

Animal-Free Products

Animal-Free Cytokines

Animal-Free Cell Culture Derived Cytokines

Animal-Free Cytokine Packages

Animal-Free Cell Culture Media Products



PeproTech's Animal-Free Products

PeproTech creates the building blocks of life sciences research by manufacturing high-quality products that advance scientific discovery and human health. With the addition of our dedicated Animal-Free facility, PeproTech offers a product line designed to eliminate the mitigation of risk that can arise from trace amounts of animal-derived adventitious agents, such as viruses, TSE/BSE and other unknowns.



The following Animal-Free product information is available

- Animal-Free Cytokines
- Animal-Free Cell Culture Derived Cytokines
- Animal-Free Cytokine Packages
- Animal-Free Cell Culture Media Products

Animal-Free Cytokines

PeproTech's *E.coli*-derived Animal-Free Cytokines are manufactured under strict Animal-Free manufacturing conditions in a dedicated Animal-Free facility located in West Lake Village, California.

Key Elements of PeproTech's *E.coli* Animal-Free Cytokines:

- **Manufactured Under Strict Animal-Free Conditions**

- Dedicated and Controlled Animal-Free Facility
- Pre-Qualified Animal-Free Raw Materials
- Animal-Free Master and Working Cell Banks
- Dedicated Animal-Free Fermentor
- Low Risk and Animal Component-Free Contact Materials, including:
 - Laboratory Equipment
 - Labware
 - Purification Methods
 - Dedicated Columns
 - Resins
- Animal-Free Filters for Sterile Filtration

- **Lyophilized without Additives or Preservatives**

- **Quality Assured**

- Extensive Quality Control Testing:
 - Protein Authenticity
 - Biological Activity
 - Protein Content
 - Purity
 - Sterility
 - Endotoxin ($\leq 0.1\text{EU}/\mu\text{g}$)

- **Animal Component free manufacturing process for Cell Culture Cytokines**

- Human TGF- β 1 CHO derived: expressed in *CHO cell* expression system with serum-free, animal-free, chemically-defined media
- Human Vitronectin: expressed in *HEK293* expression system with serum-free, animal-free, chemically-defined media

- **Widest Range of Animal-Free Cytokines Available, and Continuously Expanding**

