



# Reagents that Advance Scientific Discovery



# About PeproTech

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PeproTech creates the building blocks of your life science research by manufacturing high-quality products that advance scientific discovery and human health. Since 1988, we have grown into a global enterprise with state-of-the-art manufacturing facilities in the US, and offices around the world.

With over 2,000 products PeproTech has developed and refined innovative protocols to ensure quality, reliability and consistency.

Our mission is to provide the highest quality products and premium support that address the needs and demands of today's scientists and researchers.

We pride ourselves on being a trusted partner within the scientific community.

- Comprehensive line of Cytokines and Antibodies
- GMP Cytokines for Cell, Gene and Tissue Therapy
- Animal-Free Cytokines
- ELISA Development Kits
- Cell Culture Media Kits / Supplements

## A propos de PeproTech

PeproTech crée les éléments de base à votre recherche en sciences du vivant en fabriquant des produits de haute qualité pour faire avancer les découvertes scientifiques et la santé humaine. Depuis 1988, nous sommes devenus une entreprise mondiale avec des laboratoires de pointe aux Etats-Unis et des bureaux à travers le monde.

Avec plus de 2000 produits, PeproTech a développé et affiné des protocoles innovants pour assurer la qualité, la fiabilité et la stabilité de ses produits.

Notre objectif est de fournir des produits de la plus haute qualité et un support adapté qui réponde aux demandes et aux besoins des scientifiques et chercheurs d'aujourd'hui.

Nous sommes fiers d'être un partenaire de confiance pour la communauté scientifique.

- Une gamme très complète de Cytokines et Anticorps
- Des produits sous conditions GMP pour la Thérapie Cellulaire, Génique et Tissulaire
- Une gamme de Produits Animal Free
- Kits ELISA
- Kits pour Milieux de Culture Cellulaire

## Über PeproTech

PeproTech entwickelt Bausteine für Ihre Life Science Forschung, durch Herstellung qualitativ hochwertiger Produkte, die wissenschaftliche Entdeckungen und damit die menschliche Gesundheit voranbringen. Seit 1988 haben wir uns zu einem globalen Unternehmen entwickelt, mit modernsten Produktionsanlagen in den USA und Vertriebsbüros in der ganzen Welt.

Für über 2.000 Produkte hat PeproTech innovative Protokolle entwickelt und verbessert, die eine gleichbleibend hohe und verlässliche Qualität sicherstellen.

Unsere Aufgabe sehen wir darin, erstklassigen Service und Produkte von höchstmöglicher Qualität anzubieten, die den Bedürfnissen heutiger Wissenschaftler und Forscher entsprechen.

Wir sehen uns als vertrauenswürdigen Partner der wissenschaftlichen Gemeinschaft.

- Ein umfangreiches Sortiment an Zytokinen und Antikörpern
- GMP Zytokine für Zell-, Gen- und Gewebetherapie
- "Animal-Free" Zytokine
- ELISA Development Kits
- Medienkits / -zusätze für Zellkultur

# Ordering Information

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## Hours of Operation:

Our office is open from 9:00 AM to 5:00 PM Monday - Friday. To place an order or request a catalogue after business hours, or on weekends, please send us a fax or visit our website.

## To Place an Order:

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## Shipping:

PeproTech's products have been formulated to allow shipment at ambient temperature. Orders are dispatched using a next day delivery service. Please let us know at point of order if you require delivery by a specific date.

## Return Policy:

Any claim for credit or return goods must be made within 7 days of receipt. PeproTech will not accept returned products without prior authorization. No credit or replacement will be issued without a return authorization number. All returns are subject to 30% cost of the full list price as a return fee, unless the products are returned due to lack of conformity with the specifications in PeproTech's data sheets. Please call Customer Service for return instructions.

## Warranty:

PeproTech warrants to the original purchaser that products sold substantially conform to specifications provided with shipped products and are free from material defects. This warranty does not extend to any product which has been altered in any way by personnel other than PeproTech's employees or to any product which has been handled in a manner contrary to instructions included in product documentation. PeproTech is not responsible for patent infringement or other violations which may occur with the use of these products. PeproTech makes no warranty of the product's suitability for any purchaser's particular use; suitability for use must be determined by the purchaser or user of the products. All other warranties, expressed or implied, are disclaimed to the fullest extent allowed by law. Purchaser's sole remedy under the above warranty shall be replacement with a conforming product, a credit toward future purchases of PeproTech products or, at PeproTech's sole discretion, a refund of the price of the product. If there is a question or concern please contact our Technical Support Department immediately so we may assist you.

## Resale:

In the absence of an expressed written agreement to the contrary, all products are sold by PeproTech Inc. for the exclusive use of the purchaser and are not to be resold.

## Information Changes:

This catalogue contains current information on PeproTech products. PeproTech reserves the right to discontinue sales of any product or to change product descriptions and/or formulations at any time without notice to purchasers.

## Product Use Limitations:

PeproTech products are offered for research use only. Not for human use.

**www.peprotech.com**

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For comprehensive information about our products visit our new website at **www.peprotech.com**. Our website is an easy way to get up-to-date information on new products, references, useful links and much more. For your assurance PeproTech's website uses secure on-line ordering.

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# GMP Cytokines



## Helping unlock the promise of Cellular Therapies and Regenerative Medicines

The rapidly evolving field of regenerative medicine offers exciting opportunities to develop new solutions for an array of diseases, injuries, and genetic disorders. Modern advances in immunology, developmental biology, genetics, and cell biology are driving research in this emerging area, and opening up huge potential for related therapies.

As cell therapies transition from the lab to patients' bedsides, ensuring the highest levels of quality and safety is a significant and critical challenge. **PeproTech's PeproGMP® Cytokines help researchers meet that challenge.** Consistent with federal requirements and best practices for cell therapy, gene therapy, and tissue-engineered products for clinical applications, PeproGMP® Cytokines are manufactured and tested in compliance with US FDA GMP (Good Manufacturing Practices) regulations and the ISO 9001 quality management systems standard, without the use of animal-derived materials.

PeproGMP® Cytokines offer safety, purity, and simplified use in *ex vivo* manufacturing processes, as described in USP (United States Pharmacopeia) Chapter <1043> Ancillary Materials for Cell, Gene, and Tissue-Engineered Products.

- ISO7-certified cleanrooms and controlled laboratories
- Qualification and validation programme
- Materials management
- Personnel training programme
- Environmental monitoring
- Equipment monitoring
- Equipment calibration and maintenance
- Rigorous quality control programme
- Documentation control and records



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## GMP Cytokines

Product Description	Catalogue Number	Size
PeproGMP® Human EGF .....	GMP100-15-100µg .....	100 µg
PeproGMP® Human EGF .....	GMP100-15-500µg .....	500 µg
PeproGMP® Human FGF-basic .....	GMP100-18B-25µg .....	25 µg
PeproGMP® Human FGF-basic .....	GMP100-18B-100µg .....	100 µg
PeproGMP® Human Flt3-Ligand .....	GMP300-19-50µg .....	50 µg
PeproGMP® Human Flt3-Ligand .....	GMP300-19-100µg .....	100 µg
PeproGMP® Human IL-3 .....	GMP200-03-50µg .....	50 µg
PeproGMP® Human IL-3 .....	GMP200-03-100µg .....	100 µg
PeproGMP® Human IL-6 .....	GMP200-06-10µg .....	10 µg
PeproGMP® Human IL-6 .....	GMP200-06-100µg .....	100 µg
PeproGMP® Human SCF .....	GMP300-07-50µg .....	50 µg
PeproGMP® Human SCF .....	GMP300-07-100µg .....	100 µg
PeproGMP® Human TPO .....	GMP300-18-50µg .....	50 µg
PeproGMP® Human TPO .....	GMP300-18-100µg .....	100 µg

We are continually adding new GMP products. Please contact [gmp@peprotech.com](mailto:gmp@peprotech.com) for our most up-to-date product list. For pricing information please contact your local office.

### Quality Assurance/Quality Control

PeproTech ensures that all aspects of our quality management system—from management of raw materials and equipment to facilities maintenance (environmental monitoring), manufacturing processes, internal audits, and inspection processes—are in compliance with GMPs and all applicable regulatory and standards requirements.

We perform extensive quality control testing to verify that PeproGMP® Cytokines meet rigorous standards for purity, identity, safety, activity, and consistency.



We would love to share more about our PeproGMP® Cytokines. Contact your local office for more information:

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# Cell Culture Media Products

## PeproGrow Human Mesenchymal Stem Cell Medium

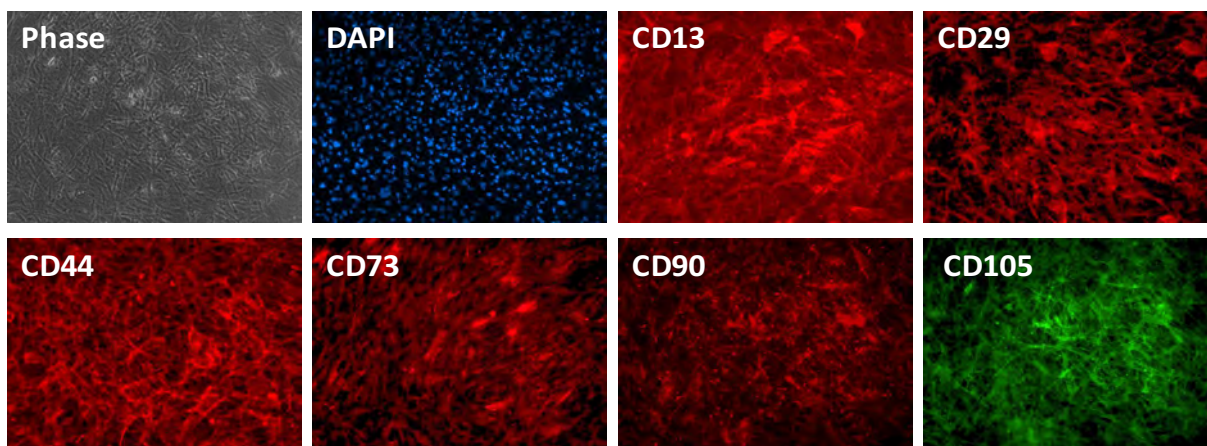
Maintenance Medium for hMSCs

### PeproGrow hMSC

PeproGrow hMSC (Mesenchymal Stem Cell) Medium is a xeno-free, human serum-containing, phenol red-free complete media formulation originally designed for the *in vitro* expansion of adipose-derived human mesenchymal stem cells (ADMSCs) while maintaining full multipotency. Since its design, this media formulation has been shown to be suitable for the sustained growth of adipose tissue-derived, bone marrow-derived, umbilical cord-derived, placental-derived, and urine-derived MSCs in both adherent and suspension culture. For optimal results, culturing should be conducted on a surface coated with PeproTech's Animal-Free Human Vitronectin Matrix as a surface-coating reagent; however, other suitable extracellular matrix (ECM) proteins, such as fibronectin or vitronectin, can be used. PeproGrow hMSC Medium was designed and developed in collaboration with American CryoStem Corporation, and is supplied as a 500mL bottle of PeproGrow hMSC Basal Medium (Catalogue# BM-XF-hMSC-500) containing a human serum component, and a separate, lyophilized vial of animal-free PeproGrow hMSC Growth Factor Supplement (Catalogue# GF-XF-hMSC-500). The addition of the separate, lyophilized growth factor supplement to the basal medium results in a complete medium containing all growth factors and supplements necessary for optimal expansion of human mesenchymal stem cells in culture.

Kit/Components	Catalogue Number
<b>PeproGrow hMSC Medium 500mL Kit</b> .....	<b>XF-hMSC-500</b>
Basal Medium.....	BM-XF-hMSC-500
Growth Factor Component.....	GF-XF-hMSC-500

#### Fluorescent immunostaining of adipose tissue-derived mesenchymal stem cells (ADMSCs) grown in PeproGrow hMSC Medium



**CD146**

Cells were grown for 4 days on Animal-Free Human Vitronectin Matrix-coated chamber slides at 37°C in an atmosphere of 5% O<sub>2</sub> and 5% CO<sub>2</sub>. Following growth, cells were rinsed once with PBS to remove debris and dead cells, then fixed for 20 minutes at RT with freshly-prepared 4% paraformaldehyde in PBS/HEPES, pH 7.4. Following fixation, cells were rinsed 3 times with PBS, blocked/permeabilized with 1x PERM/WASH (BD), and subjected to primary antibody staining (BioGems) at recommended concentrations overnight at 4°C. The following day, samples were washed 3 times with PBS, and incubated with secondary antibodies (ThermoFisher/Molecular Probes) diluted in 1:4 PERM/Wash:PBS as follows: all goat anti-rabbit antibodies were used at 1:1000, whereas goat anti-mouse isotypes were used at 1:500 dilutions. The samples were then washed 1 time with PBS containing 500 ng/ml DAPI, twice more in PBS, alone, and once in DI water to remove salts prior to mounting/cover-slipping in Aqua-Poly Mount (Polysciences) with 12 mm glass coverslips. The slides were allowed to dry overnight at RT prior to imaging using an Olympus IX71 Inverted microscope equipped with an inverted cooled CCD camera. Images were captured using iVision software (12 bit), pseudo-coloured (DAPI = blue, AF488 = green, AF594 = red), and then exported to 8 bit format. In order to ensure specificity, all image capture times were adjusted to, or below, the times of the isotype controls that revealed minimal background staining levels. As shown, ADMSCs grown in PeproGrow hMSC Medium were strongly positive for CD13, CD29, CD44, CD73, CD90, CD105, and CD146.

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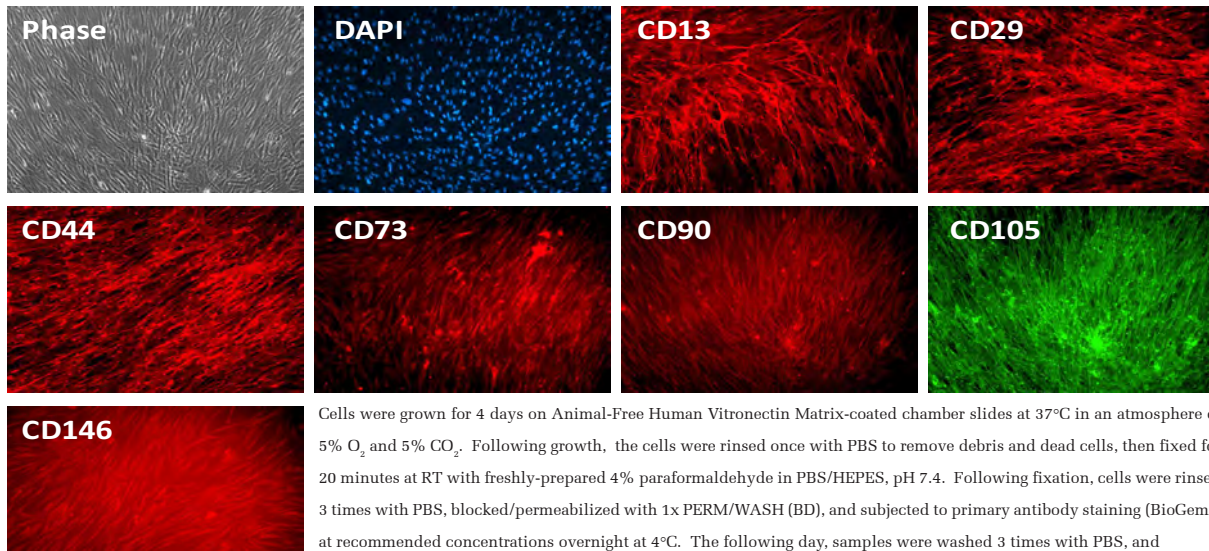
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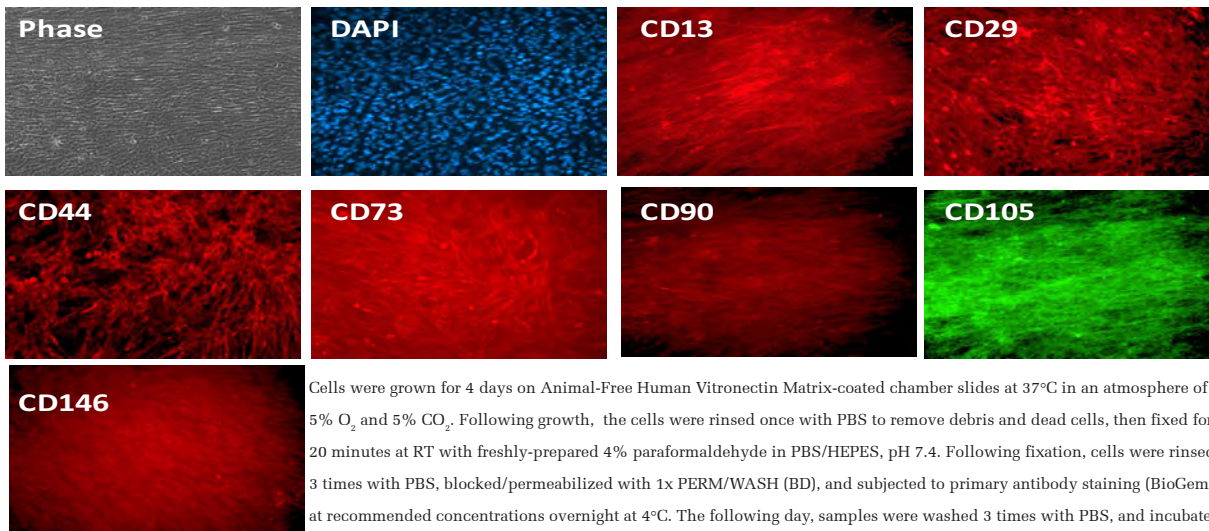
## Cell Culture Media Products

### Fluorescent immunostaining of bone marrow-derived mesenchymal stem cells (BDMSCs) grown in PeproGrow hMSC Medium



Cells were grown for 4 days on Animal-Free Human Vitronectin Matrix-coated chamber slides at 37°C in an atmosphere of 5% O<sub>2</sub> and 5% CO<sub>2</sub>. Following growth, the cells were rinsed once with PBS to remove debris and dead cells, then fixed for 20 minutes at RT with freshly-prepared 4% paraformaldehyde in PBS/HEPES, pH 7.4. Following fixation, cells were rinsed 3 times with PBS, blocked/permeabilized with 1x PERM/WASH (BD), and subjected to primary antibody staining (BioGems) at recommended concentrations overnight at 4°C. The following day, samples were washed 3 times with PBS, and incubated with secondary antibodies (ThermoFisher/Molecular Probes) diluted in 1:4 PERM/ Wash:PBS as follows: all goat anti-rabbit antibodies were used at 1:1000, whereas goat anti-mouse isotypes were used at 1:500 dilutions. The samples were then washed 1 time with PBS containing 500 ng/ml DAPI, twice more in PBS, alone, and once in DI water to remove salts prior to mounting/cover-slipping in Aqua-Poly Mount (Polysciences) with 12 mm glass coverslips. The slides were allowed to dry overnight at RT prior to imaging using an Olympus IX71 Inverted microscope equipped with an inverted cooled CCD camera. Images were captured using iVision software (12 bit), pseudo-coloured (DAPI = blue, AF488 = green, AF594 = red), and then exported to 8 bit format. In order to ensure specificity, all image capture times were adjusted to, or below times, that of the isotype controls that revealed minimal background staining levels. As shown, BDMSCs grown in PeproGrow hMSC Medium were strongly positive for CD13, CD29, CD44, CD73, CD90, CD105, and CD146.

### Fluorescent immunostaining of placental-derived mesenchymal stem cells (PDMSCs) grown in PeproGrow hMSC Medium



Cells were grown for 4 days on Animal-Free Human Vitronectin Matrix-coated chamber slides at 37°C in an atmosphere of 5% O<sub>2</sub> and 5% CO<sub>2</sub>. Following growth, the cells were rinsed once with PBS to remove debris and dead cells, then fixed for 20 minutes at RT with freshly-prepared 4% paraformaldehyde in PBS/HEPES, pH 7.4. Following fixation, cells were rinsed 3 times with PBS, blocked/permeabilized with 1x PERM/WASH (BD), and subjected to primary antibody staining (BioGems) at recommended concentrations overnight at 4°C. The following day, samples were washed 3 times with PBS, and incubated with secondary antibodies (ThermoFisher/Molecular Probes) diluted in 1:4 PERM/Wash:PBS as follows: all goat anti-rabbit antibodies were used at 1:1000, whereas goat anti-mouse isotypes were used at 1:500 dilutions. The samples were then washed 1 time with PBS containing 500 ng/ml DAPI, twice more in PBS, alone, and once in DI water to remove salts prior to mounting/cover-slipping in Aqua-Poly Mount (Polysciences) with 12 mm glass coverslips. The slides were allowed to dry overnight at RT prior to imaging using an Olympus IX71 Inverted microscope equipped with an inverted cooled CCD camera. Images were captured using iVision software (12 bit), pseudo-coloured (DAPI = blue, AF488 = green, AF594 = red), and then exported to 8 bit format. In order to ensure specificity, all image capture times were adjusted to, or below, the times of the isotype controls that revealed minimal background staining levels. As shown, PDMSCs grown in PeproGrow hMSC Medium were strongly positive for CD13, CD29, CD44, CD73, CD90, CD105, and CD146.

# Cell Culture Media Products

## PeproGrow Animal-Free Human Embryonic Stem Cell Media

Maintenance Media for hESCs and hiPSCs

### PeproGrow Animal-Free hESC Medium and PeproGrow Animal-Free Low Protein hESC Medium

PeproGrow Animal-Free hESC Medium and PeproGrow Animal-Free Low Protein hESC Medium are animal component-free, serum- and phenol red-free media of a complete, chemically-defined formulation. They are designed for feeder-free maintenance and expansion of both human embryonic stem cells (hESCs) and human induced pluripotent stem cells (iPSCs). These media formulations are best used with PeproTech's Animal-Free Human Vitronectin Matrix as a surface-coating reagent; however, these can also be used with Corning Matrigel® or Synthemax® II-SC. The media are intended for the culturing of hESCs and iPSCs in the undifferentiated, pluripotent state (Nanog+/Lin28+/Tra-1-60+ or SSEA4+/Oct4+), and demonstrate less than 15% spontaneous differentiation as indicated by immunofluorescent staining. Similar to the PeproGrow-hESC Medium, these proprietary media formulations include relevant growth factors, such as FGF2 (FGF-basic), and do not contain the insulin found in the majority of other hESC/iPSC media currently available on the market. PeproGrow Animal-Free hESC Medium and PeproGrow Animal-Free Low Protein hESC Medium were designed and developed by PeproTech in collaboration with the Stem Cell Training Course at Rutgers University. These media contain minimal, essential components required for stem cell culture maintenance and are developed in the likeness of the E8® formulation developed by the laboratory of Dr. James Thomson at the University of Wisconsin, Madison.\* These kits are supplied as a 100mL, or 500mL, bottle of basal medium, and a separate, lyophilized growth factor component. The basal medium is available as either a low-protein medium (catalogue numbers AF-LP-hESC-500 and AF-LP-hESC-100), or an animal component-free albumin-containing medium (catalogue numbers AF-hESC-R-500 and AF-hESC-R-100). Additional companion products, such as the Animal-Free Human Vitronectin Matrix and Buffer Kit, and the Cell Passaging/Non-Enzymatic Detachment Buffer, are available separately.

\*E8 is a registered trademark of the Wisconsin Alumni Research Foundation.

Kit/Components	Catalogue Number
<b>PeproGrow Animal-Free hESC Medium 500mL Kit</b> .....	<b>AF-hESC-R-500</b>
Basal Medium.....	AF-BM-hESC-R-500
Animal-Free Growth Factor Component.....	AF-GF-hESC-500
<b>PeproGrow Animal-Free hESC Medium 100mL Kit</b> .....	<b>AF-hESC-R-100</b>
Basal Medium.....	AF-BM-hESC-R-100
Animal-Free Growth Factor Component.....	AF-GF-hESC-100
<b>PeproGrow Animal-Free Low Protein hESC Medium 500mL Kit</b> .....	<b>AF-LP-hESC-500</b>
Low Protein Basal Medium.....	AF-BM-LP-hESC-500
Animal-Free Growth Factor Component.....	AF-GF-hESC-500
<b>PeproGrow Animal-Free Low Protein hESC Medium 100mL Kit</b> .....	<b>AF-LP-hESC-100</b>
Low Protein Basal Medium.....	AF-BM-LP-hESC-100
Animal-Free Growth Factor Component.....	AF-GF-hESC-100

### Companion Products for PeproGrow Animal-Free hESC Media

Kit/Components	Catalogue Number
<b>Animal-Free Human Vitronectin Matrix and Buffer Kit</b> .....	<b>AF-VMB-220</b>
Animal-Free Human Vitronectin Matrix (500µg)	
PBS + Kolliphor P 188 (220mL)	
<b>Cell Passaging/Non-Enzymatic Detachment Buffer</b> .....	<b>CPD-125</b>
PBS+HEPES+EDTA (125mL)	

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# Cell Culture Media Products

## PeproGrow Human Embryonic Stem Cell Medium

Maintenance Medium for hESCs and hiPSCs

### PeproGrow hESC

PeproGrow hESC Medium is a serum- and phenol red-free medium of a complete, chemically-defined formulation designed for feeder-free maintenance and expansion of both human embryonic stem cells (hESCs) and induced pluripotent stem cells (hiPSCs) using BD Matrigel™ as a surface-coating matrix. This medium is intended for the culturing of hESCs and hiPSCs in the undifferentiated, pluripotent state (SSEA4+/Oct4+), and demonstrates less than 15% spontaneous differentiation as indicated by flow cytometry. The proprietary formulation of the medium includes relevant growth factors, such as FGF2 (FGF-basic), but does not contain the insulin found in the majority of other hESC/hiPSC media currently available on the market. PeproGrow hESC Medium, which was designed and developed by PeproTech in collaboration with the Stem Cell Training Course at Rutgers University, is supplied as a 100mL, or 500mL, bottle of basal medium and a separate, lyophilized growth factor component.



**Kit/Components**

**Catalogue Number**

<b>PeproGrow hESC Medium 500mL Kit</b> .....	<b>hESC-500</b>
Basal Medium.....	BM-hESC-500
Growth Factor Component.....	GF-hESC-500
<b>PeproGrow hESC Medium 100mL Kit</b> .....	<b>hESC-100</b>
Basal Medium.....	BM-hESC-100
Growth Factor Component.....	GF-hESC-100

# Cell Culture Media Products

## PeperoGrow Endothelial Media

Maintenance Media for Endothelial Cells

### PeperoGrow EPC, PeperoGrow MacroV and PeperoGrow MicroV

PeperoTech offers three separate endothelial cell culture media formulations developed for the *in vitro* cultivation of: endothelial progenitor cells (EPCs), derived from bone marrow or peripheral blood (PeperoGrow EPC Medium); endothelial cells from large vessels (PeperoGrow MacroV Medium); and endothelial cells from small vessels (PeperoGrow MicroV Medium). These media formulations maintain outstanding endothelial cell morphology and function, and increase the activity of endothelial nitric oxide synthase (eNOS), which account for a specific crucial marker for endothelial cells. By doing this, the media provide an optimal cell culture environment for macrovascular and microvascular endothelial cells, as well as for EPCs; growing cells at rates that exceed commercially available media.

PeperoTech's endothelial cell culture media kit is supplied as a 500mL bottle of basal medium and a separate growth supplement bottle that contains various essential growth factors and components for endothelial cell growth. Adding the growth supplement to the basal medium results in the complete culture medium. PeperoTech's endothelial media do not contain antibiotics, antimycotics, antifungal, or phenol red, as these components can cause cell stress and masking effects that may reduce complete medium shelf life and influence experimental results.

Kit/Components	Catalogue Number
<b>PeperoGrow EPC Medium Kit (ENDO-BM &amp; GS-EPC) .....</b>	<b>700-EPC</b>
Basal Medium.....	ENDO-BM
Growth Supplement EPC.....	GS-EPC*
<b>PeperoGrow MacroV Medium Kit (ENDO-BM &amp; GS-MacroV).....</b>	<b>700-MacroV</b>
Basal Medium.....	ENDO-BM
Growth Supplement MacroV.....	GS-MacroV*
<b>PeperoGrow MicroV Medium Kit (ENDO-BM &amp; GS-MicroV) .....</b>	<b>700-MicroV</b>
Basal Medium.....	ENDO-BM
Growth Supplement MicroV .....	GS-MicroV*

\*Contains FBS

## PeperoGrow CHO Media

Maintenance Media for CHO-S Cell Lines

### PeperoGrow CD-CHO and PeperoGrow AF-CHO

PeperoTech offers two CHO media, PeperoGrow CD-CHO Medium and PeperoGrow AF-CHO Medium, for the *in vitro* cultivation of Chinese Hamster Ovary-S cells (Life Technologies™ Catalogue numbers 11619-012, R800-07, or A11557-01). This medium is intended for recombinant protein expression in suspension culture. PeperoGrow CD-CHO Medium is an animal component-free, serum-free, protein-free, chemically-defined, complete medium formulation. PeperoGrow AF-CHO Medium is an animal component-free, serum-free, protein-free, complete medium formulation. Both ready-to-use media contain L-alanyl-L-Glutamine, amino acids, vitamins, and salts, which are recommended for a 5 day batch culture with a seeding density of  $0.5 \times 10^6$  cells/mL. PeperoGrow AF-CHO Medium also contains non-animal derived hydrolysates. An adaptation process is not required for Life Technologies™ CHO-S cells.

Medium	Catalogue Number	Volume
PeperoGrow CD-CHO Medium.....	AF-CD-CHO.....	1Liter (L)
PeperoGrow AF-CHO Medium.....	AF-CHO.....	1Liter (L)

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## Cell Culture Media Products

### PeproGrow HEK293 Medium

Maintenance Medium for Human HEK293 Cells

#### PeproGrow HEK293

PeproGrow HEK293 Medium is an animal component-free, protein-free, serum-free, chemically-defined complete medium formulation for the *in vitro* cultivation of HEK293 cells (Life Technologies™ FreeStyle™ 293-F cells, Catalogue number R790-07). This medium is intended for recombinant protein expression in suspension culture, which is recommended for a 5 day batch culture with a seeding density of  $0.6 \times 10^6$  cells/mL. This ready-to-use medium contains L-alanyl-L-Glutamine, amino acids, vitamins, and salts. An adaptation process is not required for Life Technologies™ FreeStyle™ 293-F cells.

Medium	Catalogue Number	Volume
PeproGrow HEK293 Medium .....	AF-CD-HEK293 .....	1Liter (L)

## Cell Culture Supplement Kit

### PeproGrow-1 Serum-Free Cell Culture Media Supplement Kit

Serum-free cell culture supplement kit for adherent HEK293, HeLa, and A549 cells

#### PeproGrow-1

PeproGrow-1 (Catalogue number 700-C100) is a serum-free cell culture media supplement formulation designed to sustain the growth of adherent mammalian cell lines, and has been tested with HEK293, HeLa and A549 cells. This kit may potentially improve the culturing conditions of other adherent cells, however suitability for cells other than those pre-tested is not guaranteed. PeproGrow-1 is an animal component-free, protein-free, chemically-defined formulation. This kit is intended to be used with DMEM/F12 basal media (Thermo Fisher Scientific Catalogue number 31331) and contains enough material to supplement 10L of media.

**Note:** DMEM/F12 media should contain phenol red, or phenol red can be added at the customer's discretion. DMEM/F12 media should not contain HEPES. Another vendor's DMEM/F12 can be purchased, however, PeproTech only tests PeproGrow-1 (Catalogue number 700-C100) using Life Technologies' DMEM/F12.

- **100x Serum Replacement Solution (Catalogue number SR-100)** contains non-animal derived, chemically-defined salts, designed to replace serum in HEK293, HeLa, and A549 cell culture media.
- **200x Lipid Mixture Solution (Catalogue number LM-200)** contains non-animal derived fatty acids and lipids, designed to improve cell growth in serum-free media.

Medium	Catalogue Number
<b>PeproGrow-1 Kit (SR-100 &amp; LM-200)</b> .....	<b>700-C100</b>
Serum Replacement Solution .....	SR-100
Lipid Mixture Solution .....	LM-200



# ELISA Buffer Kits

## PeproTech's ELISA Buffer Kits

PeproTech offers both an ABTS ELISA Buffer Kit and a TMB ELISA Buffer Kit that have been specifically formulated for optimal performance when used in conjunction with PeproTech's ABTS ELISA Development Kits and TMB ELISA Development Kits, respectively. These buffer kits contains all of the necessary components to assay ten 96-well ELISA plates (included) and contains detailed handling instructions. All of the reagents have been sterile-filtered to minimize assay interference and maximize shelf life. Both the ABTS ELISA Buffer Kit and TMB ELISA Buffer Kit can be purchased along with one of PeproTech's ABTS or TMB ELISA Development Kits at a discounted price. These easy-to-use ELISA Buffer Kits can also be purchased as stand-alone products since the plates included are not pre-coated with capture antibody. This format allows the researcher to develop and optimize an assay for use with their own capture and detection antibodies. The actual antibody concentrations and detection ranges of the ELISA will vary.

### ABTS ELISA Buffer Kit Contents:

- 20X Plate Coating Buffer (PBS)
- 1X Blocking Buffer
- 20X Sample Diluent
- 20X Wash Buffer
- Ready-to-use ABTS
- 10 Sterile, Uncoated 96-well ELISA Plates
- 50 Plate Sealing Films
- Buffer Handling Instructions

Description	Catalogue Number
ABTS ELISA Buffer Kit.....	900-K00

### TMB ELISA Buffer Kit Contents:

- 20X Plate Coating Buffer (PBS)
- 1X Blocking Buffer
- 20X Sample Diluent
- 20X Wash Buffer
- Ready-to-use TMB Liquid Substrate
- Ready-to-use Stop Solution
- 10 Sterile, Uncoated 96-well ELISA Plates
- 50 Plate Sealing Films
- Buffer Handling Instructions

Description	Catalogue Number
TMB ELISA Buffer Kit .....	900-T00

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# Cytokine Packages

## Dendritic Cell Cytokine Packages

### Human Dendritic Cell Cytokine Package

Contains the key components required for culturing of your human dendritic cells.

Catalogue Number: HDC

The following 2 vials are included:

- 100 µg Human IL-4
- 100 µg Human GM-CSF

### Murine Dendritic Cell Cytokine Package

Contains the key components required for culturing of your mouse dendritic cells.

Catalogue Number: MDC

The following 2 vials are included:

- 100 µg Murine IL-4
- 100 µg Murine GM-CSF

### Animal-Free Human Dendritic Cell Cytokine Package

Catalogue Number: AF-HDC

The following 2 vials are included:

- 100 µg Animal-Free Human IL-4
- 100 µg Animal-Free Human GM-CSF

### Animal-Free Murine Dendritic Cell Cytokine Package

Catalogue Number: AF-MDC

The following 2 vials are included:

- 100 µg Animal-Free Murine IL-4
- 100 µg Animal-Free Murine GM-CSF

## Hematopoietic Stem Cell Expansion Cytokine Packages

### Human Hematopoietic Stem Cell Expansion Cytokine Package

Contains the key components required for *ex vivo* human hematopoietic stem cells.

Catalogue Number: HHSC3

The following 4 vials are included:

- 100 µg Human Flt3 Ligand
- 100 µg Human SCF
- 100 µg Human TPO
- 10 µg Human IL-3

### Human Hematopoietic Stem Cell Expansion Cytokine Package

Contains the key components required for *ex vivo* human hematopoietic stem cells.

Catalogue Number: HHSC6

The following 4 vials are included:

- 100 µg Human Flt3 Ligand
- 100 µg Human SCF
- 100 µg Human TPO
- 20 µg Human IL-6

### Murine Hematopoietic Stem Cell Expansion Cytokine Package

Contains the key components required for *ex vivo* mouse hematopoietic stem cells.

Catalogue Number: MHSC3

The following 4 vials are included:

- 100 µg Murine Flt3 Ligand
- 100 µg Murine SCF
- 100 µg Murine TPO
- 10 µg Murine IL-3

### Murine Hematopoietic Stem Cell Expansion Cytokine Package

Contains the key components required for *ex vivo* mouse hematopoietic stem cells.

Catalogue Number: MHSC6

The following 4 vials are included:

- 100 µg Murine Flt3 Ligand
- 100 µg Murine SCF
- 100 µg Murine TPO
- 10 µg Murine IL-6

### Animal-Free Human Hematopoietic Stem Cell Expansion Cytokine Package

Catalogue Number: AF-HHSC3

The following 4 vials are included:

- 100 µg Animal-Free Human Flt3 Ligand
- 100 µg Animal-Free Human SCF
- 100 µg Animal-Free Human TPO
- 10 µg Animal-Free Human IL-3

### Animal-Free Human Hematopoietic Stem Cell Expansion Cytokine Package

Catalogue Number: AF-HHSC6

The following 4 vials are included:

- 100 µg Animal-Free Human Flt3 Ligand
- 100 µg Animal-Free Human SCF
- 100 µg Animal-Free Human TPO
- 20 µg Animal-Free Human IL-6

### Animal-Free Murine Hematopoietic Stem Cell Expansion Cytokine Package

Catalogue Number: AF-MHSC3

The following 4 vials are included:

- 100 µg Animal-Free Murine Flt3 Ligand
- 100 µg Animal-Free Murine SCF
- 100 µg Animal-Free Murine TPO
- 10 µg Animal-Free Murine IL-3

### Animal-Free Murine Hematopoietic Stem Cell Expansion Cytokine Package

Catalogue Number: AF-MHSC6

The following 4 vials are included:

- 100 µg Animal-Free Murine Flt3 Ligand
- 100 µg Animal-Free Murine SCF
- 100 µg Animal-Free Murine TPO
- 10 µg Animal-Free Murine IL-6

## Activin A

**Synonyms:** Inhibin beta-1, FRP, FSH (Follicle-Stimulating Hormone)-releasing protein, Erythroid Differentiation Factor (EDF)

### RUO Cytokines

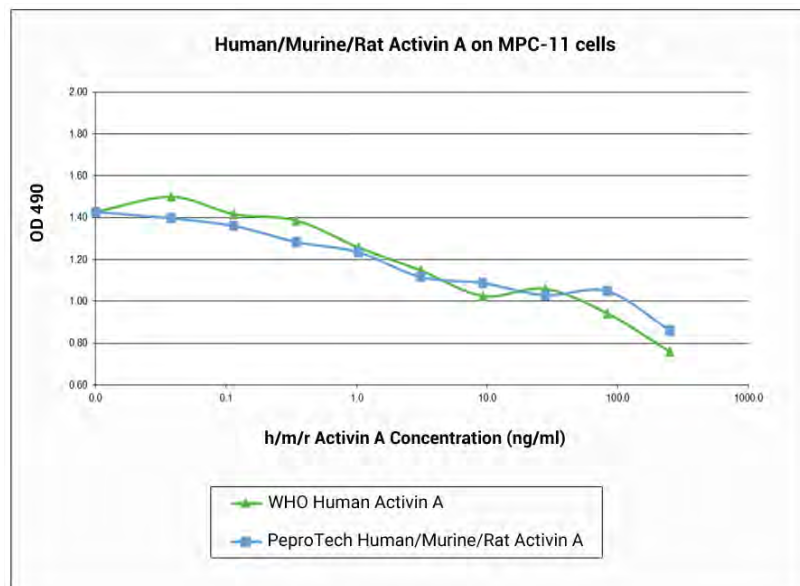
PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human/Murine/Rat Activin A	120-14	<i>Insect cells</i>	26.0 kDa	2µg	10µg	
Human/Murine/Rat Activin A	120-14E	<i>E. coli</i>	26.0 kDa	2µg	10µg	
Human/Murine/Rat Activin A	120-14P	<i>CHO cells</i>	26.0 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human/Murine/Rat Activin A	AF-120-14E	<i>E.coli</i>	26.0 kDa	2µg	10µg	

*Additional sizes available please inquire*



## Adiponectin

**Synonyms:** Acrp-30, APM-1, AdipoQ, Gelatin-binding protein, GBP-28

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Adiponectin	450-24	<i>Insect cells</i>	25.9 kDa	5µg	25µg	
Murine Adiponectin	315-26	<i>Insect cells</i>	25.8 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human Adiponectin	500-M126	<i>Mouse</i>	E, WB	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

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**AITRL** *Activation-Induced TNFR member Ligand***Synonyms:** TNFSF18, GITRL, TL-6**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human AITRL	310-22	<i>E.coli</i>	14.3 kDa	5µg	20µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human AITRL	500-P244	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human AITRL	500-P244Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Aminopeptidase****Synonyms:** none**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Aeromonas Aminopeptidase	100-10	<i>E.coli</i>	31.4 kDa	100µg	500µg	

*Additional sizes available please inquire***Amphiregulin****Synonyms:** AR, AREG, Colourectum cell-Derived Growth Factor (CRDGF)**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Amphiregulin	100-55B	<i>E.coli</i>	11.3 kDa	10µg	50µg	

*Additional sizes available please inquire***ANG-1, ANG-2** *Angiopoietin-1, -2***Synonyms:** ANG-1: ANGPT1, KIAA0003; ANG-2: ANGPT2**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human ANG-1	130-06	<i>HeLa cells</i>	56.3 kDa	5µg	20µg	
Human ANG-2	130-07	<i>CHO cells</i>	50.1 kDa	5µg	20µg	

*Additional sizes available please inquire***ANGPTL-3** *Angiopoietin-like protein 3***Synonyms:** ANG-5, ANGPT5**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human ANGPTL-3	130-18	<i>CHO cells</i>	52.9 kDa	10µg	50µg	

*Additional sizes available please inquire*

## ANGPTL-7 *Angiopoietin-like protein 7*

**Synonyms:** Angiopoietin-related protein 7, Cornea-derived transcript 6 protein, CDT6

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human ANGPTL-7	130-22	<i>Insect cells</i>	38.2 kDa	5µg	20µg	

*Additional sizes available please inquire*

## ApoA-1 *Apolipoprotein A-1*

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human ApoA-1	350-11	<i>E.coli</i>	28.2 kDa	20µg	100µg	

*Additional sizes available please inquire*

## ApoE2 *Apolipoprotein E2*

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human ApoE2	350-12	<i>E.coli</i>	34.3 kDa	100µg	500µg	

*Additional sizes available please inquire*

## ApoE3 *Apolipoprotein E3*

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human ApoE3	350-02	<i>E.coli</i>	34.4 kDa	100µg	500µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human ApoE3	500-P238	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human ApoE3	500-P238Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## ApoE4 *Apolipoprotein E4*

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human ApoE4	350-04	<i>E.coli</i>	34.4 kDa	100µg	500µg	

*Additional sizes available please inquire*



## Apo-SAA, Apo-SAA1

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Apo-SAA	300-13	<i>E.coli</i>	11.7 kDa	10µg	50µg	
Human Apo-SAA1	300-53	<i>E.coli</i>	11.7 kDa	10µg	50µg	

*Additional sizes available please inquire*

## APRIL *A Proliferation-Inducing Ligand*

**Synonyms:** TNFSF13, TRDL-1, TALL-2, CD256

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human APRIL	310-10C	<i>Insect cells</i>	16.3 kDa	2µg	10µg	
Murine APRIL	315-13	<i>E.coli</i>	21.9 kDa	5µg	20µg	

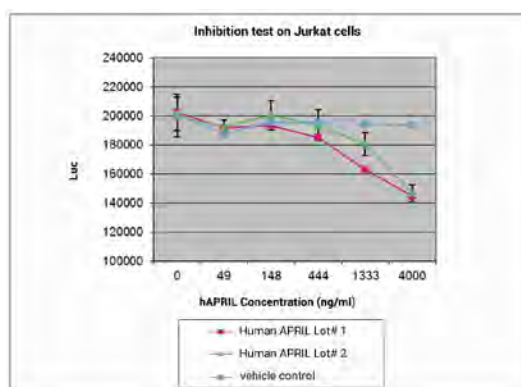
*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human APRIL	500-P192	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human APRIL	500-P192Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

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## Arg-C

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Lysobacter Enzymogenes Arg-C	450-54	<i>Insect cells</i>	26.8 kDa	5µg	20µg	

*Additional sizes available please inquire*

## Arginine Deiminase

**Synonyms:** ADI

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Mycoplasma Arginine Deiminase	150-12	<i>E.coli</i>	46.3 kDa	5µg	20µg	

*Additional sizes available please inquire*

## Artemin

**Synonyms:** ART, ARTN, Enovin, Neublabin

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Artemin	450-17	<i>E.coli</i>	24.2 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Artemin	AF-450-17	<i>E.coli</i>	24.2 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Artemin	500-P245	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human Artemin	500-P245Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## 4-1BB Ligand

**Synonyms:** TNFSF9, CD137L

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human 4-1BB Ligand	310-11	<i>E.coli</i>	19.5 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human 4-1BB Ligand	500-P169	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human 4-1BB Ligand	500-P169Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## 4-1BB Receptor

**Synonyms:** TNFRSF9, CD137, T-cell antigen ILA, CDw137

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human 4-1BB Receptor	310-15	<i>E.coli</i>	17.7 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human 4-1BB Receptor	500-P167G	<i>Goat</i>	E, WB	50µg	100µg	
Biot. Anti-Human 4-1BB Receptor	500-P167GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human 4-1BB Receptor	ABTS Catalogue # 900-K208
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## B7-1 Fc

**Synonyms:** B7, BB1, CD80

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human B7-1 Fc	310-32	CHO cells	50.0 kDa	20µg	100µg	

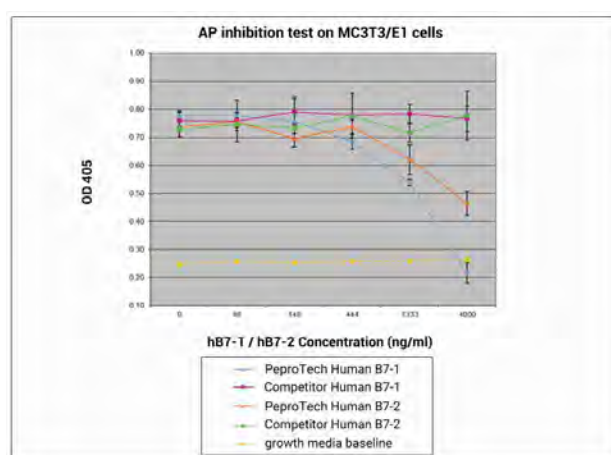
*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Murine B7-1	500-P128	Rabbit	E, WB	50µg	100µg	
Biot. Anti-Murine B7-1	500-P128Bt	Rabbit	E, WB	25µg	50µg	

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Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



## B7-2 Fc

**Synonyms:** B70, CD86, ETC1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human B7-2 Fc	310-33	CHO cells	51.2 kDa	20µg	100µg	

*Additional sizes available please inquire*

## B7-H2 Fc

**Synonyms:** Inducible Costimulator-Ligand (ICOSL), B7 homolog 2, B7-like protein G150, B7-related protein 1 (B7RP-1) CD275

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human B7-H2 Fc	310-37	CHO cells	104.9 kDa	20µg	100µg	

*Additional sizes available please inquire*

## BAFF *B-cell Activating Factor belonging to the TNF Family*

**Synonyms:** TNFSF13B, TNFSF20, TALL-1, BLyS, THANK, ZTNF4, CD257

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BAFF	310-13	<i>E.coli</i>	17.0 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BAFF	AF-310-13	<i>E.coli</i>	17.0 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human BAFF	500-P163G	<i>Goat</i>	E, WB	50µg	100µg	
Biot. Anti-Human BAFF	500-P163GBt	<i>Goat</i>	E, WB	25µg	50µg	

