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Certificate of Analysis (CoA)

PeproGMP® Recombinant Human VEGF$_{165}$

Catalog# GMP100-20-1MG
Lot# 0322G010D1422
Manufacture Date: Mar. 2022

Manufacturing Site: Cranbury, NJ, USA
Final Fill Site: Cranbury, NJ, USA
Expiration Date: Mar. 2027

Manufactured under strict animal-free conditions using no animal-derived raw or contact materials; therefore, considered BSE/TSE free.

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1. Product Description

Description	VEGF is a potent growth and angiogenic cytokine. It stimulates proliferation and survival of endothelial cells, and promotes angiogenesis and vascular permeability. Recombinant Human VEGF$_{165}$ is a 38.2 kDa, disulfide-linked homodimeric protein consisting of two 165 amino acid polypeptide chains.
Source	*E.coli*
Formulation	Sterile filtered through a 0.2 micron filter. Lyophilized with no additives.
Purity	≥98% by SDS-PAGE Gel and HPLC
Transport	Lyophilized products are stable when shipped at ambient temperature for at least 2 weeks.
Storage	Lyophilized PeproGMP® Recombinant Cytokines should be stored at -20˚C to -80˚C immediately upon receipt. Avoid repeated freeze-thaw cycles.
Country Of Origin	USA

2. Instructions for Use

Reconstitution

- Disinfect surface of the vial before use.
- Lift tab on cap and disinfect surface of the rubber stopper.
- Use appropriate sterile syringe and sterile needle.
- Reconstitute using sterile water (i.e. WFI) to a concentration of 0.1-1.0 mg/ml.
- Puncture the rubber stopper using the needle and add the sterile water (i.e. WFI) carefully along the side of the wall of the vial. Mix gently, avoiding foam formation. DO NOT shake or vortex.
- Further dilutions should be made in a buffer containing HSA or BSA.
- Avoid repeated freeze-thaw cycles.

3. Product Use Limitations

PeproTech products have been manufactured to be GMP-compliant products, wherein GMP compliance is consistent with provisions of the United States Food and Drug Administration (FDA). Products sold by PeproTech, however, do not have approval or clearance by any worldwide regulatory authority, including the FDA. PeproTech products, which are, or may be, used to manufacture human or veterinary drug products, food additives, diagnostic reagents, medical devices, dietary supplements, or cosmetics as defined or described by the United States Federal Food, Drug and Cosmetic Act (FFDCA), are not intended for direct human use. The products are intended for *in vitro* or *ex vivo* use only. Unless otherwise indicated, all products are distributed and sold for use in the manufacture or production of a therapeutic product or for chemical purposes only. Thus, PeproTech products are not intended for direct human exposure by any route, including but not limited to intravenous injection, oral ingestion, topical application, or inhalation. All products sold by PeproTech are to be used by qualified professionals only.

4. Certificate of Compliance

PeproTech certifies that PeproGMP® Recombinant Human VEGF$_{165}$ has been manufactured, tested and released in accordance with a Quality System that complies with relevant US FDA Good Manufacturing Practice and ISO 9001:2015 standard requirements.

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5. Product Specifications

Analysis	Method	Specification	Results
Concentration	UV Spectroscopy (A280)	+/- 15% @ 1mg/ml	**Pass**
Endotoxin	Charles River PTS – kinetic LAL	≤ 0.1 EU/µg	**< 0.01 EU/µg**
Protein Content	SDS-PAGE Gel 4-20% Tris-glycine	(-) Band slightly above 36.5 kDa marker (homodimer) (+) Band slightly below 21.5 kDa marker (monomer)	**Pass**
Sterility	Direct inoculation in accordance with USP	No Growth	**No Growth**
N-terminal AA Sequence	Protein Sequencing System	A P M A E G	**A P M A E G**
Purity (Elution)	HPLC	30-41% Elution Peak	**Pass**
Protein Mass	Mass Spectrometry	38.0 - 38.5 kDa	**Pass**
Biological Activity	Proliferation of HUVECs	1.0-10.0 ng/ml	**5.3-7.9 ng/ml**
Identity	Western Blot	Compare to Control	**Pass**
Mycoplasma	Tested in accordance with USP <63> and EP General Chapter 2.6.7	Negative/Not Detected	**Not Detected**
Residual *E.coli* DNA	^{32}P-labeled *E.coli* DNA probe generated from E.coli genomic DNA	≤500 pg DNA/ml	**Pass**

6. Regulatory Compliance

Purchasers of PeproTech products agree to comply with all provisions of applicable federal, state and local statutes, rules, regulations, ordinances, and orders in any use they may make of PeproTech products. Products sold by PeproTech do not have clearance or approval of any regulatory authority, including the FDA. Because PeproTech products are intended for research use or use in the manufacture of products intended for use in humans, the products may require listing on the United States Environmental Protection Agency (EPA) Toxic Substances Control Act (TSCA) Inventory. Purchasers assume the responsibility to ensure that any PeproTech product purchased are approved under TSCA, if applicable, and to ensure that the products are in compliance with any relevant TSCA provisions. Purchasers assume similar responsibilities to ensure that any products they purchase are in compliance with other relevant regulatory authority provisions.

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Document Reviewed by

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