- **Custom Sizes Available**



Animal-Free Cytokines

| Product Description | Catalogue # | Size A | Size B | Source |
|----------------------------|-------------|--------|--------|----------------|
| Human/Murine/Rat Activin A | AF-120-14E | 2µg | 10µg | <i>E. coli</i> |
| Human BAFF | AF-310-13 | 5µg | 20µg | <i>E. coli</i> |
| Human BD-5 | AF-300-68 | 5µg | 20µg | <i>E. coli</i> |
| Human BDNF | AF-450-02 | 2µg | 10µg | <i>E. coli</i> |
| Human BMP-2 | AF-120-02 | 2µg | 10µg | <i>E. coli</i> |
| Human BMP-4 | AF-120-05ET | 2µg | 10µg | <i>E. coli</i> |
| Human sCD40 Ligand | AF-310-02 | 10µg | 50µg | <i>E. coli</i> |
| Human CNTF | AF-450-13 | 5µg | 20µg | <i>E. coli</i> |
| Rat CNTF | AF-450-50 | 5µg | 25µg | <i>E. coli</i> |
| Human EGF | AF-100-15 | 100µg | 500µg | <i>E. coli</i> |
| Murine EGF | AF-315-09 | 100µg | 500µg | <i>E. coli</i> |
| Rat EGF | AF-400-25 | 20µg | 100µg | <i>E. coli</i> |
| Human FGF-acidic | AF-100-17A | 10µg | 50µg | <i>E. coli</i> |
| Human FGF-basic (146 a.a.) | AF-100-18C | 10µg | 50µg | <i>E. coli</i> |
| Human FGF-basic (154 a.a.) | AF-100-18B | 10µg | 50µg | <i>E. coli</i> |
| Murine FGF-basic | AF-450-33 | 10µg | 50µg | <i>E. coli</i> |
| Human FGF-4 | AF-100-31 | 5µg | 25µg | <i>E. coli</i> |
| Human FGF-8 | AF-100-25 | 5µg | 25µg | <i>E. coli</i> |
| Human FGF-9 | AF-100-23 | 5µg | 20µg | <i>E. coli</i> |
| Human FGF-10 | AF-100-26 | 5µg | 25µg | <i>E. coli</i> |
| Human FGF-18 | AF-100-28 | 5µg | 25µg | <i>E. coli</i> |
| Human FGF-21 | AF-100-42 | 5µg | 25µg | <i>E. coli</i> |
| Human Flt3-Ligand | AF-300-19 | 2µg | 10µg | <i>E. coli</i> |
| Human G-CSF | AF-300-23 | 2µg | 10µg | <i>E. coli</i> |
| Murine G-CSF | AF-250-05 | 2µg | 10µg | <i>E. coli</i> |
| Human GDF-3 | AF-120-22 | 5µg | 20µg | <i>E. coli</i> |
| Human GDNF | AF-450-10 | 2µg | 10µg | <i>E. coli</i> |
| Murine GDNF | AF-450-44 | 2µg | 10µg | <i>E. coli</i> |
| Rat GDNF | AF-450-51 | 2µg | 10µg | <i>E. coli</i> |
| Human GM-CSF | AF-300-03 | 5µg | 20µg | <i>E. coli</i> |
| Murine GM-CSF | AF-315-03 | 5µg | 20µg | <i>E. coli</i> |
| Rat GM-CSF | AF-400-23 | 5µg | 20µg | <i>E. coli</i> |
| Human Growth Hormone | AF-100-40 | 10µg | 50µg | <i>E. coli</i> |
| Human Heregulinβ-1 | AF-100-03 | 10µg | 50µg | <i>E. coli</i> |
| Human IFN-β | AF-300-02B | 5µg | 20µg | <i>E. coli</i> |
| Human IFN-γ | AF-300-02 | 20µg | 100µg | <i>E. coli</i> |
| Murine IFN-γ | AF-315-05 | 20µg | 100µg | <i>E. coli</i> |
| Human IFN-λ1 | AF-300-02L | 5µg | 20µg | <i>E. coli</i> |
| Human IGF-I | AF-100-11 | 100µg | 500µg | <i>E. coli</i> |
| Human IGF-I LR3 | AF-100-11R3 | 200µg | 1mg | <i>E. coli</i> |
| Human IGF-II | AF-100-12 | 10µg | 50µg | <i>E. coli</i> |
| Human IGF-BP3 | AF-100-08 | 5µg | 25µg | <i>E. coli</i> |
| Human IGF-BP7 | AF-350-09 | 5µg | 25µg | <i>E. coli</i> |
| Human IL-1α | AF-200-01A | 2µg | 10µg | <i>E. coli</i> |
| Human IL-1β | AF-200-01B | 2µg | 10µg | <i>E. coli</i> |
| Murine IL-1β | AF-211-11B | 2µg | 10µg | <i>E. coli</i> |
| Human IL-1RA | AF-200-01RA | 20µg | 100µg | <i>E. coli</i> |
| Human IL-2 | AF-200-02 | 10µg | 50µg | <i>E. coli</i> |
| Murine IL-2 | AF-212-12 | 5µg | 20µg | <i>E. coli</i> |
| Rat IL-2 | AF-400-02 | 5µg | 20µg | <i>E. coli</i> |
| Human IL-3 | AF-200-03 | 2µg | 10µg | <i>E. coli</i> |
| Murine IL-3 | AF-213-13 | 2µg | 10µg | <i>E. coli</i> |
| Human IL-4 | AF-200-04 | 5µg | 20µg | <i>E. coli</i> |