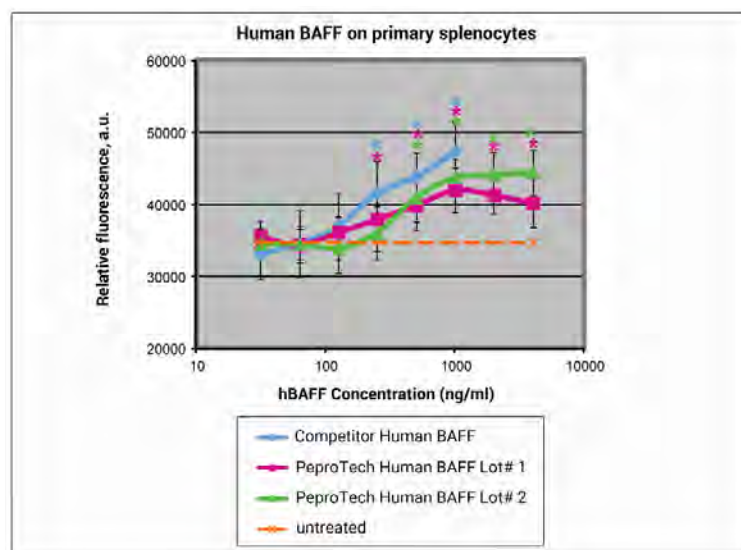
Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human BAFF	500-M64	<i>Mouse</i>	E, WB	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



## BAFF Receptor *B-cell Activating Factor belonging to the TNF Receptor Family*

**Synonyms:** BAFFR, TNFRSF13C, BLyS Receptor 3, CD268

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BAFF Receptor	310-13R	<i>E.coli</i>	7.7 kDa	10µg	50µg	

*Additional sizes available please inquire*

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**BCA-1/BLC (CXCL13)** *B-cell Attracting Chemokine-1***Synonyms:** BLR1 Ligand**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BCA-1 (CXCL13)	300-47	<i>E.coli</i>	10.3 kDa	5µg	20µg	
Murine BCA-1/BLC (CXCL13)	250-24	<i>E.coli</i>	9.8 kDa	5µg	20µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human BCA-1 (CXCL13)	500-P141	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human BCA-1 (CXCL13)	500-P141Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**BCMA** *B-Cell Maturation Antigen***Synonyms:** TNFRSF17, BCM, CD269**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BCMA	310-16	<i>E.coli</i>	5.3 kDa	5µg	20µg	

*Additional sizes available please inquire***B****BD-1, -2, -3, -4, -5** *β-Defensins 1-5***Synonyms:** **BD-1:** DEFB1, HBD1**BD-2:** DEFB2, DEFB4A, Skin-Antimicrobial Peptide 1, SAP1**BD-3:** DEFB3, DEFB103A**BD-4:** Beta-Defensin 104, DEFB4**BD-5:** BD5, DEFB105a, DEFB5**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BD-1 (36 a.a.)	300-51	<i>E.coli</i>	3.9 kDa	5µg	20µg	
Human BD-1 (47 a.a.)	300-51A	<i>E.coli</i>	5.0 kDa	5µg	20µg	
Human BD-2	300-49	<i>E.coli</i>	4.3 kDa	5µg	20µg	
Murine BD-2	250-40	<i>E.coli</i>	5.5 kDa	5µg	20µg	
Human BD-3	300-52	<i>E.coli</i>	5.1 kDa	5µg	20µg	
Human BD-4	300-65	<i>E.coli</i>	6.0 kDa	5µg	20µg	
Human BD-5	300-68	<i>E.coli</i>	5.8 kDa	5µg	20µg	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BD-5	AF-300-68	<i>E.coli</i>	5.8 kDa	5µg	20µg	

*Additional sizes available please inquire**BD-1, -2, -3, -4, -5 continued on next page...*



BD-1,-2,-3,-4,-5 *continued...***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human BD-1	500-P253	Rabbit	I, E, WB	50µg	100µg	
Biot. Anti-Human BD-1	500-P253Bt	Rabbit	E, WB	25µg	50µg	
Anti-Human BD-2	500-P161G	Goat	E, WB, N	50µg	100µg	
Biot. Anti-Human BD-2	500-P161GBt	Goat	E, WB	25µg	50µg	
Anti-Human BD-3	500-P241	Rabbit	E, WB	50µg	100µg	
Biot. Anti-Human BD-3	500-P241Bt	Rabbit	E, WB	25µg	50µg	
Anti-Human BD-4	500-P268	Rabbit	E, WB	50µg	100µg	
Biot. Anti-Human BD-4	500-P268Bt	Rabbit	E, WB	25µg	50µg	
Anti-Human BD-5	500-P323	Rabbit	E, WB	50µg	100µg	
Biot. Anti-Human BD-5	500-P323Bt	Rabbit	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Standard ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human BD-1	ABTS Catalogue # 900-K202
Human BD-2	ABTS Catalogue # 900-K172
Human BD-2	TMB Catalogue # 900-T172
Human BD-3	ABTS Catalogue # 900-K210
Human BD-4	ABTS Catalogue # 900-K435

**Mini ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human BD-1	ABTS Catalogue # 900-M202
Human BD-2	ABTS Catalogue # 900-M172
Human BD-2	TMB Catalogue # 900-TM172
Human BD-3	ABTS Catalogue # 900-M210
Human BD-4	ABTS Catalogue # 900-M435

**BDNF** *Brain-Derived Neurotrophic Factor*

**Synonyms:** Abrineurin

**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human/Murine/Rat BDNF	450-02	<i>E.coli</i>	27.0 kDa	2µg	10µg	

*Additional sizes available please inquire*

**Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human/Murine/Rat BDNF	AF-450-02	<i>E.coli</i>	27.0 kDa	2µg	10µg	

*Additional sizes available please inquire*

**Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human/Murine/Rat BDNF	500-P84	Rabbit	I, E, WB, N	50µg	100µg	
Biot. Anti-H/M/R BDNF	500-P84Bt	Rabbit	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

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## Betacellulin

**Synonyms:** BTC

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Betacellulin	100-50	<i>E.coli</i>	9.0 kDa	5µg	20µg	
Murine Betacellulin	315-21	<i>E.coli</i>	9.0 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Betacellulin	500-P254	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human Betacellulin	500-P254Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human Betacellulin	ABTS Catalogue # 900-K372
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## BMP-2 *Bone Morphogenetic Protein-2*

**Synonyms:** BMP-2A

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human/Murine/Rat BMP-2	120-02	<i>E.coli</i>	26.0 kDa	2µg	10µg	
Human/Murine/Rat BMP-2	120-02C	<i>CHO cells</i>	26.0 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human/Murine/Rat BMP-2	AF-120-02	<i>E.coli</i>	26.0 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human/Murine/Rat BMP-2	500-P195	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-H/M/R BMP-2	500-P195Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human/Murine/Rat BMP-2	ABTS Catalogue # 900-K255
Human/Murine/Rat BMP-2	TMB Catalogue # 900-T255

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human/Murine/Rat BMP-2	ABTS Catalogue # 900-M255
Human/Murine/Rat BMP-2	TMB Catalogue # 900-TM255

**BMP-3** *Bone Morphogenetic Protein-3***Synonyms:** Osteogenin, BMP-3A**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BMP-3	120-24B	<i>E.coli</i>	25.2 kDa	10µg	50µg	

*Additional sizes available please inquire***BMP-4** *Bone Morphogenetic Protein-4***Synonyms:** BMP-2B, DVR4**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BMP-4	120-05	<i>HeLa cells</i>	25.6 kDa	1µg	5µg	
Human BMP-4	120-05ET	<i>E.coli</i>	23.9 kDa	2µg	10µg	
Murine BMP-4	315-27	<i>E.coli</i>	23.9 kDa	2µg	10µg	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BMP-4	AF-120-05ET	<i>E.coli</i>	23.9 kDa	2µg	10µg	

*Additional sizes available please inquire***Monoclonal Antibodies**

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human BMP-4	500-M121	<i>Mouse</i>	I, E, WB, N	500µg

**Key:** I = IHC, E = ELISA, WB = Western blot, N = Neutralization**BMP-5** *Bone Morphogenetic Protein-5***Synonyms:** None**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BMP-5	120-39	<i>CHO cells</i>	31.2 kDa	2µg	10µg	

*Additional sizes available please inquire***BMP-6** *Bone Morphogenetic Protein-6***Synonyms:** VGR, VG-1-related protein**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BMP-6	120-06	<i>HEK293 cells</i>	26.2 kDa	2µg	10µg	

*Additional sizes available please inquire*

**BMP-7** *Bone Morphogenetic Protein-7***Synonyms:** Osteogenic Protein-1 (OP-1)**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BMP-7	120-03P	CHO cells	26.4 kDa	2µg	10µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human BMP-7	500-P198	Rabbit	I, E, WB, N	50µg	100µg	
Biot. Anti-Human BMP-7	500-P198Bt	Rabbit	E, WB	25µg	50µg	

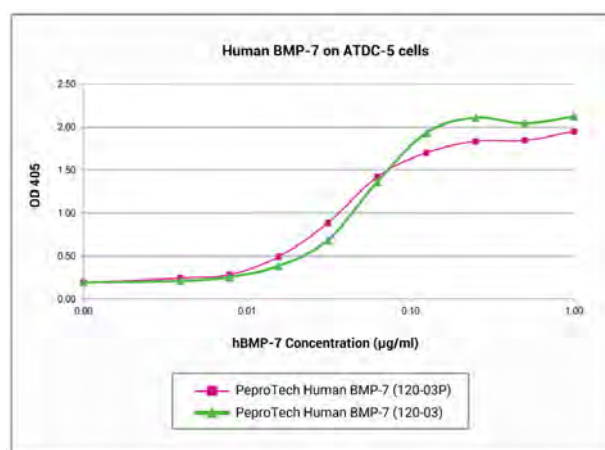
Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Monoclonal Antibodies**

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human BMP-7	500-M123	Mouse	I, E	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**BMP-10** *Bone Morphogenetic Protein-10***Synonyms:** None**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BMP-10	120-40	HEK293 cells	24.4 kDa	2µg	10µg	

*Additional sizes available please inquire***BMP-13/CDMP-2** *Bone Morphogenetic Protein-13***Synonyms:** Cartilage-Derived Morphogenetic Protein-2, GDF-6**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BMP-13/CDMP-2	120-04	E.coli	27.0 kDa	10µg	50µg	

*Additional sizes available please inquire*

## BRAK (CXCL14) *Breast and Kidney-expressed chemokine*

**Synonyms:** bolekin, NJAC

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human BRAK (CXCL14)	300-50	<i>E.coli</i>	9.4 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human BRAK (CXCL14)	500-P237	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human BRAK (CXCL14)	500-P237Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## C1 Inhibitor

**Synonyms:** Plasma protease C1 inhibitor, C1inh, C1 Esterase Protein, C1-inhibiting factor, Serpin G1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human C1 Inhibitor	130-20	<i>CHO cells</i>	49.4 kDa	50µg	200µg	

*Additional sizes available please inquire*

## C5a

**Synonyms:** Complement Component 5a, Complement 5a, CPAMD4, C3 and PZP-like alpha-2-macroglobulin domain-containing protein 4

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human C5a	300-70	<i>E.coli</i>	8.28 kDa	5µg	20µg	

*Additional sizes available please inquire*

## C10 (CCL6)

**Synonyms:** MRP-1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Murine C10 (CCL6)	250-06	<i>E.coli</i>	10.7 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Murine C10 (CCL6)	500-P112	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Murine C10 (CCL6)	500-P112Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

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## Carboxypeptidase-B

**Synonyms:** Cpb1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Rat Carboxypeptidase-B	400-00	<i>E.coli</i>	35.1 kDa	5µg	25µg	

*Additional sizes available please inquire*

## Cardiotrophin-1

**Synonyms:** CT-1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Cardiotrophin-1	300-32	<i>E.coli</i>	21.1 kDa	2µg	10µg	
Murine Cardiotrophin-1	250-25	<i>E.coli</i>	21.3 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Cardiotrophin-1	500-P101	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human Cardiotrophin-1	500-P101Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

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## sCD4 soluble CD4

**Synonyms:** Cluster determinant 4, T-cell surface glycoprotein CD4, Interleukin IL-16 receptor, T-cell surface antigen T4/Leu-3, Leu-3(a,b), OKT4(a-f), L3T4 (mouse)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sCD4	110-11	<i>CHO cells</i>	41.3 kDa	10µg	50µg	

*Additional sizes available please inquire*

## sCD14 soluble CD14

**Synonyms:** Monocyte differentiation antigen CD14

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sCD14	110-01	<i>HEK293 cells</i>	35.6 kDa	10µg	50µg	

*Additional sizes available please inquire*



**sCD22** *soluble CD22***Synonyms:** Leu-14, B-Lymphocyte cell adhesion molecule, BL-CAM, Siglec-2**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sCD22	100-01	CHO cells	75.0 kDa	5µg	20µg	

*Additional sizes available please inquire*

**Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human sCD22	500-P227	Rabbit	E, WB	50µg	100µg	
Biot. Anti-Human sCD22	500-P227Bt	Rabbit	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**sCD23** *soluble CD23***Synonyms:** CD23 antigen, Fc-epsilon-RII, Lymphocyte IgE receptor, BLAST-2**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sCD23	310-26	E.coli	19.2 kDa	5µg	20µg	

*Additional sizes available please inquire*

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**sCD27 Ligand** *soluble CD27 Ligand***Synonyms:** TNFSF7, CD70, CD27L**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sCD27 Ligand	310-30	CHO cells	18.8 kDa	10µg	50µg	

*Additional sizes available please inquire*

**sCD28 Fc** *soluble CD28 Fc***Synonyms:** T-cell-specific surface glycoprotein CD28, TP44**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sCD28 Fc	310-34	CHO cells	82.4 kDa	20µg	100µg	

*Additional sizes available please inquire*

**sCD30 Ligand** *soluble CD30 Ligand***Synonyms:** TNFSF8, CD153, CD30L**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sCD30 Ligand	450-42	CHO cells	21.3 kDa	10µg	50µg	

*Additional sizes available please inquire*

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**sCD34** *soluble CD34***Synonyms:** Hematopoietic progenitor cell antigen CD34**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sCD34	310-31	<i>CHO cells</i>	27.4 kDa	5µg	20µg	

*Additional sizes available please inquire***sCD40 Ligand** *soluble CD40 Ligand***Synonyms:** TNFSF5, TRAP, CD154, Gp39, T-BAM**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sCD40 Ligand	310-02	<i>E.coli</i>	16.3 kDa	10µg	50µg	
Murine sCD40 Ligand	315-15	<i>E.coli</i>	16.4 kDa	5µg	25µg	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sCD40 Ligand	AF-310-02	<i>E.coli</i>	16.3 kDa	10µg	50µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human sCD40 Ligand	500-P142G	<i>Goat</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human sCD40 Ligand	500-P142GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Standard ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human sCD40 Ligand ABTS Catalogue # 900-K145

**Mini ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human sCD40 Ligand ABTS Catalogue # 900-M145

**sCD100** *soluble CD100***Synonyms:** Semaphorin-4D, BB18, A8, GR3**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sCD100	310-29	<i>CHO cells</i>	78.9 kDa	5µg	20µg	

*Additional sizes available please inquire*

## CDNF *Cerebral Dopamine Neurotrophic Factor*

**Synonyms:** ARMETL1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human CDNF	450-05	<i>E.coli</i>	18.5 kDa	5µg	25µg	

*Additional sizes available please inquire*

## Chemerin

**Synonyms:** Tazarotene-Induced Gene 2 (TIG2), RARRES2

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Chemerin	300-66	<i>E.coli</i>	15.6 kDa	5µg	25µg	

*Additional sizes available please inquire*

## CNTF *Ciliary Neurotrophic Factor*

**Synonyms:** none

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human CNTF	450-13	<i>E.coli</i>	22.8 kDa	5µg	20µg	
Rat CNTF	450-50	<i>E.coli</i>	22.7 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human CNTF	AF-450-13	<i>E.coli</i>	22.8 kDa	5µg	20µg	
Rat CNTF	AF-450-50	<i>E.coli</i>	22.7 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human CNTF	500-P140	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human CNTF	500-P140Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Rat CNTF	500-P79	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Rat CNTF	500-P79Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human CNTF	ABTS Catalogue #	900-K158
Rat CNTF	ABTS Catalogue #	900-K65

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Rat CNTF	ABTS Catalogue #	900-M65
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## CTACK (CCL27) *Cutaneous T-cell Attracting Chemokine*

**Synonyms:** ALP, Skinkine, Eskinine

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human CTACK (CCL27)	300-54	<i>E.coli</i>	10.2 kDa	5µg	20µg	
Murine CTACK (CCL27)	250-26	<i>E.coli</i>	10.9 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human CTACK (CCL27)	500-P294	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human CTACK (CCL27)	500-P294Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human CTACK (CCL27) ABTS Catalogue # 900-K213

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human CTACK (CCL27) ABTS Catalogue # 900-M213

## CTGF *Connective Tissue Growth Factor*

**Synonyms:** CCN2, Hypertrophic Chondrocyte-specific protein 24 (HCS24)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human CTGF	120-19	<i>E.coli</i>	11.0 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human CTGF	500-P252	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human CTGF	500-P252Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human CTGF ABTS Catalogue # 900-K317

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human CTGF ABTS Catalogue # 900-M317

## CTGFL/WISP-2 *Connective Tissue Growth Factor-Like protein*

**Synonyms:** CCN5, CT-58

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human CTGFL/WISP-2	120-16	<i>E.coli</i>	24.3 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human CTGFL/WISP-2	500-P212	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human CTGFL/WISP-2	500-P212Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## CTLA-4 Fc

**Synonyms:** Cytotoxic T-lymphocyte-associated antigen 4, CD152

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human CTLA-4 Fc	310-05	<i>CHO cells</i>	78.7 kDa	50µg	200µg	

*Additional sizes available please inquire*

## CXCL16

**Synonyms:** SRPSOX

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human CXCL16	300-55	<i>E.coli</i>	10.1 kDa	5µg	25µg	
Murine CXCL16	250-28	<i>E.coli</i>	9.9 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human CXCL16	500-P200	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human CXCL16	500-P200Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine CXCL16	500-P201G	<i>Goat</i>	E, WB	50µg	100µg	
Biot. Anti-Murine CXCL16	500-P201GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human CXCL16	ABTS Catalogue # 900-K230
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### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human CXCL16	ABTS Catalogue # 900-M230
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## CYR61

**Synonyms:** CCN1, GIGI protein, Cysteine-rich 61

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human CYR61	120-25	<i>E.coli</i>	39.4 kDa	5µg	20µg	

*Additional sizes available please inquire*

## DKK-1, -2 and -3 *Dickkopf-related proteins 1-3*

**Synonyms:** DKK-1: Dickkopf-1, SK; DKK-2: Dickkopf-2; DKK-3: Dickkopf-3, REIC

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human DKK-1	120-30	<i>HEK293 cells</i>	25.8 kDa	2µg	10µg	
Human DKK-2	120-45	<i>CHO cells</i>	25.8 kDa	2µg	10µg	
Human DKK-3	120-46	<i>CHO cells</i>	36.3 kDa	2µg	10µg	

*Additional sizes available please inquire*

## sDLL-1 *soluble DLL-1*

**Synonyms:** Delta-like protein-1, Delta-1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sDLL-1	140-08	<i>HEK293 cells</i>	56.3 kDa	5µg	25µg	

*Additional sizes available please inquire*

## sDLL-4 *soluble DLL-4*

**Synonyms:** Delta-like protein-4, Drosophila Delta homolog 4

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sDLL-4	140-07	<i>HEK293 cells</i>	54.3 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human sDLL-4	500-P279	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human sDLL-4	500-P279Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



## EGF *Epidermal Growth Factor*

**Synonyms:** Urogastrone, URG

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Murine EGF	315-09	<i>E.coli</i>	6.0 kDa	100µg	500µg	
Rat EGF	400-25	<i>E.coli</i>	6.2 kDa	20µg	100µg	

*Additional sizes available please inquire*

### PeproGMP® Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size
PeproGMP® Human EGF	GMP100-15-100µg	<i>E.coli</i>	6.2 kDa	100µg
PeproGMP® Human EGF	GMP100-15-500µg	<i>E.coli</i>	6.2 kDa	500µg

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human EGF	AF-100-15	<i>E.coli</i>	6.2 kDa	100µg	500µg	
Murine EGF	AF-315-09	<i>E.coli</i>	6.0 kDa	100µg	500µg	
Rat EGF	AF-400-25	<i>E.coli</i>	6.2 kDa	20µg	100µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human EGF	500-P45	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human EGF	500-P45Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine EGF	500-P174G	<i>Goat</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine EGF	500-P174GBt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Rat EGF	500-P277	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Rat EGF	500-P277Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human EGF	ABTS Catalogue # 900-K05
Murine EGF	ABTS Catalogue # 900-K179
Rat EGF	ABTS Catalogue # 900-K390

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human EGF	ABTS Catalogue # 900-M05
Rat EGF	ABTS Catalogue # 900-M390

## EGF Receptor (EGFR) *Epidermal Growth Factor Receptor*

**Synonyms:** ErbB1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human EGF Receptor (EGFR)	100-15R	<i>CHO cells</i>	68.6 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human EGF Receptor (EGFR)	500-P306	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human EGF Receptor (EGFR)	500-P306Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## EGF-L7 *Epidermal Growth Factor-Like protein 7*

**Synonyms:** MEGF7, Multiple EGF-like domains protein 7, NOTCH4-like protein, VE-statin, Zneu1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human EGF-L7	100-61	<i>E.coli</i>	27.4 kDa	2µg	10µg	

*Additional sizes available please inquire*

## EG-VEGF *Endocrine Gland-derived Vascular Endothelial Growth Factor*

**Synonyms:** Prokineticin 1, PROK1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human EG-VEGF	100-44	<i>E.coli</i>	9.6 kDa	5µg	20µg	
Murine EG-VEGF	315-29	<i>E.coli</i>	9.6 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human EG-VEGF	500-P188G	<i>Goat</i>	E, WB	50µg	100µg	
Biot. Anti-Human EG-VEGF	500-P188GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human EG-VEGF	ABTS Catalogue # 900-K244
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## EMAP-II

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human EMAP-II	500-P172G	<i>Goat</i>	E, WB	50µg	100µg	
Biot. Anti-Human EMAP-II	500-P172GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## ENA-78 (CXCL5) *Epithelial Neutrophil Activating Peptide-78*

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human ENA-78 (CXCL5) (5-78 a.a.)	300-22	<i>E.coli</i>	8.0 kDa	5µg	20µg	
Human ENA-78 (CXCL5) (8-78 a.a.)	300-22B	<i>E.coli</i>	7.8 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human ENA-78 (CXCL5)	500-P91	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human ENA-78 (CXCL5)	500-P91Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## Endostatin

**Synonyms:** COL18A1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Endostatin	150-01	<i>E.coli</i>	20.2 kDa	20µg	100µg	

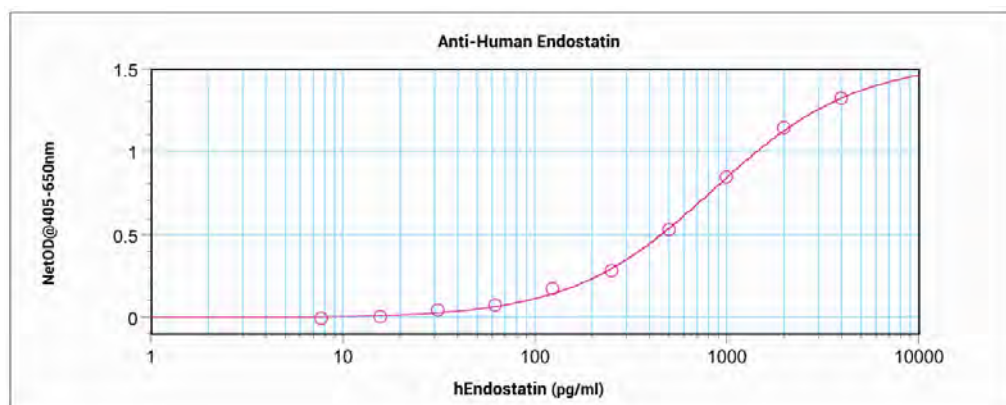
*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Endostatin	500-P262	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human Endostatin	500-P262Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



## Enterokinase

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Enterokinase	450-48C	<i>CHO cells</i>	108.7 kDa	10µg	50µg	

*Additional sizes available please inquire*

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## Eotaxin (CCL11)

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Eotaxin (CCL11)	300-21	<i>E.coli</i>	8.3 kDa	5µg	20µg	
Murine Eotaxin (CCL11)	250-01	<i>E.coli</i>	8.4 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Eotaxin (CCL11)	500-P41	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human Eotaxin (CCL11)	500-P41Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human Eotaxin (CCL11)	500-P41G	<i>Goat</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human Eotaxin (CCL11)	500-P41GBt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Murine Eotaxin (CCL11)	500-P67	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine Eotaxin (CCL11)	500-P67Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

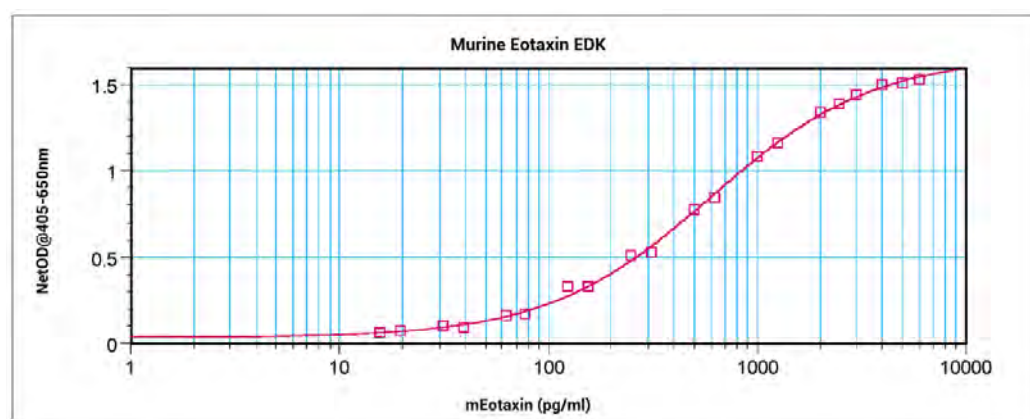
PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human Eotaxin (CCL11)	500-M25	<i>Mouse</i>	E, WB	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human Eotaxin (CCL11)	ABTS Catalogue # 900-K69
Murine Eotaxin (CCL11)	ABTS Catalogue # 900-K68



## Eotaxin-2 (CCL24)

**Synonyms:** MPIF-2, CkB-6

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Eotaxin-2 (CCL24)	300-33	<i>E.coli</i>	8.8 kDa	5µg	20µg	
Murine Eotaxin-2 (CCL24)	250-22	<i>E.coli</i>	10.3 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Eotaxin-2 (CCL24)	500-P103G	<i>Goat</i>	E, WB	50µg	100µg	
Biot. Anti-Human Eotaxin-2 (CCL24)	500-P103GBt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Murine Eotaxin-2 (CCL24)	500-P175G	<i>Goat</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine Eotaxin-2 (CCL24)	500-P175GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human Eotaxin-2 (CCL24)	500-M31	<i>Mouse</i>	E, WB	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

E

## Eotaxin-3 (CCL26)

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Eotaxin-3 (CCL26)	300-48	<i>E.coli</i>	8.4 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Eotaxin-3 (CCL26)	500-P156G	<i>Goat</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human Eotaxin-3 (CCL26)	500-P156GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human Eotaxin-3 (CCL26)	500-M32	<i>Mouse</i>	E, WB, N	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human Eotaxin-3 (CCL26)	ABTS Catalogue # 900-K167
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### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human Eotaxin-3 (CCL26)	ABTS Catalogue # 900-M167
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## Epigen

**Synonyms:** EPG, Epithelial mitogen

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Epigen	100-51	<i>E.coli</i>	7.9 kDa	5µg	25µg	

*Additional sizes available please inquire*

## Epiregulin

**Synonyms:** EREG

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Epiregulin	100-04	<i>E.coli</i>	5.6 kDa	5µg	25µg	

*Additional sizes available please inquire*

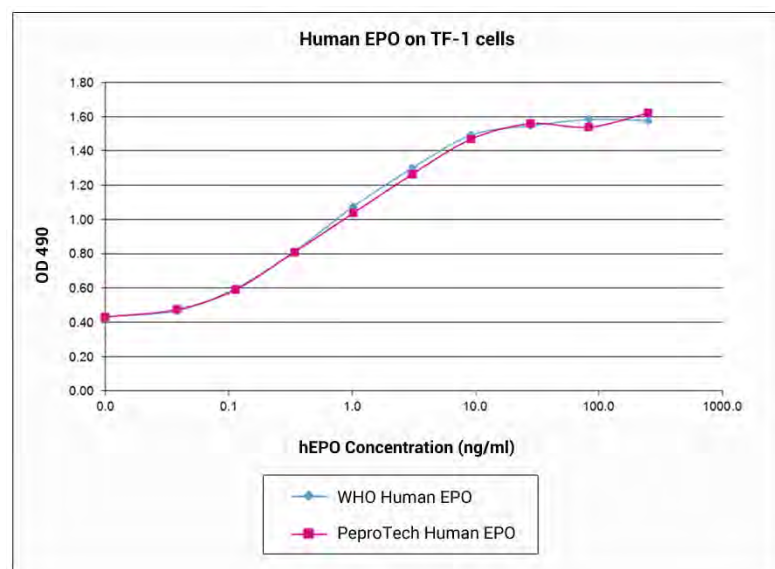
## EPO

**Synonyms:** Erythropoietin, Epoetin

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human EPO	100-64	<i>CHO cells</i>	18.4 kDa	10µg	50µg	

*Additional sizes available please inquire*





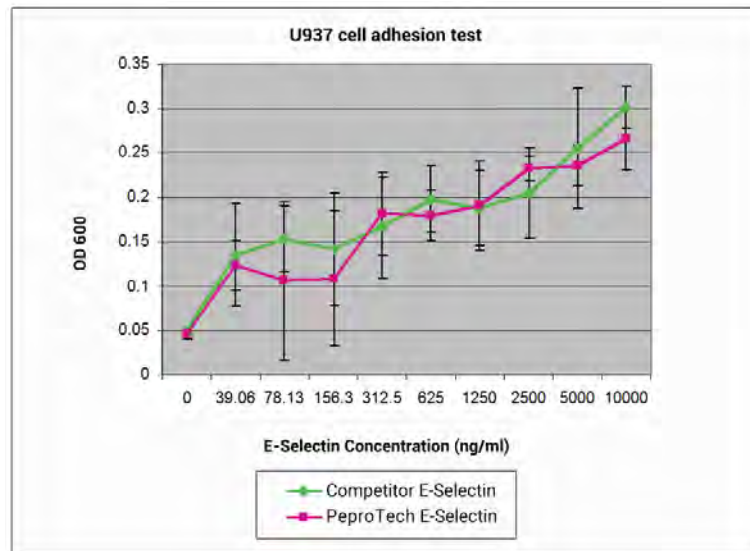
## E-Selectin

**Synonyms:** Endothelial Leukocyte Adhesion Molecule 1 (ELAM1), CD62E, SELE

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human E-Selectin	150-15	CHO cells	58.6 kDa	10µg	50µg	

Additional sizes available please inquire



## Exodus-2 (CCL21)

**Synonyms:** 6Ckine, SLC

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Exodus-2 (CCL21)	300-35	E.coli	12.2 kDa	5µg	20µg	
Murine Exodus-2 (CCL21)	250-13	E.coli	12.0 kDa	5µg	20µg	

Additional sizes available please inquire

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Exodus-2 (CCL21)	500-P109	Rabbit	I, E, WB, N	50µg	100µg	
Biot. Anti-Human Exodus-2 (CCL21)	500-P109Bt	Rabbit	E, WB	25µg	50µg	
Anti-Murine Exodus-2 (CCL21)	500-P114	Rabbit	E, WB	50µg	100µg	
Biot. Anti-Murine Exodus-2 (CCL21)	500-P114Bt	Rabbit	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Murine Exodus-2	ABTS Catalogue # 900-K132
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### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Murine Exodus-2	ABTS Catalogue # 900-M132
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## sFas Ligand *soluble Fas Ligand*

**Synonyms:** sFasL, TNFSF6, CD95L, Apo I Ligand, APTL, APT1LG1, CD178

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sFas Ligand	310-03H	CHO cells	17.9 kDa	2µg	10µg	

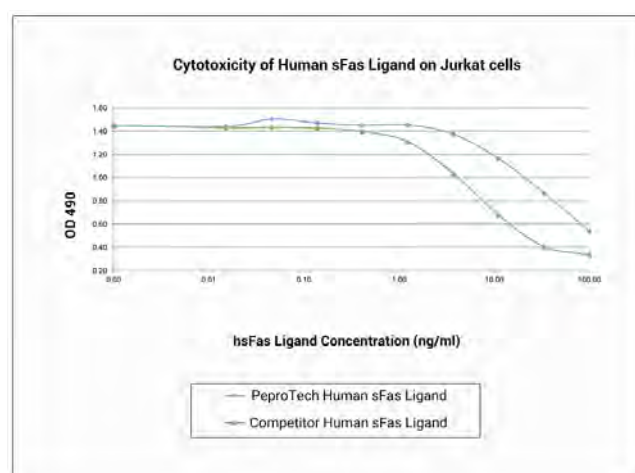
*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human sFas Ligand	500-P184G	Goat	I, E, WB, N	50µg	100µg	
Biot. Anti-Human sFas Ligand	500-P184GBt	Goat	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



## sFas Receptor *soluble Fas Receptor*

**Synonyms:** sFasR, TNFRSF6, CD95, Fas Antigen, Apo I

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sFas Receptor	310-20	E.coli	17.6 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human sFas Receptor	500-P295	Rabbit	E, WB	50µg	100µg	
Biot. Anti-Human sFas Receptor	500-P295Bt	Rabbit	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## Fetuin A/AHSG

**Synonyms:** Alpha-2-HS-glycoprotein, Alpha-2-Z-globulin, Ba-alpha-2-glycoprotein

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Fetuin A/AHSG	140-13	HEK293 cells	32.9 kDa	10µg	50µg	

*Additional sizes available please inquire*

## FGF *Fibroblast Growth Factors*

**Synonyms:** **FGF-acidic:** Fibroblast Growth Factor-acidic, FGF-1, HBGF-1, ECGF-beta; **FGF-basic:** Fibroblast Growth Factor-basic, FGF-2, HBGF-2, Prostatropin; **FGF-4:** HST-1, Transforming protein KS3, HBGF-4; **FGF-5:** HBGF-5, Smag-82; **FGF-6:** HBGF-6, HST-2; **FGF-8a/b:** FGF-8, AIGF, HBGF-8; **FGF-9:** GAF (Glia-Activating Factor), HBGF-9; **FGF-10:** FGFA, Keratinocyte Growth Factor-2; **FGF-16:** FGFG; **FGF-17:** FGFH; **FGF-18:** FGF1, zFGF5; **FGF-19:** FGFJ; **FGF-20:** FGFK; **FGF-21:** FGFL; **FGF-23:** FGFN; **FGFR1a:** Fibroblast Growth Factor Receptor 1 alpha, BFGFR; **FGFR2a:** Fibroblast Growth Factor Receptor 2 alpha, BEK, KGFR; **FGFR3:** Fibroblast Growth Factor Receptor 3 alpha, ACH, CD333, CEK2, JTK4

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human FGF-acidic	100-17A	<i>E.coli</i>	16.8 kDa	10µg	50µg	
Murine FGF-acidic	450-33A	<i>E.coli</i>	15.9 kDa	10µg	50µg	
Rat FGF-acidic	400-29A	<i>E.coli</i>	15.9 kDa	10µg	50µg	
Human FGF-basic (154 a.a.)	100-18B	<i>E.coli</i>	17.2 kDa	10µg	50µg	
Human FGF-basic (146 a.a.)	100-18C	<i>E.coli</i>	16.4 kDa	10µg	50µg	
Murine FGF-basic	450-33	<i>E.coli</i>	16.3 kDa	10µg	50µg	
Rat FGF-basic	400-29	<i>E.coli</i>	16.3 kDa	10µg	50µg	
Human FGF-4	100-31	<i>E.coli</i>	19.7 kDa	5µg	25µg	
Human FGF-5	100-34	<i>E.coli</i>	27.6 kDa	10µg	50µg	
Human FGF-6	100-30	<i>E.coli</i>	18.7 kDa	5µg	25µg	
Human/Murine FGF-8b	100-25	<i>E.coli</i>	22.5 kDa	5µg	25µg	
Human FGF-8a	100-25A	<i>CHO cells</i>	21.2 kDa	5µg	25µg	
Human FGF-9	100-23	<i>E.coli</i>	23.2 kDa	5µg	20µg	
Murine FGF-9	450-30	<i>E.coli</i>	23.3 kDa	2µg	10µg	
Human FGF-10	100-26	<i>E.coli</i>	19.3 kDa	5µg	25µg	
Human FGF-16	100-29	<i>E.coli</i>	23.6 kDa	5µg	25µg	
Human FGF-17	100-27	<i>E.coli</i>	22.7 kDa	5µg	25µg	
Human FGF-18	100-28	<i>E.coli</i>	20.1 kDa	5µg	25µg	
Human FGF-19	100-32	<i>E.coli</i>	21.8 kDa	5µg	25µg	
Human FGF-20	100-41	<i>E.coli</i>	23.2 kDa	3µg	15µg	
Human FGF-21	100-42	<i>E.coli</i>	19.5 kDa	5µg	25µg	
Human FGF-23	100-52	<i>E.coli</i>	22.5 kDa	5µg	20µg	
Murine FGF-23	450-55	<i>E.coli</i>	25.5 kDa	5µg	20µg	
Human FGFR1a (IIIc) Fc	160-02	<i>CHO cells</i>	65.2 kDa	10µg	50µg	
Human FGFR2a (IIIc) Fc	160-03	<i>CHO cells</i>	65.6 kDa	10µg	50µg	
Human FGFR3 (IIIc) Fc	160-05	<i>CHO cells</i>	128.3 kDa	10µg	50µg	

*Additional sizes available please inquire*

### PeproGMP® Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size
PeproGMP® Human FGF-basic	GMP100-18B-25µg	<i>E.coli</i>	17.2 kDa	25µg
PeproGMP® Human FGF-basic	GMP100-18B-100µg	<i>E.coli</i>	17.2 kDa	100µg

*FGF continued on next page...*

**FGF** *Fibroblast Growth Factors (Continued)***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human FGF-acidic	AF-100-17A	<i>E.coli</i>	16.8 kDa	10µg	50µg	
Human FGF-basic (154 a.a)	AF-100-18B	<i>E.coli</i>	17.2 kDa	10µg	50µg	
Human FGF-basic (146 a.a)	AF-100-18C	<i>E.coli</i>	16.4 kDa	10µg	50µg	
Murine FGF-basic	AF-450-33	<i>E.coli</i>	16.3 kDa	10µg	50µg	
Human FGF-4	AF-100-31	<i>E.coli</i>	19.7 kDa	5µg	25µg	
Human/Murine FGF-8b	AF-100-25	<i>E.coli</i>	22.5 kDa	5µg	25µg	
Human FGF-9	AF-100-23	<i>E.coli</i>	23.2 kDa	5µg	20µg	
Human FGF-10	AF-100-26	<i>E.coli</i>	19.3 kDa	5µg	25µg	
Human FGF-18	AF-100-28	<i>E.coli</i>	20.1 kDa	5µg	25µg	
Human FGF-19	AF-100-32	<i>E.coli</i>	21.8 kDa	5µg	25µg	
Human FGF-21	AF-100-42	<i>E.coli</i>	19.5 kDa	5µg	25µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human FGF-acidic	500-P17	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human FGF-acidic	500-P17Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human FGF-basic	500-P18	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human FGF-basic	500-P18Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human FGF-4	500-P158	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human FGF-4	500-P158Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine FGF-9	500-P66	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine FGF-9	500-P66Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human FGF-10	500-P151G	<i>Goat</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human FGF-10	500-P151GBt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Human FGF-16	500-P160G	<i>Goat</i>	WB, N	50µg	100µg	
Biot. Anti-Human FGF-16	500-P160GBt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Human FGF-17	500-P152	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human FGF-17	500-P152Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human FGF-17	500-P152G	<i>Goat</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human FGF-17	500-P152GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Monoclonal Antibodies**

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human FGF-basic	500-M38	<i>Mouse</i>	I, E, WB	500µg
Anti-Human FGF-5	500-M40	<i>Mouse</i>	E, N	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Standard ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human FGF-basic ABTS Catalogue # 900-K08

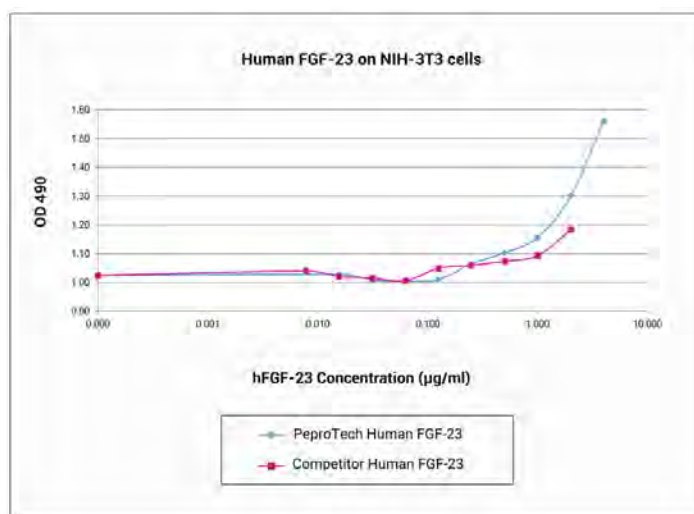
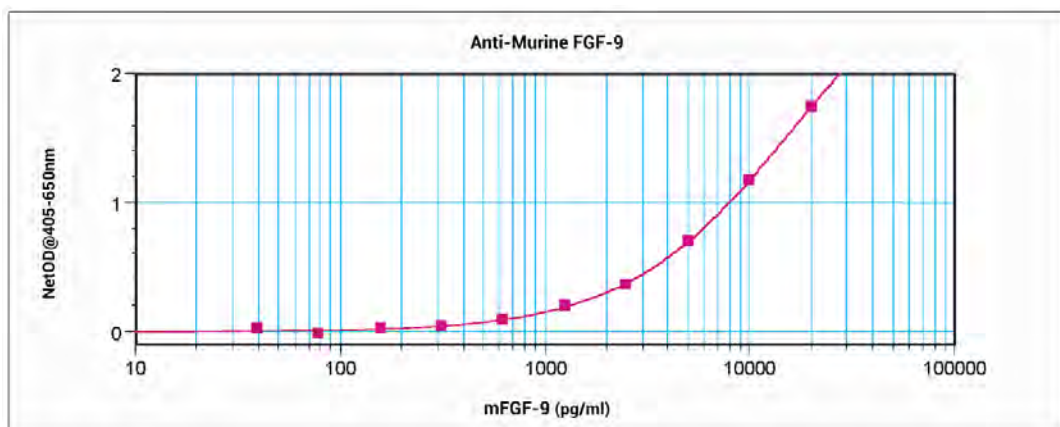
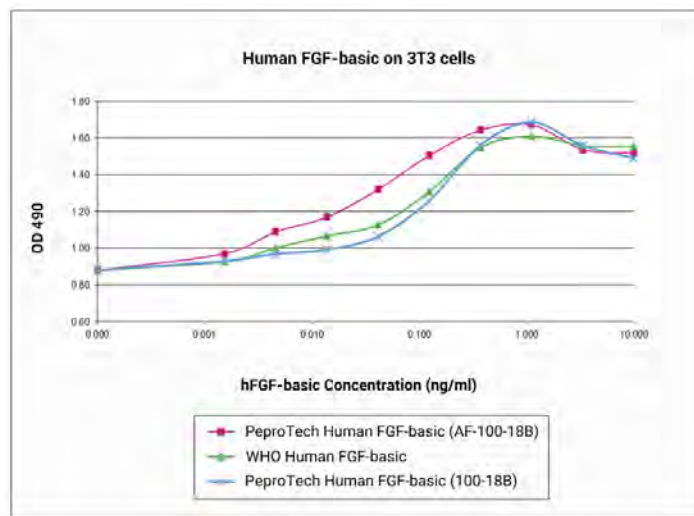
**Mini ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human FGF-basic ABTS Catalogue # 900-M08

*FGF continued on next page...*

**FGF** *Fibroblast Growth Factors (Continued)*



F

## Flt3-Ligand

**Synonyms:** Flt3L, Fms-related tyrosine kinase 3 Ligand

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Flt3-Ligand	300-19	<i>E.coli</i>	17.6 kDa	2µg	10µg	
Murine Flt3-Ligand	250-31L	<i>E.coli</i>	18.6 kDa	2µg	10µg	

\* See page 13 for available Cytokine Packages.

Additional sizes available please inquire

### PeperoGMP® Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size
PeperoGMP® Human Flt3-Ligand	GMP300-19-50µg	<i>E.coli</i>	17.6 kDa	50µg
PeperoGMP® Human Flt3-Ligand	GMP300-19-100µg	<i>E.coli</i>	17.6 kDa	100µg

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Flt3-Ligand	AF-300-19	<i>E.coli</i>	17.6 kDa	2µg	10µg	

\* See page 13 for available Cytokine Packages.

