

Epidermal Growth Factor (EGF)

recombinant, Human
expressed in E.Coli

Catalog Number

GR 001-010 (10ug)

GR 001-050 (50ug)

GR 001-200 (200ug)



Storage Temperature -5 ~ -20°C

Precautions

For *In Vitro* Use Only

Product Description

Epidermal Growth Factor (EGF) is a 6 kDa protein having three intramolecular disulfide bonds. The main function of the Epidermal Growth Factor (EGF) is to promote cell growth, proliferation, and differentiation in various tissues. When EGF binds to its receptor, the EGF receptor (EGFR), it triggers a cascade of signaling events that activate intracellular pathways, such as the Ras/MAPK and PI3K/AKT pathways. These pathways regulate cellular processes such as DNA synthesis, cell cycle progression, cell migration, and survival.

EGF is involved in various physiological and pathological processes, such as wound healing, tissue repair, cancer, and inflammation. In wound healing and tissue repair, EGF stimulates the growth and migration of epithelial cells, essential for re-epithelializing injured tissues. EGF is often overexpressed or dysregulated in cancer, leading to uncontrolled cell growth and proliferation.

EGF also plays a role in embryonic development, where it regulates cell proliferation, differentiation, and morphogenesis. In addition, EGF has been shown to have potential therapeutic applications in the treatment of certain diseases, such as chronic wounds, ulcers, and dermatitis, where it can promote tissue regeneration and healing.

Product Information

Alternative Names :

Epidermal growth factor, epithelial growth factor, EGF, HOMG4, URG

Species : Human

Source : E. Coli

Predicted Molecular Mass : 6.3 kDa

Amino Acid Sequence :

NSDSECLPSHSDGYCLHDGVCMYIEALDKYACNC
VVG YIGERCQYRDLKWWELR

Formulation :

Lyophilized from a sterile-filtered aqueous solution containing 20mM Sodium Phosphate, pH 7.0.

Product Specifications

Biological activity :

The EC₅₀ ≤ 1.0 ng/mL as determined by a cell proliferation assay using BALB/ 3T3 cells.

Purity :

≥ 95% purity by SDS-PAGE

Endotoxin :

≤ 0.5 EU/mg protein by LAL(Limulus ameobocyte lysate) analysis method.

Preparation and Storage

Storage :

Store at -5 °C to -20 °C.

Stability :

Stable as supplied for 12 months from date of receipt.

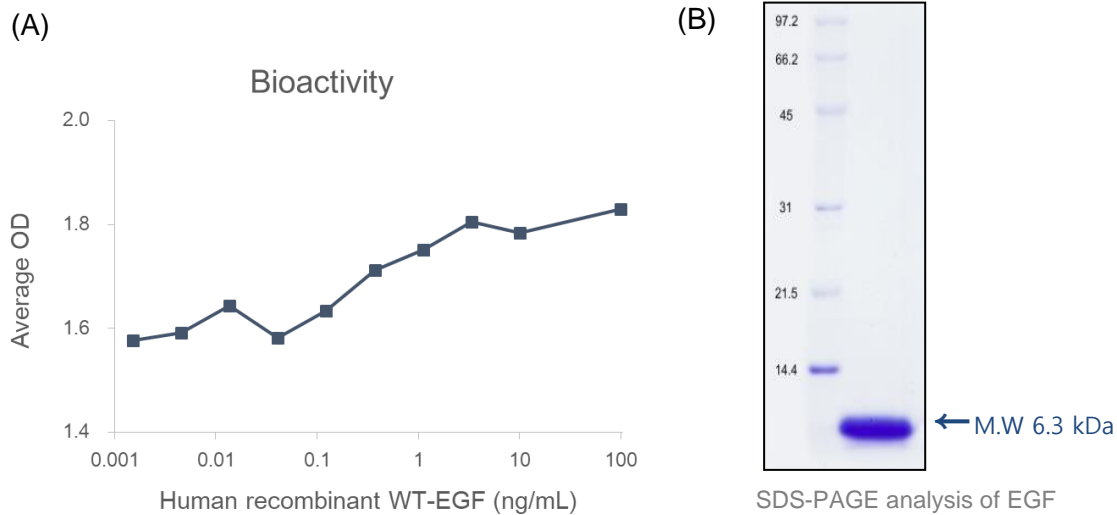
Preparation :

Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex

DATA

(A) The biological activity of Human Recombinant EGF was tested by its ability to promote the proliferation of BALB/c 3T3 cells. Cell proliferation was measured using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the under example is 0.42 ng/mL.

(B) Human Recombinant EGF was resolved with SDS-PAGE under and visualized by Coomassie Blue staining. Human Recombinant EGF has a predicted molecular mass of 6.3 kDa.



References

- Harris RC, Chung E, Coffey RJ. *Exp Cell Res.* 2003 Mar 10;284(1):2-13. doi: 10.1016/s0014-4827(02)00105-2.
- Herbst RS. *Int J Radiat Oncol Biol Phys.* 2004;59(2 Suppl):21-6. doi: 10.1016/j.ijrobp.2003.11.041.
- Shakhakarmi K, Seo JE, Lamichhane S, Thapa C, Lee S. *Arch Pharm Res.* 2023 Apr;46(4):299-322. doi: 10.1007/s12272-023-01444-3. Epub 2023 Mar 16.