| Product Description | Catalogue # | Size A | Size B | Source |
|-------------------------------|-------------|--------|--------|---------------------|
| Murine IL-4 | AF-214-14 | 5µg | 20µg | <i>E. coli</i> |
| Human IL-6 | AF-200-06 | 5µg | 20µg | <i>E. coli</i> |
| Murine IL-6 | AF-216-16 | 2µg | 10µg | <i>E. coli</i> |
| Human IL-7 | AF-200-07 | 2µg | 10µg | <i>E. coli</i> |
| Human IL-8 (CXCL8) (72 a.a.) | AF-200-08M | 5µg | 25µg | <i>E. coli</i> |
| Human IL-9 | AF-200-09 | 2µg | 10µg | <i>E. coli</i> |
| Human IL-10 | AF-200-10 | 2µg | 10µg | <i>E. coli</i> |
| Human IL-11 | AF-200-11 | 2µg | 10µg | <i>E. coli</i> |
| Human IL-13 | AF-200-13 | 2µg | 10µg | <i>E. coli</i> |
| Human IL-15 | AF-200-15 | 2µg | 10µg | <i>E. coli</i> |
| Human IL-16 (121 a.a.) | AF-200-16A | 2µg | 10µg | <i>E. coli</i> |
| Human IL-17 (IL-17A) | AF-200-17 | 5µg | 25µg | <i>E. coli</i> |
| Human IL-17E | AF-200-24 | 5µg | 25µg | <i>E. coli</i> |
| Human IL-17F | AF-200-25 | 5µg | 25µg | <i>E. coli</i> |
| Human IL-21 | AF-200-21 | 2µg | 10µg | <i>E. coli</i> |
| Human IL-22 | AF-200-22 | 2µg | 10µg | <i>E. coli</i> |
| Human IL-33 | AF-200-33 | 2µg | 10µg | <i>E. coli</i> |
| Human IL-36γ (IL-1F9) | AF-200-36G | 2µg | 10µg | <i>E. coli</i> |
| Human KGF (FGF-7) | AF-100-19 | 2µg | 10µg | <i>E. coli</i> |
| Human LIF | AF-300-05 | 5µg | 25µg | <i>E. coli</i> |
| Murine LIF | AF-250-02 | 5µg | 25µg | <i>E. coli</i> |
| Human MCP-1 (CCL2) | AF-300-04 | 5µg | 20µg | <i>E. coli</i> |
| Human M-CSF | AF-300-25 | 2µg | 10µg | <i>E. coli</i> |
| Murine M-CSF | AF-315-02 | 2µg | 10µg | <i>E. coli</i> |
| Rat M-CSF | AF-400-28 | 2µg | 10µg | <i>E. coli</i> |
| Human MIP-1α (CCL3) | AF-300-08 | 5µg | 20µg | <i>E. coli</i> |
| Human β-NGF | AF-450-01 | 20µg | 100µg | <i>E. coli</i> |
| Murine Noggin | AF-250-38 | 5µg | 20µg | <i>E. coli</i> |
| Human NT-3 | AF-450-03 | 2µg | 10µg | <i>E. coli</i> |
| Human NT-4 | AF-450-04 | 2µg | 10µg | <i>E. coli</i> |
| Human Oncostatin M (209 a.a.) | AF-300-10T | 2µg | 10µg | <i>E. coli</i> |
| Human PDGF-AA | AF-100-13A | 2µg | 10µg | <i>E. coli</i> |
| Human PDGF-BB | AF-100-14B | 2µg | 10µg | <i>E. coli</i> |
| Human PIGF-1 | AF-100-06 | 5µg | 25µg | <i>E. coli</i> |
| Human sRANK Ligand | AF-310-01 | 2µg | 10µg | <i>E. coli</i> |
| Human RANTES (CCL5) | AF-300-06 | 5µg | 20µg | <i>E. coli</i> |
| Human SCF | AF-300-07 | 2µg | 10µg | <i>E. coli</i> |
| Murine SCF | AF-250-03 | 2µg | 10µg | <i>E. coli</i> |
| Rat SCF | AF-400-22 | 2µg | 10µg | <i>E. coli</i> |
| Human SDF-1α (CXCL12) | AF-300-28A | 2µg | 10µg | <i>E. coli</i> |
| Human SDF-1β (CXCL12) | AF-300-28B | 2µg | 10µg | <i>E. coli</i> |
| Human TGF-α | AF-100-16A | 20µg | 100µg | <i>E. coli</i> |
| Human TGF-β1 | AF-100-21C | 2µg | 10µg | <i>CHO cells</i> |
| Human TGF-β3 | AF-100-36E | 2µg | 10µg | <i>E. coli</i> |
| Human TNF-α | AF-300-01A | 10µg | 50µg | <i>E. coli</i> |
| Murine TNF-α | AF-315-01A | 5µg | 20µg | <i>E. coli</i> |
| Human TPO | AF-300-18 | 2µg | 10µg | <i>E. coli</i> |
| Murine TPO | AF-315-14 | 2µg | 10µg | <i>E. coli</i> |
| Rat TPO | AF-400-34 | 2µg | 10µg | <i>E. coli</i> |
| Human TWEAK | AF-310-06 | 5µg | 25µg | <i>E. coli</i> |
| Human VEGF ₁₂₁ | AF-100-20A | 2µg | 10µg | <i>E. coli</i> |
| Human VEGF ₁₆₅ | AF-100-20 | 2µg | 10µg | <i>E. coli</i> |
| Murine VEGF ₁₆₅ | AF-450-32 | 2µg | 10µg | <i>E. coli</i> |
| Human Vitronectin | AF-140-09 | 100µg | 500µg | <i>HEK293 cells</i> |