Additional sizes available please inquire

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Flt3-Ligand	500-P42	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human Flt3-Ligand	500-P42Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

F

## Follistatin

**Synonyms:** FS, Activin-binding protein

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Follistatin	120-13	<i>E.coli</i>	31.5 kDa	5µg	20µg	

Additional sizes available please inquire

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Follistatin	500-P207	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human Follistatin	500-P207Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human Follistatin	ABTS Catalogue # 900-K299
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## Fractalkine (CX3CL1)

**Synonyms:** Neurotactin, FKN

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Fractalkine (CX3CL1)	300-31	<i>E.coli</i>	8.5 kDa	5µg	20µg	
Rat Fractalkine (CX3CL1)	400-26	<i>E.coli</i>	8.7 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Fractalkine (CX3CL1)	500-P98	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human Fractalkine (CX3CL1)	500-P98Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## sFRP-1 *Secreted Frizzled Related Protein-1*

**Synonyms:** Secreted Apoptosis Related Protein-2, SARP-2

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sFRP-1	120-29	<i>HeLa cells</i>	32.5 kDa	5µg	20µg	

*Additional sizes available please inquire*

## sFRP-4 *Secreted Frizzled Related Protein-4*

**Synonyms:** DDC-4 (rat homologue)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sFRP-4	120-50	<i>CHO cells</i>	37.8 kDa	5µg	25µg	

*Additional sizes available please inquire*

## FSTL1

**Synonyms:** Follistatin-like protein 1, FSL1, Follistatin-related protein 1, FRP, OCC1, OCC-1, TGF-β1-simulated clone 36, TSC-36

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human FSTL1	120-51	<i>CHO cells</i>	32.7 kDa	10µg	50µg	

*Additional sizes available please inquire*

## Furin

**Synonyms:** FUR, PACE, PCSK3

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Furin	450-47	<i>Insect cells</i>	63.9 kDa	2µg	10µg	

*Additional sizes available please inquire*

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## gAcrp30

**Synonyms:** Adipolean (human), APM-1, APM-1 variant, gad, globular domaine of Acrp30

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human gAcrp30/Adipolean	450-21	<i>E.coli</i>	16.6 kDa	5µg	25µg	
Murine gAcrp30	450-27	<i>E.coli</i>	16.6 kDa	5µg	25µg	
Human gAcrp30/Adipolean Variant	450-20	<i>E.coli</i>	18.1 kDa	5µg	25µg	

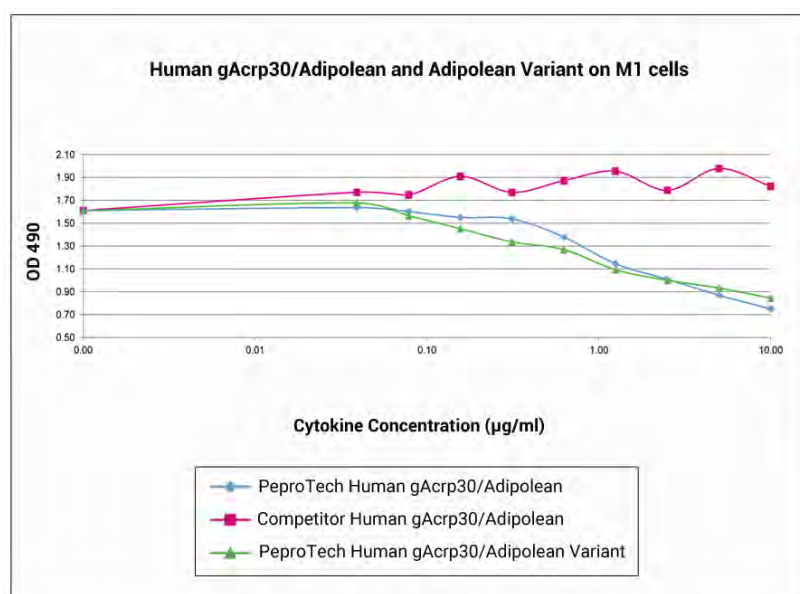
Additional sizes available please inquire

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human gAcrp30/Adipolean	500-P193G	<i>Goat</i>	E, WB	50µg	100µg	
Biot. Anti-Human gAcrp30/Adipolean	500-P193GBt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Human gAcrp30/Adipolean Variant	500-P205	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human gAcrp30/Adipolean Variant	500-P205Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



## Galectin-1

**Synonyms:** Galactose-specific lectin-1, Beta-galactoside-binding lectin L-14-I, Galaptin, 14 kDa lectin, S-LAC lectin-1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Galectin-1	450-39	<i>E.coli</i>	14.5 kDa	10µg	50µg	

Additional sizes available please inquire

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Galectin-1	500-P210	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human Galectin-1	500-P210Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## Galectin-3

**Synonyms:** Galactose-specific lectin-3, IgE-binding protein, MAC2, L-29, CPB-35

### RUO Cytokines

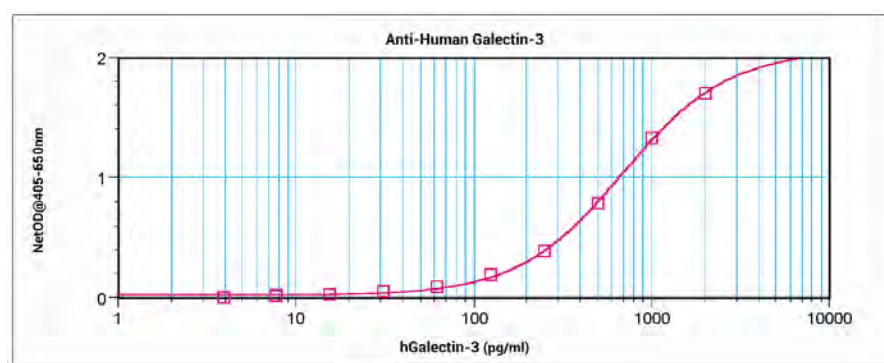
PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Galectin-3	450-38	<i>E.coli</i>	26.0 kDa	10µg	50µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Galectin-3	500-P246	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human Galectin-3	500-P246Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



## GASP-1

**Synonyms:** GDF-Associated Serum Protein-1, GASP, KIAA0443, WFIKKNRP

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human GASP-1	120-41	<i>CHO cells</i>	59.9 kDa	5µg	25µg	

*Additional sizes available please inquire*

## GCP-2 (CXCL6)/LIX (CXCL6) *Granulocyte Chemotactic Protein-2*

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human GCP-2 (CXCL6)	300-41	<i>E.coli</i>	7.9 kDa	5µg	20µg	
Murine LIX (CXCL6) (92 a.a.)	250-17	<i>E.coli</i>	9.8 kDa	5µg	20µg	
Murine LIX (CXCL6) (70 a.a.)	250-36	<i>E.coli</i>	7.6 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human GCP-2 (CXCL6)	500-P120	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human GCP-2 (CXCL6)	500-P120Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine LIX (CXCL6)	500-P146	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Murine LIX (CXCL6)	500-P146Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

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## G-CSF *Granulocyte Colony-Stimulating Factor*

**Synonyms:** CSF-3, MGI-1G, GM-CSF $\beta$ , pluripoietin

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human G-CSF	300-23	<i>E.coli</i>	18.7 kDa	2 $\mu$ g	10 $\mu$ g	
Murine G-CSF	250-05	<i>E.coli</i>	19.0 kDa	2 $\mu$ g	10 $\mu$ g	
Rat G-CSF	400-37	<i>E.coli</i>	21.6 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human G-CSF	AF-300-23	<i>E.coli</i>	18.7 kDa	2 $\mu$ g	10 $\mu$ g	
Murine G-CSF	AF-250-05	<i>E.coli</i>	19.0 kDa	2 $\mu$ g	10 $\mu$ g	

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human G-CSF	500-P43	<i>Rabbit</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human G-CSF	500-P43Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine G-CSF	500-P69	<i>Rabbit</i>	E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine G-CSF	500-P69Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human G-CSF	500-M37	<i>Mouse</i>	E, WB, N	500 $\mu$ g

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

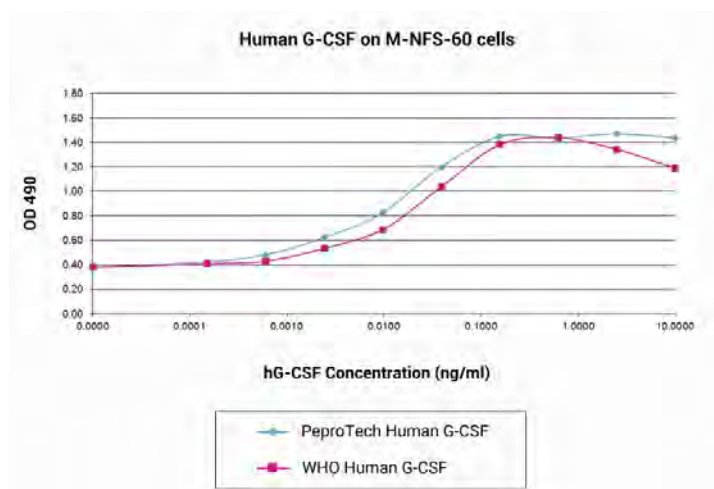
Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human G-CSF	ABTS Catalogue # 900-K77
Murine G-CSF	ABTS Catalogue # 900-K103

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human G-CSF	ABTS Catalogue # 900-M103
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**GDF-2** *Growth/Differentiation Factor-2***Synonyms:** BMP-9**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human GDF-2	120-07	<i>CHO cells</i>	24.1 kDa	2µg	10µg	

*Additional sizes available please inquire***GDF-3** *Growth/Differentiation Factor-3***Synonyms:** Vgr-2, UNQ2222/PRO248**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human GDF-3	120-22	<i>E.coli</i>	26.0 kDa	5µg	20µg	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human GDF-3	AF-120-22	<i>E.coli</i>	26.0 kDa	5µg	20µg	

**Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human GDF-3	500-P235	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human GDF-3	500-P235Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**GDF-5 (BMP-14/CDMP-1)** *Growth/Differentiation Factor-5***Synonyms:** Bone Morphogenetic Protein-14, Cartilage-Derived Morphogenetic Protein-1**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human GDF-5 (BMP-14/CDMP-1)	120-01	<i>E.coli</i>	27.0 kDa	10µg	50µg	
Murine GDF-5 (BMP-14/CDMP-1)	315-24	<i>E.coli</i>	27.0 kDa	10µg	50µg	

*Additional sizes available please inquire***GDF-7** *Growth/Differentiation Factor-7***Synonyms:** BMP-12**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human GDF-7	120-37	<i>E.coli</i>	28.0 kDa	2µg	10µg	

*Additional sizes available please inquire*

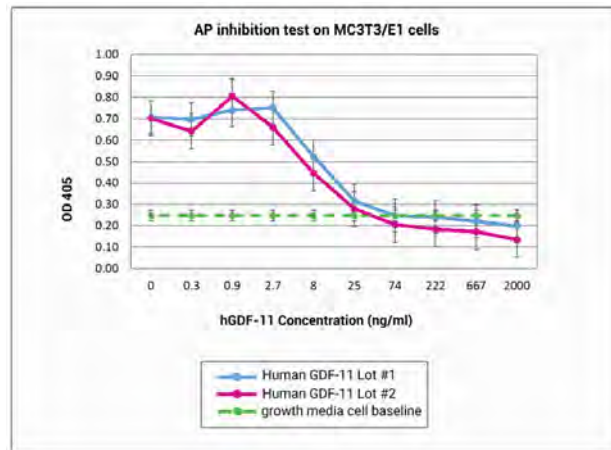
## GDF-11 *Growth/Differentiation Factor-11*

**Synonyms:** BMP-11

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human/Murine/Rat GDF-11	120-11	<i>E.coli</i>	25.0 kDa	5µg	20µg	

*Additional sizes available please inquire*



G

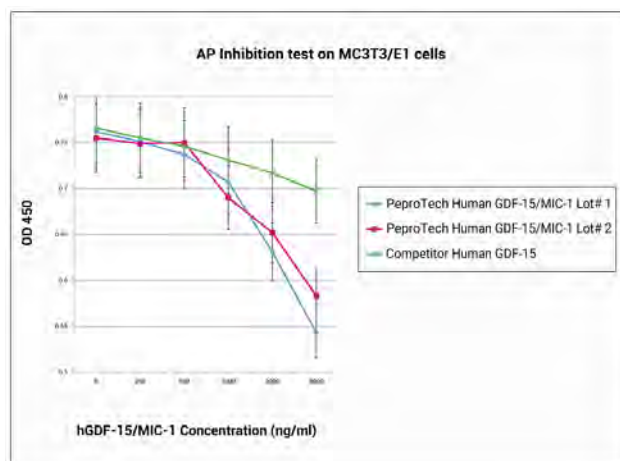
## GDF-15/MIC-1 *Growth/Differentiation Factor-15*

**Synonyms:** Placental TGF-β, Prostate Differentiation Factor (PDF), Macrophage Inhibitory Cytokine 1, MIC-1, PLAB, NRG-1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human GDF-15/MIC-1	120-28	<i>cell culture</i>	24.6 kDa	5µg	20µg	

*Additional sizes available please inquire*



## GDNF *Glial-Derived Neurotrophic Factor*

**Synonyms:** ATF (Astrocyte-derived Trophic Factor)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human GDNF	450-10	<i>E.coli</i>	30.4 kDa	2µg	10µg	
Murine GDNF	450-44	<i>E.coli</i>	30.2 kDa	2µg	10µg	
Rat GDNF	450-51	<i>E.coli</i>	30.0 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human GDNF	AF-450-10	<i>E.coli</i>	30.4 kDa	2µg	10µg	
Murine GDNF	AF-450-44	<i>E.coli</i>	30.2 kDa	2µg	10µg	
Rat GDNF	AF-450-51	<i>E.coli</i>	30.0 kDa	2µg	10µg	

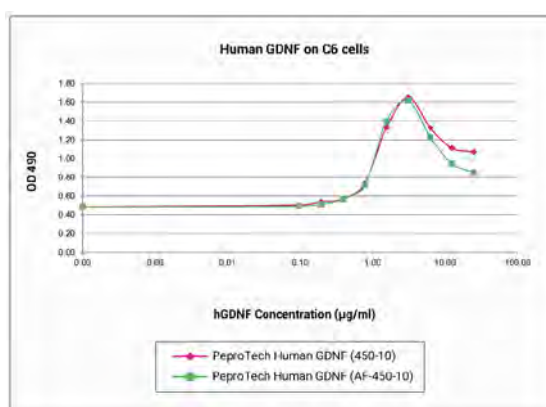
*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human GDNF	500-P81	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human GDNF	500-P81Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



## GLP-1 *Glucagon-Like Peptide 1*

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human GLP-1	130-08	<i>E.coli</i>	3.3 kDa	200µg	1mg	

*Additional sizes available please inquire*

## Glu-C

**Synonyms:** V8 Protease

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Staphylococcus Glu-C	450-46	<i>E.coli</i>	28.8 kDa	50µg	250µg	

*Additional sizes available please inquire*

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## GM-CSF *Granulocyte-Macrophage Colony-Stimulating Factor*

**Synonyms:** CSF-2, MGI-1GM, Pluripoietin- $\alpha$

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human GM-CSF	300-03	<i>E.coli</i>	14.6 kDa	5 $\mu$ g	20 $\mu$ g	
Murine GM-CSF	315-03	<i>E.coli</i>	14.2 kDa	5 $\mu$ g	20 $\mu$ g	
Rat GM-CSF	400-23	<i>E.coli</i>	14.5 kDa	5 $\mu$ g	20 $\mu$ g	

\* See page 13 for available Cytokine Packages.

Additional sizes available please inquire

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human GM-CSF	AF-300-03	<i>E.coli</i>	14.6 kDa	5 $\mu$ g	20 $\mu$ g	
Murine GM-CSF	AF-315-03	<i>E.coli</i>	14.2 kDa	5 $\mu$ g	20 $\mu$ g	
Rat GM-CSF	AF-400-23	<i>E.coli</i>	14.5 kDa	5 $\mu$ g	20 $\mu$ g	

\* See page 13 for available Cytokine Packages.

Additional sizes available please inquire

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human GM-CSF	500-P33	<i>Rabbit</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human GM-CSF	500-P33Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine GM-CSF	500-P65	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine GM-CSF	500-P65Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Rat GM-CSF	500-P225	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Rat GM-CSF	500-P225Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

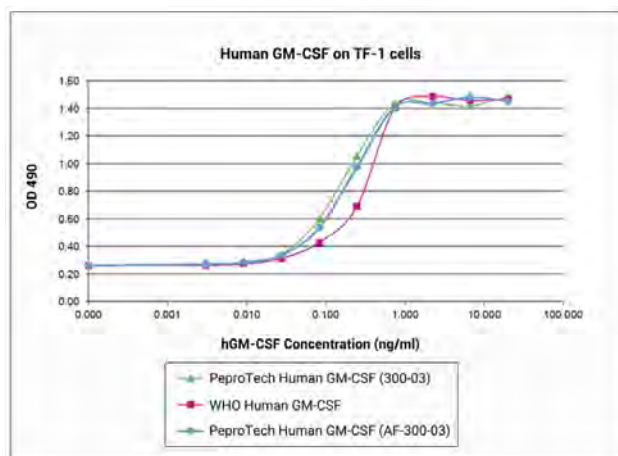
Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human GM-CSF	ABTS Catalogue # 900-K30
Murine GM-CSF	ABTS Catalogue # 900-K55

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human GM-CSF	ABTS Catalogue # 900-M30
Murine GM-CSF	ABTS Catalogue # 900-M55





## GMF- $\beta$ *Glial Maturation Factor beta*

**Synonyms:** GMFB

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human GMF- $\beta$	450-37	<i>E.coli</i>	16.5 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire*

## Granzyme B

**Synonyms:** Cytotoxic Cell Protease 1 (CCP1)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Murine Granzyme B	140-03	<i>Baculovirus</i>	28.9 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire*

## Gremlin-1

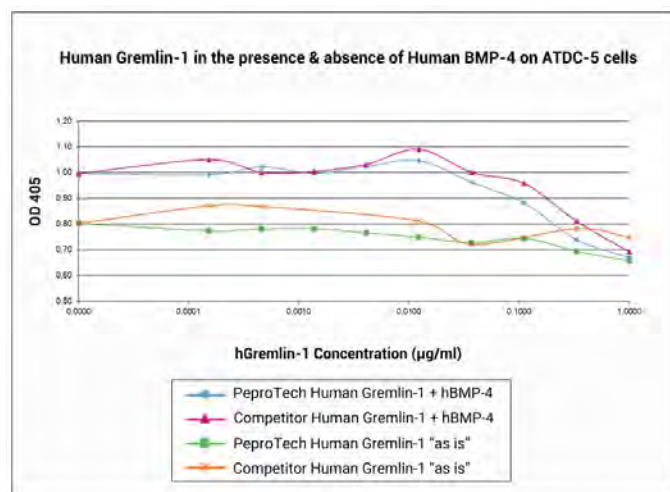
**Synonyms:** CKTSF1B1, DAND2, DRM, IHG-2

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Gremlin-1	120-42	<i>CHO cells</i>	18.3 kDa	10 $\mu$ g	50 $\mu$ g	

*Additional sizes available please inquire*

G



## GRO- $\alpha$ , - $\beta$ , - $\gamma$ (CXCL1-3) Growth Regulated Proteins

**Synonyms:** GRO- $\alpha$ /MGSA/KC: GRO1, Melanoma Growth Stimulatory Activity  $\alpha$ , MGSA $\alpha$ , NAP-3, GINC (rat)

GRO- $\beta$ /MIP-2: GRO2, Melanoma Growth Stimulatory Activity  $\beta$ , MGSA $\beta$ , MIP-2 $\alpha$

GRO- $\gamma$ : GRO3, Melanoma Growth Stimulatory Activity  $\gamma$ , MGSA $\gamma$ , MIP-2 $\beta$

MIP-2: Macrophage Inflammatory Protein-2

### Ruo Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human GRO- $\alpha$ /MGSA (CXCL1)	300-11	<i>E.coli</i>	7.8 kDa	5 $\mu$ g	25 $\mu$ g	
Murine KC (CXCL1)	250-11	<i>E.coli</i>	7.8 kDa	5 $\mu$ g	20 $\mu$ g	
Rat GRO/KC (CXCL1)	400-10	<i>E.coli</i>	7.8 kDa	5 $\mu$ g	25 $\mu$ g	
Human GRO- $\beta$ (CXCL2)	300-39	<i>E.coli</i>	7.9 kDa	2 $\mu$ g	10 $\mu$ g	
Murine MIP-2 (CXCL2)	250-15	<i>E.coli</i>	7.8 kDa	5 $\mu$ g	20 $\mu$ g	
Rat GRO- $\beta$ /MIP-2 (CXCL2)	400-11	<i>E.coli</i>	7.9 kDa	5 $\mu$ g	25 $\mu$ g	
Viral MIP-2	350-03	<i>E.coli</i>	7.9 kDa	10 $\mu$ g	50 $\mu$ g	
Human GRO- $\gamma$ (CXCL3)	300-40	<i>E.coli</i>	7.9 kDa	2 $\mu$ g	10 $\mu$ g	

Additional sizes available please inquire

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human GRO- $\alpha$ /MGSA (CXCL1)	500-P92	<i>Rabbit</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human GRO- $\alpha$ /MGSA (CXCL1)	500-P92Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine KC (CXCL1)	500-P115	<i>Rabbit</i>	E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine KC (CXCL1)	500-P115Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Rat GRO/KC (CXCL1)	500-P74	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Rat GRO/KC (CXCL1)	500-P74Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Human GRO- $\beta$ (CXCL2)	500-P104	<i>Rabbit</i>	I, E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human GRO- $\beta$ (CXCL2)	500-P104Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine MIP-2 (CXCL2)	500-P130	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine MIP-2 (CXCL2)	500-P130Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Rat GRO- $\beta$ /MIP-2 (CXCL2)	500-P75	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Rat GRO- $\beta$ /MIP-2 (CXCL2)	500-P75Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Human GRO- $\gamma$ (CXCL3)	500-P105	<i>Rabbit</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human GRO- $\gamma$ (CXCL3)	500-P105Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human GRO- $\alpha$ /MGSA (CXCL1)	ABTS Catalogue # 900-K38
Human GRO- $\beta$ (CXCL2)	ABTS Catalogue # 900-K120
Rat GRO/KC (CXCL1)	ABTS Catalogue # 900-K57
Murine KC (CXCL1)	ABTS Catalogue # 900-K127
Murine MIP-2 (CXCL2)	ABTS Catalogue # 900-K152

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human GRO- $\beta$ (CXCL2)	ABTS Catalogue # 900-M120
Murine KC (CXCL1)	ABTS Catalogue # 900-M127
Murine MIP-2 (CXCL2)	ABTS Catalogue # 900-M152

## Growth Hormone

**Synonyms:** Somatotropin, GH, GH-N, Growth Hormone 1, Pituitary growth hormone

### RUO Cytokines

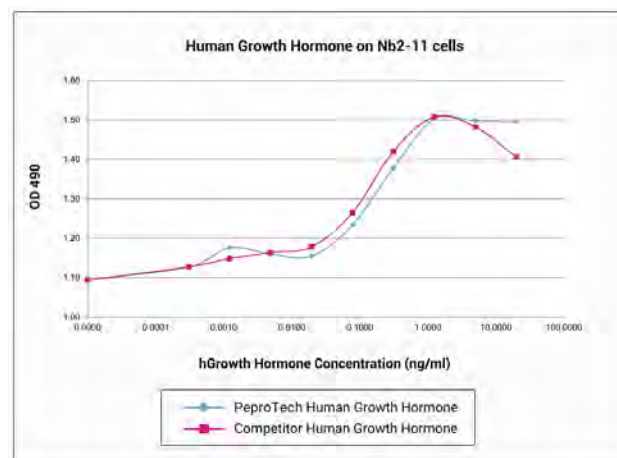
PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Growth Hormone	100-40	<i>E.coli</i>	22.3 kDa	10µg	50µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Growth Hormone	AF-100-40	<i>E.coli</i>	22.3 kDa	10µg	50µg	

*Additional sizes available please inquire*



## HB-EGF *Heparin-Binding EGF-like growth factor*

**Synonyms:** HBEGF, Diphtheria Toxin Receptor (DTR)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human HB-EGF	100-47	<i>E.coli</i>	9.7 kDa	10µg	50µg	
Murine HB-EGF	315-35	<i>E.coli</i>	9.8 kDa	10µg	50µg	

*Additional sizes available please inquire*

## HCC-1(CCL14) *Hemofiltrate CC Chemokine-1*

**Synonyms:** HCC-1/HCC-3, NCC-2

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human HCC-1 (CCL14)(66 a.a.)	300-38B	<i>E.coli</i>	7.8 kDa	2µg	10µg	
Human HCC-1 (CCL14)(72 a.a.)	300-38	<i>E.coli</i>	8.4 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human HCC-1 (CCL14)	500-P106	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human HCC-1 (CCL14)	500-P106Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

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## Heregulin $\beta$ -1

**Synonyms:** HRG, Neuregulin1 (NRG1- $\beta$ 1), HRG1- $\beta$ 1, Breast cancer cell differentiation factor p45, ARIA (Acetylcholine Receptor Inducing Activity), glial growth factor, Neu differentiation factor (rat)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Heregulin $\beta$ -1	100-03	<i>E.coli</i>	7.5 kDa	10 $\mu$ g	50 $\mu$ g	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Heregulin $\beta$ -1	AF-100-03	<i>E.coli</i>	7.5 kDa	10 $\mu$ g	50 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Heregulin $\beta$ -1	500-P288	<i>Rabbit</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human Heregulin $\beta$ -1	500-P288Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human Heregulin $\beta$ -1	ABTS Catalogue # 900-K316
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### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human Heregulin $\beta$ -1	ABTS Catalogue # 900-M316
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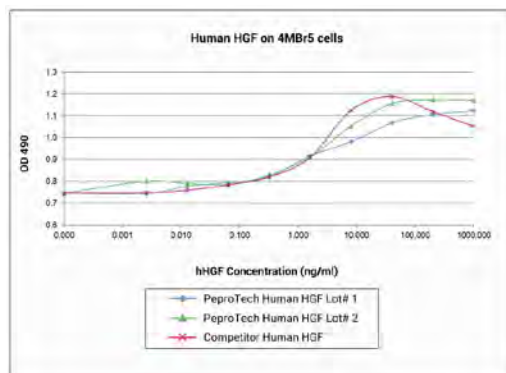
## HGF *Hepatocyte Growth Factor*

**Synonyms:** Scatter Factor (SF), Hepatopoietin (HPTA)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human HGF	100-39	<i>Insect cells</i>	80.0 kDa	2 $\mu$ g	10 $\mu$ g	
Human HGF	100-39H	<i>HEK293 cells</i>	79.4 kDa	5 $\mu$ g	25 $\mu$ g	
Murine HGF	315-23	<i>Insect cells</i>	79.3 kDa	5 $\mu$ g	20 $\mu$ g	

*Additional sizes available please inquire*



## HPRG *Histidine-Proline-Rich Glycoprotein*

**Synonyms:** Histidine-rich glycoprotein (HRG), HRGP, THPH11

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human HPRG	100-60	<i>CHO cells</i>	57.7 kDa	5µg	25µg	

*Additional sizes available please inquire*

## HVEM-Fc

**Synonyms:** TNFSFR14, HVEM, ATAR, TR2, HveA, CD270

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human HVEM-Fc	310-27	<i>Insect cells</i>	41.4 kDa	20µg	100µg	

*Additional sizes available please inquire*

## I-309 (CCL1)

**Synonyms:** TCA-3

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human I-309 (CCL1)	300-37	<i>E.coli</i>	8.5 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human I-309 (CCL1)	500-P110	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human I-309 (CCL1)	500-P110Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## ICAM-1 *Intercellular Adhesion Molecule 1*

**Synonyms:** Major group rhinovirus receptor, CD54 antigen

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human ICAM-1	150-05	<i>CHO cells</i>	49.5 kDa	10µg	50µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human ICAM-1	500-P287	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human ICAM-1	500-P287Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human ICAM-1	ABTS Catalogue # 900-K464
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### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human ICAM-1	ABTS Catalogue # 900-M464
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## ICOS Fc

**Synonyms:** Inducible T-cell costimulator, CD278, Activation-inducible lymphocyte immunomediatory molecule (AILIM), CRP-1, CVID1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human ICOS Fc	310-39	<i>CHO cells</i>	42.0 kDa	10µg	50µg	

*Additional sizes available please inquire*

## IFN- $\alpha$ Interferon-alpha

**Synonyms:** Leukocyte interferon, B cell interferon, type 1 interferon

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IFN- $\alpha$	300-02AA	<i>E.coli</i>	19.2 kDa	20µg	100µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IFN- $\alpha$	500-P32AG	<i>Goat</i>	E, WB	50µg	100µg	
Biot. Anti-Human IFN- $\alpha$	500-P32ABt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human IFN- $\alpha$	500-M89	<i>Mouse</i>	E, WB	500µg

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## IFN- $\beta$ Interferon-beta

**Synonyms:** Fibroblast Interferon, IFNB1, Type I interferon

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IFN- $\beta$	300-02BC	<i>CHO cells</i>	20.0 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IFN- $\beta$	AF-300-02B	<i>E.coli</i>	20.0 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IFN- $\beta$	500-P32B	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human IFN- $\beta$	500-P32BBt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## IFN- $\gamma$ Interferon-gamma

**Synonyms:** Immune Interferon, Type II interferon, T-cell interferon, MAF

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IFN- $\gamma$	300-02	<i>E.coli</i>	16.8 kDa	20 $\mu$ g	100 $\mu$ g	
Murine IFN- $\gamma$	315-05	<i>E.coli</i>	15.6 kDa	20 $\mu$ g	100 $\mu$ g	
Rat IFN- $\gamma$	400-20	<i>E.coli</i>	15.6 kDa	20 $\mu$ g	100 $\mu$ g	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IFN- $\gamma$	AF-300-02	<i>E.coli</i>	16.8 kDa	20 $\mu$ g	100 $\mu$ g	
Murine IFN- $\gamma$	AF-315-05	<i>E.coli</i>	15.6 kDa	20 $\mu$ g	100 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IFN- $\gamma$	500-P32	<i>Rabbit</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human IFN- $\gamma$	500-P32Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine IFN- $\gamma$	500-P119	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine IFN- $\gamma$	500-P119Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Rat IFN- $\gamma$	500-P122	<i>Rabbit</i>	I, E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Rat IFN- $\gamma$	500-P122Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Rat IFN- $\gamma$	500-P122G	<i>Goat</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Rat IFN- $\gamma$	500-P122GBt	<i>Goat</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-human IFN- $\gamma$	500-M90	<i>Mouse</i>	E, WB	500 $\mu$ g

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IFN- $\gamma$	ABTS Catalogue # 900-K27
Human IFN- $\gamma$	TMB Catalogue # 900-T27
Murine IFN- $\gamma$	ABTS Catalogue # 900-K98
Murine IFN- $\gamma$	TMB Catalogue # 900-T98
Rat IFN- $\gamma$	ABTS Catalogue # 900-K109

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IFN- $\gamma$	ABTS Catalogue # 900-M27
Human IFN- $\gamma$	TMB Catalogue # 900-TM27
Murine IFN- $\gamma$	ABTS Catalogue # 900-M98
Murine IFN- $\gamma$	TMB Catalogue # 900-TM98
Rat IFN- $\gamma$	ABTS Catalogue # 900-M109

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**IFN- $\lambda$ 1, - $\lambda$ 2** *Interferon-lambda 1, 2***Synonyms:** IFN- $\lambda$ 1: IL-29; IFN- $\lambda$ 2: IL-28A**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IFN- $\lambda$ 1	300-02L	<i>E.coli</i>	19.8 kDa	5 $\mu$ g	20 $\mu$ g	
Human IFN- $\lambda$ 2	300-02K	<i>E.coli</i>	19.6 kDa	5 $\mu$ g	20 $\mu$ g	
Murine IFN- $\lambda$ 2	250-33	<i>E.coli</i>	19.8 kDa	5 $\mu$ g	20 $\mu$ g	

*Additional sizes available please inquire***Animal-Free Cytokines**

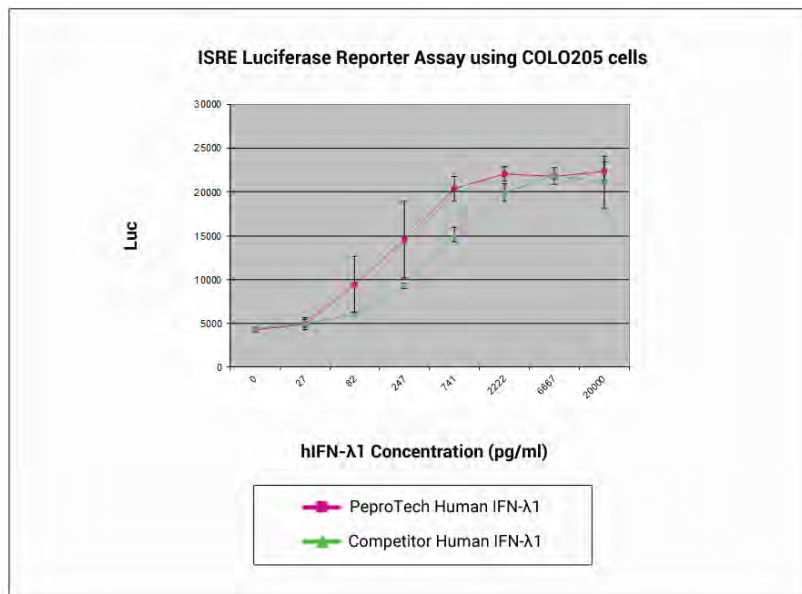
PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IFN- $\lambda$ 1	AF-300-02L	<i>E.coli</i>	19.8 kDa	5 $\mu$ g	20 $\mu$ g	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B
Anti-Human IFN- $\lambda$ 2	500-P247	<i>Rabbit</i>	I, E, WB	50 $\mu$ g	100 $\mu$ g
Biot. Anti-Human IFN- $\lambda$ 2	500-P247Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**IFN- $\omega$**  *Interferon-omega***Synonyms:** IFN alpha II-1, IFNW1**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IFN- $\omega$	300-02J	<i>E.coli</i>	19.9 kDa	20 $\mu$ g	100 $\mu$ g	

*Additional sizes available please inquire*

## IGF-I, IGF-I LR3 and IGF-II *Insulin-like Growth Factors I and II*

**Synonyms:** IGF-I: Somatamedin C, IGF-IA; IGF-I LR3: Long R3 IGF-I, Somatamedin C, IGF-IA IGF-II: Somatamedin A

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IGF-I	100-11	<i>E.coli</i>	7.6 kDa	100µg	500µg	
Murine IGF-I	250-19	<i>E.coli</i>	7.6 kDa	10µg	50µg	
Human IGF-I LR3	100-11R3	<i>E.coli</i>	9.1 kDa	200µg	1mg	
Human IGF-II	100-12	<i>E.coli</i>	7.5 kDa	10µg	50µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IGF-I	AF-100-11	<i>E.coli</i>	7.6 kDa	100µg	500µg	
Human IGF-I LR3	AF-100-11R3	<i>E.coli</i>	9.1 kDa	200µg	1mg	
Human IGF-II	AF-100-12	<i>E.coli</i>	7.5 kDa	10µg	50µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IGF-I	500-P11	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human IGF-I	500-P11Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine IGF-I	500-P157G	<i>Goat</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine IGF-I	500-P157GBt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Human IGF-II	500-P12	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human IGF-II	500-P12Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

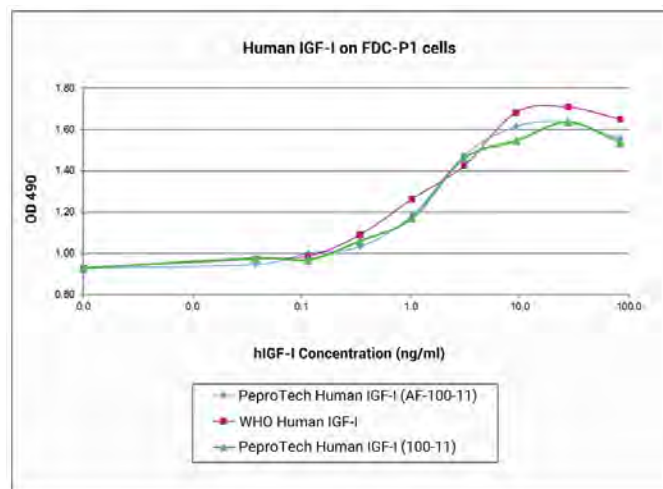
Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Murine IGF-I ABTS Catalogue # 900-K170

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells

Murine IGF-I ABTS Catalogue # 900-M170



## IGF-BP *Insulin-like Growth Factor-Binding Proteins 1-7*

**Synonyms:** **IGF-BP1:** IBP-1, Placenta Protein 12 (PP12)  
**IGF-BP2:** IBP-2  
**IGF-BP3:** IBP-3, Growth-hormone-dependent binding protein  
**IGF-BP4:** IBP-4, HT29-IGF-BP, colon cancer cell growth inhibitor  
**IGF-BP5:** IBP-5  
**IGF-BP6:** IBP-6  
**IGF-BP7:** IBP-7, Mac25, IGF binding protein-related protein-1 (IGFBP-rP1)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IGF-BP1	350-10	<i>E.coli</i>	25.4 kDa	5µg	25µg	
Human IGF-BP2	350-06B	<i>Insect cells</i>	31.5 kDa	5µg	20µg	
Human IGF-BP3	100-08	<i>E.coli</i>	28.8 kDa	5µg	25µg	
Human IGF-BP4	350-05B	<i>Insect cells</i>	25.7kDa	5µg	20µg	
Human IGF-BP5	100-05	<i>E.coli</i>	28.6 kDa	5µg	25µg	
Human IGF-BP6	350-07B	<i>Insect cells</i>	22.3 kDa	5µg	20µg	
Human IGF-BP7	350-09	<i>E.coli</i>	26.4 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IGF-BP3	AF-100-08	<i>E.coli</i>	28.8 kDa	5µg	25µg	
Human IGF-BP7	AF-350-09	<i>E.coli</i>	26.4 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B
Anti-Human IGF-BP1	500-P228	<i>Rabbit</i>	I, E, WB	50µg	100µg
Biot. Anti-Human IGF-BP1	500-P228Bt	<i>Rabbit</i>	E, WB	25µg	50µg
Anti-Human IGF-BP3	500-P230	<i>Rabbit</i>	I, E, WB	50µg	100µg
Biot. Anti-Human IGF-BP3	500-P230Bt	<i>Rabbit</i>	E, WB	25µg	50µg
Anti-Human IGF-BP5	500-P232	<i>Rabbit</i>	I, E, WB	50µg	100µg
Biot. Anti-Human IGF-BP5	500-P232Bt	<i>Rabbit</i>	E, WB	25µg	50µg
Anti-Human IGF-BP7	500-P234	<i>Rabbit</i>	I, E, WB	50µg	100µg
Biot. Anti-Human IGF-BP7	500-P234Bt	<i>Rabbit</i>	E, WB	25µg	50µg

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IGF-BP1 ABTS Catalogue # 900-K315

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells

Human IGF-BP1 ABTS Catalogue # 900-M315

## IL-1 $\alpha$ Interleukin-1alpha

**Synonyms:** Hematopoietin-1, Lymphocyte-Activating Factor (LAF), Endogenous Pyrogen (EP), Leukocyte Endogenous Mediator (LEM), Mononuclear Cell Factor (MCF)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-1 $\alpha$	200-01A	<i>E.coli</i>	18.0 kDa	2 $\mu$ g	10 $\mu$ g	
Murine IL-1 $\alpha$	211-11A	<i>E.coli</i>	17.9 kDa	2 $\mu$ g	10 $\mu$ g	
Rat IL-1 $\alpha$	400-01A	<i>E.coli</i>	17.7 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-1 $\alpha$	AF-200-01A	<i>E.coli</i>	18.0 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-1 $\alpha$	500-P21A	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human IL-1 $\alpha$	500-P21ABt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine IL-1 $\alpha$	500-P51A	<i>Rabbit</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine IL-1 $\alpha$	500-P51ABt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Rat IL-1 $\alpha$	500-P180G	<i>Goat</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Rat IL-1 $\alpha$	500-P180GBt	<i>Goat</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

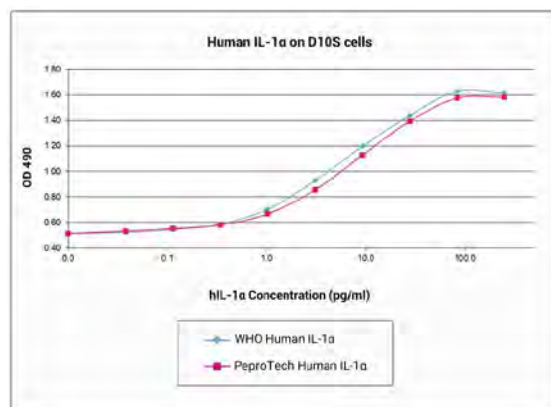
Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-1 $\alpha$	ABTS Catalogue # 900-K11
Human IL-1 $\alpha$	TMB Catalogue # 900-T11
Murine IL-1 $\alpha$	ABTS Catalogue # 900-K82
Rat IL-1 $\alpha$	ABTS Catalogue # 900-K204

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells

Human IL-1 $\alpha$	ABTS Catalogue # 900-M11
Human IL-1 $\alpha$	TMB Catalogue # 900-TM11
Murine IL-1 $\alpha$	ABTS Catalogue # 900-M82



## IL-1 $\beta$ Interleukin-1beta

**Synonyms:** Catabolin, Lymphocyte-Activating Factor (LAF), Endogenous Pyrogen (EP), Leukocyte Endogenous Mediator (LEM), Mononuclear Cell Factor (MCF)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-1 $\beta$	200-01B	<i>E.coli</i>	17.3 kDa	2 $\mu$ g	10 $\mu$ g	
Murine IL-1 $\beta$	211-11B	<i>E.coli</i>	17.5 kDa	2 $\mu$ g	10 $\mu$ g	
Rat IL-1 $\beta$	400-01B	<i>E.coli</i>	17.4 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-1 $\beta$	AF-200-01B	<i>E.coli</i>	17.3 kDa	2 $\mu$ g	10 $\mu$ g	
Murine IL-1 $\beta$	AF-211-11B	<i>E.coli</i>	17.5 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-1 $\beta$	500-P21BG	<i>Goat</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human IL-1 $\beta$	500-P21BGBT	<i>Goat</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine IL-1 $\beta$	500-P51	<i>Rabbit</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine IL-1 $\beta$	500-P51Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Rat IL-1 $\beta$	500-P80	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Rat IL-1 $\beta$	500-P80Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

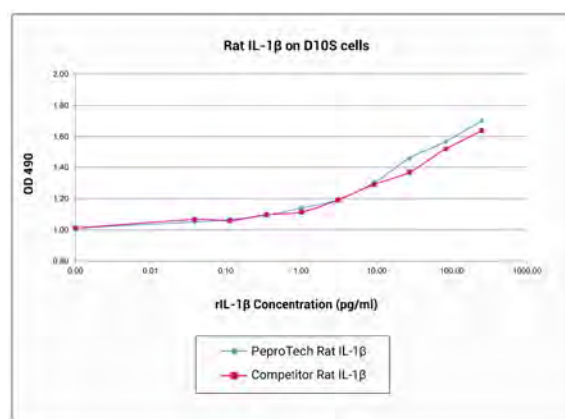
Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-1 $\beta$	ABTS Catalogue # 900-K95
Human IL-1 $\beta$	TMB Catalogue # 900-T95
Murine IL-1 $\beta$	ABTS Catalogue # 900-K47
Rat IL-1 $\beta$	ABTS Catalogue # 900-K91

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells

Human IL-1 $\beta$	TMB Catalogue # 900-TM95
Human IL-1 $\beta$	ABTS Catalogue # 900-M95
Murine IL-1 $\beta$	ABTS Catalogue # 900-M47
Rat IL-1 $\beta$	ABTS Catalogue # 900-M91



## IL-1RA *Interleukin-1 Receptor Antagonist*

**Synonyms:** ICIL-1RA, IRAP, IL-1RN

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-1RA	200-01RA	<i>E.coli</i>	17.2 kDa	20µg	100µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-1RA	AF-200-01RA	<i>E.coli</i>	17.2 kDa	20µg	100µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-1RA	500-P209	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human IL-1RA	500-P209Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-1RA	ABTS Catalogue # 900-K474
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### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IL-1RA	ABTS Catalogue # 900-M474
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## IL-2 *Interleukin-2*

**Synonyms:** T-cell Growth Factor (TCGF), Aldesleukin

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-2	200-02	<i>E.coli</i>	15.5 kDa	10µg	50µg	
Murine IL-2	212-12	<i>E.coli</i>	17.2 kDa	5µg	20µg	
Rat IL-2	400-02	<i>E.coli</i>	15.3 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-2	AF-200-02	<i>E.coli</i>	15.5 kDa	10µg	50µg	
Murine IL-2	AF-212-12	<i>E.coli</i>	17.2 kDa	5µg	20µg	
Rat IL-2	AF-400-02	<i>E.coli</i>	15.3 kDa	5µg	20µg	

*Additional sizes available please inquire*

*IL- 2 continued on next page...*

**IL-2** *Interleukin-2 (Continued)***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-2	500-P22	Rabbit	I, E, WB, N	50µg	100µg	
Biot. Anti-Human IL-2	500-P22Bt	Rabbit	E, WB	25µg	50µg	
Anti-Human IL-2	500-P22G	Goat	I, E, WB, N	50µg	100µg	
Biot. Anti-Human IL-2	500-P22GBt	Goat	E, WB	25µg	50µg	
Anti-Murine IL-2	500-P111	Rabbit	E, WB, N	50µg	100µg	
Biot. Anti-Murine IL-2	500-P111Bt	Rabbit	E, WB	25µg	50µg	
Anti-Rat IL-2	500-P274	Rabbit	E, WB	50µg	100µg	
Biot. Anti-Rat IL-2	500-P274Bt	Rabbit	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Monoclonal Antibodies**

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human IL-2	500-M02	Mouse	I, E, WB	500µg
Anti-Murine IL-2	500-M127	Rat	E, WB, N	500µg
Anti-Rat IL-2	500-M129	Mouse	E, WB	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Standard ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-2	ABTS Catalogue # 900-K12
Human IL-2	TMB Catalogue # 900-T12
Murine IL-2	ABTS Catalogue # 900-K108
Murine IL-2	TMB Catalogue # 900-T108
Rat IL-2	ABTS Catalogue # 900-K205

**Mini ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IL-2	ABTS Catalogue # 900-M12
Human IL-2	TMB Catalogue # 900-TM12
Murine IL-2	ABTS Catalogue # 900-M108
Murine IL-2	TMB Catalogue # 900-TM108
Rat IL-2	ABTS Catalogue # 900-M205

**sIL-2 Receptor  $\alpha$**  *soluble Interleukin-2 Receptor alpha*

**Synonyms:** soluble Interleukin-2R $\alpha$ , TAC-antigen, CD25 antigen

**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sIL-2 Receptor $\alpha$	200-02RC	CHO cells	24.8 kDa	5µg	25µg	

*Additional sizes available please inquire*

**Monoclonal Antibodies**

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size	1mg
Anti-Human sIL-2 Receptor $\alpha$	500-M02R	Mouse	I, E, WB, N	500µg	

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



## IL-3/IL-3 $\beta$ Interleukin-3/ Interleukin-3 beta

**Synonyms:** Mast Cell Growth Factor (MCGF), Multi-CSF, HCGF, P-cell stimulation factor

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-3	200-03	<i>E.coli</i>	15.0 kDa	2 $\mu$ g	10 $\mu$ g	
Murine IL-3	213-13	<i>E.coli</i>	15.1 kDa	2 $\mu$ g	10 $\mu$ g	
Rat IL-3 $\beta$	400-03	<i>E.coli</i>	16.3 kDa	5 $\mu$ g	20 $\mu$ g	

\* See page 13 for available Cytokine Packages.

Additional sizes available please inquire

### PeperoGMP<sup>®</sup> Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size
PeperoGMP <sup>®</sup> Human IL-3	GMP200-03-50 $\mu$ g	<i>E.coli</i>	15.0 kDa	50 $\mu$ g
PeperoGMP <sup>®</sup> Human IL-3	GMP200-03-100 $\mu$ g	<i>E.coli</i>	15.0 kDa	100 $\mu$ g

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-3	AF-200-03	<i>E.coli</i>	15.0 kDa	2 $\mu$ g	10 $\mu$ g	
Murine IL-3	AF-213-13	<i>E.coli</i>	15.1 kDa	2 $\mu$ g	10 $\mu$ g	

\* See page 13 for available Cytokine Packages.

Additional sizes available please inquire

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-3	500-P23	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human IL-3	500-P23Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine IL-3	500-P53	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine IL-3	500-P53Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Rat IL-3 $\beta$	500-P177G	<i>Goat</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Rat IL-3 $\beta$	500-P177GBt	<i>Goat</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human IL-3	500-M03	<i>Mouse</i>	E, WB, N	500 $\mu$ g

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-3	ABTS Catalogue # 900-K13
Murine IL-3	ABTS Catalogue # 900-K48

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Murine IL-3	ABTS Catalogue # 900-M48
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**IL-4** Interleukin-4**Synonyms:** BCGF, BCDF, B-cell Stimulating Factor (BSF-1)**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-4	200-04	<i>E.coli</i>	15.1 kDa	5µg	20µg	
Murine IL-4	214-14	<i>E.coli</i>	13.5 kDa	5µg	20µg	
Rat IL-4	400-04	<i>E.coli</i>	14.0 kDa	5µg	20µg	

\* See page 13 for available Cytokine Packages.

Additional sizes available please inquire

**Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-4	AF-200-04	<i>E.coli</i>	15.1 kDa	5µg	20µg	
Murine IL-4	AF-214-14	<i>E.coli</i>	13.5 kDa	5µg	20µg	

\* See page 13 for available Cytokine Packages.

Additional sizes available please inquire

**Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-4	500-P24	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human IL-4	500-P24Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine IL-4	500-P54	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine IL-4	500-P54Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Rat IL-4	500-P94	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Rat IL-4	500-P94Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Monoclonal Antibodies**

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human IL-4	500-M04	<i>Mouse</i>	E, WB, N	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Standard ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-4	ABTS Catalogue # 900-K14
Human IL-4	TMB Catalogue # 900-T14
Murine IL-4	ABTS Catalogue # 900-K49
Murine IL-4	TMB Catalogue # 900-T49

**Mini ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IL-4	ABTS Catalogue # 900-M14
Human IL-4	TMB Catalogue # 900-TM14
Murine IL-4	ABTS Catalogue # 900-M49
Murine IL-4	TMB Catalogue # 900-TM49

## sIL-4 Receptor $\alpha$ *soluble Interleukin-4 Receptor alpha*

**Synonyms:** soluble Interleukin-4R $\alpha$ , CD124

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sIL-4 Receptor $\alpha$	200-04RC	<i>CHO cells</i>	23.9 kDa	5 $\mu$ g	20 $\mu$ g	

*Additional sizes available please inquire*

## IL-5 *Interleukin-5*

**Synonyms:** EDF, BCDFII, TRF

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-5	200-05	<i>E.coli</i>	26.5 kDa	2 $\mu$ g	10 $\mu$ g	
Murine IL-5	215-15	<i>E.coli</i>	26.2 kDa	5 $\mu$ g	25 $\mu$ g	
Rat IL-5	400-05	<i>E.coli</i>	26.0 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-5	500-P25	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human IL-5	500-P25Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine IL-5	500-P55	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine IL-5	500-P55Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-5	ABTS Catalogue # 900-K15
Murine IL-5	ABTS Catalogue # 900-K406

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IL-5	ABTS Catalogue # 900-M15
Murine IL-5	ABTS Catalogue # 900-M406

## IL-6 *Interleukin-6*

**Synonyms:** 26 kDa protein, IFN- $\beta$ 2, B-Cell Differentiation Factor (BCDF), B-cell Stimulatory Factor-2, BSF-2, HPGF, HSF, MGI-2

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-6	200-06	<i>E.coli</i>	20.9 kDa	5 $\mu$ g	20 $\mu$ g	
Murine IL-6	216-16	<i>E.coli</i>	21.7 kDa	2 $\mu$ g	10 $\mu$ g	
Rat IL-6	400-06	<i>E.coli</i>	21.7 kDa	2 $\mu$ g	10 $\mu$ g	

\* See page 13 for available Cytokine Packages.

