



CTGrade GMP rh EGF

Catalog #	Product	Size
500-14	CTGrade GMP rh EGF	50µg, 100µg, 1mg lyophilized

Intended Use

This product is for research or further manufacturing use only. Not for injection or diagnostic procedures. The safety and efficacy of this product in diagnostic or other clinical procedures has not been established.

Product Description

This product is produced from *E. coli* and is manufactured in a facility that does not use or process beta-lactam containing materials. No animal- or human-derived materials were used during manufacturing or as ingredients. As such, the risk for BSE/TSE contamination can be considered negligible. This product is manufactured, tested, and released in an ISO 9001:2015 certified facility and follows cGMP practices. USP chapter <1043> for ancillary materials has been considered in the manufacture of this product.

Synonyms: Urogastrone, URG

NIH Accession Number: P01133

Background: Epidermal Growth Factor (EGF) exerts its effects by binding to the EGF Receptor, a protein kinase that initiates the intracellular signaling (1). EGF is widely distributed in tissues like the kidney, cerebrum, prostate, and salivary glands. EGF acts as a potent factor in promoting cell division, and the phosphorylated receptor recruit adapter proteins like GRB2, which then activate complex downstream signaling cascades. EGF stimulates the proliferation differentiation, and survival of epithelial and epidermal cells. EGF possesses three intramolecular disulfide bonds and forms a strong attachment to the epidermal growth factor receptor (EGFR). Activation of EGFR initiates diverse cellular pathways in response to toxic environmental stimuli, or to EGF binding to the receptor, the EGFR forms homo- or heterodimers with other family members. (2, 3). EGF activates at least four major downstream signaling pathways, including the RAS-RAF-MEK-ERK, PI3 kinase-AKT, PLC gamma-PKC, and STAT modules. Additionally, research suggests that EGF may play a significant role in activating the NF-kappa-B signaling cascade (4). Mutations in the EGF gene are responsible for hypomagnesemia type 4, and its dysregulation has been linked to the development and progression of certain cancers (5).



Specifications

Formulation:	CTGrade GMP rh EGF is lyophilized from a 0.2 µm filtered solution containing 0.1% Trifluoroacetic Acid (TFA).
Protein Purity:	≥98% determined by reducing and non-reducing SDS-PAGE analysis.
Endotoxin:	<0.01 EU/µg using USP <85>/ EP 2.6.14
Bioactivity:	ED50 is determined by the dose-dependent Proliferation of BALB/c 3T3 cells. The ED50 is typically less than 0.1 ng/mL. The international units of CTGrade GMP rh EGF is approximately 1.0 x10 ³ IU/µg, which is calibrated against recombinant Human Epidermal Growth Factor WHO International Standard (NIBSC code 91/530).
Quality:	Carrier-free and no animal- or human-derived materials were used during manufacturing.

Quality Assurance

All quality control test results are reported on a lot specific Certificate of Analysis, which is available at <https://fujifilmbiosciences.fujifilm.com/> or upon request.

Shipping

This product is shipped at ambient temperature. Immediately upon receipt, store at the recommended temperature below.

Storage Instructions and Stability

Upon receipt, store the lyophilized protein at -20°C in a manual defrost freezer. Unopened vials are stable for 36 months from the date of manufacture. Reconstituted material should be apportioned in working volumes and stored at or below -20°C in manual defrost freezer.

For short term storage reconstituted material is stable for 4-6 weeks when stored at 2-8°C. Stability can be increased by adding at least 0.1% carrier protein.

Precautions

For *ex vivo* use only. Not for injection or diagnostic procedures. The safety and efficacy of this product in diagnostic or other clinical uses has not been established. Please refer to the Safety Data Sheet for information regarding hazards and safe handling practices.



Directions for Use

1. Reconstitution

Allow the vial and sterile water (e.g. FUJIFILM Biosciences Inc. P/N 9309 Water for Injection) to equilibrate to room temperature. Draw up desired volume of reconstitution buffer. Aseptically puncturing through rubber stopper with sterile needle, inject the buffer to achieve the desired concentration (0.1-0.5 mg/mL). Swirl the vial gently, **do not vortex**. Allow protein to rehydrate for 10-15 minutes at room temperature with occasional gentle mixing.

2. Optimum Concentration

The optimum concentration varies depending on cell type and culture conditions. Working concentration should be determined for each specific application.

Related Products

Catalog #	Product	Size
91149	PRIME-XV MSC Expansion XSFM	1L
91139	PRIME-XV FreezIS	10mL , 100mL
91201	PRIME-XV Neural Basal Medium	500mL
9309	Water for Injection	1L

References

1. Boonstra et al., 1995. Cell Biol Int. 19 (5) 413-430. DOI: 10.1006/cbir.1995.1086
2. Chakraborty et al., 2014. Nat Commun. 5: 5811. DOI: 10.1038/ncomms6811
3. Alexander et al., 2015. Cell Res. 25: 135-138. <https://doi.org/10.1038/cr.2014.141>
4. Wee and Wang, 2017. Cancers (Basel). 9 (5): 52. <https://doi.org/10.3390/cancers9050052>
5. Workeneh et al., 2021. Kidney360. 2 (1) 154-166. doi: 10.34067/KID.0005622020



Technical Support

CONTACT US

For more information or assistance contact Customer Service at:

- Email: fisitmrequest@fujifilm.com
- Direct line: +1 800 577 6097

WEBSITE RESOURCES

Visit the website at <https://fujifilmbiosciences.fujifilm.com/> for technical resources and information including:

- Safety Data Sheets (SDS)
- Certificate of Analysis (CoA) (when available)
- FAQs
- Product literature

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