Animal-Free Cytokine Packages

PeprTech's Animal-Free Cytokine Packages provide customers with a convenient single package of select research based product combinations. These are available as Human and Murine Animal-Free Dendritic Cell Cytokine Packages, and Human and Murine Animal-Free Hematopoietic Stem Cell Expansion Cytokine Packages.

Animal-Free Human Dendritic Cell Cytokine Package

Catalogue Number: AF-HDC

The following 2 vials are included:

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

Animal-Free Murine Dendritic Cell Cytokine Package

Catalogue Number: AF-MDC

The following 2 vials are included:

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

Animal-Free Human Hematopoietic Stem Cell Expansion Cytokine Package

Catalogue Number: AF-HHSC3

The following 4 vials are included:

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

Animal-Free Murine Hematopoietic Stem Cell Expansion Cytokine Package

Catalogue Number: AF-MHSC3

The following 4 vials are included:

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

Animal-Free Human Hematopoietic Stem Cell Expansion Cytokine Package

Catalogue Number: AF-HHSC6

The following 4 vials are included:

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

Animal-Free Murine Hematopoietic Stem Cell Expansion Cytokine Package

Catalogue Number: AF-MHSC6

The following 4 vials are included:

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



Animal-Free Cell Culture Media Products

As a leading researcher and manufacturer of cytokine products, PeproTech is pleased to offer Animal-Free Cell Culture Media including products that contain our recombinant proteins and/or growth factors. These media formulations are engineered by PeproTech's scientists and collaborators to provide the basic nutrients to grow and support several specific cell types.



PeproGrow Animal-Free hESC Medium Kits

Based on the E8® Formulation*

For Human ESCs and Human iPSCs

| Kit Catalogue Number: | | AF-hESC-R-500 | |
|-----------------------|--|------------------|-----------------------------|
| <i>For 500mL size</i> | Basal Medium | AF-BM-hESC-R-500 | 500mL |
| | Animal-Free Growth Factor Component | AF-GF-hESC-500 | Vial for 500mL Basal Medium |
| Kit Catalogue Number: | | AF-hESC-R-100 | |
| <i>For 100mL size</i> | Basal Medium | AF-BM-hESC-R-100 | 100mL |
| | Animal-Free Growth Factor Component | AF-GF-hESC-100 | Vial for 100mL Basal Medium |

PeproGrow Animal-Free Low Protein hESC Medium Kits

Based on the E8® Formulation*

For Human ESCs and Human iPSCs

| Kit Catalogue Number: | | AF-LP-hESC-500 | |
|-----------------------|--|-------------------|-----------------------------|
| <i>For 500mL size</i> | Low Protein Basal Medium | AF-BM-LP-hESC-500 | 500mL |
| | Animal-Free Growth Factor Component | AF-GF-hESC-500 | Vial for 500mL Basal Medium |
| Kit Catalogue Number: | | AF-LP-hESC-100 | |
| <i>For 100mL size</i> | Low Protein Basal Medium | AF-BM-LP-hESC-100 | 100mL |
| | Animal-Free Growth Factor Component | AF-GF-hESC-100 | Vial for 100mL Basal Medium |