*Additional sizes available please inquire*

*IL- 6 continued on next page...*

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**IL-6** Interleukin-6 (Continued)**Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-6	AF-200-06	<i>E.coli</i>	20.9 kDa	5µg	20µg	
Murine IL-6	AF-216-16	<i>E.coli</i>	21.7 kDa	2µg	10µg	

\* See page 13 for available Cytokine Packages.

Additional sizes available please inquire

**PeperoGMP® Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size
PeperoGMP® Human IL-6	GMP200-06-10µg	<i>E.coli</i>	20.9 kDa	10µg
PeperoGMP® Human IL-6	GMP200-06-100µg	<i>E.coli</i>	20.9 kDa	100µg

**Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-6	500-P26	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human IL-6	500-P26Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human IL-6	500-P26G	<i>Goat</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human IL-6	500-P26GBt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Murine IL-6	500-P56	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Murine IL-6	500-P56Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Rat IL-6	500-P73	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Rat IL-6	500-P73Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Rat IL-6	500-P73G	<i>Goat</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Rat IL-6	500-P73GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Monoclonal Antibodies**

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human IL-6	500-M06	<i>Mouse</i>	E, WB	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Standard ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-6	ABTS Catalogue # 900-K16
Human IL-6	TMB Catalogue # 900-T16
Murine IL-6	ABTS Catalogue # 900-K50
Murine IL-6	TMB Catalogue # 900-T50
Rat IL-6	ABTS Catalogue # 900-K86

**Mini ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IL-6	ABTS Catalogue # 900-M16
Human IL-6	TMB Catalogue # 900-TM16
Murine IL-6	ABTS Catalogue # 900-M50
Murine IL-6	TMB Catalogue # 900-TM50
Rat IL-6	ABTS Catalogue # 900-M86

## sIL-6 Receptor $\alpha$ soluble Interleukin-6 Receptor alpha

**Synonyms:** soluble Interleukin-6R $\alpha$ , CD126

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sIL-6 Receptor $\alpha$	200-06RC	CHO cells	37.9 kDa	5 $\mu$ g	20 $\mu$ g	

Additional sizes available please inquire

## IL-7 Interleukin-7

**Synonyms:** Lymphopoietin 1 (LP-1), pre-B-cell factor

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-7	200-07	E.coli	17.4 kDa	2 $\mu$ g	10 $\mu$ g	
Murine IL-7	217-17	E.coli	15.0 kDa	2 $\mu$ g	10 $\mu$ g	
Rat IL-7	400-07	E.coli	15.0 kDa	2 $\mu$ g	10 $\mu$ g	

Additional sizes available please inquire

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-7	AF-200-07	E.coli	17.4 kDa	2 $\mu$ g	10 $\mu$ g	

Additional sizes available please inquire

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-7	500-P27	Rabbit	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human IL-7	500-P27Bt	Rabbit	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine IL-7	500-P57	Rabbit	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine IL-7	500-P57Bt	Rabbit	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Rat IL-7	500-P310	Rabbit	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Rat IL-7	500-P310Bt	Rabbit	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human IL-7	500-M07	Mouse	E, WB	500 $\mu$ g

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-7	ABTS Catalogue # 900-K17
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## IL-8 (CXCL8) *Interleukin-8*

**Synonyms:** Monocyte-Derived Neutrophil Chemotactic Factor (MDNCF), Neutrophil Activating Factor (NAF), NAP-1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-8 (CXCL8) (72 a.a.)	200-08M	<i>E.coli</i>	8.4 kDa	5µg	25µg	
Human IL-8 (CXCL8) (77 a.a.)	200-08	<i>E.coli</i>	8.9 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-8 (CXCL8) (72 a.a.)	AF-200-08M	<i>E.coli</i>	8.4 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B
Anti-Human IL-8 (CXCL8)	500-P28	<i>Rabbit</i>	E, WB, N	50µg	100µg
Biot. Anti-Human IL-8 (CXCL8)	500-P28Bt	<i>Rabbit</i>	E, WB	25µg	50µg

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human IL-8 (CXCL8)	500-M08	<i>Mouse</i>	E, WB	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

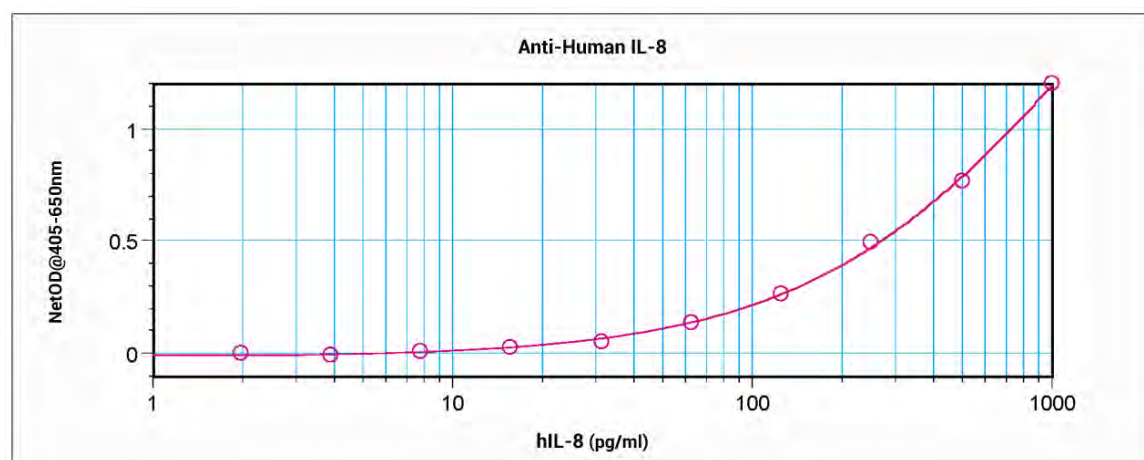
Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-8 (CXCL8)	ABTS Catalogue # 900-K18
Human IL-8 (CXCL8)	TMB Catalogue # 900-T18

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IL-8 (CXCL8)	ABTS Catalogue # 900-M18
Human IL-8 (CXCL8)	TMB Catalogue # 900-TM18



## IL-9 Interleukin-9

**Synonyms:** p40 cytokine, T-cell growth factor p40

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-9	200-09	<i>E.coli</i>	14.0 kDa	2µg	10µg	
Murine IL-9	219-19	<i>E.coli</i>	14.3 kDa	2µg	10µg	
Rat IL-9	400-18	<i>E.coli</i>	14.3 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-9	AF-200-09	<i>E.coli</i>	14.0 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-9	500-P29	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human IL-9	500-P29Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine IL-9	500-P59	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine IL-9	500-P59Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

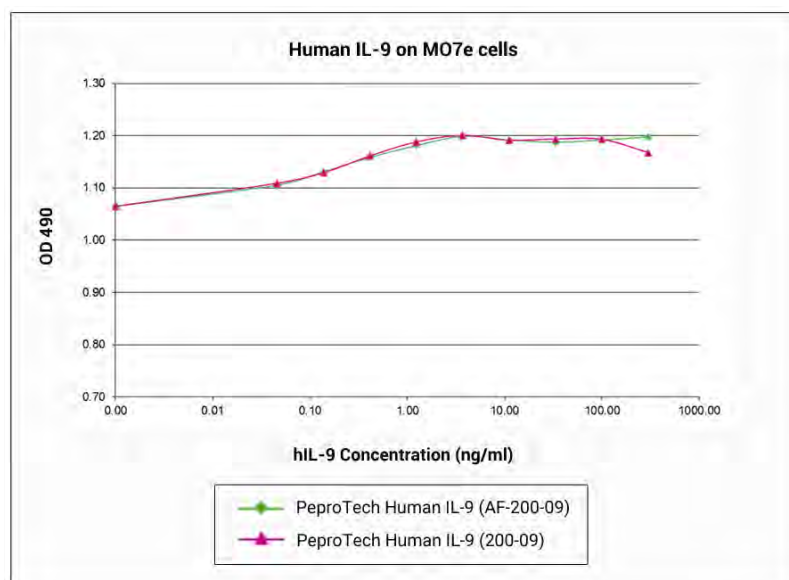
Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-9 ABTS Catalogue # 900-K20





**IL-10** *Interleukin-10***Synonyms:** B-TCGF, CSIF, TGIF**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-10	200-10	<i>E.coli</i>	18.6 kDa	2µg	10µg	
Murine IL-10	210-10	<i>E.coli</i>	18.7 kDa	2µg	10µg	
Rat IL-10	400-19	<i>E.coli</i>	18.7 kDa	2µg	10µg	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-10	AF-200-10	<i>E.coli</i>	18.6 kDa	2µg	10µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-10	500-P20	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human IL-10	500-P20Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine IL-10	500-P60	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine IL-10	500-P60Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Rat IL-10	500-P139	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Rat IL-10	500-P139Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Monoclonal Antibodies**

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human IL-10	500-M86	<i>Mouse</i>	E, WB	500µg
Anti-Murine IL-10	500-M128	<i>Rat</i>	E, WB, N	500µg
Anti-Rat IL-10	500-M130	<i>Mouse</i>	E, WB	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Standard ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-10	ABTS Catalogue # 900-K21
Murine IL-10	ABTS Catalogue # 900-K53
Murine IL-10	TMB Catalogue # 900-T53

**Mini ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IL-10	ABTS Catalogue # 900-M21
Murine IL-10	ABTS Catalogue # 900-M53
Murine IL-10	TMB Catalogue # 900-TM53

## IL-11 *Interleukin-11*

**Synonyms:** Adipogenesis Inhibitory Factor (AGIF)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-11	200-11	<i>E.coli</i>	19.3 kDa	2µg	10µg	
Murine IL-11	220-11	<i>E.coli</i>	19.1 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-11	AF-200-11	<i>E.coli</i>	19.3 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-11	500-P01	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human IL-11	500-P01Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human IL-11	500-M11	<i>Mouse</i>	I, E, WB, N	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

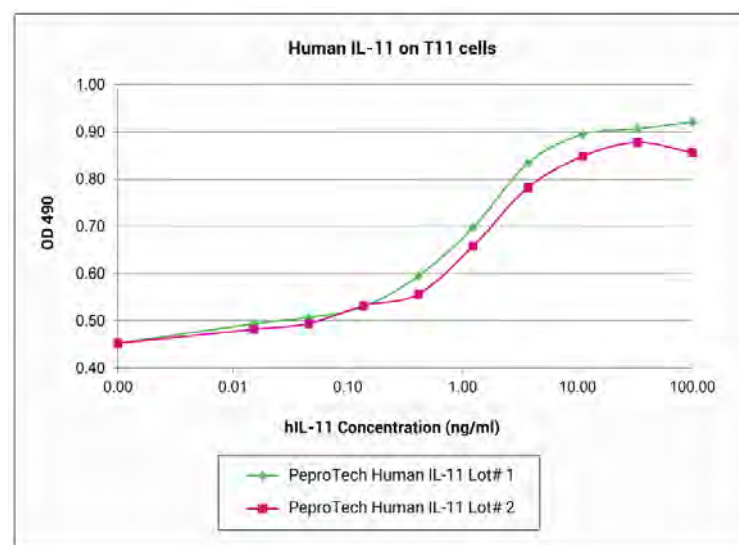
Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-11 ABTS Catalogue # 900-K22

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IL-11 ABTS Catalogue # 900-M22



## IL-12 Interleukin-12

**Synonyms:** NKSF, CTL Maturation Factor (TCMF), Cytotoxic Lymphocyte Maturation Factor (CLMF), TSF;  
**p35:** Interleukin-12 subunit alpha, IL-12 subunit p35, IL-12A, Cytotoxic Lymphocyte Maturation Factor 35 kDa subunit (CLMF p35), NK cell stimulating Factor Chain 1; **p40:** Interleukin-12 subunit beta, IL-12 subunit p40, IL-12B, Cytotoxic Lymphocyte Maturation Factor 40 kDa subunit (CLMF p40), NK cell Stimulating Factor Chain 2

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-12 p40	200-12P40	CHO cells	40.0 kDa	2µg	10µg	
Murine IL-12 p40	210-12P40H	HEK293 cells	40.0 kDa	2µg	10µg	
Human IL-12 p70	200-12	CHO cells	75.0 kDa	2µg	10µg	
Human IL-12 p70	200-12H	HEK293 cells	75.0 kDa	2µg	10µg	
Murine IL-12 p70	210-12	CHO cells	75.0 kDa	2µg	10µg	
Human IL-12 p80	200-12P80H	Insect cells	80.0 kDa	2µg	10µg	
Murine IL-12 p80	210-12P80H	HEK293 cells	80.0 kDa	2µg	10µg	

Additional sizes available please inquire

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-12	500-P154G	Goat	E, WB, N	50µg	100µg	
Biot. Anti-Human IL-12	500-P154GBt	Goat	E, WB	25µg	50µg	
Anti-Murine IL-12	500-P155G	Goat	E, WB, N	50µg	100µg	
Biot. Anti-Murine IL-12	500-P155GBt	Goat	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human IL-12	500-M12	Mouse	I, E, WB	500µg
Anti-Murine IL-12	500-M59	Rat	E, WB, N	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-12	ABTS Catalogue # 900-K96
Human IL-12	TMB Catalogue # 900-T96
Murine IL-12	ABTS Catalogue # 900-K97
Murine IL-12	TMB Catalogue # 900-T97

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IL-12	ABTS Catalogue # 900-M96
Human IL-12	TMB Catalogue # 900-TM96
Murine IL-12	ABTS Catalogue # 900-M97
Murine IL-12	TMB Catalogue # 900-TM97

## IL-13 *Interleukin-13*

**Synonyms:** NC30 (Human), P600 (Murine)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-13	200-13	<i>E.coli</i>	12.6 kDa	2µg	10µg	
Human IL-13 Variant	200-13A	<i>E.coli</i>	12.6 kDa	2µg	10µg	
Murine IL-13	210-13	<i>E.coli</i>	12.3 kDa	2µg	10µg	
Rat IL-13 (109 a.a.)	400-16	<i>E.coli</i>	11.9 kDa	2µg	10µg	
Rat IL-13 (113 a.a.)	400-16L	<i>E.coli</i>	12.3 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-13	AF-200-13	<i>E.coli</i>	12.6 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-13	500-P13	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human IL-13	500-P13Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine IL-13	500-P178	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine IL-13	500-P178Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Biot. Anti-Rat IL-13	500-P224	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Rat IL-13	500-P224Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

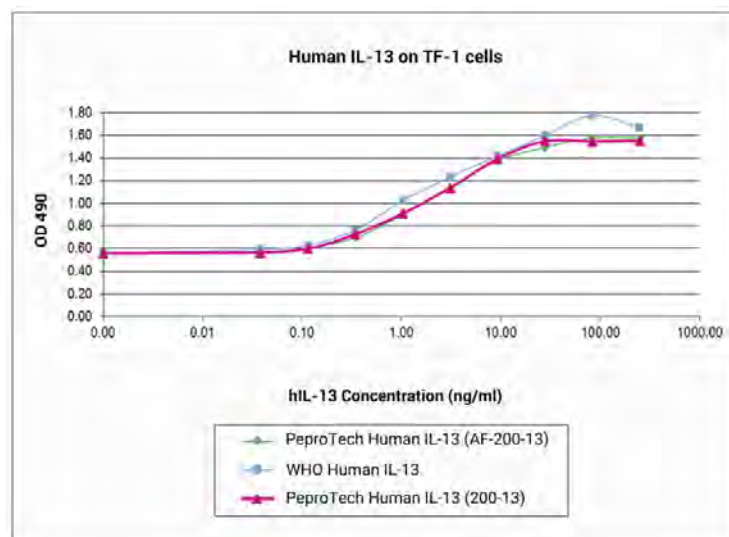
Human IL-13 ABTS Catalogue # 900-K23

Murine IL-13 ABTS Catalogue # 900-K207

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Murine IL-13 ABTS Catalogue # 900-M207



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## IL-15 *Interleukin-15*

Synonyms: IL-T

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-15	200-15	<i>E.coli</i>	12.9 kDa	2µg	10µg	
Murine IL-15	210-15	<i>E.coli</i>	13.3 kDa	2µg	10µg	
Rat IL-15	400-24	<i>E.coli</i>	13.5 kDa	2µg	10µg	

Additional sizes available please inquire

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-15	AF-200-15	<i>E.coli</i>	12.9 kDa	2µg	10µg	

Additional sizes available please inquire

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-15	500-P15	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human IL-15	500-P15Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine IL-15	500-P173	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine IL-15	500-P173Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human IL-15	500-M15	<i>Mouse</i>	E, WB	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

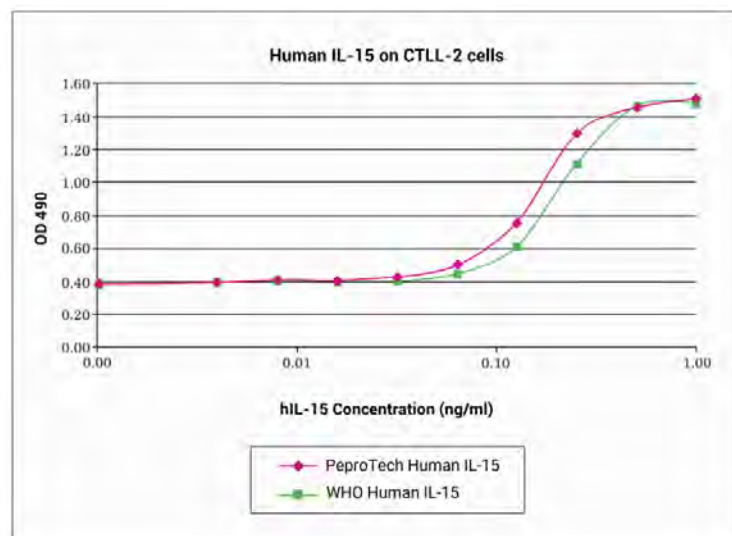
Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Murine IL-15 ABTS Catalogue # 900-K188

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Murine IL-15 ABTS Catalogue # 900-M188



**IL-16** *Interleukin-16***Synonyms:** LCF (Lymphocyte Chemoattractant Factor)**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-16 (121 a.a.)	200-16A	<i>E.coli</i>	12.4 kDa	2µg	10µg	
Human IL-16 (129 a.a.)	200-16	<i>E.coli</i>	13.3 kDa	2µg	10µg	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-16 (121 a.a.)	AF-200-16A	<i>E.coli</i>	12.4 kDa	2µg	10µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-16	500-P06	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human IL-16	500-P06Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**IL-17A** *Interleukin-17***Synonyms:** IL-17, CTLA-8**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-17A	200-17	<i>E.coli</i>	31.3 kDa	5µg	25µg	
Murine IL-17A	210-17	<i>E.coli</i>	30.0 kDa	5µg	25µg	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-17A	AF-200-17	<i>E.coli</i>	31.3 kDa	5µg	25µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-17A	500-P07	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human IL-17A	500-P07Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human IL-17A	500-P07G	<i>Goat</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human IL-17A	500-P07GBt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Murine IL-17A	500-P265	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Murine IL-17A	500-P265Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

*IL-17A continued on next page...*

**IL-17A** *Interleukin-17 (Continued)***Standard ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-17A	ABTS Catalogue # 900-K84
Murine IL-17A	ABTS Catalogue # 900-K392

**Mini ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IL-17A	ABTS Catalogue # 900-M84
Murine IL-17A	ABTS Catalogue # 900-M392

**IL-17B** *Interleukin-17B*

**Synonyms:** IL-20, NIRF, Cytokine ZCYTO7

**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-17B	200-28	<i>E.coli</i>	36.6 kDa	5µg	25µg	

*Additional sizes available please inquire*

**Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-17B	500-P248	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human IL-17B	500-P248Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**IL-17D** *Interleukin-17D*

**Synonyms:** none

**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-17D	200-27	<i>E.coli</i>	40.5 kDa	5µg	25µg	

*Additional sizes available please inquire*

**Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-17D	AF-200-27	<i>E.coli</i>	40.5 kDa	5µg	25µg	

*Additional sizes available please inquire*

**Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-17D	500-P88	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human IL-17D	500-P88Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



## IL-17E *Interleukin-17E*

**Synonyms:** IL-25

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-17E	200-24	<i>E.coli</i>	33.8 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-17E	AF-200-24	<i>E.coli</i>	33.8 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-17E	500-P89	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human IL-17E	500-P89Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-17E	ABTS Catalogue # 900-K234
Human IL-17E	TMB Catalogue # 900-T234

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IL-17E	ABTS Catalogue # 900-M234
Human IL-17E	TMB Catalogue # 900-TM234

## IL-17F *Interleukin-17F*

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-17F	200-25	<i>E.coli</i>	30.1 kDa	5µg	25µg	
Murine IL-17F	210-17F	<i>E.coli</i>	30.0 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-17F	AF-200-25	<i>E.coli</i>	30.1 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-17F	500-P90	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human IL-17F	500-P90Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-17F	ABTS Catalogue # 900-K277
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**Czech Republic:** Tel: +420 225 992 284 • Fax: +420 225 992 201 • info@peprotech.cz

**IL-18BP** *Interleukin-18 Binding Protein***Synonyms:** None**Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Murine IL-18BP	500-P153G	Goat	E, WB	50µg	100µg	
Biot. Anti-Murine IL-18BP	500-P153GBt	Goat	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**IL-19** *Interleukin-19***Synonyms:** Melanoma differentiation-associated protein-like protein**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-19	200-19	<i>E.coli</i>	35.8 kDa	2µg	10µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-19	500-P189	Rabbit	E, WB	50µg	100µg	
Biot. Anti-Human IL-19	500-P189Bt	Rabbit	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**IL-20** *Interleukin-20***Synonyms:** Cytokine ZCYTO10**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-20	200-20	<i>E.coli</i>	35.2 kDa	2µg	10µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-20	500-P190G	Goat	E, WB	50µg	100µg	
Biot. Anti-Human IL-20	500-P190GBt	Goat	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Standard ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-20	ABTS Catalogue # 900-K224
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## IL-21 *Interleukin-21*

Synonyms: Za11

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-21	200-21	<i>E.coli</i>	15.4 kDa	2µg	10µg	
Murine IL-21	210-21	<i>E.coli</i>	15.0 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-21	AF-200-21	<i>E.coli</i>	15.4 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-21	500-P191	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human IL-21	500-P191Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine IL-21	500-P278	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Murine IL-21	500-P278Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

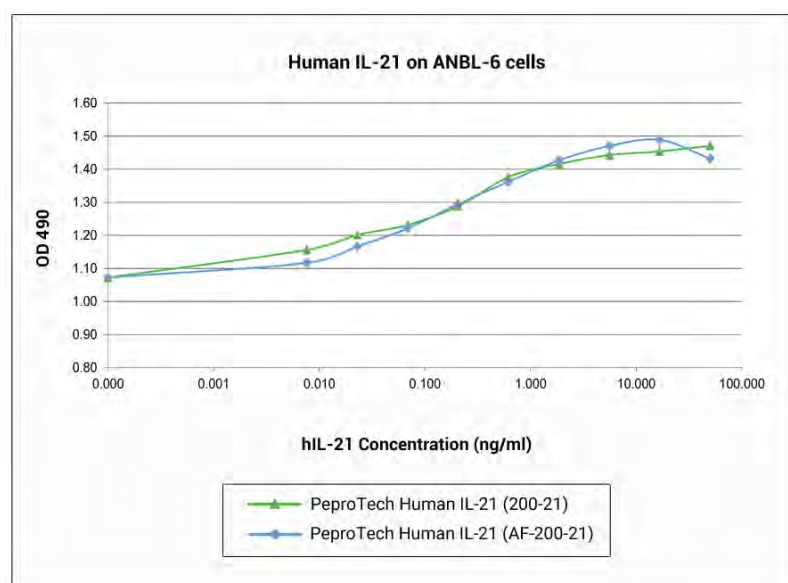
Human IL-21 ABTS Catalogue # 900-K226

Murine IL-21 ABTS Catalogue # 900-K368

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Murine IL-21 ABTS Catalogue # 900-M368



**IL-22** *Interleukin-22***Synonyms:** IL-T1F, Cytokine ZCYTO18**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-22	200-22	<i>E.coli</i>	33.6 kDa	2µg	10µg	
Murine IL-22	210-22	<i>E.coli</i>	33.4 kDa	2µg	10µg	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-22	AF-200-22	<i>E.coli</i>	33.6 kDa	2µg	10µg	
Murine IL-22	AF-210-22	<i>E.coli</i>	33.4 kDa	2µg	10µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-22	500-P211	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human IL-22	500-P211Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine IL-22	500-P223	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Murine IL-22	500-P223Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Standard ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-22	ABTS Catalogue # 900-K246
Murine IL-22	ABTS Catalogue # 900-K257

**Mini ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IL-22	ABTS Catalogue # 900-M246
Murine IL-22	ABTS Catalogue # 900-M257

**IL-23** *Interleukin-23***Synonyms:** None**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-23	200-23	<i>Insect cells</i>	53.5 kDa	2µg	10µg	

*Additional sizes available please inquire***IL-24** *Interleukin-24***Synonyms:** MDA-7 (Melanoma Differentiation-Associated gene 7 protein)**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-24	200-35	<i>CHO cells</i>	18.9 kDa	5µg	20µg	

*Additional sizes available please inquire*

## IL-27 *Interleukin-27*

**Synonyms:** Interleukin-27 subunit alpha, IL-27-A, Interleukin-27 subunit beta, IL-27B, Epstein-Barr virus-induced gene 3 protein, EBV-induced gene 3 protein, EBI3, p28, Interleukin-30, IL-30

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-27	200-38	HEK293 cells	47.8 kDa	2µg	10µg	

*Additional sizes available please inquire*

## IL-31 *Interleukin-31*

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-31	200-31	<i>E.coli</i>	15.8 kDa	2µg	10µg	
Murine IL-31	210-31	<i>E.coli</i>	15.8 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-31	500-P249	Rabbit	E, WB	50µg	100µg	
Biot. Anti-Human IL-31	500-P249Bt	Rabbit	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

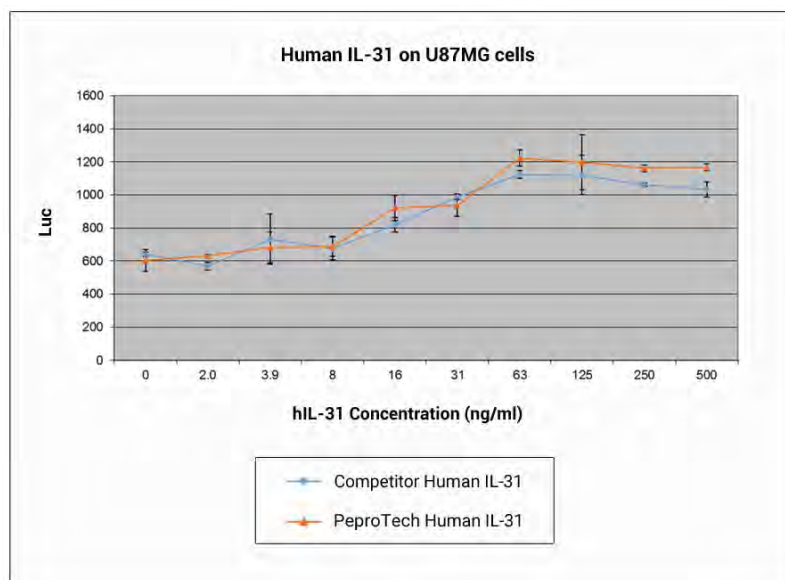
Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-31 ABTS Catalogue # 900-K347

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IL-31 ABTS Catalogue # 900-M347



**IL-33** *Interleukin-33***Synonyms:** IL-1 F11, NF-HEV**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-33	200-33	<i>E.coli</i>	17.9 kDa	2µg	10µg	
Murine IL-33	210-33	<i>E.coli</i>	17.5 kDa	2µg	10µg	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-33	AF-200-33	<i>E.coli</i>	17.9 kDa	2µg	10µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-33	500-P261	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human IL-33	500-P261Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Standard ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IL-33 ABTS Catalogue # 900-K398

**Mini ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IL-33 ABTS Catalogue # 900-M398

**IL-34** *Interleukin-34***Synonyms:** C16orf77**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-34	200-34	<i>HEK293 cells</i>	52.5 kDa	2µg	10µg	

*Additional sizes available please inquire***IL-35** *Interleukin-35***Synonyms:** None**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-35	200-37	<i>HEK293 cells</i>	45.8 kDa	2µg	10µg	

**IL-36 $\alpha$  (IL-1F6)** Interleukin-36 $\alpha$ **Synonyms:** IL36A, Interleukin-1 family member 6 (IL-1F6), FIL1 $\epsilon$  (FIL1E), Interleukin-1 $\epsilon$  (IL1E)**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-36 $\alpha$ (IL-1F6)	200-36A	<i>E.coli</i>	17.3 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire***IL-36 $\beta$  (IL-1F8)** Interleukin-36 $\beta$ **Synonyms:** IL-1H2, IL-1 eta**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-36 $\beta$ (IL-1F8)	200-36B	<i>E.coli</i>	17.3 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire***IL-36 $\gamma$  (IL-1F9)** Interleukin-36 $\gamma$ **Synonyms:** IL-1 $\epsilon$  (epsilon), IL-1H1**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-36 $\gamma$ (IL-1F9)	200-36G	<i>E.coli</i>	17.0 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-36 $\gamma$ (IL-1F9)	AF-200-36G	<i>E.coli</i>	17.0 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IL-36 $\gamma$	500-P316	<i>Rabbit</i>	E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human IL-36 $\gamma$	500-P316Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

**IL-36RA** Interleukin-36 Receptor Antagonist**Synonyms:** Interleukin-36RA, FIL1 delta, IL-1F5, IL-1HY1, IL-1L1, IL-1RP3, IL-1ra Homolog 1, IL-1 delta**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IL-36RA	200-36RA	<i>E.coli</i>	17.0 kDa	5 $\mu$ g	25 $\mu$ g	
Murine IL-36RA	210-36RA	<i>E.coli</i>	17.0 kDa	5 $\mu$ g	25 $\mu$ g	

*Additional sizes available please inquire***INSL5/INSL7 Hybrid****Synonyms:** none**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human INSL5/INSL7 Hybrid	130-05	<i>E.coli</i>	5.2 kDa	5 $\mu$ g	25 $\mu$ g	

*Additional sizes available please inquire***European Headquarters:** Tel: +44 (0)20 7610 3062 • Fax +44 (0)20 7610 3430 • info@peprotech.co.uk**Austria:** Tel: +43 (0)1 405 9696 • Fax +43 (0)1 405 9898 • info@peprotech.at**Czech Republic:** Tel: +420 225 992 284 • Fax: +420 225 992 201 • info@peprotech.cz



## IP-10 (CXCL10) *Gamma-Interferon Inducible Protein 10*

**Synonyms:** Crg-2

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human IP-10 (CXCL10)	300-12	<i>E.coli</i>	8.6 kDa	5µg	25µg	
Murine IP-10 (CXCL10)	250-16	<i>E.coli</i>	8.7 kDa	5µg	25µg	
Rat IP-10 (CXCL10)	400-33	<i>E.coli</i>	8.6 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human IP-10 (CXCL10)	500-P93	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human IP-10 (CXCL10)	500-P93Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine IP-10 (CXCL10)	500-P129	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Murine IP-10 (CXCL10)	500-P129Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Rat IP-10 (CXCL10)	500-P290	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Rat IP-10 (CXCL10)	500-P290Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human IP-10 (CXCL10)	500-M60	<i>Mouse</i>	E, WB	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human IP-10 (CXCL10)	ABTS Catalogue # 900-K39
Human IP-10 (CXCL10)	TMB Catalogue # 900-T39
Murine IP-10 (CXCL10)	ABTS Catalogue # 900-K153
Rat IP-10 (CXCL10)	ABTS Catalogue # 900-K449

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human IP-10 (CXCL10)	ABTS Catalogue # 900-M39
Human IP-10 (CXCL10)	TMB Catalogue # 900-TM39
Murine IP-10 (CXCL10)	ABTS Catalogue # 900-M153
Rat IP-10 (CXCL10)	ABTS Catalogue # 900-M449

## Irisin

**Synonyms:** Fibronectin type III domain-containing protein 5 (FNDC5), Fibronectin type III repeat-containing protein 2 (FRCP2)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human/Murine/Rat Irisin	100-65	<i>CHO cells</i>	25.2 kDa	2µg	10µg	

*Additional sizes available please inquire*

## I-TAC (CXCL11) *Interferon Inducible T-cell $\alpha$ Chemokine*

**Synonyms:** B-R1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human I-TAC (CXCL11)	300-46	<i>E.coli</i>	8.3 kDa	5 $\mu$ g	20 $\mu$ g	
Murine I-TAC (CXCL11)	250-29	<i>E.coli</i>	9.0 kDa	5 $\mu$ g	20 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human I-TAC (CXCL11)	500-P132	<i>Rabbit</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human I-TAC (CXCL11)	500-P132Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

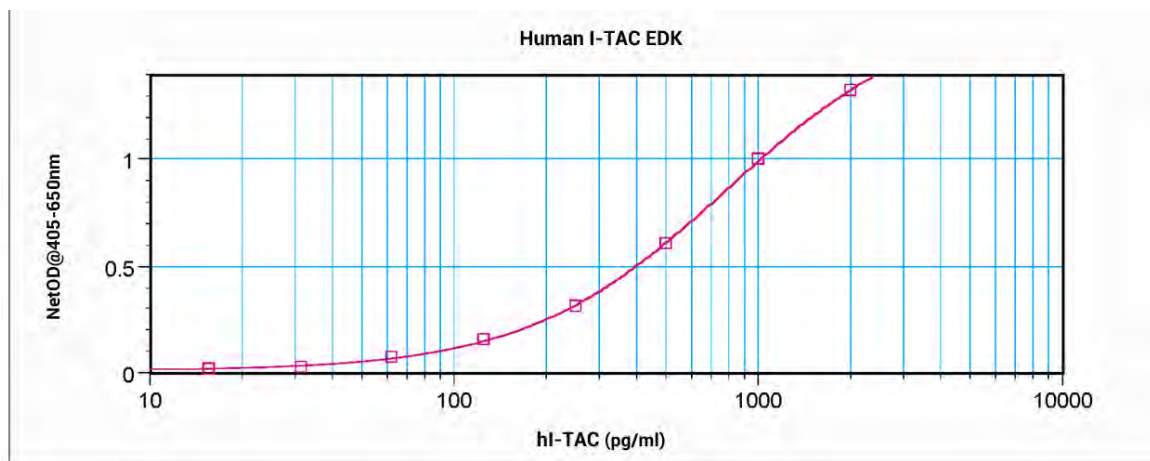
Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human I-TAC (CXCL11) ABTS Catalogue # 900-K151



## Kex-2

**Synonyms:** Endoproteinase Lys/Arg-Arg

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Yeast Kex-2	450-45	<i>Insect cells</i>	60.4 kDa	50 $\mu$ g	250 $\mu$ g	

*Additional sizes available please inquire*

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**KGF (FGF-7)** *Keratinocyte Growth Factor***Synonyms:** Fibroblast Growth Factor-7 (FGF-7), HBGF-7**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human KGF (FGF-7)	100-19	<i>E.coli</i>	18.9 kDa	2µg	10µg	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human KGF (FGF-7)	AF-100-19	<i>E.coli</i>	18.9 kDa	2µg	10µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human KGF (FGF-7)	500-P19	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human KGF (FGF-7)	500-P19Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**KLF4-TAT** *Kruppel-Like Factor-4***Synonyms:** EZF, GKLF**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human KLF4-TAT	110-08	<i>HEK293 cells</i>	51.7 kDa	5µg	25µg	

*Additional sizes available please inquire***Klotho****Synonyms:** αKlotho, KLA**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Klotho	100-53	<i>CHO cells</i>	58.6 kDa	5µg	20µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Klotho	500-P296	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human Klotho	500-P296Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**LAG-1 (CCL4L1)** *Lymphocyte Activation Gene-1***Synonyms:** ACT-2, T-cell Activation-2, HC21**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human LAG-1 (CCL4L1)	300-58	<i>E.coli</i>	7.7 kDa	5µg	20µg	

*Additional sizes available please inquire*

## LD78 $\beta$ (CCL3L1)

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human LD78 $\beta$ (CCL3L1)	300-56	<i>E.coli</i>	7.7 kDa	5 $\mu$ g	20 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human LD78 $\beta$ (CCL3L1)	500-P187G	<i>Goat</i>	E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human LD78 $\beta$ (CCL3L1)	500-P187GBt	<i>Goat</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## LEC (CCL16) *Liver-Expressed Chemokine*

**Synonyms:** NCC-4, HCC-4, LMC, LCC-1, MTN-1, IL-10-inducible chemokine

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human LEC (CCL16)	300-44	<i>E.coli</i>	11.2 kDa	5 $\mu$ g	20 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human LEC (CCL16)	500-P125G	<i>Goat</i>	E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human LEC (CCL16)	500-P125GBt	<i>Goat</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human LEC (CCL16)	500-M43	<i>Mouse</i>	E, WB, N	500 $\mu$ g

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## Leptin

**Synonyms:** Obesity protein (OB)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Leptin	300-27	<i>E.coli</i>	16.0 kDa	200 $\mu$ g	1mg	
Murine Leptin	450-31	<i>E.coli</i>	16.2 kDa	200 $\mu$ g	1mg	
Rat Leptin	400-21	<i>E.coli</i>	16.2 kDa	200 $\mu$ g	1mg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Leptin	AF-300-27	<i>E.coli</i>	16.0 kDa	200 $\mu$ g	1mg	
Murine Leptin	AF-450-31	<i>E.coli</i>	16.2 kDa	200 $\mu$ g	1mg	

*Additional sizes available please inquire*

*Leptin continued on next page...*

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## Leptin *continued...*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Leptin	500-P86	Rabbit	I, E, WB	50µg	100µg	
Biot. Anti-Human Leptin	500-P86Bt	Rabbit	E, WB	25µg	50µg	
Anti-Murine Leptin	500-P68	Rabbit	I, E, WB	50µg	100µg	
Biot. Anti-Murine Leptin	500-P68Bt	Rabbit	E, WB	25µg	50µg	
Anti-Rat Leptin	500-P185G	Goat	E, WB	50µg	100µg	
Biot. Anti-Rat Leptin	500-P185GBt	Goat	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human Leptin	500-M27	Mouse	E, WB	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human Leptin	ABTS Catalogue # 900-K90
Murine Leptin	ABTS Catalogue # 900-K76

## Leptin Receptor

**Synonyms:** LEP-R, HuB219, Obesity protein (OB) Receptor, OB-R

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Leptin Receptor	300-27R	CHO cells	93.5 kDa	20µg	100µg	

*Additional sizes available please inquire*

## LIF *Leukemia Inhibitory Factor*

**Synonyms:** Differentiation-stimulating factor, D factor, Melanoma-derived LPL inhibitor (MLPLI)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human LIF	300-05	<i>E.coli</i>	19.6 kDa	5µg	25µg	
Murine LIF	250-02	<i>E.coli</i>	19.9 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human LIF	AF-300-05	<i>E.coli</i>	19.6 kDa	5µg	25µg	
Murine LIF	AF-250-02	<i>E.coli</i>	19.9 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human LIF	500-P39	Rabbit	E, WB, N	50µg	100µg	
Biot. Anti-Human LIF	500-P39Bt	Rabbit	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## LIGHT

**Synonyms:** TNFSF14, HVEM-L, CD258

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human LIGHT	310-09B	<i>Insect cells</i>	19.3 kDa	3µg	15µg	
Murine LIGHT	315-12	<i>E.coli</i>	20.1 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human LIGHT	500-P179	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human LIGHT	500-P179Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## Lin28-TAT

**Synonyms:** CSDD1, LIN28A, ZCCHC1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Lin28-TAT	110-06	<i>E.coli</i>	24.4 kDa	5µg	25µg	

*Additional sizes available please inquire*

## Lungkine (CXCL15)

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Murine Lungkine (CXCL15)	250-37	<i>E.coli</i>	16.3 kDa	5µg	20µg	

*Additional sizes available please inquire*

## Lymphotactin (XCL1)

**Synonyms:** SCM-1a, ATAC

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Lymphotactin (XCL1)	300-20	<i>E.coli</i>	10.0 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Lymphotactin	500-P40	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human Lymphotactin	500-P40Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**MANF** *Mesencephalic Astrocyte-derived Neurotrophic Factor***Synonyms:** ARMET, Arginine-Rich Protein (ARP)**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MANF	450-06	<i>E.coli</i>	18.1 kDa	5µg	25µg	

*Additional sizes available please inquire***Maspin****Synonyms:** Serpin B5, Protease inhibitor 5**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Maspin	130-12	<i>E.coli</i>	42.1 kDa	5µg	20µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Maspin	500-P270	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human Maspin	500-P270Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**M-CSF** *Macrophage Colony Stimulating Factor***Synonyms:** CSF-1, MGI-IM**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human M-CSF	300-25	<i>E.coli</i>	36.8 kDa	2µg	10µg	
Murine M-CSF	315-02	<i>E.coli</i>	36.4 kDa	2µg	10µg	
Rat M-CSF	400-28	<i>E.coli</i>	36.2 kDa	2µg	10µg	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human M-CSF	AF-300-25	<i>E.coli</i>	36.8 kDa	2µg	10µg	
Murine M-CSF	AF-315-02	<i>E.coli</i>	36.4 kDa	2µg	10µg	
Rat M-CSF	AF-400-28	<i>E.coli</i>	36.2 kDa	2µg	10µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human M-CSF	500-P44	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human M-CSF	500-P44Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine M-CSF	500-P62G	<i>Goat</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine M-CSF	500-P62GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Standard ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Murine M-CSF	ABTS Catalogue # 900-K245
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## MCPs *Monocyte Chemotactic Proteins 1-5*

**Synonyms:** MCP-1: MCAF, JE (murine); MCP-2: HC14; MCP-3: MARC; MCP-4: NCC-1; MCP-5: None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MCP-1 (CCL2)	300-04	<i>E.coli</i>	8.6 kDa	5µg	20µg	
Murine JE/MCP-1 (CCL2)	250-10	<i>E.coli</i>	13.8 kDa	2µg	10µg	
Rat MCP-1 (CCL2)	400-12	<i>E.coli</i>	14.0 kDa	2µg	10µg	
Human MCP-2 (CCL8)	300-15	<i>E.coli</i>	8.9 kDa	2µg	10µg	
Murine MCP-2 (CCL8)	250-14	<i>E.coli</i>	8.5 kDa	5µg	20µg	
Human MCP-3 (CCL7)	300-17	<i>E.coli</i>	9.0 kDa	2µg	10µg	
Murine MCP-3 (CCL7)	250-08	<i>E.coli</i>	8.5 kDa	2µg	10µg	
Human MCP-4 (CCL13)	300-24	<i>E.coli</i>	8.6 kDa	5µg	20µg	
Murine MCP-5 (CCL12)	250-04	<i>E.coli</i>	9.3 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MCP-1 (CCL2)	AF-300-04	<i>E.coli</i>	8.6 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human MCP-1 (CCL2)	500-P34	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human MCP-1 (CCL2)	500-P34Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine JE/MCP-1 (CCL2)	500-P113	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Murine JE/MCP-1 (CCL2)	500-P113Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Rat MCP-1 (CCL2)	500-P76	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Rat MCP-1 (CCL2)	500-P76Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human MCP-2 (CCL8)	500-P35	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human MCP-2 (CCL8)	500-P35Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine MCP-2 (CCL8)	500-P127	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Murine MCP-2 (CCL8)	500-P127Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human MCP-3 (CCL7)	500-P37G	<i>Goat</i>	E, WB	50µg	100µg	
Biot. Anti-Human MCP-3 (CCL7)	500-P37GBt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Murine MCP-3 (CCL7)	500-P116G	<i>Goat</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine MCP-3 (CCL7)	500-P116GBt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Human MCP-4 (CCL13)	500-P04	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human MCP-4 (CCL13)	500-P04Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human MCP-4 (CCL13)	500-P04G	<i>Goat</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human MCP-4 (CCL13)	500-P04Gbt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Murine MCP-5 (CCL12)	500-P61	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine MCP-5 (CCL12)	500-P61Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

*MCPs continued on next page...*

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MCPs *continued...***Monoclonal Antibodies**

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human MCP-1 (CCL2)	500-M71	Mouse	I, E, WB	500µg
Anti-Human MCP-2 (CCL8)	500-M69	Mouse	E, WB, N	500µg
Anti-Human MCP-3 (CCL7)	500-M73	Mouse	E, WB, N	500µg
Anti-Human MCP-4 (CCL13)	500-M70	Mouse	E, WB, N	500µg

**Standard ELISA Development Kits**

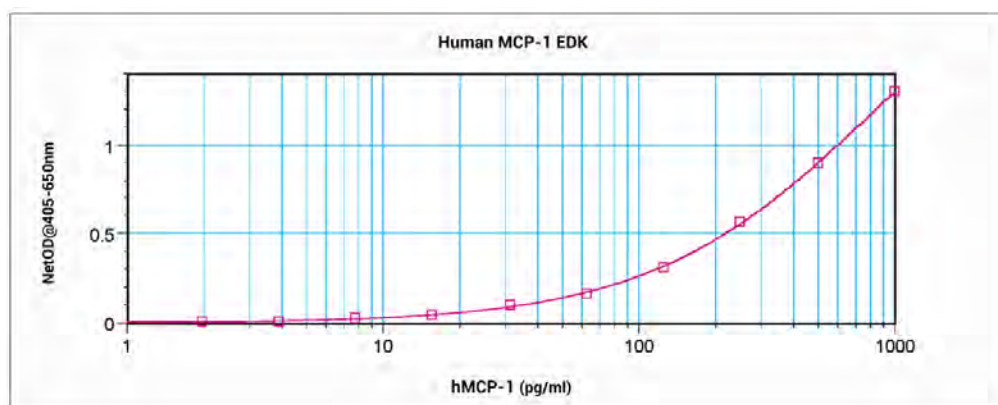
Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human MCP-1 (CCL2)	ABTS Catalogue # 900-K31
Human MCP-1 (CCL2)	TMB Catalogue # 900-T31
Murine JE/MCP-1 (CCL2)	ABTS Catalogue # 900-K126
Rat MCP-1 (CCL2)	ABTS Catalogue # 900-K59
Human MCP-2 (CCL8)	ABTS Catalogue # 900-K41
Murine MCP-3 (CCL7)	ABTS Catalogue # 900-K123

**Mini ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human MCP-1 (CCL2)	ABTS Catalogue # 900-M31
Human MCP-1 (CCL2)	TMB Catalogue # 900-TM31
Murine JE/MCP-1 (CCL2)	ABTS Catalogue # 900-M126
Rat MCP-1 (CCL2)	ABTS Catalogue # 900-M59
Human MCP-2 (CCL8)	ABTS Catalogue # 900-M41



## MDC (CCL22) *Macrophage-Derived Chemokine*

**Synonyms:** STCP-1, ABCD-1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MDC (CCL22) (67 a.a.)	300-36	<i>E.coli</i>	8.0 kDa	5µg	20µg	
Human MDC (CCL22) (69 a.a.)	300-36A	<i>E.coli</i>	8.1 kDa	5µg	20µg	
Murine MDC (CCL22)	250-23	<i>E.coli</i>	7.8 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human MDC (CCL22)	500-P107	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human MDC (CCL22)	500-P107Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine MDC (CCL22)	500-P176	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine MDC (CCL22)	500-P176Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human MDC (CCL22)	500-M41	<i>Mouse</i>	E, WB	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Murine MDC (CCL22)	ABTS Catalogue # 900-K197
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## MEC (CCL28) *Mucosae-associated Epithelial Chemokine*