PeproGrow-1 Kit

Catalogue #700-C100

For adherent HeLa, HEK293, and A549 cells

| | | |
|-----------------------------------|-------|-------|
| Serum Replacement Solution | SR100 | 100mL |
| Lipid Mixture Solution | LM200 | 55mL |

PeproGrow CHO Media

For CHO cells

| | | |
|-------------------------|----------------------|-----|
| PeproGrow CD-CHO | Catalogue #AF-CD-CHO | 1 L |
| PeproGrow AF-CHO | Catalogue #AF-CHO | 1 L |

PeproGrow HEK293 Medium

For HEK293 cells

| | | |
|-------------------------|-------------------------|-----|
| PeproGrow HEK293 | Catalogue #AF-CD-HEK293 | 1 L |
|-------------------------|-------------------------|-----|

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

Companion Products for PeproGrow Animal-Free hESC Media

PeproTech offers two companion products for the PeproGrow Animal-Free hESC Media Products: the Animal-Free Human Vitronectin Matrix and Buffer Kit, and the Cell Passaging/Non-Enzymatic Detachment Buffer. These products are developed in collaboration with, and used in, the Rutgers Stem Cell Training Course.

Animal-Free Human Vitronectin Matrix and Buffer Kit Catalogue #AF-VMB-220

| | |
|---|-------|
| Animal-Free Human Vitronectin Matrix | 500ug |
| PBS + Kolliphor P 188 | 220mL |

Cell Passaging/Non-Enzymatic Detachment Buffer Catalogue #CPD-125

| | |
|---------------------------------------|-------|
| Buffer contains PBS+HEPES+EDTA | 125mL |
|---------------------------------------|-------|

Animal-Free Glossary:

| | |
|------------------------------|---|
| Animal | A living organism from the Kingdom Animalia, having the characteristics of being multicellular and eukaryotic. |
| Animal Component-Free | A reagent that does not contain any animal-derived components. |
| Animal-Derived | A component that has been directly removed from an animal source, and therefore may potentially have a level of risk exposure as associated with animal components. |
| Animal-Free | A reagent that was manufactured without any animal-derived components and without exposure to animal derived reagents or equipment. |

Cell Culture Glossary:

| | |
|---|---|
| Adherent Cell Culture | Cells that form a single layer on an artificial substrate system in a medium, such as in a T-flask or a roller bottle. |
| Animal-Free Medium | The medium does not contain animal-derived components. |
| Aseptic Technique | Procedures that are performed under sterile conditions. This prevents the introduction of fungi, bacteria, viruses, mycoplasma or other microorganisms into cell culture or other laboratory culturing conditions. These procedures may also prevent cell cross-contamination. |
| Basal Medium | An incomplete simple cell culturing medium that does not contain supplemental nutrients or growth factors. |
| Chemically-Defined Medium | The chemicals contained in the medium are known and quantifiable. This medium does not contain yeast, animal or plant protein hydrolysates. |
| Complete Medium | All the necessary components/nutrients for the cell type are present for culturing. |
| Defined Medium | This is also known as chemically-defined medium. All the chemicals and quantities of the medium content are known. |
| Growth Supplement | This is an additional supplement, which contains growth factors/proteins necessary for a particular cell type's growth. PeproTech supplies this with some media types and the researcher adds to the medium upon use. The addition of the growth supplement results in the complete medium. |
| Medium/Media (plural form of medium) | The liquid solution or medium to grow and cultivate a particular cell type. |
| Protein-Free Medium | The medium does not contain protein. For example, these protein reagents may include insulin, transferrin, albumin, and other protein growth factors. |
| Serum-Free Medium | The medium does not contain serum. |
| Suspension Cell Culture | Cells that are free-floating in a medium, such as in a shaker flask on an orbital shaker or a stirred tank bioreactor. |
| Undefined Medium | The medium may contain ingredients, such as a yeast extract, and animal or plant protein hydrolysates, in which the mixture of the chemical reagents is in unknown proportions. |
| Xeno-Free Medium | By some definitions, xeno-free medium does not contain animal products, i.e., all the components are of non-animal origin. A xeno-free product may contain human-derived reagents. |



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