**Synonyms:** CCK-1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MEC (CCL28)	300-57	<i>E.coli</i>	12.3 kDa	5µg	20µg	
Murine MEC (CCL28)	250-30	<i>E.coli</i>	12.6 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B
Anti-Human MEC (CCL28)	500-P297	<i>Rabbit</i>	I, E, WB	50µg	100µg
Biot. Anti-Human MEC (CCL28)	500-P297Bt	<i>Rabbit</i>	E, WB	25µg	50µg

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## Mesothelin

**Synonyms:** MPF, MSLN, SMRP, CAK1 antigen, ERC, Pre-pro-megakaryocyte-potentiating factor

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Mesothelin	100-63	<i>CHO cells</i>	36.4 kDa	10µg	50µg	

*Additional sizes available please inquire*

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## MIA *Melanoma Inhibitory Activity*

**Synonyms:** Cartilage-Derived Retinoic Acid-sensitive Protein (CD-RAP)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B
Human MIA	130-01	<i>E.coli</i>	12.2 kDa	5µg	20µg

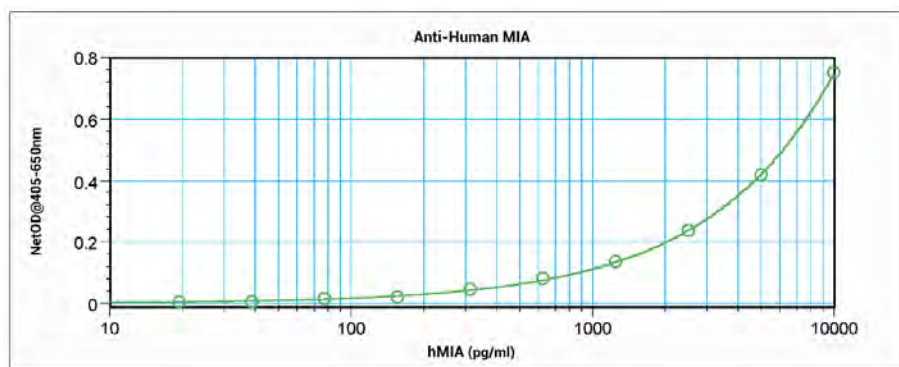
*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human MIA	500-P243	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human MIA	500-P243Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



## MIA-2 *Melanoma Inhibitory Activity-2*

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MIA-2	130-02	<i>E.coli</i>	11.5 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human MIA-2	500-P255	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human MIA-2	500-P255Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

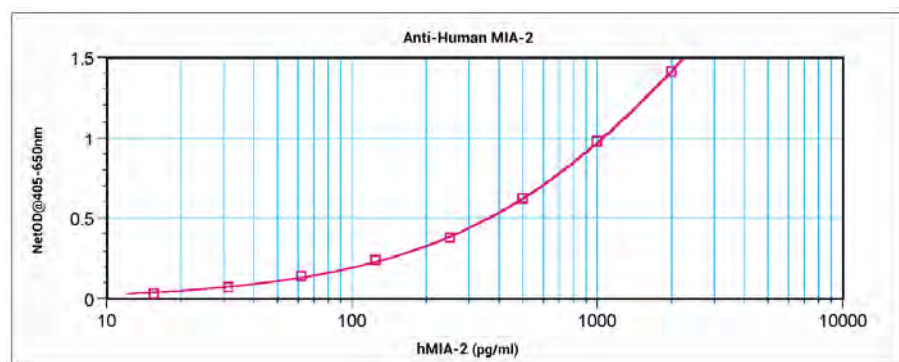
Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human MIA-2 ABTS Catalogue # 900-K357



## Midkine

**Synonyms:** MK, NEGF-2

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Midkine	450-16	<i>E.coli</i>	13.4 kDa	5µg	20µg	
Murine Midkine	315-25	<i>E.coli</i>	13.3 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Midkine	500-P171	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human Midkine	500-P171Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

**Key:** I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human Midkine ABTS Catalogue # 900-K190

## MIF *Macrophage Migration Inhibitory Factor*

**Synonyms:** GLIF, MMIF, GIF, Glycosylation-Inhibiting Factor

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MIF	300-69	<i>Insect cells</i>	15.0 kDa	5µg	25µg	

*Additional sizes available please inquire*

## MIG (CXCL9) *Monokine Induced by Interferon-γ*

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MIG (CXCL9)	300-26	<i>E.coli</i>	11.7 kDa	5µg	20µg	
Murine MIG (CXCL9)	250-18	<i>E.coli</i>	12.2 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human MIG (CXCL9)	500-P50	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human MIG (CXCL9)	500-P50Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

**Key:** I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human MIG (CXCL9)	500-M42	<i>Mouse</i>	E, WB, N	500µg

**Key:** I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human MIG (CXCL9) ABTS Catalogue # 900-K87

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human MIG (CXCL9) ABTS Catalogue # 900-M87

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## MIP-1 $\alpha$ (CCL3), $\beta$ (CCL4), $\gamma$ (CCL9/10) *Macrophage Inflammatory Proteins-1 $\alpha$ , -1 $\beta$ , -1 $\gamma$*

**Synonyms:** MIP-1 $\alpha$ : LD78 $\alpha$ ; MIP-1 $\beta$ : ACT-2; MIP-1 $\gamma$ : MRP2, CCF18

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MIP-1 $\alpha$ (CCL3)	300-08	<i>E.coli</i>	7.8 kDa	5 $\mu$ g	20 $\mu$ g	
Murine MIP-1 $\alpha$ (CCL3)	250-09	<i>E.coli</i>	7.8 kDa	2 $\mu$ g	10 $\mu$ g	
Rat MIP-1 $\alpha$ (CCL3)	400-15	<i>E.coli</i>	7.8 kDa	5 $\mu$ g	20 $\mu$ g	
Human MIP-1 $\beta$ (CCL4)	300-09	<i>E.coli</i>	7.6 kDa	2 $\mu$ g	10 $\mu$ g	
Murine MIP-1 $\beta$ (CCL4)	250-32	<i>E.coli</i>	7.8 kDa	2 $\mu$ g	10 $\mu$ g	
Rat MIP-1 $\beta$ (CCL4)	400-09	<i>E.coli</i>	7.8 kDa	5 $\mu$ g	20 $\mu$ g	
Murine MIP-1 $\gamma$ (CCL9/10)	250-12	<i>E.coli</i>	11.6 kDa	5 $\mu$ g	20 $\mu$ g	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MIP-1 $\alpha$ (CCL3)	AF-300-08	<i>E.coli</i>	7.8 kDa	5 $\mu$ g	20 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human MIP-1 $\alpha$ (CCL3)	500-P38	<i>Rabbit</i>	E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human MIP-1 $\alpha$ (CCL3)	500-P38Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Human MIP-1 $\alpha$ (CCL3)	500-P38G	<i>Goat</i>	I, E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human MIP-1 $\alpha$ (CCL3)	500-P38GBt	<i>Goat</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine MIP-1 $\alpha$ (CCL3)	500-P121	<i>Rabbit</i>	E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine MIP-1 $\alpha$ (CCL3)	500-P121Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Rat MIP-1 $\alpha$ (CCL3)	500-P77	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Rat MIP-1 $\alpha$ (CCL3)	500-P77Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Human MIP-1 $\beta$ (CCL4)	500-P38B	<i>Rabbit</i>	E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human MIP-1 $\beta$ (CCL4)	500-P38BBt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine MIP-1 $\beta$ (CCL4)	500-P213	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine MIP-1 $\beta$ (CCL4)	500-P213Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine MIP-1 $\gamma$ (CCL9/10)	500-P117	<i>Rabbit</i>	E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine MIP-1 $\gamma$ (CCL9/10)	500-P117Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human MIP-1 $\alpha$ (CCL3)	500-M74	<i>Mouse</i>	E, WB, N	500 $\mu$ g

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human MIP-1 $\alpha$ (CCL3)	ABTS Catalogue # 900-K35
Murine MIP-1 $\alpha$ (CCL3)	ABTS Catalogue # 900-K125
Rat MIP-1 $\alpha$ (CCL3)	ABTS Catalogue # 900-K75
Human MIP-1 $\beta$ (CCL4)	TMB Catalogue # 900-T36
Murine MIP-1 $\beta$ (CCL4)	ABTS Catalogue # 900-K278

*MIPs continued on next page...*

## MIP-1 $\alpha$ (CCL3), $\beta$ (CCL4) *Macrophage Inflammatory Proteins-1 $\alpha$ , -1 $\beta$ (continued...)*

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human MIP-1 $\alpha$ (CCL3)	ABTS Catalogue # 900-M35
Murine MIP-1 $\alpha$ (CCL3)	ABTS Catalogue # 900-M125
Human MIP-1 $\beta$ (CCL4)	TMB Catalogue # 900-TM36
Murine MIP-1 $\beta$ (CCL4)	ABTS Catalogue # 900-M278

## MIP-2 (CXCL2) - (see GRO- $\beta$ )

## MIP-3 (CCL23) *Macrophage Inflammatory Protein-3*

**Synonyms:** MPIF-1, Ck- $\beta$ 8

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MIP-3 (CCL23)	300-29	<i>E.coli</i>	11.3 kDa	5 $\mu$ g	20 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human MIP-3 (CCL23)	500-P124	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human MIP-3 (CCL23)	500-P124Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## MIP-3 $\alpha$ (CCL20) *Macrophage Inflammatory Protein-3 $\alpha$*

**Synonyms:** LARC, Exodus-1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MIP-3 $\alpha$ (CCL20)	300-29A	<i>E.coli</i>	8.0 kDa	5 $\mu$ g	20 $\mu$ g	
Murine MIP-3 $\alpha$ (CCL20)	250-27	<i>E.coli</i>	7.9 kDa	5 $\mu$ g	20 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human MIP-3 $\alpha$ (CCL20)	500-P95A	<i>Rabbit</i>	I, E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human MIP-3 $\alpha$ (CCL20)	500-P95ABt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human MIP-3 $\alpha$ (CCL20)	500-M28	<i>Mouse</i>	E, WB	500 $\mu$ g

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



## MIP-3 $\beta$ (CCL19) *Macrophage Inflammatory Protein-3 $\beta$*

**Synonyms:** ELC, Exodus-3, SCYA19

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MIP-3 $\beta$ (CCL19)	300-29B	<i>E.coli</i>	8.8 kDa	5 $\mu$ g	20 $\mu$ g	
Murine MIP-3 $\beta$ (CCL19)	250-27B	<i>E.coli</i>	9.2 kDa	5 $\mu$ g	20 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B
Anti-Human MIP-3 $\beta$ (CCL19)	500-P95B	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g
Biot. Anti-Human MIP-3 $\beta$ (CCL19)	500-P95BBt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g

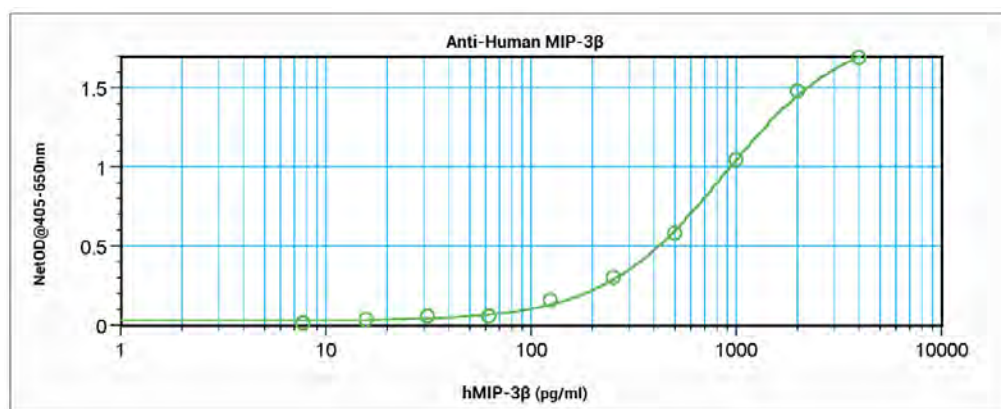
Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human MIP-3 $\beta$ (CCL19)	500-M29	<i>Mouse</i>	I, E, WB	500 $\mu$ g

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



## MIP-4 (CCL18) *Macrophage Inflammatory Protein-4*

**Synonyms:** PARC, DC-CK1, AMAC-1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MIP-4 (CCL18)	300-34	<i>E.coli</i>	7.8 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human MIP-4 (CCL18)	500-P108	<i>Rabbit</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human MIP-4 (CCL18)	500-P108Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## MIP-5 (CCL15) *Macrophage Inflammatory Protein-5*

**Synonyms:** HCC-2, Lkn-1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MIP-5 (CCL15)	300-43	<i>E.coli</i>	10.1 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human MIP-5 (CCL15)	500-P123G	<i>Goat</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human MIP-5 (CCL15)	500-P123GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## MMP-1 *Matrix Metalloproteinase-1*

**Synonyms:** Fibroblast Collagenase, Interstitial Collagenase

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MMP-1	420-01	<i>E.coli</i>	42.7 kDa	2µg	10µg	

*Additional sizes available please inquire*

## MMP-2 *Matrix Metalloproteinase-2*

**Synonyms:** Gelatinase A, TBE-1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MMP-2	420-02	<i>E.coli</i>	62.0 kDa	2µg	10µg	

*Additional sizes available please inquire*

## MMP-3 *Matrix Metalloproteinase-3*

**Synonyms:** Stromelysin-1, SL-1, Transin-1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MMP-3	420-03	<i>E.coli</i>	42.8 kDa	2µg	10µg	

*Additional sizes available please inquire*

## MPF *Megakaryocyte Potentiating Factor*

**Synonyms:** Mesothelin, MSLN, SMRP, CAK1 Antigen

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human MPF	100-62	<i>CHO cells</i>	26.7 kDa	10µg	50µg	

*Additional sizes available please inquire*

## Myostatin

**Synonyms:** GDF-8

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human/Murine/Rat Myostatin	120-00	<i>E.coli</i>	25.0 kDa	2µg	10µg	

*Additional sizes available please inquire*

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## Myostatin-Propeptide

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Myostatin-Propeptide	120-12	<i>E.coli</i>	27.8 kDa	5µg	25µg	

*Additional sizes available please inquire*

## Nanog

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Nanog	120-21	<i>E.coli</i>	34.7 kDa	5µg	20µg	
Human Nanog-TAT	120-21B	<i>E.coli</i>	36.1 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Nanog	500-P236	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human Nanog	500-P236Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

M-N

## NAP-2 (CXCL7) Neutrophil Activating Protein-2

**Synonyms:** PBP (parent molecule), CTAP-III (precursor)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human NAP-2 (CXCL7)	300-14	<i>E.coli</i>	7.6 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human NAP-2 (CXCL7)	500-P03	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human NAP-2 (CXCL7)	500-P03Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human NAP-2 (CXCL7)	500-P03G	<i>Goat</i>	E, WB	50µg	100µg	
Biot. Anti-Human NAP-2 (CXCL7)	500-P03GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human NAP-2 (CXCL7)	500-M33	<i>Mouse</i>	E, WB	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human NAP-2 (CXCL7)	ABTS Catalogue # 900-K40
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## Nesfatin-1

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Nesfatin-1	300-67	<i>E.coli</i>	9.7 kDa	20µg	100µg	

*Additional sizes available please inquire*

## Neuritin

**Synonyms:** CPG15, NRN1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human/Rat Neuritin	450-36D	<i>E.coli</i>	19.4 kDa	5µg	20µg	

*Additional sizes available please inquire*

## Neuropoietin

**Synonyms:** NPO, NP

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Murine Neuropoietin	250-25B	<i>E.coli</i>	19.8 kDa	5µg	25µg	

*Additional sizes available please inquire*

## Neuroserpin

**Synonyms:** Serpin I1, Protease inhibitor 12

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Neuroserpin	130-14	<i>E.coli</i>	44.8 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Neuroserpin	500-P271	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human Neuroserpin	500-P271Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human Neuroserpin	ABTS Catalogue # 900-K412
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### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human Neuroserpin	ABTS Catalogue # 900-M412
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## Neurturin

**Synonyms:** NTN, NRTN

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Neurturin	450-11	<i>E.coli</i>	23.6 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Neurturin	500-P102	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human Neurturin	500-P102bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## β-NGF *beta-Nerve Growth Factor*

**Synonyms:** NGF-β

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human β-NGF	450-01	<i>E.coli</i>	27.0 kDa	20µg	100µg	
Murine β-NGF	450-34	<i>E.coli</i>	26.8 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B
Human β-NGF	AF-450-01	<i>E.coli</i>	27.0 kDa	20µg	100µg

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human β-NGF	500-P85	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human β-NGF	500-P85Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human β-NGF	500-M85	<i>Mouse</i>	I, E, WB, N	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human β-NGF ABTS Catalogue # 900-K60

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human β-NGF ABTS Catalogue # 900-M60

## NNT-1/BCSF-3 *Novel Neurotrophin-1/B-Cell-Stimulating Factor-3*

**Synonyms:** Cardiotrophin-like cytokine

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human NNT-1/BCSF-3	450-18	<i>E.coli</i>	22.4 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-human NNT-1/BCSF-3	500-P186	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. anti-human NNT-1/BCSF-3	500-P186bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## Noggin

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Noggin	120-10C	<i>HEK293 cells</i>	46.0 kDa	5µg	20µg	
Murine Noggin	250-38	<i>E.coli</i>	46.4 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Murine Noggin	AF-250-38	<i>E.coli</i>	46.4 kDa	5µg	20µg	

*Additional sizes available please inquire*

## NOV *Nephroblastoma Overexpressed gene*

**Synonyms:** CCN3, IGFBP9, NovH

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human NOV	120-26	<i>E.coli</i>	36.2 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human NOV	500-P257	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human NOV	500-P257bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human NOV	ABTS Catalogue # 900-K338
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**NP-1** *Neutrophil Peptide-1***Synonyms:** Alpha Defensin-1, HNP-1, Cryptdin**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human NP-1	300-42	<i>E.coli</i>	3.4 kDa	5µg	20µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human NP-1	500-P126G	<i>Goat</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human NP-1	500-P126GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**NT-3** *Neurotrophin-3***Synonyms:** Neurotrophic Factor, Nerve Growth Factor-2 (NGF-2), HGNF**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human NT-3	450-03	<i>E.coli</i>	27.2 kDa	2µg	10µg	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human NT-3	AF-450-03	<i>E.coli</i>	27.2 kDa	2µg	10µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human NT-3	500-P82	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human NT-3	500-P82Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human NT-3	500-P82G	<i>Goat</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human NT-3	500-P82GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**NT-4** *Neurotrophin-4***Synonyms:** Neurotrophin 4/5 (NT-4/NT-5)**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human NT-4	450-04	<i>E.coli</i>	28.1 kDa	2µg	10µg	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human NT-4	AF-450-04	<i>E.coli</i>	28.1 kDa	2µg	10µg	

*Additional sizes available please inquire**NT-4 Continued on next page ...*



**NT-4** *Neurotrophin-4 (continued...)***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human NT-4	500-P83G	Goat	E, WB	50µg	100µg	
Biot. Anti-Human NT-4	500-P83GBt	Goat	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Monoclonal Antibodies**

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human NT-4	500-M24	Mouse	E	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Oncostatin M****Synonyms:** OSM**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Oncostatin M (227 a.a.)	300-10	<i>E.coli</i>	25.7 kDa	2µg	10µg	
Human Oncostatin M (209 a.a.)	300-10T	<i>E.coli</i>	23.6 kDa	2µg	10µg	
Rat Oncostatin M	400-36	<i>E.coli</i>	24.4 kDa	2µg	10µg	

*Additional sizes available please inquire*

**Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Oncostatin M (209 a.a.)	AF-300-10T	<i>E.coli</i>	23.6 kDa	2µg	10µg	

*Additional sizes available please inquire*

**Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Oncostatin M	500-P30	Rabbit	I, E, WB, N	50µg	100µg	
Biot. Anti-Human Oncostatin M	500-P30Bt	Rabbit	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**OPG** *Osteoprotegerin***Synonyms:** TNFRSF11B, OCIF (Osteoclastogenesis Inhibitory Factor), TR1**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human OPG	450-14	<i>E.coli</i>	20.0 kDa	10µg	50µg	

*Additional sizes available please inquire*

**Polyclonal Antibodies**- Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human OPG	500-P149	Rabbit	I, E, WB	50µg	100µg	
Biot. Anti-Human OPG	500-P149Bt	Rabbit	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## Osteopontin

**Synonyms:** Bone sialoprotein 1, Secreted phosphoprotein 1, SPP-1, Nephropontin, Uropontin

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Osteopontin	120-35	HEK293 cells	33.7 kDa	10µg	50µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Osteopontin	500-P314	Rabbit	E, WB	50µg	100µg	
Biot. Anti-Human Osteopontin	500-P314Bt	Rabbit	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization, NA = Neutralization not tested

## OTOR

**Synonyms:** Otoraplin, MIAL (Melonoma Inhibitory Activity-like Protein)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human OTOR	130-03	E.coli	12.7 kDa	5µg	20µg	

*Additional sizes available please inquire*

O-P

## sOX40 Ligand

**Synonyms:** OX40L, Glycoprotein Gp34, CD252, TXGP1, TNFSF4

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sOX40 Ligand	310-28	Insect cells	15.4 kDa	2µg	10µg	

*Additional sizes available please inquire*

## p16-INK4a

**Synonyms:** Cyclin-Dependent Kinase Inhibitor 2A, Cyclin-Dependent Kinase 4 Inhibitor A, CDK4I, p16INK4A, Multiple Tumor Suppressor 1, MTS-1, p16-INK4

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human p16-INK4a	110-02	E.coli	16.5 kDa	5µg	20µg	
Human p16-INK4a-TAT	110-02T	E.coli	18.0 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human p16-INK4a-TAT	500-P284T	Rabbit	E, WB	50µg	100µg	
Biot. Anti-Human p16-INK4a-TAT	500-P284TBt	Rabbit	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## PAF-AH

**Synonyms:** PAF acetylhydrolase, PAF 2-acylhydrolase, LDL-associated Phospholipase A2, LDL-PLA(2), 2-acetyl-1-alkylglycerophosphocholine esterase, 1-alkyl-2-acetyl-glycerophosphocholine esterase

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human PAF-AH	140-10	HEK293 cells	47.8 kDa	5µg	20µg	

Additional sizes available please inquire

## PAI-1 Plasminogen Activator Inhibitor-1

**Synonyms:** Serpin E1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human PAI-1	140-04	<i>E.coli</i>	42.7 kDa	2µg	10µg	

Additional sizes available please inquire

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human PAI-1	500-P260	Rabbit	I, E, WB, N	50µg	100µg	
Biot. Anti-Human PAI-1	500-P260Bt	Rabbit	E, WB	25µg	50µg	

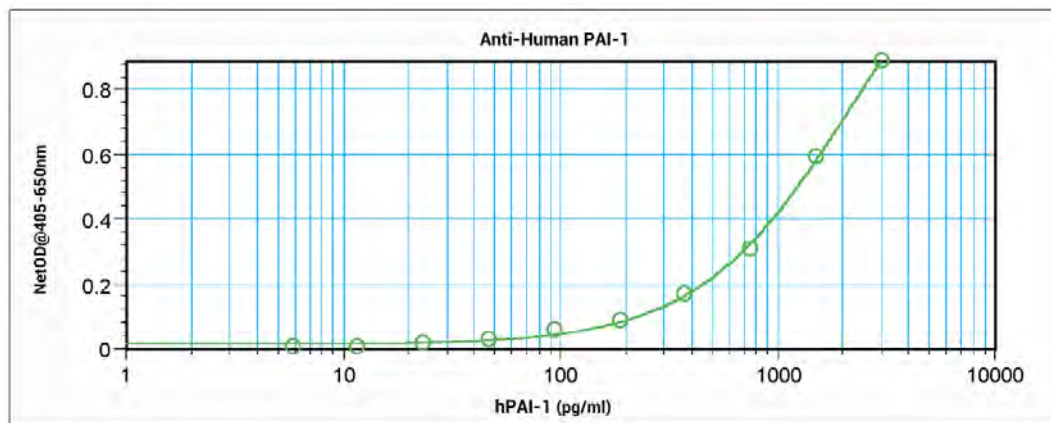
Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human PAI-1 ABTS Catalogue # 900-K383



## PAI-2 Plasminogen Activator Inhibitor-2

**Synonyms:** Serpin B2, Urokinase Inhibitor, Monocyte Arg-serpin

### Recombinant Proteins

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human PAI-2	140-06	<i>E.coli</i>	46.5 kDa	2µg	10µg	

Additional sizes available please inquire

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## PDGF-AA, -AB, -BB, -CC *Platelet-Derived Growth Factor*

**Synonyms:** **PDGF-AA:** Platelet-Derived Growth Factor-AA, Glioma-Derived Growth Factor (GDGF), Osteosarcoma-Derived Growth Factor (ODGF); **PDGF-AB:** Platelet-Derived Growth Factor-AB, Glioma-Derived Growth Factor (GDGF), Osteosarcoma-Derived Growth Factor (ODGF), PCGF; **PDGF-BB:** Platelet-Derived Growth Factor-BB, Glioma-Derived Growth Factor (GDGF), Osteosarcoma-Derived Growth Factor (ODGF); **PDGF-CC:** Platelet-Derived Growth Factor-CC, Spinal Cord-Derived Growth Factor (SCDGF), Fallotein

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human PDGF-AA	100-13A	<i>E.coli</i>	28.5 kDa	2µg	10µg	
Murine PDGF-AA	315-17	<i>E.coli</i>	28.7 kDa	2µg	10µg	
Human PDGF-AB	100-00AB	<i>E.coli</i>	26.4 kDa	2µg	10µg	
Human PDGF-BB	100-14B	<i>E.coli</i>	24.3 kDa	2µg	10µg	
Murine PDGF-BB	315-18	<i>E.coli</i>	24.4 kDa	2µg	10µg	
Human PDGF-CC	100-00CC	<i>E.coli</i>	25.0 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human PDGF-AA	AF-100-13A	<i>E.coli</i>	28.5 kDa	2µg	10µg	
Human PDGF-BB	AF-100-14B	<i>E.coli</i>	24.3 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human PDGF-AA	500-P46	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human PDGF-AA	500-P46Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human PDGF-BB	500-P47	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human PDGF-BB	500-P47Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

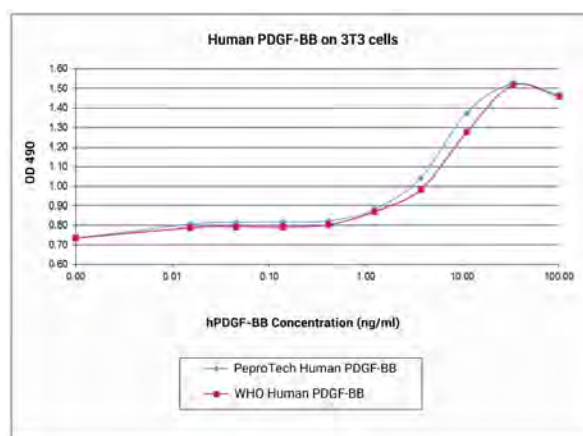
Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human PDGF-BB ABTS Catalogue # 900-K04

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human PDGF-BB ABTS Catalogue # 900-M04



## PD-L1 Fc *Programmmed Death Ligand 1*

**Synonyms:** Programmmed cell death 1 Ligand 1 (PDCD1L1), PD-1, B7-H1 (B7 homolog 1), CD274, SLEB2, SLE1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human PD-L1 Fc	310-35	<i>CHO cells</i>	51.3 kDa	20µg	100µg	

*Additional sizes available please inquire*

## PECAM-1 *Platelet Endothelial Cell Adhesion Molecule*

**Synonyms:** CD31 antigen, EndoCAM

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human PECAM-1	150-06	<i>HEK293 cells</i>	64.3 kDa	10µg	50µg	

*Additional sizes available please inquire*

## PEDF *Pigment Epithelium-Derived Factor*

**Synonyms:** SerpinF1, EPC-1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human PEDF	130-13	<i>E.coli</i>	44.5 kDa	5µg	20µg	

*Additional sizes available please inquire*

## Persephin

**Synonyms:** PSP, PSPN

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Persephin	450-12	<i>E.coli</i>	20.8 kDa	5µg	20µg	
Murine Persephin	450-35	<i>E.coli</i>	20.6 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Persephin	500-P138	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human Persephin	500-P138Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**PF-4 (CXCL4)** *Platelet Factor-4***Synonyms:** Oncostatin A, Ironplact**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human PF-4 (CXCL4)	300-16	<i>E.coli</i>	7.8 kDa	5µg	20µg	
Murine PF-4 (CXCL4)	250-39	<i>E.coli</i>	8.2 kDa	5µg	20µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human PF-4 (CXCL4)	500-P05	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human PF-4 (CXCL4)	500-P05Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Pleiotrophin****Synonyms:** PTN, Heparin Affin Regulatory Protein (HARP), Heparin-Binding Growth Factor-8 (HBGF-8), Osteoblast-Specific Factor 1 (OSF-1)**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Pleiotrophin	450-15	<i>E.coli</i>	15.4 kDa	5µg	20µg	

*Additional sizes available please inquire***PIGF-1** *Placenta Growth Factor-1***Synonyms:** PGF, PIGF, PGFL**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human PIGF-1	100-06	<i>E.coli</i>	29.7 kDa	5µg	25µg	
Rat PIGF-1	400-39	<i>E.coli</i>	30.3 kDa	5µg	25µg	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human PIGF-1	AF-100-06	<i>E.coli</i>	29.7 kDa	5µg	25µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human PIGF-1	500-P226	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human PIGF-1	500-P226Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Standard ELISA Development Kits**

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human PIGF-1	ABTS Catalogue # 900-K307
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## PIGF-2 *Placenta Growth Factor-2*

**Synonyms:** PGFL

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human PIGF-2	100-56	<i>E.coli</i>	34.0 kDa	5µg	25µg	

*Additional sizes available please inquire*

## PIGF-3 *Placenta Growth Factor-3*

**Synonyms:** PGFL

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human PIGF-3	100-57	<i>E.coli</i>	45.7 kDa	5µg	25µg	

*Additional sizes available please inquire*

## Prokineticin-2

**Synonyms:** PROK2, PK2, Protein Bv8 homolog

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Prokineticin-2	100-46	<i>E.coli</i>	8.8 kDa	5µg	20µg	

*Additional sizes available please inquire*

## Prolactin

**Synonyms:** Mammotropin, Luterotropic hormone, Lutetropin

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Prolactin	100-07	<i>E.coli</i>	23.0 kDa	10µg	50µg	
Murine Prolactin	315-16	<i>E.coli</i>	22.5 kDa	10µg	50µg	
Rat Prolactin	400-27	<i>E.coli</i>	22.6 kDa	10µg	50µg	

*Additional sizes available please inquire*

## PTHrP *Parathyroid Hormone-related Protein*

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human PTHrP	100-09	<i>E.coli</i>	9.8 kDa	10µg	50µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human PTHrP	500-P276	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human PTHrP	500-P276Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

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## R-Spondin-1, -2 and -3 *Roof plate-specific Spondin-1, -2 and -3*

**Synonyms:** R-Spondin-1: RSPO1; R-Spondin-2: RSPO2; R-Spondin-3: RSPO3, PWTSR, THSD2

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human R-Spondin-1	120-38	<i>CHO cells</i>	26.7 kDa	5µg	20µg	
Murine R-Spondin-1	315-32	<i>CHO cells</i>	27.1 kDa	5µg	20µg	
Human R-Spondin-2	120-43	<i>CHO cells</i>	24.4 kDa	5µg	20µg	
Human R-Spondin-3	120-44	<i>CHO cells</i>	26.9 kDa	5µg	20µg	

*Additional sizes available please inquire*

## sRANK Ligand *soluble Receptor Activator of NF-κB Ligand*

**Synonyms:** TNFSF11, TRANCE (TNF-Related Activation-induced Cytokine), OPGL (Osteoprotegerin Ligand), ODF (Osteoclast Differentiation Factor), CD254

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sRANK Ligand	310-01	<i>E.coli</i>	20.0 kDa	2µg	10µg	
Human sRANK Ligand	310-01C	<i>CHO cells</i>	22.1 kDa	2µg	10µg	
Murine sRANK Ligand	315-11	<i>E.coli</i>	19.4 kDa	2µg	10µg	
Murine sRANK Ligand	315-11C	<i>CHO cells</i>	19.8 kDa	2µg	10µg	
Rat sRANK Ligand	400-30	<i>E.coli</i>	19.4 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sRANK Ligand	AF-310-01	<i>E.coli</i>	20.0 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human sRANK Ligand	500-P133	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human sRANK Ligand	500-P133Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human sRANK Ligand	500-P133G	<i>Goat</i>	E, WB	50µg	100µg	
Biot. Anti-Human sRANK Ligand	500-P133GBt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Murine sRANK Ligand	500-P63	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine sRANK Ligand	500-P63Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human sRANK Ligand	500-M46	<i>Mouse</i>	E	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human sRANK Ligand ABTS Catalogue # 900-K142

Murine sRANK Ligand ABTS Catalogue # 900-K233

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human sRANK Ligand ABTS Catalogue # 900-M142

Murine sRANK Ligand ABTS Catalogue # 900-M233

## sRANK Receptor *soluble RANK Receptor*

**Synonyms:** TNFRSF11A, TRANCE Receptor (TNF-Related Activation-induced Cytokine Receptor), ODAR (Osteoclast Differentiation and Activation Receptor), ODFR (Osteoclast Differentiation Factor Receptor), CD265

### RUO Cytokines

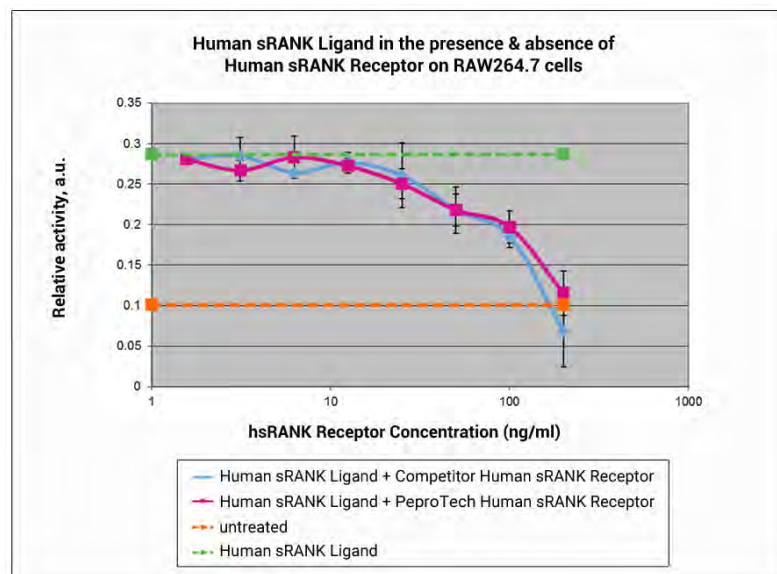
PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sRANK Receptor	310-08	<i>E.coli</i>	19.3 kDa	20µg	100µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human sRANK Receptor	500-P144	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human sRANK Receptor	500-P144Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



## RANTES (CCL5) *Regulation upon Activation Normal T-cell Expressed Sequence*

**Synonyms:** SIS-delta

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human RANTES (CCL5)	300-06	<i>E.coli</i>	7.8 kDa	5µg	20µg	
Murine RANTES (CCL5)	250-07	<i>E.coli</i>	7.8 kDa	5µg	20µg	
Rat RANTES (CCL5)	400-13	<i>E.coli</i>	7.9 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human RANTES (CCL5)	AF-300-06	<i>E.coli</i>	7.8 kDa	5µg	20µg	

*Additional sizes available please inquire*

RANTES Continued on next page ...

## RANTES *Regulation upon Activation Normal T-cell Expressed Sequence (continued)*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human RANTES (CCL5)	500-P36	Rabbit	I, E, WB, N	50µg	100µg	
Biot. Anti-Human RANTES (CCL5)	500-P36Bt	Rabbit	E, WB	25µg	50µg	
Anti-Murine RANTES (CCL5)	500-P118	Rabbit	I, E, WB	50µg	100µg	
Biot. Anti-Murine RANTES (CCL5)	500-P118Bt	Rabbit	E, WB	25µg	50µg	
Anti-Rat RANTES (CCL5)	500-P78	Rabbit	I, E, WB	50µg	100µg	
Biot. Anti-Rat RANTES (CCL5)	500-P78Bt	Rabbit	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size	1mg
Anti-Human RANTES (CCL5)	500-M75	Mouse	I, E, WB, N	500µg	

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

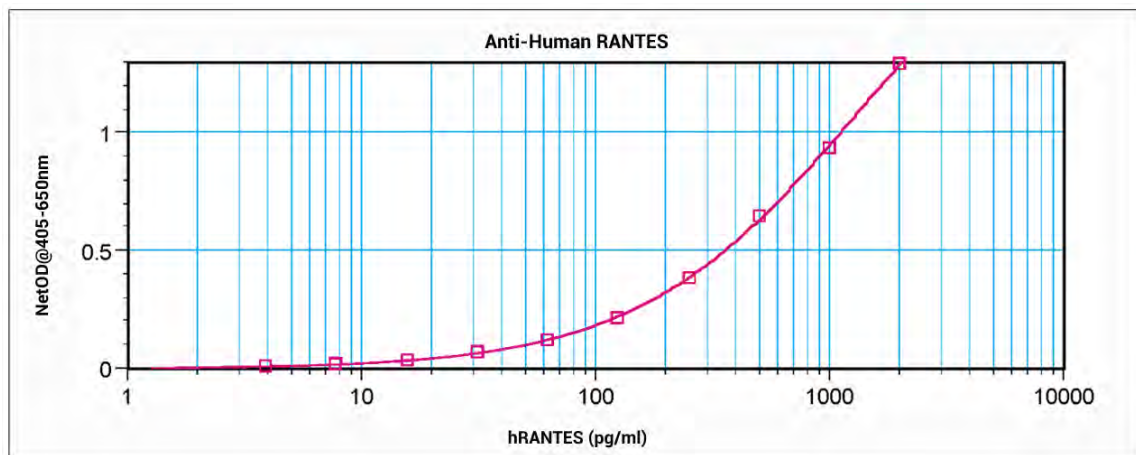
Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human RANTES (CCL5)	ABTS Catalogue # 900-K33
Murine RANTES (CCL5)	ABTS Catalogue # 900-K124
Rat RANTES (CCL5)	ABTS Catalogue # 900-K72

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human RANTES (CCL5)	ABTS Catalogue # 900-M33
Murine RANTES (CCL5)	ABTS Catalogue # 900-M124
Rat RANTES (CCL5)	ABTS Catalogue # 900-M72



## Relaxin-2

**Synonyms:** H2 relaxin, RLN2

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Relaxin-2	130-15	<i>E.coli</i>	6.0 kDa	5µg	25µg	

*Additional sizes available please inquire*

## Relaxin-3

**Synonyms:** H3 relaxin, Insulin-like peptide-7, INSL7

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Relaxin-3	130-10	<i>E.coli</i>	5.5 kDa	5µg	25µg	

*Additional sizes available please inquire*

## RELM $\alpha$ Resistin-like $\alpha$

**Synonyms:** Cysteine-rich secreted protein FIZZ1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Murine RELM $\alpha$	450-26	<i>E.coli</i>	10.0 kDa	5µg	25µg	

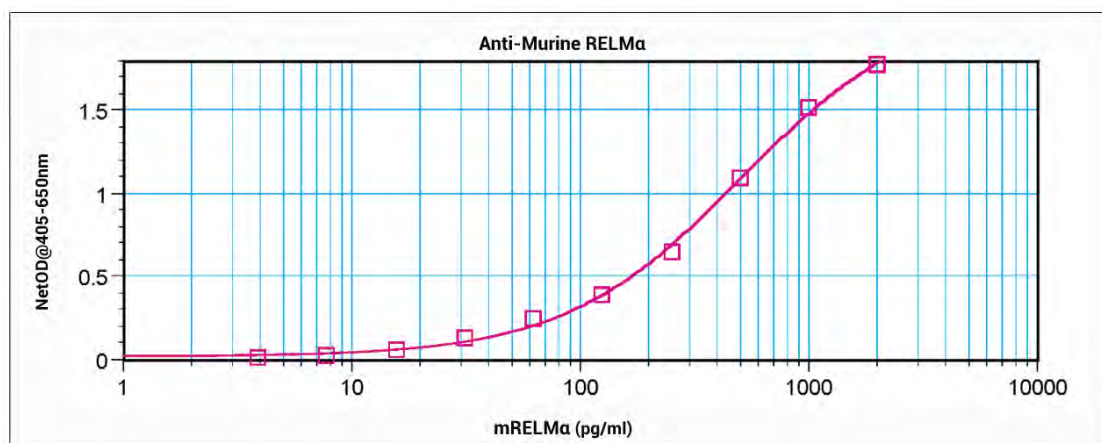
*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Murine RELM $\alpha$	500-P214	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Murine RELM $\alpha$	500-P214Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



**RELM $\beta$**  *Resistin-like  $\beta$* **Synonyms:** Cysteine-rich secreted protein FIZZ2**RUO Cytokines**

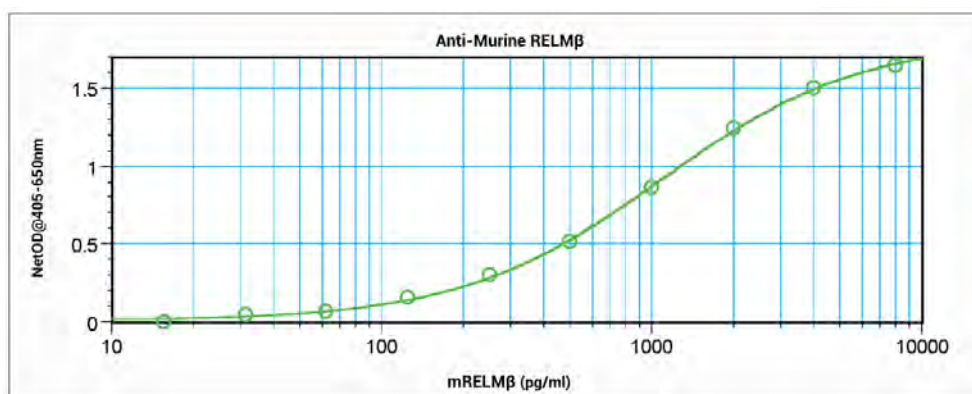
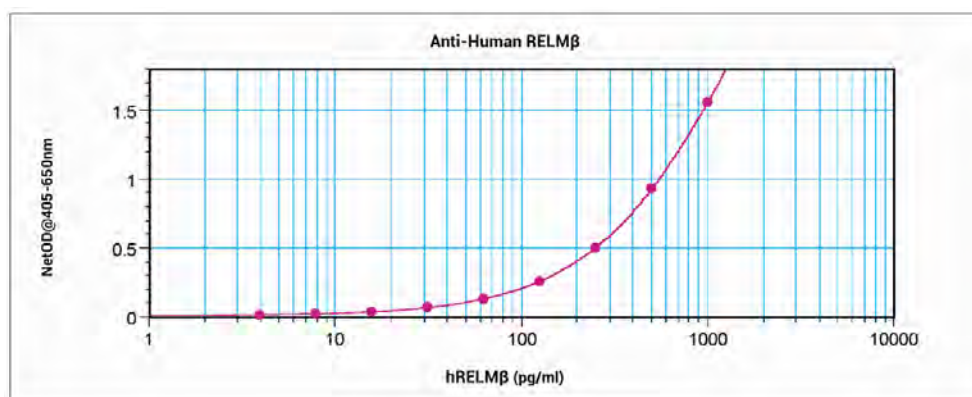
PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human RELM $\beta$	450-22	<i>E.coli</i>	19.0 kDa	5 $\mu$ g	25 $\mu$ g	
Murine RELM $\beta$	450-26B	<i>E.coli</i>	18.0 kDa	5 $\mu$ g	25 $\mu$ g	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human RELM $\beta$	500-P217	<i>Rabbit</i>	I, E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human RELM $\beta$	500-P217Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine RELM $\beta$	500-P215	<i>Rabbit</i>	I, E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine RELM $\beta$	500-P215Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**RELM $\gamma$**  *Resistin-like  $\gamma$* **Synonyms:** None**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Murine RELM $\gamma$	450-26G	<i>E.coli</i>	9.2 kDa	5 $\mu$ g	25 $\mu$ g	

*Additional sizes available please inquire*

## Resistin

**Synonyms:** FIZZ3, Adipose tissue-specific secretory factor, ADSF

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Resistin	450-19	<i>E.coli</i>	19.5 kDa	5µg	25µg	
Murine Resistin	450-28	<i>E.coli</i>	20.2 kDa	5µg	25µg	
Rat Resistin	400-35	<i>E.coli</i>	20.0 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Resistin	500-P183G	<i>Goat</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human Resistin	500-P183GBt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Murine Resistin	500-P182G	<i>Goat</i>	E, WB	50µg	100µg	
Biot. Anti-Murine Resistin	500-P182GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size	1mg
Anti-Human Resistin	500-M91	<i>Mouse</i>	E, WB	500µg	

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human Resistin	ABTS Catalogue # 900-K235
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### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human Resistin	ABTS Catalogue # 900-M235
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## ROR1

**Synonyms:** NTRKR1, Neurotrophic tyrosine kinase, receptor-related 1, Tyrosine-protein kinase transmembrane receptor ROR1, Receptor-tyrosine-kinase-like orphan receptor 1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human ROR1	160-04	<i>CHO cells</i>	42.4 kDa	20µg	100µg	

*Additional sizes available please inquire*

## SCF *Stem Cell Factor*

**Synonyms:** c-Kit Ligand, Mast Cell Growth Factor (MGF), Steel Factor (SF)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human SCF	300-07	<i>E.coli</i>	18.4 kDa	2µg	10µg	
Murine SCF	250-03	<i>E.coli</i>	18.3 kDa	2µg	10µg	
Rat SCF	400-22	<i>E.coli</i>	18.4 kDa	2µg	10µg	

*Additional sizes available please inquire*

\* See page 13 for available Cytokine Packages.

*SCF Continued on next page ...*

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## SCF *Stem Cell Factor* (Continued...)

### PeptoGMP® Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size
PeptoGMP® Human SCF	GMP300-07-50µg	<i>E.coli</i>	18.4 kDa	50µg
PeptoGMP® Human SCF	GMP300-07-100µg	<i>E.coli</i>	18.4 kDa	100µg

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human SCF	AF-300-07	<i>E.coli</i>	18.4 kDa	2µg	10µg	
Murine SCF	AF-250-03	<i>E.coli</i>	18.3 kDa	2µg	10µg	
Rat SCF	AF-400-22	<i>E.coli</i>	18.4 kDa	2µg	10µg	

\* See page 13 for available Cytokine Packages.

Additional sizes available please inquire

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human SCF	500-P48	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human SCF	500-P48Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human SCF	500-P48G	<i>Goat</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human SCF	500-P48GBt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Murine SCF	500-P71	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Murine SCF	500-P71Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Rat SCF	500-P202	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Rat SCF	500-P202Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-human SCF	500-M44	<i>Mouse</i>	I, E, WB	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human SCF	ABTS Catalogue # 900-K34
Human SCF	TMB Catalogue # 900-T34
Murine SCF	ABTS Catalogue # 900-K78
Rat SCF	TMB Catalogue # 900-K258

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human SCF	ABTS Catalogue # 900-M34
Human SCF	TMB Catalogue # 900-TM34
Rat SCF	ABTS Catalogue # 900-M258

## Sclerostin

**Synonyms:** SOST, SOST1, CDD, VBCH, DAND6

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size	1mg
Human Sclerostin	100-49	<i>CHO cells</i>	18.4 kDa	5µg	20µg	



## SCGF- $\alpha$ , - $\beta$ Stem Cell Growth Factor - $\alpha$ , - $\beta$

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human SCGF- $\alpha$	100-22A	<i>E.coli</i>	33.9 kDa	2 $\mu$ g	10 $\mu$ g	
Human SCGF- $\beta$	100-22B	<i>E.coli</i>	25.0 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human SCGF- $\beta$	500-P99G	<i>Goat</i>	E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human SCGF- $\beta$	500-P99GBt	<i>Goat</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## SDF-1 $\alpha$ , $\beta$ (CXCL12) Stromal-Cell Derived Factor-1 $\alpha$ , $\beta$

**Synonyms:** PBSF

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human SDF-1 $\alpha$ (CXCL12)	300-28A	<i>E.coli</i>	8.0 kDa	2 $\mu$ g	10 $\mu$ g	
Murine SDF-1 $\alpha$ (CXCL12)	250-20A	<i>E.coli</i>	7.9 kDa	2 $\mu$ g	10 $\mu$ g	
Rat SDF-1 $\alpha$ (CXCL12)	400-32A	<i>E.coli</i>	7.9 kDa	2 $\mu$ g	10 $\mu$ g	
Human SDF-1 $\beta$ (CXCL12)	300-28B	<i>E.coli</i>	8.5 kDa	2 $\mu$ g	10 $\mu$ g	
Murine SDF-1 $\beta$ (CXCL12)	250-20B	<i>E.coli</i>	8.5 kDa	2 $\mu$ g	10 $\mu$ g	
Rat SDF-1 $\beta$ (CXCL12)	400-32B	<i>E.coli</i>	8.4 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human SDF-1 $\alpha$ (CXCL12)	AF-300-28A	<i>E.coli</i>	8.0 kDa	2 $\mu$ g	10 $\mu$ g	
Human SDF-1 $\beta$ (CXCL12)	AF-300-28B	<i>E.coli</i>	8.5 kDa	2 $\mu$ g	10 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human SDF-1 $\alpha$ (CXCL12)	500-P87A	<i>Rabbit</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human SDF-1 $\alpha$ (CXCL12)	500-P87ABt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine SDF-1 $\alpha$ (CXCL12)	500-P164G	<i>Goat</i>	E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine SDF-1 $\alpha$ (CXCL12)	500-P164GBt	<i>Goat</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Rat SDF-1 $\alpha$ (CXCL12)	500-P315	<i>Rabbit</i>	E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Rat SDF-1 $\alpha$ (CXCL12)	500-P315Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Human SDF-1 $\beta$ (CXCL12)	500-P87BG	<i>Goat</i>	I, E, WB	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human SDF-1 $\beta$ (CXCL12)	500-P87BGBt	<i>Goat</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human SDF-1 $\alpha$  (CXCL12) ABTS Catalogue # 900-K92

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human SDF-1 $\alpha$  (CXCL12) ABTS Catalogue # 900-M92

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**Czech Republic:** Tel: +420 225 992 284 • Fax: +420 225 992 201 • info@peprotech.cz

## Semaphorin 3A

**Synonyms:** SEMA3A, SEMAD

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Semaphorin 3A	150-17	<i>CHO cells</i>	173.2 kDa	5µg	25µg	

*Additional sizes available please inquire*

## SF-20

**Synonyms:** IL-25, Myeloid-derived growth factor (MYDGF)

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Murine SF-20	210-25	<i>E.coli</i>	15.8 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Murine SF-20	500-P259	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Murine SF-20	500-P259Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## Slit2-N

**Synonyms:** Slit homolog 2 protein, SLIL3

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Slit2-N	150-11	<i>HEK293 cells</i>	122.35 kDa	5µg	25µg	

*Additional sizes available please inquire*

## Sonic Hedgehog (Shh)

**Synonyms:** Hhg-1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Sonic Hedgehog (Shh)	100-45	<i>E.coli</i>	20.0 kDa	5µg	25µg	
Murine Sonic Hedgehog (Shh)	315-22	<i>E.coli</i>	20.0 kDa	5µg	25µg	

*Additional sizes available please inquire*

## Sox2

**Synonyms:** Sex determining region Y (SRY)-box 2

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Sox2	110-03	<i>E.coli</i>	34.3 kDa	5µg	25µg	
Human Sox2-TAT	110-03T	<i>E.coli</i>	36.0 kDa	5µg	25µg	

*Additional sizes available please inquire*

## SPARC (Osteonectin) *Secreted Protein Acidic and Rich in Cysteine*

**Synonyms:** BM-40, ON

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human SPARC/Osteonectin	120-36	<i>CHO cells</i>	32.7 kDa	10µg	50µg	

*Additional sizes available please inquire*

## TACI *Transmembrane Activator and CAML Interactor*

**Synonyms:** TNFRSF13B, CD267

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TACI	310-17	<i>E.coli</i>	17.8 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human TACI	500-P166G	<i>Goat</i>	E, WB	50µg	100µg	
Biot. Anti-Human TACI	500-P166GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human TACI ABTS Catalogue # 900-K216

## TAFA-2

**Synonyms:** Chemokine-like protein TAFA-2, FAM19A2

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TAFA-2	300-63	<i>E.coli</i>	11.2 kDa	5µg	20µg	

*Additional sizes available please inquire*

## TARC (CCL17) *Thymus and Activation-Regulated Chemokine*

**Synonyms:** ABCD-2

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TARC (CCL17)	300-30	<i>E.coli</i>	8.0 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human TARC (CCL17)	500-P97	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human TARC (CCL17)	500-P97Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

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**TECK (CCL25)** *Thymus Expressed Chemokine***Synonyms:** None**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TECK (CCL25)	300-45	<i>E.coli</i>	14.2 kDa	5µg	20µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human TECK (CCL25)	500-P134	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human TECK (CCL25)	500-P134Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**Monoclonal Antibodies**

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human TECK (CCL25)	500-M48	<i>Mouse</i>	I, E, WB, N	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**TFF-1, -2, -3** *Trefoil factor-1, -2, -3***Synonyms:** **TFF-1:** pS2 protein, HP1.A, Breast Cancer Estrogen-Inducible protein (BCEI), PNR2  
**TFF-2:** Spasmolytic Polypeptide (SP), Spasmolysin **TFF-3:** Intestinal Trefoil Factor (ITF), TFI**Recombinant Proteins**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TFF-1	300-60	<i>E.coli</i>	6.7 kDa	5µg	20µg	
Human TFF-2	300-59	<i>E.coli</i>	12.0 kDa	5µg	20µg	
Human TFF-3	300-61	<i>E.coli</i>	13.2 kDa	5µg	20µg	
Murine TFF-1	315-31	<i>E.coli</i>	7.4 kDa	5µg	20µg	
Murine TFF-2	315-30	<i>E.coli</i>	11.9 kDa	5µg	20µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human TFF-2	500-P312	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human TFF-2	500-P312Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

**TGF- $\alpha$**  *Transforming Growth Factor  $\alpha$* **Synonyms:** Sarcoma growth factor, TGF-type I, ETGF**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TGF- $\alpha$	100-16A	<i>E.coli</i>	5.5 kDa	20µg	100µg	

*Additional sizes available please inquire***Animal-Free Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TGF- $\alpha$	AF-100-16A	<i>E.coli</i>	5.5 kDa	20µg	100µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human TGF- $\alpha$	500-P16	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human TGF- $\alpha$	500-P16Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## TGF- $\beta_1$ , - $\beta_2$ , - $\beta_3$ Transforming Growth - $\beta_1$ , - $\beta_2$ and - $\beta_3$

**Synonyms:** TGF- $\beta_1$ : Differentiation inhibiting factor, Cartilage-inducing factor

TGF- $\beta_2$ : Glioblastoma-derived T-cell suppressor factor, BSC-1, Cetermin, Polygerin

TGF- $\beta_3$ : none

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TGF- $\beta_1$	100-21	HEK293 cells	25.0 kDa	2 $\mu$ g	10 $\mu$ g	
Human TGF- $\beta_1$	100-21C	CHO cells	25.0 kDa	2 $\mu$ g	10 $\mu$ g	
Human TGF- $\beta_2$	100-35	Insect cells	25.0 kDa	2 $\mu$ g	10 $\mu$ g	
Human TGF- $\beta_2$	100-35B	HEK293 cells	25.0 kDa	2 $\mu$ g	10 $\mu$ g	
Human TGF- $\beta_3$	100-36E	E.coli	25.0 kDa	2 $\mu$ g	10 $\mu$ g	

Additional sizes available please inquire

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TGF- $\beta_1$	AF-100-21C	CHO cells	25.0 kDa	2 $\mu$ g	10 $\mu$ g	
Human TGF- $\beta_3$	AF-100-36E	E.coli	25.0 kDa	2 $\mu$ g	10 $\mu$ g	

Additional sizes available please inquire

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-human TGF- $\beta_1$	500-M66	Mouse	I, E, WB	500 $\mu$ g

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## Thrombomodulin

**Synonyms:** CD141, BDCA-3, THBD, TM

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Thrombomodulin	100-58	HEK293 cells	51.4 kDa	2 $\mu$ g	10 $\mu$ g	

Additional sizes available please inquire

## Thymosin- $\beta_4$

**Synonyms:** T $\beta$ -4, Hematopoietic system regulatory peptide, Seraspenide, TMSB4X, TB4X, TMSB4

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human/Murine/Rat Thymosin- $\beta_4$	140-14	E.coli	5.2 kDa	20 $\mu$ g	100 $\mu$ g	

Additional sizes available please inquire

## TIGAR TP53-Induced Glycolysis and Apoptosis Regulator

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TIGAR	150-14	E.coli	29.9 kDa	5 $\mu$ g	25 $\mu$ g	
Human TIGAR-TAT	150-14T	E.coli	31.6 kDa	5 $\mu$ g	25 $\mu$ g	

Additional sizes available please inquire

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## TIMP-1 *Tissue Inhibitor of Metalloproteinases 1*

**Synonyms:** Fibroblast collagenase inhibitor, Erythroid-potentiating activity

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TIMP-1	410-01	<i>E.coli</i>	20.6 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human TIMP-1	500-P280	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human TIMP-1	500-P280Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

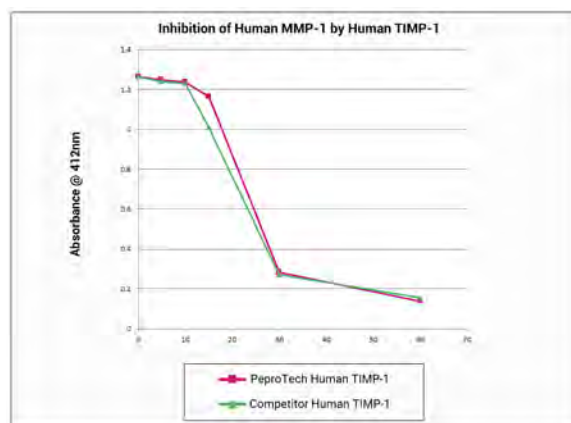
Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human TIMP-1	ABTS Catalogue # 900-K438
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### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human TIMP-1	ABTS Catalogue # 900-M438
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## TIMP-2 *Tissue Inhibitor of Metalloproteinases 2*

**Synonyms:** CSC-21K

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TIMP-2	410-02	<i>E.coli</i>	21.8 kDa	2µg	10µg	

*Additional sizes available please inquire*

## Tissue Factor

**Synonyms:** TF, TF1, Coagulation factor III, factor III, F3, Thromboplastin, CD142

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Tissue Factor	150-19	<i>CHO cells</i>	48.8 kDa	2µg	10µg	

*Additional sizes available please inquire*

## TL-1A

**Synonyms:** TNFSF15, VEGI

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TL-1A	310-23	<i>E.coli</i>	22.0 kDa	5µg	20µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human TL-1A	500-P240	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human TL-1A	500-P240Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

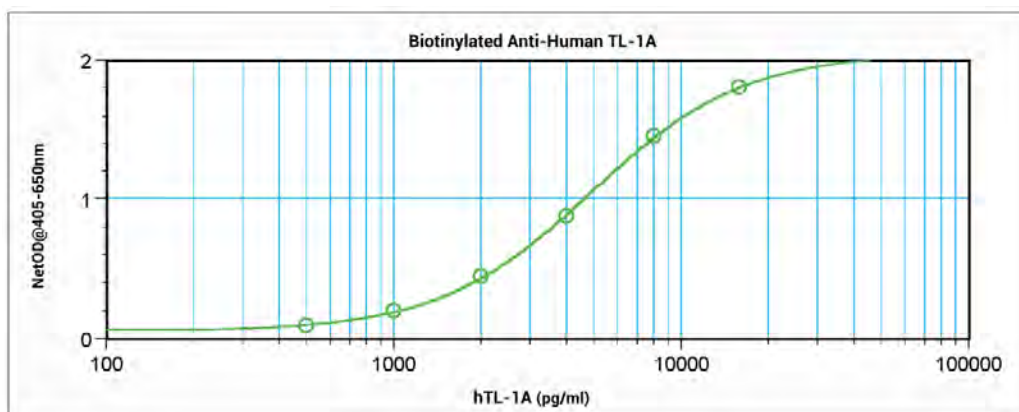
Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human TL-1A ABTS Catalogue # 900-K290

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human TL-1A ABTS Catalogue # 900-M290



## TLR-3 *Toll-Like Receptor 3*

**Synonyms:** CD283 antigen

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TLR-3	160-01	<i>HEK293 cells</i>	77.4 kDa	5µg	25µg	

*Additional sizes available please inquire*

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## TNF- $\alpha$ Tumor Necrosis Factor- $\alpha$

**Synonyms:** TNFSF2, Cachectin, Differentiation-Inducing Factor (DIF), Necrosin, Cytotoxin, TNSF1A

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TNF- $\alpha$	300-01A	<i>E.coli</i>	17.4 kDa	10 $\mu$ g	50 $\mu$ g	
Murine TNF- $\alpha$	315-01A	<i>E.coli</i>	17.3 kDa	5 $\mu$ g	20 $\mu$ g	
Rat TNF- $\alpha$	400-14	<i>E.coli</i>	17.3 kDa	5 $\mu$ g	20 $\mu$ g	

Additional sizes available please inquire

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TNF- $\alpha$	AF-300-01A	<i>E.coli</i>	17.4 kDa	10 $\mu$ g	50 $\mu$ g	
Murine TNF- $\alpha$	AF-315-01A	<i>E.coli</i>	17.3 kDa	5 $\mu$ g	20 $\mu$ g	

Additional sizes available please inquire

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human TNF- $\alpha$	500-P31A	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human TNF- $\alpha$	500-P31ABt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Human TNF- $\alpha$	500-P31AG	<i>Goat</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human TNF- $\alpha$	500-P31AGBt	<i>Goat</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine TNF- $\alpha$	500-P64	<i>Rabbit</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine TNF- $\alpha$	500-P64Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Murine TNF- $\alpha$	500-P64G	<i>Goat</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Murine TNF- $\alpha$	500-P64GBt	<i>Goat</i>	E, WB	25 $\mu$ g	50 $\mu$ g	
Anti-Rat TNF- $\alpha$	500-P72	<i>Rabbit</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Rat TNF- $\alpha$	500-P72Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human TNF- $\alpha$	500-M26	<i>Mouse</i>	I, E, WB, N	500 $\mu$ g

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human TNF- $\alpha$	ABTS Catalogue # 900-K25
Human TNF- $\alpha$	TMB Catalogue # 900-T25
Murine TNF- $\alpha$	ABTS Catalogue # 900-K54
Murine TNF- $\alpha$	TMB Catalogue # 900-T54
Rat TNF- $\alpha$	ABTS Catalogue # 900-K73
Rat TNF- $\alpha$	TMB Catalogue # 900-T73

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human TNF- $\alpha$	ABTS Catalogue # 900-M25
Human TNF- $\alpha$	TMB Catalogue # 900-TM25
Murine TNF- $\alpha$	ABTS Catalogue # 900-M54
Murine TNF- $\alpha$	TMB Catalogue # 900-TM54
Rat TNF- $\alpha$	ABTS Catalogue # 900-M73
Rat TNF- $\alpha$	TMB Catalogue # 900-TM73

## TNF- $\beta$ Tumor Necrosis Factor- $\beta$

**Synonyms:** TNFSF1B, Lymphotoxin-alpha (LT- $\alpha$ )

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TNF- $\beta$	300-01B	<i>E.coli</i>	18.6 kDa	5 $\mu$ g	20 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human TNF- $\beta$	500-P31B	<i>Rabbit</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human TNF- $\beta$	500-P31BBt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## sTNF Receptor Type I soluble Tumor Necrosis Factor Receptor Type I

**Synonyms:** TNFRSF1A, TNFAR, TNFR60, p60, p55, CD120a, TNFR1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sTNF Receptor Type I	310-07	<i>E.coli</i>	18.3 kDa	5 $\mu$ g	20 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human sTNF Receptor Type I	500-P143	<i>Rabbit</i>	E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human sTNF Receptor Type I	500-P143Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## sTNF Receptor Type II soluble Tumor Necrosis Factor Receptor Type II

**Synonyms:** TNFRSF1B, p75, TNFR75, CD120b, TNFR80, p80, TNFR2

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sTNF Receptor Type II	310-12	<i>E.coli</i>	18.9 kDa	5 $\mu$ g	20 $\mu$ g	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human sTNF Receptor Type II	500-P168	<i>Rabbit</i>	I, E, WB, N	50 $\mu$ g	100 $\mu$ g	
Biot. Anti-Human sTNF Receptor Type II	500-P168Bt	<i>Rabbit</i>	E, WB	25 $\mu$ g	50 $\mu$ g	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

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## TPO *Thrombopoietin*

**Synonyms:** Megakaryocyte colony-stimulating factor, c-MPL Ligand, MGDF

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TPO	300-18	<i>E.coli</i>	18.6 kDa	2µg	10µg	
Murine TPO	315-14	<i>E.coli</i>	18.7 kDa	2µg	10µg	
Rat TPO	400-34	<i>E.coli</i>	18.7 kDa	2µg	10µg	

\* See page 13 for available Cytokine Packages.

Additional sizes available please inquire

### PeptoGMP® Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size
PeptoGMP® Human TPO	GMP300-18-50µg	<i>E.coli</i>	18.6 kDa	50µg
PeptoGMP® Human TPO	GMP300-18-100µg	<i>E.coli</i>	18.6 kDa	100µg

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TPO	AF-300-18	<i>E.coli</i>	18.6 kDa	2µg	10µg	
Murine TPO	AF-315-14	<i>E.coli</i>	18.7 kDa	2µg	10µg	
Rat TPO	AF-400-34	<i>E.coli</i>	18.7 kDa	2µg	10µg	

\* See page 13 for available Cytokine Packages.

Additional sizes available please inquire

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human TPO	500-P49	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human TPO	500-P49Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human TPO	500-P49G	<i>Goat</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human TPO	500-P49GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human TPO	ABTS Catalogue # 900-K44
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### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

Human TPO	ABTS Catalogue # 900-M44
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## sTRAIL/Apo2L *TNF-Related Apoptosis-Inducing Ligand*

**Synonyms:** TNFSF10, Apo2 ligand, TL2, CD253

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sTRAIL/Apo2L	310-04	<i>E.coli</i>	19.6 kDa	10µg	50µg	
Murine TRAIL	315-19	<i>E.coli</i>	20.0 kDa	10µg	50µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human sTRAIL/Apo2L	500-P135	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human sTRAIL/Apo2L	500-P135Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Murine TRAIL	500-P303	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Murine TRAIL	500-P303Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

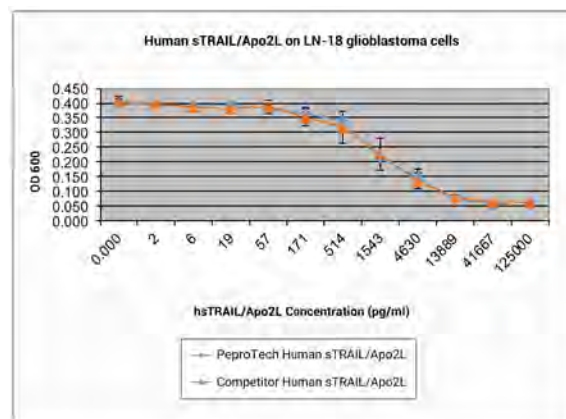
PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-human sTRAIL/Apo2L	500-M49	<i>Mouse</i>	E, WB, N	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human sTRAIL/Apo2L	ABTS Catalogue # 900-K141
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## sTRAIL Receptor-1 *soluble TRAIL Receptor-1*

**Synonyms:** TNFRSF10A, DR4, Apo2, CD261

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sTRAIL Receptor-1	310-18	<i>E.coli</i>	22.7 kDa	10µg	50µg	

*Additional sizes available please inquire*

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## sTRAIL Receptor-2 *soluble TRAIL Receptor-2*

**Synonyms:** TNFRSF10B, DR5, KILLER, TRICK2A, TRICKB, CD262

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human sTRAIL Receptor-2	310-19	<i>E.coli</i>	14.9 kDa	10µg	50µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human sTRAIL Receptor-2	500-P299	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human sTRAIL Receptor-2	500-P299Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## TREM-1 Fc *Triggering receptor expressed on monocytes 1*

**Synonyms:** CD354

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TREM-1 Fc	310-36	<i>CHO cells</i>	92.6 kDa	10µg	50µg	

*Additional sizes available please inquire*

## TSG *Twisted Gastrulation Protein*

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TSG	120-09	<i>E.coli</i>	22.2 kDa	10µg	50µg	

*Additional sizes available please inquire*

## TSLP *Thymic Stromal Lymphopoietin*

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TSLP	300-62	<i>E.coli</i>	15.0 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human TSLP	500-P258	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human TSLP	500-P258Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human TSLP	ABTS Catalogue # 900-K334
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## TWEAK *TNF-related Weak Inducer of Apoptosis*

**Synonyms:** TNFSF12, DR3LG, Apo3 Ligand

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TWEAK	310-06	<i>E.coli</i>	17.0 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TWEAK	AF-310-06	<i>E.coli</i>	17.0 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human TWEAK	500-P137G	<i>Goat</i>	E, WB, N	50µg	100µg	
Biot. Anti-Human TWEAK	500-P137GBt	<i>Goat</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

**Key:** I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human TWEAK	ABTS Catalogue # 900-K149
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T-U

## TWEAK Receptor *TNF-related Weak Inducer of Apoptosis Receptor*

**Synonyms:** TNFRSF12A, FGF-inducible 14, FN14

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human TWEAK Receptor	310-21	<i>E.coli</i>	5.6 kDa	5µg	25µg	

*Additional sizes available please inquire*

## Uteroglobulin

**Synonyms:** Clara Cell Phospholipid-Binding Protein, CCPBP, Clara Cells 10 kDa secretory protein, CC10, Secretoglobin family 1A member 1, Urinary protein 1, UP-1, UP, Urine protein 1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Uteroglobulin	150-18	<i>E.coli</i>	16.1 kDa	10µg	50µg	

*Additional sizes available please inquire*

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## VAP-1 *Vascular Adhesion Protein-1*

**Synonyms:** AOC3, SSAO, HPAO, Copper Amine Oxidase, Membrane Primary Amine Oxidase

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human VAP-1	150-16	<i>CHO cells</i>	81.8 kDa	2µg	10µg	

*Additional sizes available please inquire*

## Vaspin

**Synonyms:** Visceral adipose tissue-derived serpin

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Vaspin	130-11	<i>E.coli</i>	45.2 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Vaspin	500-P256	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human Vaspin	500-P256Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## VCAM-1 *Vascular Cell Adhesion Molecule 1*

**Synonyms:** CD106, INCAM-100, MGC108734, MGC99561, VCAM, VCAM1, VCAM1B, VECAM1

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human VCAM-1	150-04	<i>HEK293 cells</i>	74.1 kDa	10µg	50µg	

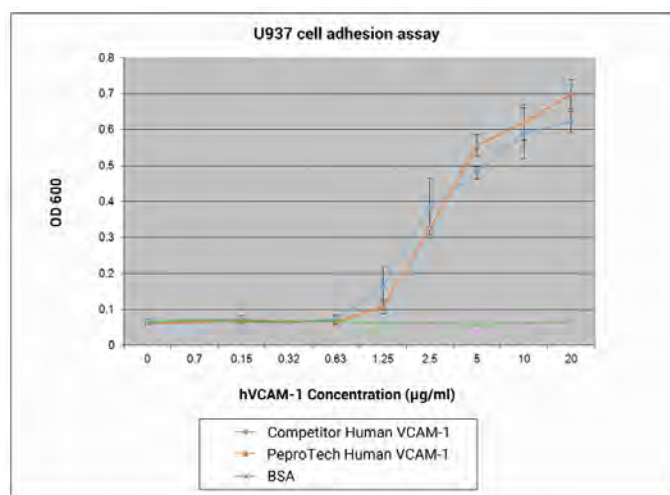
*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human VCAM-1	500-P300	<i>Rabbit</i>	E, WB	50µg	100µg	
Biot. Anti-Human VCAM-1	500-P300Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization





## VEGF *Vascular Endothelial Growth Factor*

**Synonyms:** VEGF<sub>121</sub>: Vascular Endothelial Growth Factor 121, VPF, VEGF-A; VEGF<sub>165</sub>: Vascular Endothelial Growth Factor 165, VPF, Folliculostellate cell-derived growth factor, Glioma-derived endothelial cell mitogen, VEGF-A

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human VEGF <sub>121</sub>	100-20A	<i>E.coli</i>	28.4 kDa	2µg	10µg	
Human VEGF <sub>165</sub>	100-20	<i>E.coli</i>	38.2 kDa	2µg	10µg	
Murine VEGF <sub>165</sub>	450-32	<i>E.coli</i>	39.0 kDa	2µg	10µg	
Rat VEGF <sub>165</sub>	400-31	<i>E.coli</i>	38.5 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human VEGF <sub>121</sub>	AF-100-20A	<i>E.coli</i>	28.4 kDa	2µg	10µg	
Human VEGF <sub>165</sub>	AF-100-20	<i>E.coli</i>	38.2 kDa	2µg	10µg	
Murine VEGF <sub>165</sub>	AF-450-32	<i>E.coli</i>	39.0 kDa	2µg	10µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human VEGF <sub>165</sub>	500-P10	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human VEGF <sub>165</sub>	500-P10Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Human VEGF <sub>165</sub>	500-P10G	<i>Goat</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Human VEGF <sub>165</sub>	500-P10GBt	<i>Goat</i>	E, WB	25µg	50µg	
Anti-Murine VEGF <sub>165</sub>	500-P131	<i>Rabbit</i>	I, E, WB, N	50µg	100µg	
Biot. Anti-Murine VEGF <sub>165</sub>	500-P131Bt	<i>Rabbit</i>	E, WB	25µg	50µg	
Anti-Rat VEGF <sub>165</sub>	500-P275	<i>Rabbit</i>	E, WB, N	50µg	100µg	
Biot. Anti-Rat VEGF <sub>165</sub>	500-P275Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Monoclonal Antibodies

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size
Anti-Human VEGF <sub>165</sub>	500-M88	<i>Mouse</i>	E, WB	500µg

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

### Standard ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 1000 ELISA plate wells.

Human VEGF <sub>165</sub>	ABTS Catalogue # 900-K10
Human VEGF <sub>165</sub>	TMB Catalogue # 900-T10
Murine VEGF <sub>165</sub>	ABTS Catalogue # 900-K99
Rat VEGF <sub>165</sub>	ABTS Catalogue # 900-K436

### Mini ELISA Development Kits

Each kit contains: capture antibody, detection antibody, calibrated standard, and HRP Conjugate, sufficient to assay the target cytokine in at least 200 ELISA plate wells.

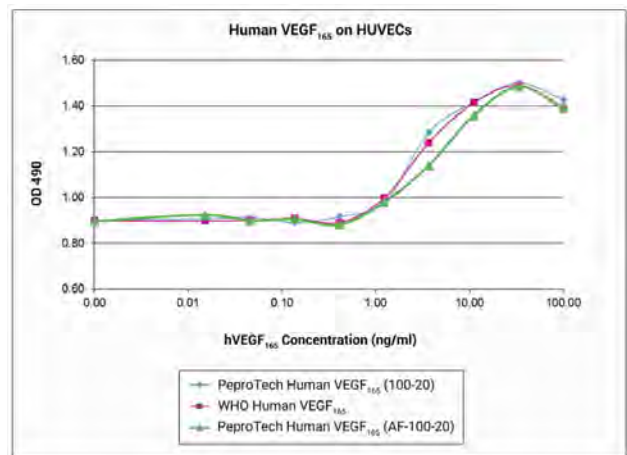
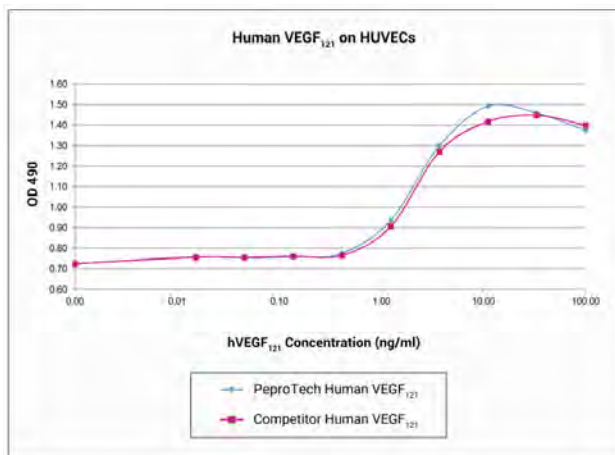
Human VEGF <sub>165</sub>	ABTS Catalogue # 900-M10
Human VEGF <sub>165</sub>	TMB Catalogue # 900-TM10
Murine VEGF <sub>165</sub>	ABTS Catalogue # 900-M99
Rat VEGF <sub>165</sub>	ABTS Catalogue # 900-M436

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## VEGF *Vascular Endothelial Growth Factor (Continued)*



## VEGF-B *Vascular Endothelial Growth Factor-B*

**Synonyms:** VEGF-related factor, VRF

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human VEGF-B	100-20B	<i>E.coli</i>	38.0 kDa	5µg	20µg	

*Additional sizes available please inquire*

## VEGF-C *Vascular Endothelial Growth Factor-C*

**Synonyms:** VRF, Flt4-Ligand

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human VEGF-C	100-20C	<i>HEK293 cells</i>	27.0 kDa	5µg	20µg	

*Additional sizes available please inquire*

## VEGF-D *Vascular Endothelial Growth Factor-D*

**Synonyms:** FIGF

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human VEGF-D	100-20D	<i>HEK293 cells</i>	26.2 kDa	2µg	10µg	

*Additional sizes available please inquire*

## Vimentin

**Synonyms:** Vim

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Vimentin	110-10	<i>E.coli</i>	54.3 kDa	20µg	100µg	

*Additional sizes available please inquire*

## Visfatin

**Synonyms:** PBEF (Pre-B-cell colony-enhancing factor), NAMPTase (nicotinamide phosphoribosyltransferase), Nampt, VF

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Visfatin	130-09	<i>E.coli</i>	52.6 kDa	5µg	25µg	

*Additional sizes available please inquire*

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human Visfatin	500-P222	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human Visfatin	500-P222Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

## Vitronectin

**Synonyms:** VTN, Serum-spreading factor, V75

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Vitronectin	140-09	<i>HEK293 cells</i>	52.2 kDa	100µg	500µg	

*Additional sizes available please inquire*

### Animal-Free Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human Vitronectin	AF-140-09	<i>HEK293 cells</i>	52.2 kDa	100µg	500µg	

*Additional sizes available please inquire*

**WISP-1** *WNT-1 Inducible Signaling Pathway protein-1***Synonyms:** CCN4, Wnt-1-induced secreted protein**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human WISP-1	120-18	<i>E.coli</i>	38.1 kDa	5µg	20µg	

*Additional sizes available please inquire***WISP-3** *WNT-1 Inducible Signaling Pathway protein-3***Synonyms:** CCN6**RUO Cytokines**

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human WISP-3	120-20	<i>E.coli</i>	36.8 kDa	5µg	20µg	

*Additional sizes available please inquire***WNT-1****Synonyms:** INT-1, Wnt-1 proto-oncogene protein (precursor)**RUO Cytokines**

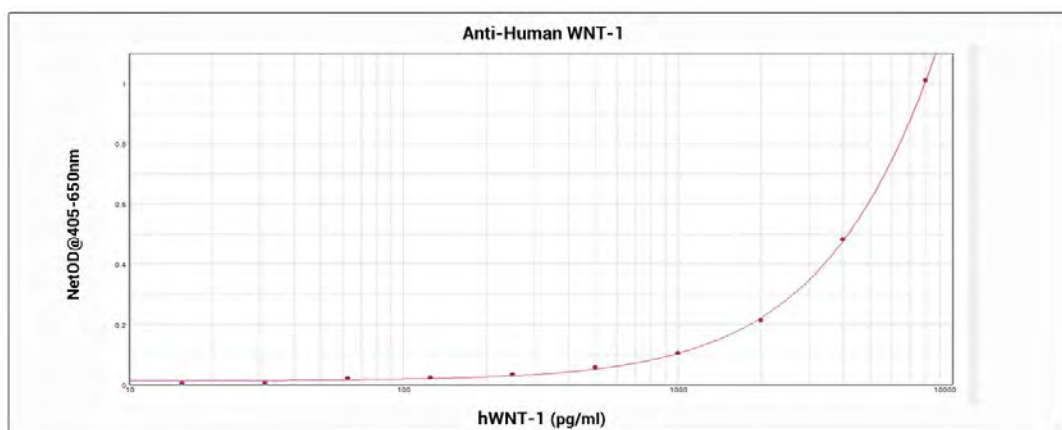
PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human WNT-1	120-17	<i>E.coli</i>	38.4 kDa	2µg	10µg	

*Additional sizes available please inquire***Polyclonal Antibodies** - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human WNT-1	500-P250	<i>Rabbit</i>	I, E, WB	50µg	100µg	
Biot. Anti-Human WNT-1	500-P250Bt	<i>Rabbit</i>	E, WB	25µg	50µg	

Biot. = Biotinylated

Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization



## WNT-3a

**Synonyms:** Wingless-type MMTV (Mouse Mammary Tumor Virus) integration site family member 3a

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human WNT-3a	120-27	cell culture	37.4 kDa	2µg	10µg	
Murine WNT-3a	315-20	cell culture	37.4 kDa	2µg	10µg	

### Polyclonal Antibodies - Antigen Affinity Purified

PRODUCT	CATALOGUE #	SOURCE	APPLICATIONS	Size A	Size B	1mg
Anti-Human WNT-3a	500-P251	Rabbit	I, E, WB	50µg	100µg	
Biot. Anti-Human WNT-3a	500-P251Bt	Rabbit	E, WB	25µg	50µg	

Biot. = Biotinylated Key: I = IHC, E = ELISA, WB = Western blot, N = Neutralization

## WNT-7a

**Synonyms:** None

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human WNT-7a	120-31	HEK293 cells	35.5 kDa	3µg	15µg	

*Additional sizes available please inquire*

## WNT-9b

**Synonyms:** WNT15, WNT14B, UNQ6973/PRO21956

### RUO Cytokines

PRODUCT	CATALOGUE #	SOURCE	MW	Size A	Size B	1mg
Human WNT-9b	120-49	CHO cells	36.9 kDa	5µg	20µg	

*Additional sizes available please inquire*

## Control Antibodies

PRODUCT	CATALOGUE #	Size
Normal Goat IgG	500-G00	1mg
Normal Mouse IgG	500-M00	1mg
Normal Rabbit IgG	500-P00	500µg

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# Chemokine Nomenclature

Systematic Name	Functional Name(s) (mouse protein)	Responding Cell Type(s) (mouse protein)	Known Receptor(s)
<b>CXC Chemokines</b>			
CXCL1	GRO1, GRO- $\alpha$ , MGSA, NAP-3 (KC)	PMN	CXCR1, CXCR2
CXCL2	GRO2, GRO- $\beta$ , MIP2- $\alpha$ (MIP-2)	PMN	CXCR1, CXCR2
CXCL3	GRO3, GRO- $\gamma$ , MIP2- $\beta$ (DCIP-1)	PMN	CXCR2
CXCL4	PF-4, Oncostatin-A	PMN, Mo	CXCR3B
CXCL5	ENA-78	PMN	CXCR2
CXCL6	GCP-2, CKA-3 (LIX)	PMN	CXCR1, CXCR2
CXCL7	NAP-2, PBP, LDGF, MDGF	PMN	CXCR1, CXCR2
CXCL8	IL-8, GCP-1, NAP-1	PMN, Bs	CXCR1, CXCR2
CXCL9	MIG	actT [Th1], NK	CXCR3
CXCL10	IP-10 (CRG-2)	Mo, actT [Th1], NK	CXCR3
CXCL11	I-TAC, IP-9	actT [Th1], NK	CXCR3, CXCR7
CXCL12	SDF-1, SDF-1 $\alpha/\beta$ , PBSF	All cell types	CXCR4, CXCR7
CXCL13	BCA-1, BLC	B, (Mo)	CXCR5
CXCL14	BRAK, MIP-2G	PMN, mDC (B, Mo)	unknown
CXCL15	(Lungkine)	PMN	unknown
CXCL16	SR-PSOX	actT	CXCR6
CXCL17	VEGF co-regulated chemokine 1, DMC	Mo, iDC	unknown
<b>C Chemokines</b>			
XCL1	Lymphotactin, ATAC, SCM-1	Tr	XCR1
XCL2	SCM-1 $\beta$	Tr	XCR1
<b>CX3C Chemokines</b>			
CX3CL1	Fractalkine, Neurotactin, CX3C	Mo, actT, NK	CX3CR1
<b>CC Chemokines</b>			
CCL1	I-309 (TCA-3)	iDC, actT [Th2], Mo (PMN)	CCR8
CCL2	MCP-1, MCAF, JE	Bs, Mo, actT, NK, iDC	CCR2, CCR4
CCL3	MIP-1 $\alpha$ , LD78 $\alpha$	Eo, Mo, actT, NK, iDC (PMN)	CCR1, CCR4, CCR5
CCL3L1	LD78 $\beta$	Mo, actT, B	CCR1, CCR3, CCR5
CCL4	MIP-1 $\beta$ , LAG-1	Mo, actT [Th1], NK, iDC	CCR5
CCL4L1	LAG-1 gene duplication	Mo	CCR1, CCR5
CCL5	RANTES	Eo, Bs, Mo, actT, NK, iDC, Tm	CCR1, CCR3, CCR4, CCR5
CCL6	(C-10)	Mo	CCR1
CCL7	MCP-3 (FIC)	Eo, Bs, Mo, actT, NK, iDC	CCR1, CCR2, CCR3
CCL8	MCP-2	Eo, Bs, Mo, actT, NK, iDC	CCR1, CCR2B, CCR3, CCR5
CCL9/10	(MIP-1 $\gamma$ , MRP-2)	PMN, actT	CCR1
CCL11	Eotaxin	Eo, Bs, actT [Th2], iDC	CCR3
CCL12	(MCP-5)	Eo, Bs, Mo, actT, NK, iDC	CCR2
CCL13	MCP-4, CK $\beta$ -10	Eo, Bs, Mo, actT, NK, iDC	CCR1, CCR2, CCR3
CCL14	HCC-1	Eo, Mo, T	CCR1, CCR3, CCR5
CCL15	MIP-5, MIP-1 $\delta$ , HCC-2, LKN-1	Mo, T	CCR1, CCR3
CCL16	LEC, HCC-4	Mo, actT [Th1]	CCR1
CCL17	TARC (ABCD-2)	actT [Th2]	CCR4
CCL18	MIP-4, DC-CK1, PARC, AMAC-1	Tr, iDC	unknown
CCL19	MIP-3 $\beta$ , ELC, Exodus-3, CK $\beta$ -11	Tr, actT, mDC	CCR7
CCL20	MIP-3 $\alpha$ , LARC, Exodus-1	Tm, B, iDC, PMN	CCR6
CCL21	Exodus-2, 6Ckine, SLC	Tr, actT, mDC	CCR7
CCL22	MDC, STCP-1 (ABCD-1)	Mo, actT [Th2], NK, iDC	CCR4
CCL23	MIP-3, MPIF-1, CK $\beta$ -8	PMN, Mo, Tr	CCR1
CCL24	Eotaxin-2, MPIF-2, CK $\beta$ -6	Eo, Bs, actT [Th2], iDC, PMN, Tr	CCR3
CCL25	TECK	Thymocytes, Tr, iDC	CCR9
CCL26	MIP-4 $\alpha$ , Eotaxin-3	Eo, Bs, actT [Th2], iDC	CCR3
CCL27	CTACK, ILC, Eskine	actT	CCR10
CCL28	MEC	actT, Tr, Eo	CCR3, CCR10

KEY
Tm = memory T cells
B = B-cells
actT = activated T cell
Bs = Basophil
Tr = resting T cell
T = T cells
Eo = Eosinophil
NK = Natural Killer cells
Mo = monocyte
PMN = neutrophils
mDC = mature dendritic cells
iDC = immature dendritic cells

# TNF Nomenclature

## TNF Superfamily – Ligands

Nomenclature Name	Functional Names
TNFSF1	TNF- $\beta$ , Lymphotoxin- $\alpha$ (LT- $\alpha$ ), TNFSF1
TNFSF2	TNF- $\alpha$ , Cachectin, DIF, Necrosin, Cytotoxin, TNFSF1A
TNFSF3	Lymphotoxin- $\beta$ (LT- $\beta$ ), TNF-C
TNFSF4	OX40 Ligand (OX40L), Gp34, TXGP1, CD252
TNFSF5	CD40 Ligand (CD40L), TRAP, Gp39, CD154, T-BAM
TNFSF6	Fas Ligand (FasL), APTL, APT1LG1, CD95L, CD178
TNFSF7	CD70, CD27 Ligand (CD27L, CD27LG)
TNFSF8	CD30 Ligand (CD30L, CD30LG), CD153
TNFSF9	4-1BB Ligand (4-1BBL), CD137L
TNFSF10	TRAIL, Apo2 Ligand (Apo2L), CD253
TNFSF11	RANK Ligand (RANKL), TRANCE, OPGL, ODF, CD254
TNFSF12	TWEAK, Apo3 Ligand (Apo3L), DR3LG
TNFSF13	APRIL, TALL-2, TRDL-1, CD256
TNFSF13B	BAFF, BlyS, TALL-1, CD257, TNFSF20, THANK, ZTNF4
TNFSF14	LIGHT, HVEM-Ligand (HVEM-L), CD258
TNFSF15	TL1A, TL1, VEGI
TNFSF18	AITR Ligand (AITRL), TL-6, GITR Ligand (GITRL)

## TNF Superfamily – Receptors

Nomenclature Name	Functional Names
TNFRSF1A	TNF Receptor Type I (TNFR1), CD120a, p55, p60, TNFAR
TNFRSF1B	TNF Receptor Type II (TNFR2), CD120b, p75, p80
TNFRSF3	TNF Receptor Type III (TNFR3), Lymphotoxin- $\beta$ Receptor, TNFR2-RP, TNFCR
TNFRSF4	OX40L Receptor, ACT35, TXGP1R, CD134
TNFRSF5	Bp50, CD40L Receptor, CDw40, CD40
TNFRSF6	FASLG Receptor, CD95, Apo-1
TNFRSF6B	DcR3, M68
TNFRSF7	CD27, CD27L Receptor, T14
TNFRSF8	CD30, CD30L Receptor, Ki-1
TNFRSF9	4-1BBL Receptor, CDw137, CD137, T-cell antigen ILA
TNFRSF10A	DR4, Apo2, TRAIL Receptor 1 (TRAILR1), CD261
TNFRSF10B	DR5, TRAIL Receptor 2 (TRAILR2), CD262, KILLER, TRICK2A, TRICKB
TNFRSF10C	DcR1, TRAIL Receptor 3 (TRAILR3), CD263
TNFRSF10D	DcR2, TRAIL Receptor 4 (TRAILR4), CD264
TNFRSF11A	RANK Receptor (RANKR), ODFR, CD265, ODAR, TRANCE
TNFRSF11B	Osteoprotegerin (OPG), OCIF, TR1
TNFRSF12	DR3, TNFRSF25, Apo3, AIR, TRAMP, LARD, WSL, WSL-1
TNFRSF13B	TACI, CD267
TNFRSF13C	BAFF Receptor (BAFFR), CD268, BlyS Receptor 3
TNFRSF14	HVEM, TR2, HveA, CD270, ATAR
TNFRSF16	NGF Receptor (NGFR), Gp80-LNGFR, p75NTR, p75 ICD, CD271
TNFRSF17	BCMA, CD269
TNFRSF18	AITR, GITR, CD357
TNFRSF19	TRADE
TNFRSF19L	RELT
TNFRSF21	DR6, CD358
TNFRSF22	SOBa, TNFRH2
TNFRSF23	SOB, TNFRH1



# FGF Family

Fibroblast Growth Factors	MW-Secreted form (mouse)	Estimated pI (mouse)	Target Cells (Partial list)	Receptors	Functions (Partial list)
<b>FGF1 (Acidic FGF)</b> Heparin-Binding Growth Factor-1 (HBGF-1) ECGF-beta (Endothelial Cell Growth Factor-beta)	15.8 kDa (15.7 kDa)	7.99 (7.88)	mesenchymal, neuroectodermal endothelial cells	all FGF receptors	Angiogenic <i>in vivo</i> , mitogenic <i>in vitro</i> , wound healing
<b>FGF2 (Basic FGF)</b> Heparin-Binding Growth Factor-2 (HBGF-2) Prostatropin	17.2 kDa (17.1 kDa)	10.03 (9.59)	mesenchymal, neuroectodermal endothelial cells	1b, 1c, 2c, 3c, 4	Vasculogenesis, wound healing, angiogenesis, hematopoiesis, neuron survival
<b>FGF3</b> int-2	24.9 kDa (25.2 kDa)	10.98 (10.84)	epithelial cells that express FGF receptor 2b	2b	Mesoderm induction, angiogenesis, inner ear development
<b>FGF4</b> Heparin Secretory Transforming protein (HST-1) Transforming protein KS3 Heparin-Binding Growth Factor-4 (HBGF-4)	19.7 kDa (18.9 kDa)	10.22 (10.24)	cells that express FGF receptors	1c, 2c, 3c, 4	Angiogenesis, vertebrate limb development and development of stomach cancer
<b>FGF5</b> Heparin-Binding Growth Factor-5 (HBGF-5) Smag-82	27.6 kDa (27.1 kDa)	11.1 (10.50)	cells that express FGF receptors	1c, 2c	Hair growth and development
<b>FGF6</b> Heparin-Binding Growth Factor-6 (HBGF-6) HST-2	18.7 kDa (18.9 kDa)	10.09 (9.80)	cells that express FGF receptors	1c, 2c, 4	Skeletal muscle development
<b>FGF7/KGF</b> (Keratinocyte Growth Factor) Heparin-Binding Growth Factor-7 (HBGF-7)	18.9 kDa (18.8 kDa)	9.55 (9.22)	keratinocytes and epithelial cells that express FGF receptor 2b	2b	Keratinocyte growth factor, kidney and lung development, angiogenesis and wound healing
<b>FGF8</b> Androgen-Induced Growth Factor (AIGF), Heparin-Binding Growth Factor-8 (HBGF-8)	22.4 kDa (28.0 kDa)	10.95 (10.46)	mammary carcinoma cells and other cells that express FGF receptors	2c, 3c, 4 (possibly 1c)	Limb, central nervous system, cardiac outflow tract development
<b>FGF9</b> Glia Activating Factor (GAF) Heparin-Binding Growth Factor-9 (HBGF-9)	23.4 kDa (23.3 kDa)	7.44 (7.44)	glial cells, astrocyte cells and other cells that express FGF receptors	1c, 2c, 3b, 3c, 4	Glia-activating factor, motor neuron survival, lung and testes development
<b>FGF10</b> FGFA Keratinocyte growth factor-2	19.3 kDa (19.5 kDa)	10.49 (9.76)	epithelial cells that express FGF receptor 2b	2b	Wound healing, multi-organ including limb and lung development
<b>FGF11</b> FGFB Fibroblast growth factor Homologous Factor-3 (FHF-3)	25.0 kDa (25.1 kDa)	9.92 (10.06)	nuclear processes unrelated to the secreted FGFs	none	Appears to be involved in nervous system development and function
<b>FGF12</b> FGFC Fibroblast growth factor Homologous Factor-1 (FHF-1)	27.4 kDa (27.3 kDa)	9.98 (9.98)	nuclear processes unrelated to the secreted FGFs	none	Appears to be involved in nervous system development and function
<b>FGF13</b> FGFD Fibroblast growth factor Homologous Factor-2 (FHF-2)	27.5 kDa (27.6 kDa)	9.92 (9.92)	nuclear processes unrelated to the secreted FGFs	none	Appears to be involved in nervous system development and function
<b>FGF14</b> FGFE Fibroblast growth factor Homologous Factor-4 (FHF-4)	27.7 kDa (27.7 kDa)	10.11 (10.11)	nuclear processes unrelated to the secreted FGFs	none	Regulates central nervous system development and function
<b>FGF15</b> FGFF, identified in mouse not human	(22.5 kDa)	(5.76)	cells that express FGF receptor 4	4	Regulator of cell division and patterning in specific regions of embryonic brain, spinal cord and sensory organs
<b>FGF16</b> FGFG	23.7 kDa (23.7 kDa)	9.52 (9.36)	cells that express FGF receptors	2c, 3c	Central nervous system development
<b>FGF17</b> FGFH	22.7 kDa (22.5 kDa)	11.22 (10.71)	cells that express FGF receptors	1c, 2c, 3c, 4	Signals induction and patterning of embryonic brain
<b>FGF18</b> zFGF5 FGFI	20.1 kDa (20.9 kDa)	10.67 (10.09)	cells that express FGF receptors	1c, 2c, 3c, 4	An essential regulator of long bone and calvarial development
<b>FGF19</b> FGFJ, identified in human not mouse	21.8 kDa	6.32	cells that express FGF receptor 4	4	Expressed during brain development and during embryogenesis, regulates multiple metabolic processes in adulthood
<b>FGF20</b> FGFK	23.2 kDa (23.6 kDa)	9.22 (8.54)	epithelial and mesenchymal cells	1c, 2c, 3c	Expressed during limb and brain development
<b>FGF21</b> FGFL	19.4 kDa (19.9 kDa)	5.29 (4.59)	unknown at the time of printing	unknown at the time of printing	Expressed in liver and thymus, may play a role in Type 2 Diabetes
<b>FGF22</b> FGFM	17.1 kDa (16.5 kDa)	11.71 (11.58)	hair follicle keratinocytes	unknown at the time of printing	May be involved in cutaneous develop- ment and repair, and hair development
<b>FGF23</b> FGFN	25.3 kDa (25.3 kDa)	8.95 (9.64)	renal proxima epithelial cells	3c	Expressed in brain and thymus, regulates phosphate homeostasis, mutant in hypophosphatemic rickets, regulates multiple metabolic processes in adulthood

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# Neurotrophin/Neurotrophic Cytokines

Functional Name	Synonyms	Main Neurotrophic Functions (Partial List)	Disease/Disorder Relation (Partial List)	Receptors
<b>β-NGF</b> (beta-Nerve Growth Factor)	NGF-β	Supports survival and maintenance of neurons in the sensory and sympathetic nervous systems	Alzheimer's, Parkinson's, diabetic peripheral neuropathy, cardiovascular diseases	LNGFR, gp140/trk, p75NTR
<b>BDNF</b> (Brain Derived Neurotrophic Factor)	Abrineurin	Supports survival and maintenance of neurons in the central nervous system and peripheral nervous systems	Parkinson's, diabetic peripheral neuropathy, ALS, Huntington's	LNGFR, gp145/trkB, p75NTR
<b>NNT-1/BCSF-3</b> (Novel Neurotrophin-1/ B-Cell Stimulating Factor-3)	Cardiotrophin-like cytokine (CLCF1)	Supports survival of motor and sympathetic neurons in chick embryos	Multifocal neuronal hypoplasia, neurodegenerative eye diseases (glaucoma), CISS (cold-induced sweating syndrome)	LIFR-β, gp130
<b>NT-3</b> (Neurotrophin-3)	NGF-2, HGNF	Promotes growth and survival of new and existing neurons	Diabetic peripheral neuropathy, periodontal diseases	Trk, TrkB, TrkC, p75NTR
<b>NT-4</b> (Neurotrophin-4)	NT-4/NT-5	Promotes survival of peripheral sensory sympathetic neurons	Huntington's, glaucoma	TrkB, p75NTR
<b>GDNF</b> (Glial-Derived Neurotrophic Factor)	ATF-1	Promotes dopamine uptake, survival and morphological differentiation of midbrain neurons	Parkinson's, ALS, Huntington's	RET/GFR1α-4α
<b>MANF</b> (Mesencephalic Astrocyte-Derived Neurotrophic Factor)	ARMET, Arginine-Rich Protein (ARP)	Promotes survival, growth and function of dopamine-specific neurons	Parkinson's, cancer	Unknown at time of printing
<b>CDNF</b> (Cerebral Dopamine Neurotrophic Factor)	ARMETL1	Promotes survival, growth and function of dopamine-specific neurons	Parkinson's	Unknown at time of printing
<b>CNTF</b> (Ciliary Neurotrophic Factor)	None	Promotes survival of ciliary neurons, primary sensory neurons, motor neurons, basal forebrain neurons, and type 2 astrocytes	ALS, Huntington's	CNTFR-α
<b>IL-6</b> (Interleukin-6)	26 kDa protein, IFN-β2, B-cell Differentiation Factor (BCDF), BSF-2, HPGF, HSF, MGI-2	Involved in inflammation associated with Alzheimer's disease	Diabetes, atherosclerosis, Alzheimer's, depression, rheumatoid arthritis, systematic lupus, cancer, MS	IL-6Rα, gp130
<b>Oncostatin M</b>	OSM	Involved in the regulation of neurogenesis	Rheumatoid arthritis, atherosclerosis, cancer, TEL/JAK2 disease	LIFR-high affinity, gp130-low affinity
<b>Cardiotrophin-1</b>	CT-1	Enhances the survival of different neuronal populations	Motor Neuron Diseases (MND), cardiovascular diseases	gp130, LIFR
<b>IL-11</b> (Interleukin-11)	AGIF (Adipogenesis Inhibitory Factor)	Survival of oligodendrocytes, involved in inflammation associated with MS	Atherosclerosis, MS	IL-11Rα, gp130
<b>LIF</b> (Leukemia Inhibitory Factor)	Differentiation-stimulating factor, D-factor, Melanoma-Derived LPL inhibitor (MLPLI)	Promotes the stimulation of differentiation of cholinergic nerves	Systemic lupus, cancer, epidermal hyperplasia in ALS	LIFR
<b>Pleiotrophin</b>	PTN, Heparin Affin Regulatory Protein (HARP), Heparin-Binding Growth Factor-8 (HBGF-8), Osteoblast-Specific Factor-1 (OSF-1)	Promotes neurite outgrowth	Angiogenesis, Parkinson's, cancer	ALK
<b>Midkine</b>	MK, NEGF-2	Promotes neurite outgrowth	Alzheimer's, cancer	ALK
<b>Neurturin</b>	NTN, NRTN	Promotes survival of sympathetic and sensory neurons	Parkinson's	Prefers RET/GFR2α
<b>Artemin</b>	ART, ARTN, Enovin, Neublastin	Promotes the survival of sympathetic, neural crest, placodally-derived sensory neurons, and dopaminergic midbrain neurons	Chronic Pain	Prefers RET/GFR3α
<b>Persephin</b>	PSP, PSPN	Promotes the survival of ventral midbrain dopaminergic neurons and motor neurons after sciatic nerve oxotomy	Alzheimer's	Prefers RET/GFR4α

# TGF- $\beta$ Superfamily

Name	Synonyms	Main Function	Natural Antagonists/ Binding Proteins
TGF- $\beta_1$	Differentiation inhibiting factor, cartilage-inducing factor	Regulates cell proliferation, growth, differentiation and motility. Involved in adipogenesis, chondrogenesis, embryogenesis, tissue remodeling, wound healing and tumor formation.	Follistatin, Follistatin-like related gene (FLRG), Decorin, alpha-2 macroglobulin
TGF- $\beta_2$	Glioblastoma-derived T-cell suppressor factor, BSC-1, Cetermin, Polyergin	Regulates cell proliferation, growth, differentiation and motility. Involved in adipogenesis, chondrogenesis, embryogenesis, tissue remodeling, wound healing and tumor formation.	Decorin, alpha-2 macroglobulin
TGF- $\beta_3$	None	Regulates cell proliferation, growth, differentiation and motility. Involved in adipogenesis, chondrogenesis, embryogenesis, tissue remodeling, wound healing and tumor formation.	
TGF- $\beta_4$	Endometrial Bleeding Associated Factor beta-4, (EBAF) Lefty preproprotein, LEFTA	Essential for left-right (L-R) asymmetry determination of organ systems. Possible role in endometrial bleeding.	
Inhibin A	Inhibin alpha & beta A	Inhibits secretion of follitropin by the pituitary gland, regulates embryogenesis, osteogenesis, hematopoiesis, reproductive physiology and hormone secretion from the hypothalamic, pituitary and gonadal glands.	
Inhibin B	Inhibin alpha & beta B	Inhibits secretion of follitropin by the pituitary gland, regulates embryogenesis, osteogenesis, hematopoiesis, reproductive physiology and hormone secretion from the hypothalamic, pituitary and gonadal glands.	
Activin A	Activin beta-A, Inhibin beta-1, FRP, (Follicle-stimulating hormone-Releasing Protein), FSH-releasing extra protein, FSH-releasing factor, EDF (Erythroid Differentiation Factor)	Regulates embryogenesis, osteogenesis, hematopoiesis, reproductive physiology and hormone secretion from the hypothalamic, pituitary and gonadal glands.	Follistatin, Follistatin-like related gene (FLRG), GASP-1, Cerberus, alpha2 macroglobulin, DAN
Activin AB	Activin beta A & beta B	Regulates embryogenesis, osteogenesis, hematopoiesis, reproductive physiology and hormone secretion from the hypothalamic, pituitary and gonadal glands.	
Activin B	Activin beta-B, Inhibin beta-2	Regulates embryogenesis, osteogenesis, hematopoiesis, reproductive physiology and hormone secretion from the hypothalamic, pituitary and gonadal glands.	
Activin C	Activin beta-C, Inhibin beta-C, blastocyst B1	Regulates embryogenesis, osteogenesis, hematopoiesis, reproductive physiology and hormone secretion from the hypothalamic, pituitary and gonadal glands.	
Activin E	Activin beta-E, Inhibin beta-E	Regulates embryogenesis, osteogenesis, hematopoiesis, reproductive physiology and hormone secretion from the hypothalamic, pituitary and gonadal glands.	
BMP-2	BMP-2A	Induces cartilage and bone formation, plays a role in cardiac morphogenesis.	Noggin, Chordin, Follistatin, Follistatin-like related gene (FLRG), DAN, Cerberus, Gremlin
BMP-3	Osteogenin, BMP-3A	Induces cartilage and bone formation.	
BMP-3B	GDF-10	Biological function unknown, but may play a role in differentiation of osteoblasts, augmenting BMP-2 activity.	
BMP-4	BMP2B (BMP2B1, BMP2B2, Bmp2-rs1), DVR4	Induces cartilage and bone formation, involved in mesoderm induction, tooth development, limb formation and fracture repair.	Noggin, Chordin, Chordin-like/Neuralin/Ventropin, Follistatin, DAN, Cerberus, Gremlin
BMP-5	None	Induces cartilage and bone formation.	Noggin, Chordin-like/Neuralin/Ventropin, Sclerostin/SOST
BMP-6	VGR, Vg-1-related protein	Induces cartilage and bone formation.	Noggin, Chordin-like/Neuralin/Ventropin, Follistatin, Follistatin-like related gene (FLRG), Sclerostin/SOST
BMP-7	OP-1 (Osteogenic Protein-1)	Induces cartilage and bone formation, involved in calcium regulation and bone homeostasis. May act as an osteoinductive factor responsible for epithelial osteogenesis.	Noggin, Chordin, Follistatin-like related gene (FLRG), DAN, Cerberus, Sclerostin/SOST
BMP-8	BMP-8a, OP-2 (Osteogenic Protein-2)	Induces cartilage and bone formation, involved in calcium regulation and bone homeostasis. May act as an osteoinductive factor responsible for epithelial osteogenesis.	
BMP-8b	OP-2 (Osteogenic Protein-2)	Stimulates cartilage and bone formation, implicated in calcium regulation and bone homeostasis.	
BMP-9	GDF-2	May be involved in bone formation, regulates blood glucose homeostasis, potential autocrine/paracrine mediator in the hepatic reticuloendothelial system, involved in chondrogenesis.	

Continued...

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# TGF- $\beta$ Superfamily Continued...

Name	Synonyms	Main Function	Natural Antagonists/ Binding Proteins
<b>BMP-10</b>	None	Plays a crucial role in trabeculation of the embryonic heart.	
<b>BMP-11</b>	GDF-11	Involved in the patterning of both mesodermal and neural tissues and in establishing the skeletal muscle. Acts globally to specific positional identity along the anterior/posterior axis.	Follistatin, Follistatin-like related gene (FLRG), GASP-1
<b>BMP-12</b>	GDF-7, CDMP-3	Induces the formation of tendon and ligament tissues.	
<b>BMP-13</b>	GDF-6, CDMP-2	Plays a role in cartilage homeostasis, involved in embryonic skeletal development, and formation of tendon-like tissue.	Noggin
<b>BMP-14</b>	GDF-5, CDMP-1	Essential for limb cartilage and limb-joint formation in developing mice. Involved in embryonic skeletal development.	Noggin, DAN
<b>BMP-15</b>	GDF-9B	An oocyte-specific factor that regulates granulosa cell proliferation and differentiation, and is essential for normal follicular growth.	
<b>GDF-1</b>	Embryonic growth/ differentiation factor	May be involved in mediating cell differentiation events during embryonic development.	
<b>GDF-2</b>	BMP-9	Implicated in bone formation.	
<b>GDF-3</b>	Vgr-2, UNQ222/PRO248	Embryonal carcinoma stem cell-associated marker <i>in vitro</i> and <i>in vivo</i> .	
<b>GDF-5</b>	CDMP-1, BMP-14	Essential for limb cartilage and limb-joint formation in developing mice. Involved in embryonic skeletal development.	Noggin, DAN
<b>GDF-6</b>	BMP-13, CDMP-2	Plays a role in cartilage homeostasis; embryonic skeletal development; and formation of a tendon-like tissue.	Noggin
<b>GDF-7</b>	BMP-12, CDMP-3	Induces the formation of tendon and ligament tissues.	
<b>GDF-8</b>	Myostatin	Regulates skeletal muscle mass.	Follistatin, Follistatin-like related gene (FLRG), GASP-1
<b>GDF-9</b>	None	Essential for normal follicular growth.	
<b>GDF-10</b>	BMP-3B, BIP (Bone Inducing Protein)	Biological function unknown, but may play a role in differentiation of osteoblasts, augmenting BMP-2 activity.	
<b>GDF-11</b>	BMP-11	Involved in the patterning of both mesodermal and neural tissues and in establishing the skeletal muscle. Acts globally to specific positional identity along the anterior/posterior axis.	Follistatin, Follistatin-like related gene (FLRG), GASP-1
<b>GDF-15</b>	PLAB, Placental TGF $\beta$ , Prostate Differentiation Factor (PDF), NRG-1, MIC-1 (Macrophage Inhibiting Cytokine-1)	Possible mediator of placental control of embryonic development, may act as an autocrine regulatory molecule.	
<b>GDNF</b>	ATF (Astrocyte-derived Trophic Factor)	Promotes dopamine uptake and survival and morphological differentiation of midbrain neurons.	
<b>Artemin</b>	ART, ARTN, Enovin, Neublastin	Supports the survival of all peripheral ganglia such as sympathetic, neural crest and placodally-derived sensory neurons, and dopaminergic midbrain neurons.	
<b>Neurturin</b>	NTN, NRTN	Promotes the development and survival of sympathetic and sensory neurons.	
<b>Persephin</b>	PSP, PSPN	Promotes the survival of ventral midbrain dopaminergic neurons and motor neurons, and promotes ureteric bud branching.	
<b>LEFTY-1</b>	LEFTYB, Protein Lefty B	Essential for left-right asymmetry determination of organ systems.	
<b>LEFTY-2</b>	LEFTYA, TGF- $\beta$ <sub>4</sub> , Protein Lefty A	Essential for left-right asymmetry determination of organ systems. Possible role in endometrial bleeding.	
<b>AMH (anti-Muellerian Hormone)</b>	MIS, Muellierian inhibiting substance	Causes regression of the Muellierian duct, inhibits the growth of tumors derived from tissues of Muellierian duct origin.	
<b>Dorsalin (chick)</b>	Dorsalin-1, DSL-1	Regulates cell differentiation within neural tube.	
<b>NODAL</b>	None	Essential for mesoderm formation and subsequent organization of axial structures.	Cerberus

# VEGF/PDGF Family

Functional Name	Synonyms	Expression (Partial List)	Function	Receptors (Selected List)
VEGF-A <sub>121</sub>	Vascular Permeability Factor (VPF)	All vascularized tissues	Angiogenesis, induces endothelial cell proliferation, and cell migration, osteoclastogenesis	VEGFR-1,-2
VEGF-A <sub>145</sub>	Vascular Permeability Factor (VPF)	All vascularized tissues	Angiogenesis, induces endothelial cell proliferation, vasculogenesis, permeabilization of blood vessels, osteoclastogenesis	VEGFR-1,-2, HSPG, Neuropilin-1
VEGF-A <sub>165</sub>	Vascular Permeability Factor (VPF)	All vascularized tissues	Angiogenesis, induces endothelial cell proliferation, vasculogenesis, permeabilization of blood vessels, osteoclastogenesis	VEGFR-1,-2, HSPG, Neuropilin-1,-2
VEGF-A <sub>189</sub>	Vascular Permeability Factor (VPF)	All vascularized tissues	Angiogenesis, induces endothelial cell proliferation, migration	HSPG, Neuropilin-1,-2
VEGF-A <sub>206</sub>	Vascular Permeability Factor (VPF)	All vascularized tissues	Not determined at time of printing	HSPG, Neuropilin-1,-2
VEGF-B <sub>167</sub>	VEGF-Related Factor (VRF)	Heart, skeletal muscle, vascular smooth muscle cells	Embryonic angiogenesis	VEGFR-1, Neuropilin-1
VEGF-B <sub>186</sub>	VEGF-Related Factor (VRF)	Heart, skeletal muscle, vascular smooth muscle cells	Embryonic angiogenesis	VEGFR-1, Neuropilin-2
VEGF-C	VEGF-2, Vascular Endothelial Growth Factor Related protein (VRP), Flt4-Ligand	Neuroendocrine organs, lung, heart, kidney, vascular smooth muscle cells	Lymphangiogenesis and tumor angiogenesis	VEGFR-2,-3, Neuropilin-2
VEGF-D	c-Fos Induced Growth Factor (FIGF)	Neuroendocrine organs, lung, heart, skeletal muscle, small intestine, vascular smooth muscle cells	Lymphangiogenesis and tumor angiogenesis	VEGFR-2,-3
VEGF-E (Orf Virus)	None	Virus-derived	Induces endothelial proliferation, vascular permeability, angiogenesis	VEGFR-2, Neuropilin-1 (binds NZ2-VEGF-E variant)
VEGF-F (Snake venom)	None	Snake venom	Induces endothelial proliferation vascular permeability, angiogenesis	VEGFR-2
PIGF-1	Placenta Growth Factor-1, PGFL, PGF, PIGF	Placenta, thyroid, lung, goiter	Angiogenesis, chemotactic towards monocytes, wound healing and tumor formation	VEGFR-1
PIGF-2	Placenta Growth Factor-2, PGFL	Placenta, thyroid, lung, goiter	Angiogenesis, chemotactic towards monocytes, wound healing and tumor formation	VEGFR-1, Neuropilin-1, Neuropilin-2
PIGF-3	Placenta Growth Factor-3, PGFL	Placenta	Angiogenesis, chemotactic towards monocytes, wound healing and tumor formation	VEGFR-1
PIGF-4	Placenta Growth Factor-4, PGFL	Placenta, thyroid, lung, goiter	Angiogenesis, chemotactic towards monocytes, wound healing and tumor formation	VEGFR-1
PDGF-AA	Glioma-Derived Growth Factor (GDGF), Osteosarcoma-Derived Growth Factor (ODGF)	$\alpha$ -granules, released upon platelet activation	Mitogenic factor, hyperplasia, cell migration, embryonic neuron development, angiogenesis	PDGFR- $\alpha$
PDGF-BB	Glioma-Derived Growth Factor (GDGF), Osteosarcoma-Derived Growth Factor (ODGF)	Heart, brain (substantia nigra), placenta, fetal kidney	Mitogenic factor, hyperplasia, cell migration, embryonic neuron development, angiogenesis	PDGFR- $\alpha$ , PDGFR- $\beta$
PDGF-AB	Glioma-Derived Growth Factor (GDGF), Osteosarcoma-Derived Growth Factor (ODGF)	$\alpha$ -granules, released upon platelet activation	Mitogenic factor, hyperplasia, cell migration, embryonic neuron development, angiogenesis	PDGFR- $\alpha$ , PDGFR- $\beta$
PDGF-CC	Fallotein, Spinal Cord-Derived Growth Factor (SCDGF)	Retinal pigment epithelia, fallopian tube, vascular smooth muscle cells in kidney, platelets, prostate, testis, uterus	Mitogenic factor, hyperplasia, cell migration, embryonic development, angiogenesis	PDGFR- $\alpha$
PDGF-DD	Iris-Expressed Growth Factor (IEGF), Spinal Cord-Derived Growth Factor-B (SCDGF-B)	Heart, pancreas, adrenal gland, ovary, placenta, liver, kidney, prostate, testis, small intestine	Mitogenic factor, hyperplasia, cell migration, embryonic development, angiogenesis	PDGFR- $\beta$

## Antagonists of TGF- $\beta$ Ligands

Natural TGF- $\beta$ Antagonists	Structural Features Contained in the Antagonist Polypeptide (M.W.)	Known TGF- $\beta$ Binding Partners
Noggin	unique Noggin cysteine knot (26 kDa)	BMP-2, -4, -5, -6, -7, -13/GDF-5, -6, -14
Chordin	4 CR/VWCC (Chordin) domains, 3 SOG repeats (102 kDa)	BMP-2, -4, -7
Chordin-like/Neuralin/Ventropin	3 Chordin domains (51 kDa)	BMP-4, -5, -6
Follistatin	3 cysteine-rich Follistatin (FS) and 3 kazal domains (38 kDa)	Activin, BMP-2, -4, -6, -7, Myostatin/GDF-8, GDF-11, TGF- $\beta$ <sub>1</sub>
Follistatin-like related gene (FLRG)	2 FS and 2 kazal domains (28 kDa)	Activin, Myostatin/GDF-8, GDF-11, TGF- $\beta$ <sub>1</sub>
GASP-1	1 Wap, 1 FS, 1 kazal, 1 IG-like, 2 kunitz, 1 netrin domains (63 kDa)	Myostatin/GDF-8, GDF-11
Follistatin-related protein (FSRP)	1 FS, 1 CR/VWRC, 2 EF-hand domains (35 kDa)	Activin, BMP-2, -6, -7
DAN	unique DAN cysteine knot (19 kDa)	BMP-2, -4, -7, -14/GDF-5
Cerberus	DAN-like cysteine knot (30 kDa)	BMP-2, -4, -7, Activin, NODAL
Gremlin	DAN-like cysteine knot (21 kDa)	BMP-2, -4, -7
Sclerostin/SOST	unique Sclerostin cysteine knot (24 kDa)	BMP-5, -6
Decorin	multiple leucine-rich repeats (40 kDa)	TGF $\beta$ -1, -2
alpha-2 macroglobulin	multiple proteinase inhibitor domains (163 kDa)	TGF $\beta$ -1, -2, Activin, Inhibin

## General Characteristics of Plasma Lipoproteins

LP Particle	Size	Density (g/ml)*	TG/CE Ratio*	L/P Ratio*	Associated Apoproteins
CM	1000nm	<0.95	28.83	65.66	<b>apoB-48</b> , apoA, apoC, apoE, apoH
VLDL	70nm	0.98	3.89	10.76	<b>apoE</b> , apoB-100, apoC
IDL	40nm	1.01	0.82	8.09	<b>apoE</b> , apoB-100, apoC
LDL	20nm	1.04	0.18	3.76	<b>apoB-100</b> , apoC, apoE, apo(a)
HDL	10nm	1.13	0.16	1.22	<b>apoA-I</b> , apoC, apoD, apoE

LEGEND: \* Average values, TG-triglycerides, CE-cholesteryl esters, L/P- lipid/protein, **Bold** represents the major apoprotein

## Classification of Apoproteins

Apoprotein	MW	Function and Comments
ApoA-I	29 kDa	Major protein of HDL, activates LCAT, high levels of ApoA-I are associated with a reduced risk of CHD.
ApoA-II	17.4 kDa	Primarily in HDL, inhibits hepatic lipase activity.
ApoA-IV	46 kDa	Present in fat-rich LPs.
ApoB-48	246 kDa	Derived from ApoB-100 gene by RNA editing, found exclusively in CMs, lack the LDLR binding domain of ApoB-100.
ApoB-100	513 kDa	Major protein of LDL, binds to LDLR, high levels of ApoB-100 are associated with an increased risk of CAD.
ApoC-I	7.6 kDa	Appears to be involved in activation of LCAT.
ApoC-II	8.9 kDa	Activates LPL, deficiency of ApoC-II results in accumulation of CMs and high TG levels.
ApoC-III	8.75 kDa	Inhibits LPL.
ApoD	33 kDa	Found only in HDL, closely associated with LCAT.
ApoE	34 kDa	Three known ApoE alleles (E2, E3, E4). Binds to LDLR, inhibits development of atherosclerosis, ApoE4 is associated with late-onset Alzheimer's disease.

Note: Tables found on pages 144-151 are reflective of current knowledge.

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## General Abbreviations

AA (aa)	Amino Acid	HUVEC	Human Umbilical Venous Endothelial Cells
AAP	Antigen-Affinity Purified	ICC	Immunocytochemistry
ABTS	azino-diethylbenzothiazoline-sulfonate	IgG	Immunoglobulin G
AEC	3-amino-9-ethylcarbazole	IgE	Immunoglobulin E
AP	Alkaline Phosphatase	IHC	Immunohistochemistry
AR	Antigen Retrieval	IU	International Unit
bME	beta-Mercaptoethanol	kDa	kilodaltons
BSA	Bovine Serum Albumin	LAL	Limulus Amoebocyte Lysate assay
Bt	Biotinylated	LPS	Lipopolysaccharide
CHO	Chinese Hamster Ovary (cells)	MAB	Monoclonal Antibody
ConA	Concanavalin A	MW	Molecular Weight
Da	Daltons	MSC	Mesenchymal Stem Cells
DAB	3,3' Diaminobenzidine	NaP	Sodium Phosphate (NaPO <sub>4</sub> )
DI	Deionized	NFDM	Nonfat Dry Milk
DMEM	Dulbecco's Modified Eagle's Medium	NKC	Natural Killer Cells
DMSO	Dimethyl Sulfoxide	NM	Nitrocellulose Membrane
DTT	Dithiothreitol	NSC	Neural Stem Cells
ECM	Extra Cellular Matrix	O.D.	Optical Density
ED50	50% Effective Dose	PAb	Polyclonal Antibody
EDK	ELISA Development Kit	PAGE	Polyacrylamide Gel Electrophoresis
EIA	Enzyme Immunoassay	PCR	Polymerase Chain Reaction
EIER	Enzyme-Induced Epitope Retrieval	PBL	Peripheral Blood Lymphocytes
ELISA	Enzyme-Linked Immunosorbent Assay	PBS	Phosphate Buffered Saline
ESC	Embryonic Stem Cells	PBST	PBS with 0.1% TWEEN-20
EU	Endotoxin Unit	PBMC	Peripheral Blood Mononuclear Cells
FACS	Fluorescence-Activated Cell Sorter	PHA	Phytohemagglutinin
FBS	Fetal Bovine Serum	pI	Isoelectric Point
FCS	Fetal Calf Serum	PIER	Protease-Induced Epitope Retrieval
FFPE	Formalin-Fixed Paraffin-Embedded	Rb	Rabbit
FLISA	Fluorescence-linked Immunosorbent Assay	RIA	Radioimmunoassay
Gt	Goat	RT	Room Temperature
HCl	Hydrochloric Acid	SDS	Safety Data Sheet
HEK293	Human Embryonic Kidney Cells	SDS	Sodium Dodecyl Sulfate
HIER	Heat-Induced Epitope Retrieval	TBS	Tris Buffered Saline
HoAc	Acetic Acid	TFA	Trifluoroacetic Acid
HPLC	High-Performance Liquid Chromatography	TMB	3,3',5,5'-tetramethylbenzidine
HRP	Horseradish Peroxidase	WB	Western Blot
HSA	Human Serum Albumin	WFI	Water Force Injection
HSC	Hematopoietic Stem Cells	WHO	World Health Organization



## RUO Cytokines FAQ

**Before releasing our cytokines and cytokine products for sale they are thoroughly analyzed to ensure the following qualities:**

1. *Authenticity*: by N-terminal sequence analysis and, when possible, by SDS-PAGE, RP-HPLC, and Mass Spectrometry analyses versus standards.
2. *Purity*: by SDS-PAGE and RP-HPLC analysis.
3. *Biological Activity*: by the relevant *in vitro* or *in vivo* bioassay.
4. *Protein content*: by UV spectroscopy, SDS-PAGE analysis and, when possible, by HPLC analysis versus the calibrated standard solution.
5. *Endotoxin contamination*: by kinetic LAL method.
6. *Microbiological contamination*: by membrane filtration method; protein solutions are sterile-filtered prior to vialing.

**The relevant information relating to each product appears on the Certificate of Analysis that is shipped with the product. Please read this information carefully to obtain useful instructions for reconstitution and storage. If, after reading the CoA, you need additional information, please review the following set of questions and answers, or call our technical service department at +44 (0)20 7610 3062.**

### 1. What should I know about the stability of your protein products?

Unless otherwise mentioned on the product information sheet, all of our products are formulated in such a manner that the lyophilized proteins are very stable at room temperature. However, we recommend storing lyophilized products at -20°C to -80°C.

For reconstituted solutions of most products, we recommend short-term storage at 4°C. For longer term storage, the protein solution should be stored with a carrier protein (e.g. 0.1% BSA) in working aliquots and stored frozen at -20°C to -80°C. Aliquots should be prepared to concentration no lower than 1µg/ml or to a volume no lower than 10µl independent of concentration.

Please keep in mind that every freeze/thaw cycle may cause some denaturation of the protein.

### 2. What endotoxin level should be expected when purchasing PeproTech proteins?

For PeproTech's Animal-Free proteins, the endotoxin level is guaranteed to be less than 0.01 ng/µg of protein or 0.1 EU/µg. For most of PeproTech's non-Animal-Free proteins the endotoxin level is guaranteed to be less than 0.1 ng/µg of protein, or 1 EU/µg. However, for many proteins, the actual measured endotoxin values are consistently below this stated endotoxin level. Please contact our technical service department for more information.

### 3. Why can't I see the protein pellet in the vial?

Unlike many protein products available on the market, PeproTech products are not formulated with carrier proteins or other additives (e.g., BSA, HSA, sucrose, etc.) and are often lyophilized with a minimum amount of salt. As a result, the small amounts of protein can be deposited on the vial during lyophilization as a thin and sometimes invisible film. Before opening, we recommend centrifuging each vial in a microcentrifuge for 20-30 seconds to drive any protein that may be lodged in the cap or on the side to the bottom of the vial. Our quality control procedures assure that each vial contains the correct amount of product.

### 4. What is the relationship between the specific activity expressed as an ED<sub>50</sub> and as units/mg?

The ED<sub>50</sub> is defined as the cytokine concentration at which the activity is 50% of the maximum response. This method of expressing potency should only be used for cytokines whose dose-response curves are sigmoidal in shape. The formula for converting the activity as an ED<sub>50</sub> in ng/ml to specific activity in units/mg is:

$$\frac{1 \times 10^6}{ED_{50} \text{ (ng/ml)}} = \text{specific activity (units/mg)}$$

### 5. Which cytokines show cross-species activity?

With a few exceptions, most human cytokines are active on mouse cells. Many mouse cytokines are active on human cells, but may show lower specific activity than the corresponding human cytokine. A few human cytokines, such as IL-7, even exhibit higher specific activities on mouse cells than do the corresponding mouse cytokines. The interferons, GM-CSF, IL-3, and IL-4 are known to be species-specific with very little, if any, activity on non-homologous cells. In contrast, the FGFs and neurotrophins are very highly conserved and show excellent activity on cells of other animal species.

## GMP Cytokines FAQ

### 1. Can I use PeproGMP® Cytokines for GMP manufacturing of investigational products, and for manufacturing commercial therapeutic products?

Yes, PeproGMP® Cytokines are intended for use in GMP manufacturing of investigational or marketed clinical products, such as cell therapy, gene therapy, tissue-engineered products, combination products, or other Advanced Therapy Medicinal Products.

PeproGMP® Cytokines are not, however, therapeutic products or excipients, and hence are not suitable for direct administration to humans. See USP Chapter <1043> Ancillary Materials for Cell, Gene, and Tissue-Engineered Products for more information, or contact PeproTech Technical Support.

### 2. What is the risk classification for PeproGMP® Cytokines?

PeproGMP® Cytokines are classified as Tier 2 under USP Chapter <1043>:

**Tier 1:** Low-risk, highly qualified materials (therapeutic drug or biologic, medical device)

**Tier 2:** Low-risk, well-characterized materials, produced in compliance with GMPs, and intended to be used as ancillary materials

**Tier 3:** Moderate risk, not for use as ancillary materials

**Tier 4:** High-risk materials

### 3. Is the facility where PeproGMP® Cytokines are manufactured GMP-certified by FDA? Has FDA inspected PeproTech? How would my QA department qualify PeproTech and PeproGMP® Cytokines?

The US FDA does not perform inspections or GMP certification of manufacturing facilities for ancillary reagents. In some countries, the national regulatory authority does inspect and certify GMP manufacturing facilities for all types of products, but FDA GMP inspections are limited to manufacturing facilities for therapeutic products and medical devices.

PeproGMP® Cytokines are manufactured in accordance with GMPs, under a rigorous ISO 9001-compliant quality system. All aspects of manufacturing, testing, labeling, and packaging are stringently controlled, validated, and monitored by PeproTech QA. PeproTech provides detailed Certificates of Analysis and Certificates of Origin for all PeproGMP® product lines. SDS documents are also available.

### 4. Are PeproGMP® Cytokines animal-origin free and human-origin free?

Yes. Cytokines in the PeproGMP® line are manufactured using defined media, enzymes, and chemicals, none of which are derived from animal or human tissues.

### 5. Do PeproGMP® Cytokines have the same biological properties as the PeproTech research-grade cytokines I have been using for R&D studies?

Yes. PeproGMP® Cytokines are functionally equivalent to their research-grade counterparts.

### 6. How are PeproGMP® Cytokines shipped?

The products are lyophilized, making them stable at a wide range of temperatures. Shipping is at ambient temperature. Upon request and at an additional cost, these products can be shipped on ice packs or dry ice.

## Animal-Free Media Supplement Kits FAQ

### 1. What is chemically defined serum-free media?

Chemically defined media include only components of known molecular structures and concentrations.

### 2. Are PeproTech's Serum-Free Cell Culture Media Supplement Kits protein-free?

Yes, PeproTech's Serum-Free Cell Culture Media kits are protein-free, as well as animal-free.

### 3. What are the advantages of using chemically defined serum-free media?

The advantages include: lot-to-lot consistency and reproducible cell growth; greater protein yield (for protein production applications) vs. using serum, consistent media performance, lowered risk of contamination with viral and other adventitious infectious agents, reduced downstream purification challenges (for protein production

applications), elimination of the need to prescreen serum lots, and simplification of any regulatory or other documentation requirements.

### 4. Can you provide the certifications for these animal-free components?

Yes, please contact Technical Support.

### 5. Where can I find formulations for these kits?

Formulations for these kits are proprietary to PeproTech, Inc.

### 6. Can I use DMEM instead of DMEM/F12?

DMEM/F12 medium is the mixture of half DMEM and half F12 medium, therefore DMEM/F12 has much more nutrition than DMEM alone. PeproTech has not tested DMEM at this time. Therefore, it is recommended that DMEM/F12 is used with PeproTech Supplements.

# PeproGrow-hESC FAQ

## 1. What is the PeproGrow-hESC medium formulation?

PeproGrow-hESC is a proprietary formulation that was designed and developed by PeproTech in collaboration with the Stem Cell Training Course at Rutgers University. The medium is serum- and phenol red-free, and a complete, chemically defined formulation designed for the expansion of both human embryonic stem cells (hESCs) and induced pluripotent stem cells (iPSCs) using BD Matrigel™ as a surface coating matrix. This formulation does contain a unique activator of the TGF-Beta pathway, a substitute for insulin that activates similar pathways and also FGF-Basic. There are no inhibitors of TGF-Beta.

## 2. How do I store the PeproGrow-hESC medium?

When using within 1 week of receipt, the medium and growth factor component should both be stored in the dark at 4°C. For extended storage past one week, the medium should be stored in the dark at 4°C for up to 6 months, and the lyophilized growth factor component should be stored at -20°C for up to five years.

## 3. How do I prepare the PeproGrow-hESC medium?

Reconstitute the lyophilized growth factor component with 500µl of sterile cell-culture grade water. Allow the vial to sit for several minutes, gently mix several times by inversion, and then centrifuge. Aseptically add the entire contents of the vial to the medium bottle. Label the bottle with both the date of mixture and the newly calculated expiration date (2 weeks from the date of mixture). Store the media in the dark at 4°C until needed, and only warm the amount of media needed for each given feeding.

## 4. How do I switch from my current medium to PeproGrow-hESC medium?

You can switch the medium immediately (acute protocol) without an adaptation step, or slowly increase the percentage of PeproGrow-hESC media daily over the course of a week (adaptation/accommodation).

## 5. Should I use any precautions during an adaptation protocol?

This can be done at your discretion as an adaptation is not required and the cells can adapt immediately to the new medium. If using an adaptation protocol, then you can maintain a culture in its current media as a precautionary step. When adapting cultures, you may choose to slowly change the ratio of the current media to PeproGrow-hESC; again, this is not necessary. A change in morphology, such as flattening, may be observed; this change should not be a reason for concern. The cultures may look slightly different than those observed in other vendor's media, but will maintain their pluripotency.

## 6. What do I do if I see differentiation during adaptation?

Some differentiation is expected, and you will need to either scrape off the differentiated colonies, or “pick-to-save” the non-differentiated colonies onto newly coated cell culture dishes.

## 7. Will my cell cultures change in PeproGrow-hESC medium?

The morphology of some cell colonies may change. You may also observe some amount of differentiation during media switching via both type of protocols (acute or adaptation). This is not unexpected, and you may need to clean and passage cells up to 3 times to sort out poorly responding colonies. Please refer to the PeproGrow-hESC Instructions Manual for suggested protocols.

## 8. How will my cell cultures change in PeproGrow-hESC medium?

Although we cannot exactly predict the changes, we found the colonies became more elastic and resilient to passaging in the adapted cultures. There is detailed passaging technique information for more elastic colonies in the PeproGrow-hESC Instructions Manual. If you find that there is no change in the texture of the colonies, then continue using your routine laboratory protocols.

## 9. How come the cells did not attach well after enzymatic passaging?

The colonies have most likely been over-digested, but the remaining cells should not be discarded. If some colonies have attached, then continue to feed the cultures as some cells will grow robustly after 4-6 days, and your cultures can be maintained from 2-4 colonies. Also, you may consider using a non-enzymatic passaging method to avoid over-digestion.

## 10. Can a reagent be added to my culture if the cells have not attached well after enzymatic passaging?

The addition of 2-10 µM (preferably 2 µM) Y-27632, or a ROCK inhibitor, has been shown to enhance cellular survival and attachment during enzymatic passaging (when using either dispase or Accutase™). Increased amounts of Y-27632 have been shown to cause neural differentiation, in addition to morphological changes that have been shown to be reversible.

## 11. Are there any additional recommendations for passaging the cells?

Additional recommendations have been included below; however, please also refer to the PeproGrow-hESC Instructions Manual.

- Appropriate timing is the most difficult part of the passaging method as it is extremely important to avoid the over-digestion of the colonies with dispase, since this can prevent colonies from attaching, or to cause them to fold in on themselves upon attaching.
- After 5-7 days the colony will most likely be large enough to passage.
- Some cell death is normal. When passaging using the dispase method you can expect some percentage of cells not to attach, but if you get less than 50% viability, then the cells have been passaged too roughly. The PBS/EDTA method is gentler and leads to better recovery if cells are passaged correctly.

## 12. Do you have any additional recommendations for the timing of passaging the cells?

The timing of the passaging is a critical step. Cells that are passaged too early will plate poorly since the colonies will be too small and will not survive the passaging technique. Also, it is important to avoid overexposure to collagenase. We recommend dispase or PBS/EDTA. Both are optimal at 5 minutes, but you should observe the cells at 3 minutes for both methods to determine if the full 5 minutes is needed.

## 13. How does cell density affect the colony growth?

If the cells are too sparsely, or too densely, populated, then this can lead to differentiation. If the split ratio is too high, then the cells will not have enough autocrine factors to enhance viability and many cells will die and/or differentiate. We recommend starting with a near confluent dish and trying a 1:6, 1:12, or 1:18 split using dispase, or a 1:6, 1:12, 1:18, or 1:24 split using a PBS/EDTA method. Further dilutions can be made if needed. We recommend adding Y27632 when using dispase at a low cell plating density, but this is not needed for a PBS/EDTA method.

## 14. How does spacing affect the cell density?

Spacing is arbitrary. When plating the cells we recommend that you transfer cells around the rim of the well (only for 6-well dish) and then gently move the dish back and forth to mix. For other sized dishes, disperse cells by moving the pipette as you add the cells.

## 15. Are there any specific recommendations for feeding the cells?

Feed the cells daily, with the exception of one “double volume” feed over the weekend.

## 16. Can I use matrices other than the recommended BD Matrigel™ to coat cell culture dishes?

Yes, we have tried several other coating reagents including: Laminin/Entactin (BD™), recombinant human Vitronectin (PeproTech), and Synthemax II® (Corning). For the Laminin/Entactin, we observed nearly identical growth as compared to BD Matrigel™ on the standard cell culture plastics. For both the human Vitronectin and Synthemax II®, we recommend CellBIND® or an equivalent type of cell culture plastic for optimal binding of factors. We observed less spreading of colonies and slightly less robust attachment, and this method appears to require the addition of Y-27632 for additional time.

## Antigen Affinity Purification of Antibodies

Cytokines are signaling proteins necessary for cell-to-cell communication throughout the body. In accordance with their role in preserving vital biological functions, the amino acid sequence of homologous cytokines from different mammalian species is generally highly conserved, rendering them poor immunogens for antibody production.

Consequently, the sera obtained from host animals after immunization with cytokines (Figure I-1) typically contain minute amounts of cytokine-specific antibodies. Isolation of these antibodies by standard purification procedures (e.g. ion-exchange chromatography) is tedious and ineffective. On the other hand, purification protocols which exploit the binding affinity of antibodies to certain biomolecules have yielded much better results.

**Figure I-1 - General Immunization Schedule for Polyclonal Antibody Production in Rabbits**

Day	Procedure	Antiserum Collected
1	Prebleed	3ml
1	Initial Immunization (250ug)	-
21	Immunization (125ug)	-
31	Titer Test Bleed	3ml
42	Immunization (125ug)	-
49	Production Bleed	10-25ml
56	Production Bleed	10-25ml
63	Immunization (125ug)	-
70	Production Bleed	10-25ml
77	Production Bleed	10-25ml
84	Immunization (125ug)	-
91	Production Bleed	10-25ml
98	Production Bleed	10-25ml

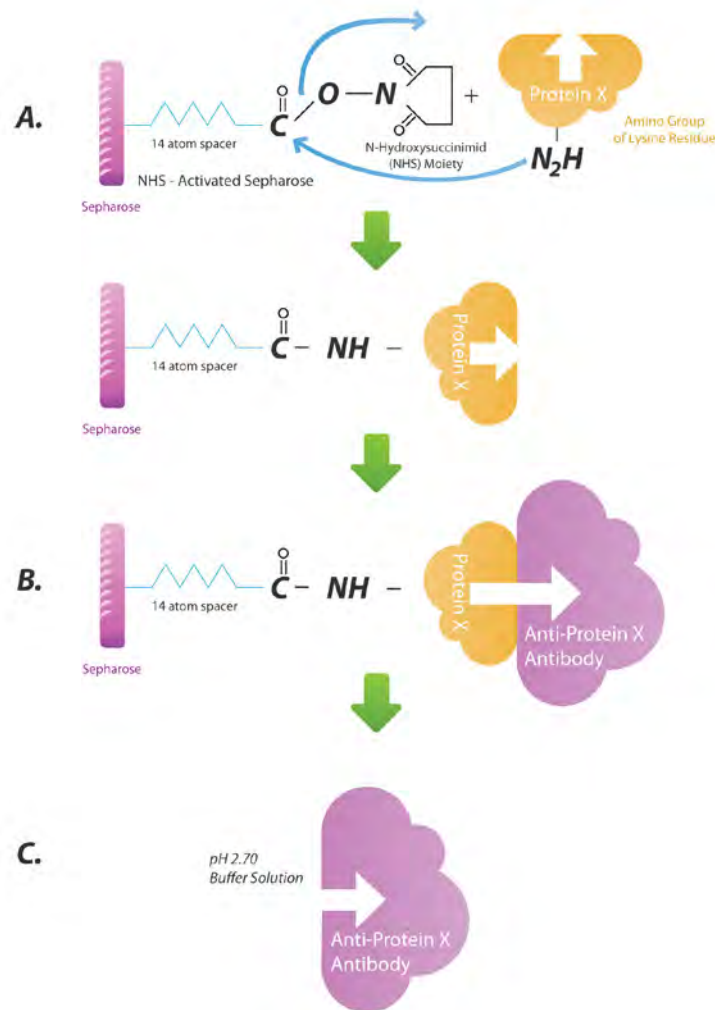
For example, Protein A and Protein G are bacterial (*Staphylococcus*)-derived proteins that possess high binding affinity toward the Fc (Fragment crystallizable) region of immunoglobulins (IgGs), and when attached to a solid-support matrix, enable efficient separation of IgGs from other serum constituents. Protein A/G affinity purification of serum-IgGs typically enriches the desired antibody by more than 100-fold. Yet, in the case of anti-cytokine antibodies, the total IgG fraction often contains less than 0.2% of the desired antibody.

The large quantity of unrelated IgGs found in these preparations not only interferes with quantification of the relative amount of the cytokine-specific antibody, but also considerably increases the background noise when the antibody is used in analytical procedures such as ELISA, neutralization, immunohistochemistry, and Western blotting. A superior method for isolating specific polyclonal antibodies from antiserum is by affinity chromatography, which exploits the specificity of antibody-antigen interactions (Figure I-2).

## Antigen Affinity Purification of Antibodies continued...

**Figure I-2** -Antigen Affinity Purification of Antibodies

(A.) Preparation of separation resin.  
(B.) Specific binding of Antibody to the resin  
(C.) pH elution of the antibody from the affinity column.



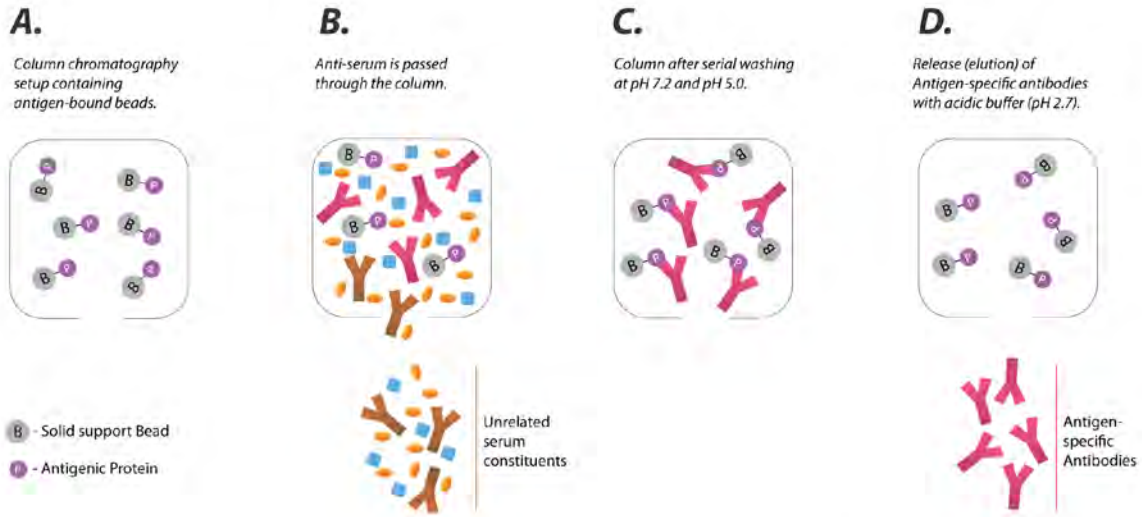
Here, the separation medium consists of a solid-support resin to which the antigen is attached through stable covalent bonds. The immobilized antigen is then used in a column chromatography setup to selectively capture antigen-specific antibodies, while other serum proteins and unrelated immunoglobulins are washed away (Figure I-3).

The antigen-bound antibodies can be eluted from the column by an acidic solution (Figure I-4), which is promptly brought back to physiological pH to prevent acid-catalyzed antibody denaturation. This method typically yields >95% pure specific antibodies (Figure I-5).



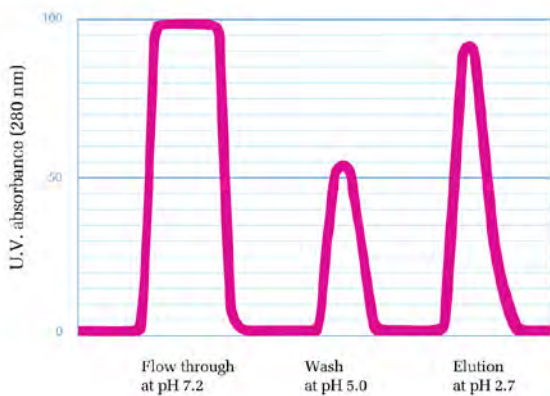
# Antigen Affinity Purification of Antibodies continued...

**Figure I-3** - Schematic illustration of column chromatography setup for antigen affinity purification of antibodies.



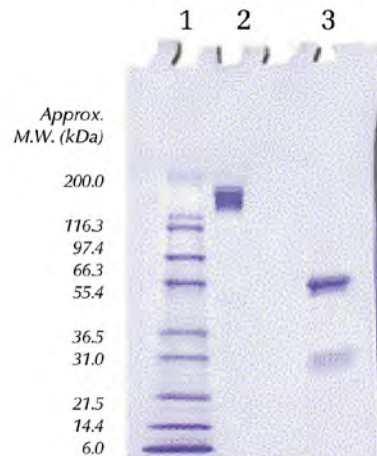
NOTE: Elution is titrated with 1M NaOH to pH 7.2.

**Figure I-4** - A Typical Antigen Affinity Purification Chromatogram



**Figure I-5** - SDS-PAGE analysis of Rabbit Anti-Human IL-8 polyclonal antibodies (RbahIL-8)

Lane 1: Molecular weight markers  
 Lane 2: 2µg of RbahIL-8 (unreduced)  
 Lane 3: 2µg of RbahIL-8 (reduced)



## Antibody FAQ

### 1. Does PeproTech test for endotoxin in their antibodies?

PeproTech does test their antibodies for endotoxin using the kinetic LAL method. Please contact Technical Support for more information.

### 2. Which isotype are PeproTech's polyclonal antibodies?

The polyclonal antibodies that PeproTech manufactures are IgG antibodies.

### 3. How are your antibodies purified?

All polyclonal and biotinylated polyclonal antibodies are antigen-affinity purified. Monoclonal antibody purification varies by product; please contact Technical Support for more information.

### 4. Can you tell me what epitope your antibody binds to?

PeproTech does not perform epitope mapping at this time. As a general guideline, a polyclonal mixture of antibodies will bind to multiple epitopes on the protein of interest while each monoclonal antibody will bind to a specific epitope.

### 5. Have PeproTech's antibodies been tested in neutralization assays?

Neutralization testing is performed on a lot-to-lot basis for each antibody. The results of this testing can be found on the product's corresponding data sheet.

### 6. Are PeproTech's antibodies suitable for use in ELISA and Western Blot applications?

PeproTech's antibodies are suitable for use in ELISA and Western Blot assays; please see our individual ELISA and Western Blot F.A.Q. sections for more information regarding these applications.

### 7. What information should be known about the stability of your antibody products?

PeproTech's antibodies are lyophilized from PBS. As such, they are stable at room temperature for at least 1 month. For longer periods, we recommend storing the lyophilized products at -20°C to -80°C.

For reconstituted solutions of the antibodies, we recommend short-term storage at 4°C. For long-term storage the antibody solution should first be aliquoted (to avoid more than one freeze/thaw cycle) and stored frozen at -20°C to -80°C. Frozen aliquots of this antibody solution are stable for at least 6 months when kept at -20°C to -80°C.

### 8. Do PeproTech's antibody products contain any carrier proteins or other additives?

No, PeproTech does not formulate its polyclonal, biotinylated polyclonal, or monoclonal antibodies with additives or carrier proteins.

### 9. Will PeproTech's antibodies work in immunohistochemistry and immunocytochemistry applications?

All antibodies that have been tested so far have been found to be suitable for these applications. Please contact Technical Support for more information.

### 10. Will PeproTech antibodies recognize target proteins sold by other vendors?

PeproTech's antibody products have high binding affinity towards the natural and/or recombinant versions of the corresponding proteins. However, due to lack of authenticity sometimes found in other vendors' proteins, we cannot guarantee that our antibodies will perform as well with these proteins.

### 11. Will PeproTech's antibodies recognize target protein in complex biological fluids such as blood or serum?

Yes. However, for samples that have a high content of interfering agents, the recognition will be less efficient and have a higher background, or reduced signal to noise ratio may be seen.



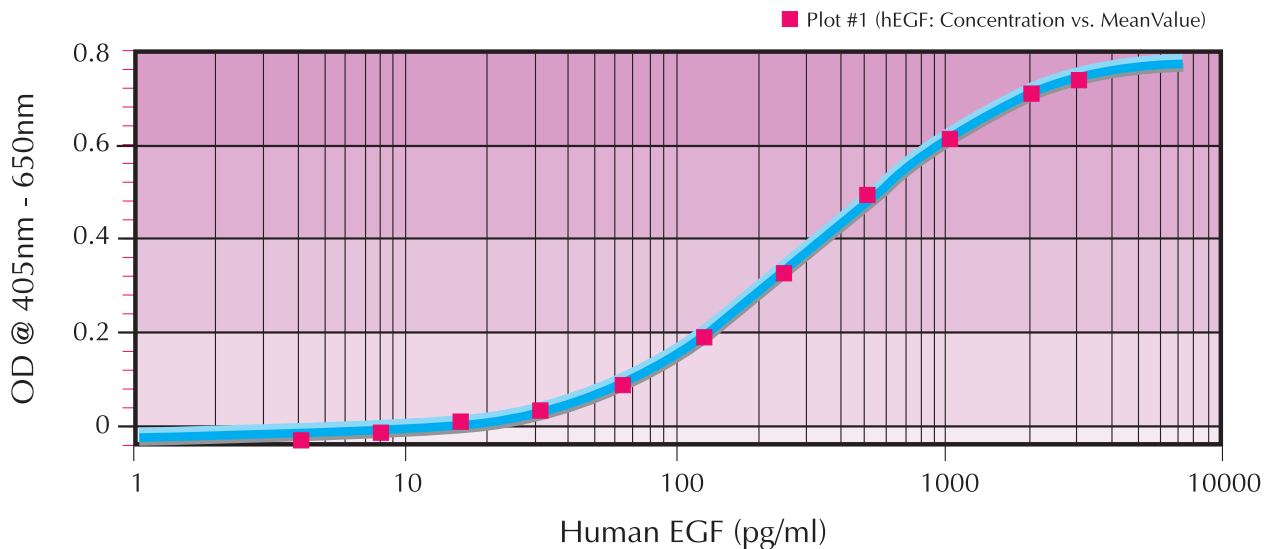
## ELISA

Enzyme-linked immunosorbent assay (ELISA) is a laboratory technique for quantifying the concentration of specific antigens or antibodies in cell lysates, sera, or other complex solutions. In its simplest format, called direct ELISA, a solid-phase binding support such as a polystyrene plate is used to capture the tested antigen, which is then detected with the aid of a specific enzyme-linked antibody (E-Ab). The detection protocol involves conversion of a colourless substrate solution into an intense, coloured product that can be measured directly in the reaction plate. The increase in optical density during the reaction is recorded at different time points for several sample dilutions, and the collected data is then used in conjunction with a standard curve to calculate the concentration of the antigen in the original sample (Figure II-1). Although the sensitivity and specificity of ELISA are comparable to those of radioimmunoassay

(RIA), ELISA has the advantage of not requiring radioactive isotopes and expensive counting devices. In recent years, ELISA has gained popularity in both research and clinical laboratories, and has become an important diagnostic test for many infectious diseases, including the human immunodeficiency virus (HIV).

A number of different enzymes are suitable for the preparation of E-Abs, including alkaline phosphatase, horseradish peroxidase, and carbonic anhydrase. Although E-Abs can be obtained by covalently binding enzymes to antibodies through a coupling agent such as glutaraldehyde, this method is not commonly used, because it often yields products with impaired immunological and/or enzymatic activity. A superior method to prepare fully active E-Abs is by exploiting the high binding affinity of HRP-conjugate for biotin, as depicted in Figure II-2.

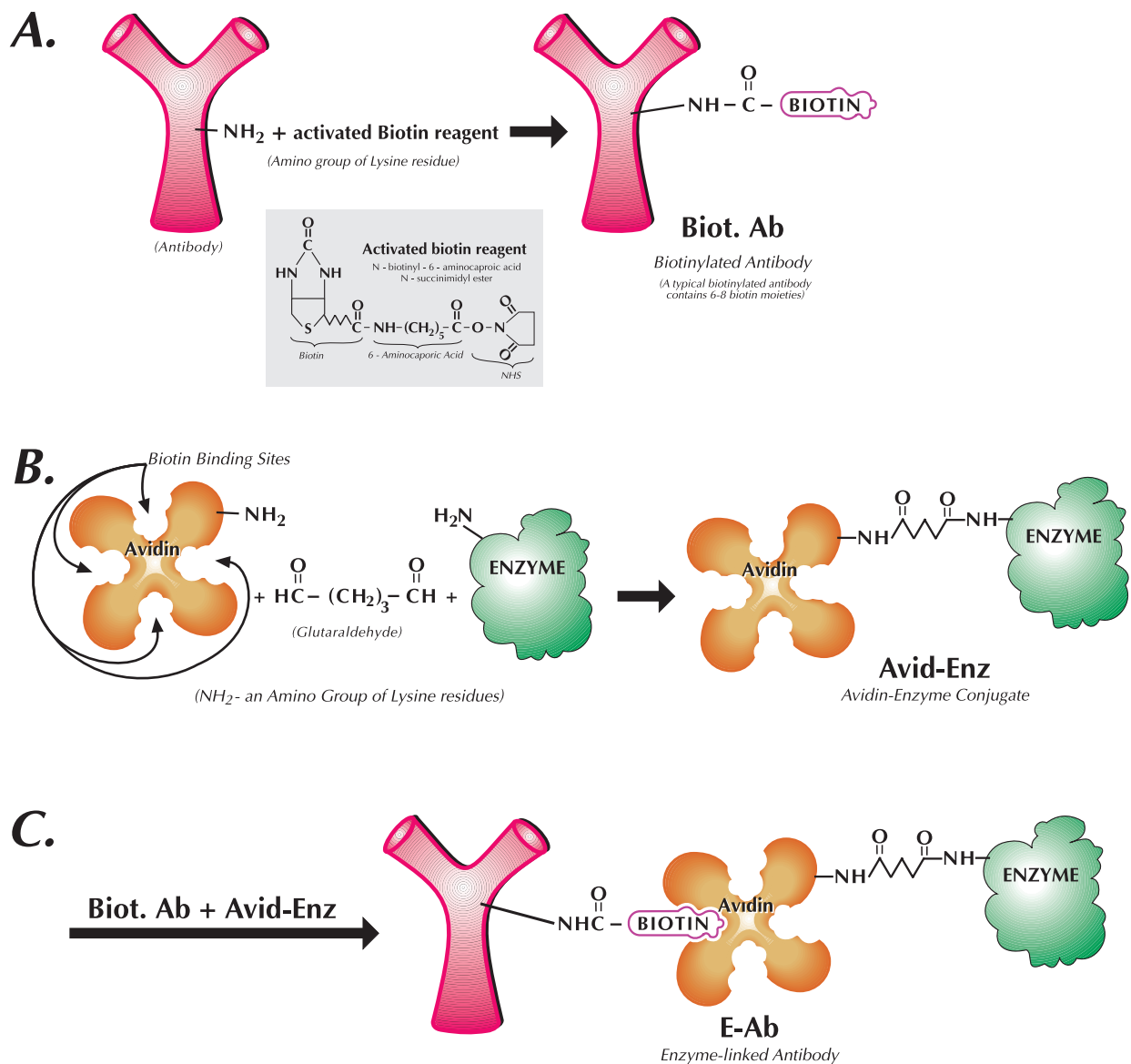
Figure II - 1 - Sample Standard Curve - Human EGF ABTS ELISA



## ELISA continued...

Figure II - 2 - Steps in the production of enzyme-linked antibody, through HRP-Biotin interaction.

(A.) Biotinylation of an Antibody. (B.) HRP-Enzyme Conjugation.  
(C.) *In Situ* formation of enzyme-linked Antibody via noncovalent interaction between Avidin and Biotin.



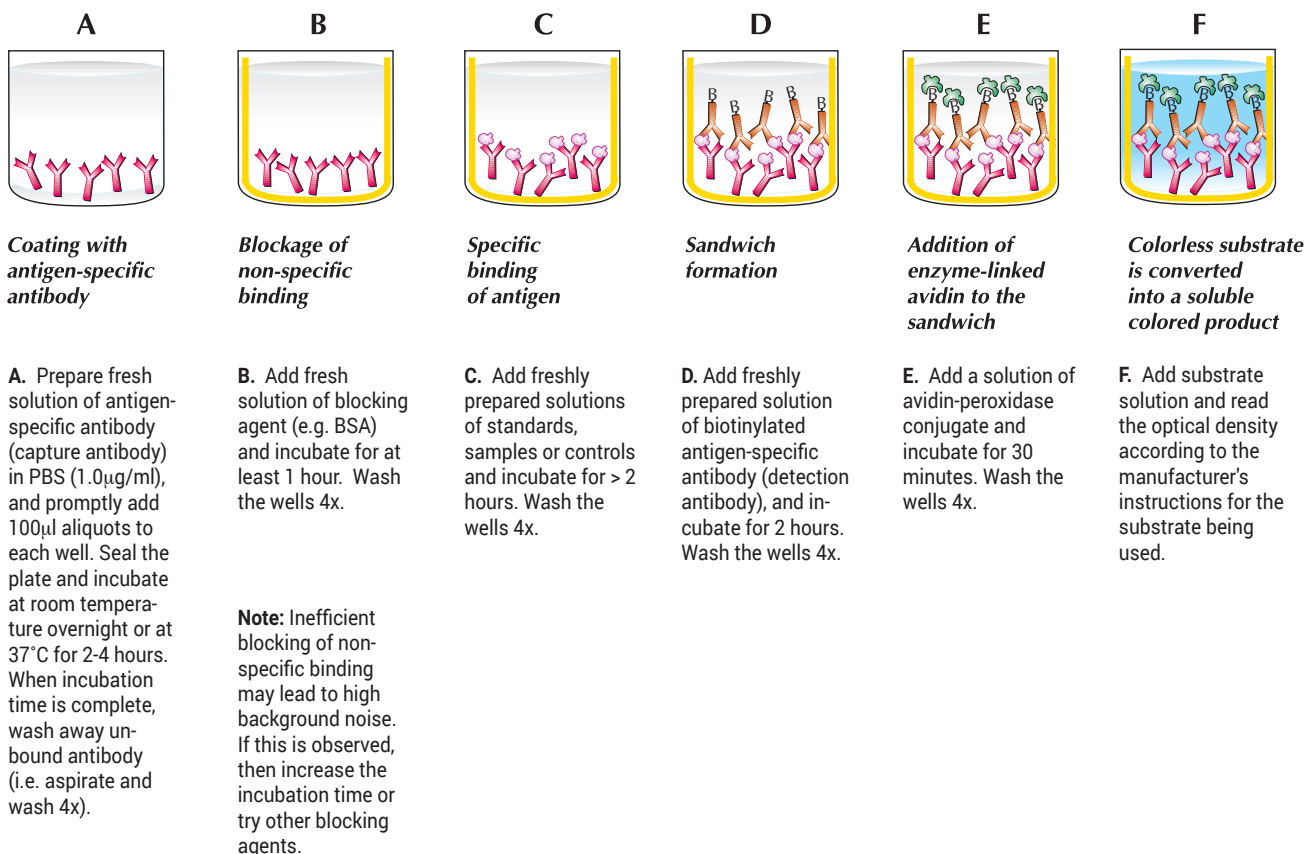
**Note:** Unless otherwise specified, the ELISA protocol is conducted at ambient temperature.

## ELISA continued...

The biotinylated antibody used in this method contains on average 6-8 biotin moieties, which, due to their small size, do not interfere with the interaction between the antibody and the captured antigen. Once unbound antibody has been rinsed from the plate, the biotin moieties are used *in-situ* to form stable complexes with avidin-enzyme conjugates. A major limitation of the direct ELISA format is that certain antigens (e.g. low molecular weight cytokines) bind poorly to polystyrene plates, and therefore, cannot be measured accurately by the

assay. To by-pass this limitation, the plate can be pre-coated with a specific antibody that recognizes the tested antigen through epitopes that are not used by the E-Ab. Using a matched pair of antigen-specific antibodies, one for capturing and one for detection, significantly improves both the sensitivity and specificity of the assay. This format, called Sandwich ELISA, enables detection of picogram quantities of antigens and is the preferred method for measuring cytokines and hormones in biological samples (Figure II-3).

Figure II - 3 - Schematic presentation of Sandwich ELISA protocol.



## ELISA Troubleshooting Guide

When trouble shooting, prepare all fresh buffers. Sterile filter buffers containing BSA and allow all reagents to reach room temperature prior to use.

Problem	Possible Source	Suggestion
<b>High Background/ Non-specific Colour Development</b>	Non-specific binding of antibody	Modify blocking buffer used (e.g. substitute casein for BSA). Do not wash after blocking step; dump, blot & go directly to the next step.
	Plate not washed sufficiently	Be sure all wells are filled with buffer during every wash step. Be sure washing apparatus is working properly. Wash 3-5x between steps. Do not add additional washes. After final wash, blot plate forcefully on paper towel to remove residual buffer. Be sure the correct amount of Tween that was added to the wash solution (0.01-0.1% recommended).
	Contaminated Buffers	Prepare all buffers fresh (within 7 days of use) and sterile filter daily.
	Incubation temperature too high	Incubate at room temperature (25°C) throughout whole procedure.
	Incubation time too long	Reduce incubation time.
	Contamination of the substrate with the conjugate or contamination of blank wells with positive control	Change pipette tips between reagents and use separate reservoirs. Ideally, wash buffer should be aspirated (pouring/dumping may lead to cross contamination).
	Concentration of detection antibody or avidin-HRP/streptavidin-HRP is too high	Check calculations or try further dilutions.
	Substrate exposed to light prior to use	Keep substrate in the dark until ready to dispense into wells.
	Wrong filter used when taking readings	Wavelength should be 405nm with a 650nm wavelength correction for ABTS, or 450nm with a 620nm wavelength correction for TMB, when using recommended plates.
	Read beyond time needed for development	Read at recommended time or time intervals in order to monitor blank O.D. readings.
<b>Weak/No Colour Development</b>	A reagent or a step of the procedure omitted by mistake	Check protocol and follow steps carefully.
	Detergent concentration in wash buffer too high	Remove or decrease detergent (0.01-0.1% recommended).
	Plate washed inadequately	Decrease number of washes between steps, especially if not using automated or semi-automated washer. 1-2 washes may suffice.
	Enzyme inhibitor present in samples	Sodium azide inhibits peroxidase activity.
	Wrong incubation time or temperature	Check and follow protocol recommendations. Place plates in an incubator during incubation periods to avoid temperature fluctuations (set to 25°C).
	Wrong substrate volume added to wells	Check pipette; use calibrated pipettes.
	Wrong enzyme-substrate system used	Check manufacturer specifications: avidin-HRP + ABTS or streptavidin-HRP + TMB.

## ELISA Troubleshooting Guide continued...

Problem	Possible Source	Suggestion
<b>Weak/No Colour Development</b> continued	Conjugate or substrate inactive	Test activity in another system and check expiration dates.
	Incorrect storage of components	Store all components as recommended on data sheet.
	Wrong filter used when taking readings	Wavelength should be 405nm with a 650nm wavelength correction for ABTS, or 450nm with a 620nm wavelength correction for TMB, when using the recommended plates.
<b>Poor Standard Curve</b>	Incorrect preparation of standard	Reconstitute standard as suggested on data sheet. Dilute only with recommended diluent buffer unless alternative buffer has been optimized.
	Dilutions made too early	Prepare reagents immediately prior to use and add to wells promptly.
	Capture Antibody did not bind	Use ELISA-suitable plates (i.e. Nunc MaxiSorp Prod. # 439454 or Corning Prod. # 3590); not tissue culture plates.
	Inefficient washing	Be sure wash apparatus is working properly (i.e. distributing even volumes into each well). Be sure wells are empty after aspiration, yet be sure to fill wells in a timely manner.
	Pipetting error	Dispense quickly and identically into the side of each well. Use calibrated pipettes.
	Read beyond time needed for development	In general, reliable standard curves are obtained for ABTS Kits when O.D. readings do not exceed 0.2 for blanks or 1.2 for the highest standard concentration and for TMB Kits when O.D. readings do not exceed 0.15 for blanks.
	Incorrect storage of components	Store all components as recommended on data sheet. Do not allow reconstituted reagents to stay at room temperature for excess time.
<b>Poor Precision</b>	Insufficient mixing of reagents	Ensure adequate mixing of reagents before pipetting.
	Inefficient washing	Be sure wash apparatus is working properly (i.e. distributing even volumes into each well). Be sure wells are empty after aspiration, yet be sure to fill wells in a timely manner.
	Pipetting error	Dispense quickly and identically into the side of each well. Use calibrated pipettes.
	Reused materials	Change pipette tips between samples, reservoirs between reagents, and plate sealers between incubation periods.
	Wells have been scratched by pipette tips or washing apparatus	Use caution when dispensing and aspirating.
	Precipitate in samples	Centrifuge vials prior to use.
	Unclean wells or debris	Inspect wells and remove debris prior to use. Wipe bottom of plate to remove any debris or fingerprints prior to reading.
<b>Edge Effects</b>	Evaporation	Use plate sealers between each step.
	Uneven temperature	Place plates in an incubator during incubation periods to avoid temperature fluctuations (set to 25°C). Do not stack plates.

## ELISA FAQ

### 1. What are the stabilities of the HRP conjugates included in PeproTech's ELISA Development Kits?

The avidin-HRP included in the ABTS kits is stable for up to 1 month at 2-8°C, and up to 2 years at -20°C.

The streptavidin-HRP included in the TMB kit is stable for at least 6 months at 2-8°C.

### 2. How can I find cross-reactivity information for a kit?

PeproTech performs in-house cross-reactivity testing on its ELISA Development Kits. The results that have been collected from this testing are located on the kit's data sheet.

### 3. Is there any step of the ELISA protocol that can be left over the weekend?

The plate may be coated with the capture antibody on Friday, left at 4°C over the weekend, and resumed on Monday. *Please note: changing incubation times may cause results to vary between plates.*

### 4. Are PeproTech's EDKs suitable to use with all sample types?

Although PeproTech has not tested all of its kits in every matrix available, they should be suitable for use in, but not limited to: serum, plasma, cell culture supernate, urine and saliva.

### 5. Is a stop solution necessary to stop the reaction?

A stop solution is not needed when using avidin-HRP + ABTS. In general, reliable standard curves are obtained when either O.D. readings do not exceed 0.2 units for the zero standard concentrations, or 1.2 units for the highest standard concentration. If a stop solution is desired, 1% sodium dodecyl sulfate (SDS) may be used to end the reaction. Stop solutions are not used in PeproTech's laboratory with ABTS kits, though literature has shown that SDS is the optimal stop solution for ABTS.

A stop solution (1M HCl Stop Solution) is recommended with all of PeproTech's TMB kits.

### 6. In addition to the 620nm correction wavelength recommended for the TMB EDKs, can other wavelengths be used?

A correction wavelength of 540, 570, 620, or 650nm can be used with the TMB EDKs.

### 7. Can I use TMB with PeproTech's ABTS EDKs?

PeproTech's EDKs are optimized using ABTS and are, therefore, best used in conjunction with this substrate. The kit can still be used in combination with TMB, but only after some adjustments have been made:

- The avidin-HRP provided in the kit cannot be used with TMB; streptavidin must be purchased separately.
- Dilutions of streptavidin will need to be optimized.
- A stop solution is generally needed when using streptavidin + TMB. Refer to manufacturer's data sheet.
- The TMB reaction time, prior to the addition of stop solution, will need to be optimized.
- The plate is to be read at 450nm with a correction at 650nm when using recommended plates.

### 8. Why is D-mannitol added to the EDK components?

D-mannitol is added to the EDK components in order to aid in protein/antibody visualization. It does not alter ELISA results.

### 9. Can I use the curve on the EDK data sheet as my standard curve?

A separate standard curve must be run on each ELISA plate. In other words, the curve from one plate cannot be used for a different plate. The curve that PeproTech provides on the EDK data sheet is for demonstration purposes only, as achieved in PeproTech's laboratory.

### 10. How does PeproTech generate their standard curve?

When an ELISA is run in PeproTech's lab, a Molecular Devices® plate reader and the SOFTmax® PRO software are used. This programme uses the values that are received and generates a 4-parameter curve. Here is the equation that the programme uses:

4-P Fit:

$$y = \frac{A - D}{1 + \left(\frac{x}{C}\right)^B} + D$$

x = concentration (pg/ml)

y = O.D. (405nm – 650nm)

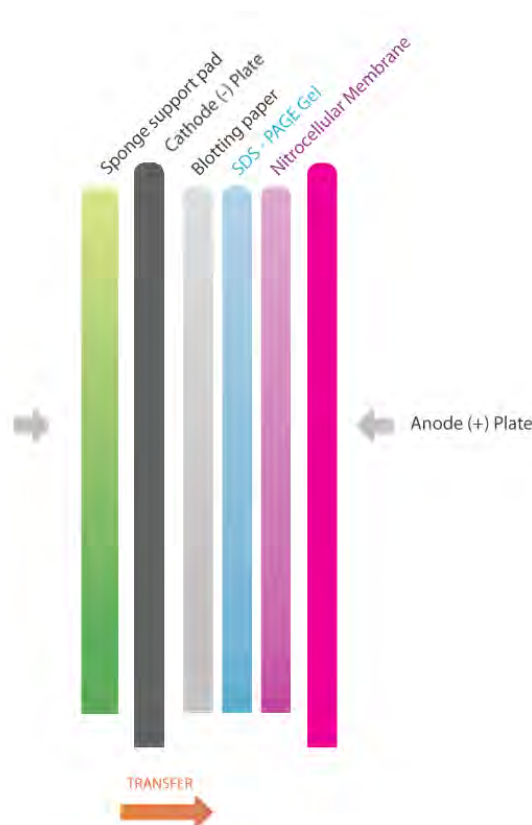
A, B, C, & D correspond to the 4 parameters.\*

\*For more detailed information regarding the parameters, please contact the Technical Support Department.

## Western Transfer (Western Blot)

### iBlot2 Dry Blotting Transfer

1. Open lid of the iBlot2 device.
2. Using Kit #IB23001 (Thermo Fisher) unseal the Top & Bottom Stack. KEEP THE STACK IN THE PLASTIC TRAY. (One tray can fit two 4-20% Tris-Gly gels)
3. Place the Stack onto the iBlot2 transfer machine making sure the electrical contacts from the stack are aligned with the contact on the left side of the iBlot2 system.
4. Carefully remove the top portion from the stack that contains the Top Cathode portion and place it to the side.
5. Place the pre-run gels onto the transfer membrane making sure that the gel marker is facing toward you and use the Blotting Roller to remove all air bubbles.
6. Place the pre-soaked (in deionized water) iBlot Filter Paper onto the pre-run gels and remove air bubbles using the Blotting Roller.
7. Place the Cathode Stack over the pre-soaked Filter Paper with the electrode side facing up and the gel side facing down. Remove air bubbles using the Blotting Roller.
8. Place the Absorbent Pad on top of the Cathode Stack with the metal contact on the left side making sure it aligns with the systems point of contact.
9. Close the lid. Touch P3 on the screen and then start and it will run for 7 minutes.
10. Once the iBlot2 beeps indicating that the cycle is complete, open the lid of the iBlot2 device.
11. Discard the Disposable Sponge and Cathode Stack .
12. Carefully remove and discard the filter paper. Use gels as a marker and cut the transfer membrane in half using a razor.
13. Discard gels and remove the transfer membrane from the stack. Discard the Anode Stack after you removed the membranes for testing.
14. Incubate the membrane in blocking solution (10% Seablock for all antibodies) for 40 minutes with gentle agitation on an orbital shaker.
15. Wash the membrane three times with TBST (TBS, pH 7.2 with 0.1% TWEEN-20) in a clean tray on an orbital shaker; each wash lasting 5-10 minutes.
16. Dilute the probing (primary) antibody in TBST to a volume of 50ml (approximate final concentration of 0.20µg/ml) and incubate the membrane in the antibody solution for one to four hours at room temperature. (The optimum incubation time depends on the antibody/antigen binding affinity and must be pre-determined for each antibody.)
17. Wash the membrane three times as in step #15.





## Western Transfer (Western Blot) continued...

### iBlot2 Dry Blotting Transfer continued....

18. Dilute the secondary antibody in TBST according to the manufacturer's specification. Incubate the membrane in a clean tray containing 50ml of diluted secondary antibody for one hour at room temperature on an orbital shaker.
19. Wash the membrane three times as in step #15.
20. Colour development requires the use of a commercially available (e.g. Bio-Rad or Sigma) alkaline phosphatase conjugate substrate kit. Follow the manufacturer's instructions.
21. After the bands become clearly visible, stop the colour by placing the membrane in a tray containing diH<sub>2</sub>O for at least ten minutes.

#### Recommended Materials:

- SDS-PAGE apparatus and accessories
- iBlot2 Dry Blotting Transfer System
- iBlot2 NC Regular Stacks
- Seablock
- 1xTBST
- Antigen specific probing antibody (Primary Antibody)
- Secondary Antibody (Donkey-anti-probing antibody species conjugated to alkaline phosphatase)
- Commercially available alkaline phosphatase conjugate substrate kit

## Western Transfer FAQ

### 1. How long will the immunostaining take when PeproTech's Western Transfer protocol is followed?

The Western Transfer process will take approximately 6 hours from transfer of proteins to visualization of bands.

### 2. What type of molecular weight marker should be used?

A. PeproTech uses Novex® Sharp Protein Standard for use in all Western Transfers performed in-house, although this molecular weight marker does not have to be utilized. However, it is necessary that a pre-stained molecular weight marker is used when not utilizing the ECL detection method.

### 3. Is the addition of a positive control necessary in a Western Transfer?

Yes, in order to know exactly how the protein of interest will visualize on the Western Transfer you must add a positive control to your gel. When using PeproTech's antibodies in a Western Transfer, we recommend using the corresponding PeproTech recombinant protein, which was the immunizing antigen for the antibody of choice.

### 4. Does the colour development system recommended in PeproTech's Western Transfer protocol have to be used?

No. There are many different colour development systems that can be used for the visualization of your Western Transfer. However, the system that is chosen must be compatible with the enzyme conjugate being used. PeproTech uses an alkaline phosphatase linked secondary antibody. NBT/BCIP is suitable for use with this enzyme, and is therefore used for the visualization of our Western Transfers.

### 5. Is agitation of the membrane essential during the incubation periods?

Yes, it is essential that the membrane be agitated during the incubation periods. If the membrane is not agitated the antibodies, blocking buffer, and washing buffer may not affect the membrane evenly and can create splotchy, or patchy background. It can also limit the detection of the proteins by the antibodies.

### 6. Why are some Western Transfer results stronger than others when using different lots of the same antibody?

Due to the nature of polyclonal antibodies, variability may be seen from lot to lot.

### 7. Is it necessary to include the blotting paper during the protein transfer step?

Yes, it is necessary to include the blotting paper as a barrier in the protein transfer step. This blotting paper helps protect the gel and membrane from any possible damage resulting from direct contact with the sponges, yet does not interfere with the electric current.

### 8. Can an enzyme-conjugated primary antibody be used in a Western Transfer rather than using a primary/secondary antibody system?

Yes, an enzyme-conjugated primary antibody can be used instead of utilizing a primary/secondary antibody system in your Western Transfer. However, by using a labeled secondary antibody that recognizes the antigen-specific primary antibody, there will be an amplification of the signal seen in a Western Transfer when compared to using the enzyme-conjugated primary antibody alone.

## Western Transfer Troubleshooting Guide

Problem	Possible source	Suggestion
Weak/No Signal	Insufficient amount of protein present	<ul style="list-style-type: none"> <li>• Increase amount of protein in sample.</li> <li>• Confirm protein is present through an alternate method.</li> </ul>
	Gel ran too long	<ul style="list-style-type: none"> <li>• Decrease running time and monitor the gel by watching dye front and ensuring the current is turned off when dye front is near bottom of gel.</li> </ul>
	Old or degraded protein samples	<ul style="list-style-type: none"> <li>• Test a fresh sample of target protein.</li> </ul>
	Protein over-transferred/ did not transfer correctly	<ul style="list-style-type: none"> <li>• Use a membrane with a smaller pore size.</li> <li>• Decrease voltage for lower MW proteins (less than 10kDa).</li> <li>• Make sure membrane is pre-soaked according to manufacturer's instructions.</li> <li>• Check and optimize transfer time, as appropriate transfer time will vary with MW of the target protein.</li> <li>• Make sure transfer "sandwich" is set up correctly and there is sufficient contact between gel and membrane. (Please see our Western Transfer protocol for correct transfer "sandwich" set up.)</li> <li>• Ensure the correct transfer buffer is being used.</li> <li>• The presence of SDS during transfer can reduce the binding of the protein when using a nitrocellulose membrane.</li> <li>• Add 20% methanol to transfer buffer to increase binding.</li> <li>• Check protein transfer by staining the membrane with a reversible stain, such as Ponceau S, to visualize major bands.</li> </ul>
	Protein has a pI greater than 9	<ul style="list-style-type: none"> <li>• Substitute buffer with a higher pH buffer (i.e. CAPS buffer, pH 10.5).</li> </ul>
	Protein masked by blocking buffer	<ul style="list-style-type: none"> <li>• Test using a different blocking buffer.</li> <li>• Optimize concentration of protein in blocking buffer. We recommend 10% Seablock in diH<sub>2</sub>O.</li> </ul>
	Enzyme inhibitor present (i.e. azide)	<ul style="list-style-type: none"> <li>• Make sure buffers do not contain sodium azide, as this will interfere with the HRP signal.</li> </ul>
	Old or degraded primary antibody	<ul style="list-style-type: none"> <li>• Check manufacturer's recommendations for storage and/or expiration date. If expired or past storage time, purchase new antibody.</li> <li>• If antibody was subjected to repeated freeze/thaw cycles purchase new antibody, as this can affect the structure and protein:antibody binding.</li> <li>• Perform a Dot Blot to ensure antibody is still active.</li> </ul>
	Insufficient amount of primary and/or secondary antibody	<ul style="list-style-type: none"> <li>• Check manufacturer's recommendation for antibody concentration.</li> <li>• Test a range of concentrations to find the optimal condition for individual assay.</li> </ul>
	Incorrect primary antibody	<ul style="list-style-type: none"> <li>• Ensure primary antibody reacts with the target protein from the species being studied (i.e. Rabbit anti-human VEGF → Human VEGF).</li> </ul>

## Western Transfer Troubleshooting Guide *continued...*

Problem	Possible source	Suggestion
<b>Weak/No Signal</b> continued	Incorrect secondary antibody	<ul style="list-style-type: none"> <li>Ensure the secondary antibody being used is against the species of the primary antibody (i.e. Donkey anti-rabbit IgG → Rabbit anti-human VEGF).</li> </ul>
	Insufficient incubation of primary antibody	<ul style="list-style-type: none"> <li>Increase incubation period of primary antibody. Antibody can be incubated for at least one hour at room temperature or overnight at 4°C.</li> </ul>
	Insufficient incubation of secondary antibody	<ul style="list-style-type: none"> <li>Increase incubation period of secondary antibody (please see manufacturer's recommendations for incubation time and temperature).</li> </ul>
	Membrane over-washed	<ul style="list-style-type: none"> <li>Shorten wash times and/or reduce number of washes.</li> <li>Use a washing buffer that does not contain a detergent, or that has a lower concentration of detergent present.</li> </ul>
	Incompatible developing reagent	<ul style="list-style-type: none"> <li>Make sure the developing reagent being used is compatible with the enzyme conjugate.</li> <li>Ensure substrate is made correctly by following the manufacturer's instructions.</li> </ul>
	Excess salt present	<ul style="list-style-type: none"> <li>Decrease amount of salt present in wash buffer.</li> <li>Decrease amount of salt present in antibody dilution buffer.</li> </ul>
	Degraded/Incorrect developing reagent	<ul style="list-style-type: none"> <li>Ensure the developing reagent was prepared correctly.</li> <li>Check that the reagent is still active. If not, purchase new reagent.</li> </ul>
	For ECL method, film is bad/expired	<ul style="list-style-type: none"> <li>Ensure film is not expired or exposed. If so, purchase new film.</li> </ul>
	For ECL method, ECL developing solutions are old/expired	<ul style="list-style-type: none"> <li>Use fresh ECL developing solutions.</li> </ul>
	For ECL method, film exposure time is too short	<ul style="list-style-type: none"> <li>Increase exposure time of the film.</li> </ul>
	For ECL method, cling film interfering with reaction	<ul style="list-style-type: none"> <li>Use different brand of cling film.</li> </ul>
<b>High Background</b>	Antibody concentration too high	<ul style="list-style-type: none"> <li>Check manufacturer's recommendations for primary and/or secondary antibody concentrations.</li> <li>Test a range of concentrations to find optimal condition for individual assay.</li> </ul>
	Over-incubation of antibodies	<ul style="list-style-type: none"> <li>Check manufacturer's protocol to ensure the correct incubation time and temperature is used. If this information is not supplied by the manufacturer, optimize incubation time through testing.</li> </ul>
	Non-specific binding of antibodies	<ul style="list-style-type: none"> <li>Ensure the primary antibody is specific only for the protein that is being targeted.</li> <li>Run a control, omitting the primary antibody incubation. If bands develop, choose a different secondary antibody.</li> <li>Choose a different host species for secondary antibody.</li> </ul>

## Western Transfer Troubleshooting Guide *continued...*

Problem	Possible source	Suggestion
High Background continued	Cross reaction of antibodies with proteins in blocking buffer and/or sample	<ul style="list-style-type: none"> <li>• Use a different blocking buffer formulation.</li> <li>• Goat antibodies will react with BSA due to a slight recognition of the bovine protein by the goat antibody. This will lead to a purple sheen on your membrane. If this occurs, use a different species antibody or a different blocking buffer.</li> <li>• If secondary antibody is suspected, dilute antibody in buffer containing 1-5% normal serum from the same species as target protein.</li> </ul>
	Ineffective blocking buffer	<ul style="list-style-type: none"> <li>• Use a different blocking buffer formulation.</li> <li>• Add detergent to blocking buffer, such as TWEEN-20.</li> </ul>
	Insufficient blocking	<ul style="list-style-type: none"> <li>• Use a different blocking buffer formulation.</li> <li>• Batch of blocking buffer may be inactive. Use fresh blocking buffer.</li> <li>• If blocking overnight at 4°C, this may decrease blocking efficiency since lower temperatures may lessen the effectiveness. Try incubation for one hour at room temperature.</li> <li>• Optimize incubation time and/or temperature of blocking step.</li> </ul>
	Insufficient washing	<ul style="list-style-type: none"> <li>• After each step, wash membrane 3 times for 10 minutes each. Increase the duration of the washing step if this is not sufficient.</li> <li>• Try a different detergent in washing buffer or add TWEEN-20 if not already present.</li> <li>• Increase volume of washing buffer used.</li> </ul>
	Over-incubation in colour development substrate	<ul style="list-style-type: none"> <li>• Shorten incubation time in colour development solution. Monitor development until bands are present and stop reaction by washing membrane in diH<sub>2</sub>O.</li> </ul>
	Excess enzyme present	<ul style="list-style-type: none"> <li>• Reduce concentration of selected enzyme conjugate.</li> </ul>
	Interference by endogenous enzyme	<ul style="list-style-type: none"> <li>• Non Fat Dry Milk contains endogenous biotin and may interfere with avidin/biotin detection system. Use different blocking buffer, such as 3% BSA.</li> </ul>
	Contaminated reagents	<ul style="list-style-type: none"> <li>• Filter buffers before use to remove contaminant.</li> <li>• Make fresh buffers and re-run Western Transfer.</li> </ul>
	Membrane problems	<ul style="list-style-type: none"> <li>• Test new membranes.</li> <li>• During the entire procedure the membrane can only be dried between transfer and immunostaining. Once immunostaining has begun, the membrane cannot be dried until completion of immunostaining procedure. Re-run Western Transfer if membrane was dried at any other point during immunostaining procedure.</li> </ul>
	For ECL method, ECL film overexposed	<ul style="list-style-type: none"> <li>• Shorten film exposure time.</li> <li>• If signal from target protein is too strong, wait 5-10 minutes and re-expose to film.</li> </ul>

## Western Transfer Troubleshooting Guide *continued...*

Problem	Possible source	Suggestion
<b>Spotchy Background</b>	Uneven agitation during incubations	<ul style="list-style-type: none"> <li>• Ensure the membrane is agitated evenly by placing on a rocker or shaker during incubation.</li> </ul>
	Insufficient amount of incubation buffer	<ul style="list-style-type: none"> <li>• Ensure enough solution is present during each incubation period to fully submerge the membrane and allow it to float freely in the solution.</li> </ul>
	Air bubbles present during transfer	<ul style="list-style-type: none"> <li>• Gently remove all air bubbles from transfer “sandwich” before transfer is started. This can be done by using a roller or clean glass rod/Pasteur pipette.</li> </ul>
	Membrane problems	<ul style="list-style-type: none"> <li>• Ensure membrane is wetted thoroughly according to the manufacturer’s protocol.</li> <li>• Handle membranes with extreme care. Mishandled membranes can cause non-specific binding.</li> <li>• Handling membranes with bare hands can lead to contamination of membrane. Use forceps or wear gloves when handling membrane.</li> </ul>
	Aggregation of HRP conjugate	<ul style="list-style-type: none"> <li>• If using HRP, filter conjugate to remove HRP aggregates.</li> <li>• Use a fresh sample of HRP conjugate.</li> </ul>
	Contamination of reagents	<ul style="list-style-type: none"> <li>• Filter buffers before use to remove contaminant.</li> <li>• Make fresh buffers and re-run Western Transfer.</li> </ul>
<b>Non-specific bands</b>	Antibody concentration too high	<ul style="list-style-type: none"> <li>• Check manufacturer’s recommendations for primary and/or secondary antibody concentrations.</li> <li>• Test a range of concentrations to find optimal condition for individual assay.</li> </ul>
	Old or degraded antibody	<ul style="list-style-type: none"> <li>• Check manufacturer’s recommendations for storage and/or expiration date. If expired or past storage time, purchase new antibody.</li> <li>• If antibody was subjected to repeated freeze/thaw cycles purchase new antibody, as this can affect the structure and protein:antibody binding.</li> </ul>
	Non-specific binding of primary antibody	<ul style="list-style-type: none"> <li>• Decrease concentration of primary antibody.</li> <li>• Check concentration of protein being added to gel.</li> <li>• Use a more specific antibody, such as a monoclonal antibody or Antigen Affinity Purified polyclonal antibody.</li> <li>• Add a small amount of detergent, such as TWEEN-20 (0.1-0.5%) to the primary antibody solution and/or blotting buffer.</li> <li>• Increase number/duration of washes.</li> </ul>
	Non-specific binding of secondary antibody	<ul style="list-style-type: none"> <li>• Decrease concentration of secondary antibody.</li> <li>• Run a control, omitting the primary antibody incubation. If bands develop, choose a different secondary antibody.</li> <li>• Add a small amount of detergent, such as TWEEN-20 (0.1-0.5%) to the secondary antibody solution.</li> <li>• Increase number/duration of washes.</li> </ul>

## Western Transfer Troubleshooting Guide *continued...*

Problem	Possible source	Suggestion
<b>Non-Specific Bands</b> continued	Aggregation of target protein	<ul style="list-style-type: none"> <li>• Add or increase a reducing agent, such as DTT or BME, to ensure all disulfide bonds are reduced.</li> <li>• Heat protein sample in a hot water bath for 5-10 minutes before loading onto gel.</li> <li>• Check concentration of protein being added to gel. A concentration that is too high can cause protein aggregation. Re-run Western Transfer with a lower concentration of protein.</li> </ul>
	Degradation of protein sample	<ul style="list-style-type: none"> <li>• Make fresh samples and minimize freeze/thaw cycles of samples.</li> <li>• Add protease inhibitor to samples prior to storage.</li> <li>• Keep samples stored between -20°C and -80°C.</li> </ul>
	Insufficient blocking	<ul style="list-style-type: none"> <li>• Test a different blocking buffer formulation.</li> <li>• Batch of blocking buffer may be inactive. Use a fresh blocking buffer.</li> <li>• If blocking overnight at 4°C, this may decrease blocking efficiency since lower temperatures may lessen the effectiveness. Try incubation for one hour at room temperature.</li> <li>• Add TWEEN-20 to blocking buffer.</li> <li>• Optimize incubation time and/or temperature of blocking step.</li> </ul>
	SDS facilitates binding to immobilized protein bands	<ul style="list-style-type: none"> <li>• Ensure membrane is sufficiently washed after transfer of proteins.</li> <li>• Do not use SDS during immunostaining when using a nitrocellulose membrane.</li> </ul>
	Excess enzyme present	<ul style="list-style-type: none"> <li>• Reduce concentration of the selected enzyme conjugate.</li> </ul>
	Contamination of reagents	<ul style="list-style-type: none"> <li>• Filter buffers before use to remove contaminant.</li> <li>• Make fresh buffers and re-run Western Transfer.</li> </ul>
<b>Diffused/Fuzzy bands</b>	Antibody concentration too high	<ul style="list-style-type: none"> <li>• Check manufacturer's recommendations for primary and/or secondary antibody concentrations.</li> <li>• Test a range of concentrations to find optimal condition for individual assay.</li> </ul>
	Excess protein on gel	<ul style="list-style-type: none"> <li>• Further dilute protein samples before loading onto gel.</li> </ul>
	Gel over-heated/high voltage	<ul style="list-style-type: none"> <li>• Heat causes the gel to lose its structure and resolving power. Be sure the transfer reservoir is run in an ice bath.</li> <li>• Reduce voltage or current used during transfer.</li> </ul>
	Incorrect preparation of membrane	<ul style="list-style-type: none"> <li>• Pre-soak membrane in correct transfer solution (see membrane manufacturer's protocol). Ensure it is soaked for the correct amount of time.</li> </ul>
<b>White Bands (ECL visualization method)</b>	Antibody or protein concentration too high/Excessive signal generated	<ul style="list-style-type: none"> <li>• White bands are the result of rapid consumption of the substrate caused by the presence of too much conjugate. This is the result of high concentrations of the antibodies and/or proteins. Check manufacturer's recommendations for antibody and/or protein concentrations.</li> </ul>

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