Recombinant Human EGF

20180212BB

FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no:	**100-008**
Size:	100 µg
Lot. No.:	According to product label
Country of origin:	Germany

Scientific Background

Gene:	*EGF*
Synonyms:	Epidermal Growth Factor, Urogastrone, URG

Epidermal growth factor (EGF) is the founding member of the EGF family that also includes TGFα, amphiregulin (AR), betacellulin (BTC), epiregulin (EPR), heparin-binding EGF-like growth factor (HBEGF), epigen, and the neuregulins (NRG) 1 through 6. Members of the EGF family share a structural motif, the EGF-like domain, which is characterized by three intra-molecular disulfide bonds that are formed by six similarly spaced conserved cysteine residues. All EGF family members are synthesized as type I transmembrane precursor proteins that may contain several EGF domains in the extracellular region. The mature proteins are released from the cell surface by regulated proteolysis. The 1207 amino acid (aa) human EGF precursor contains nine EGF domains and nine LDLR class B repeats. The mature protein consists of 53 aa and is generated by proteolytic excision of the EGF domain proximal to the transmembrane region. Mature human EGF shares 70% aa sequence identity with mature mouse and rat EGF. EGF is present in various body fluids, including blood, milk, urine, saliva, seminal fluid, pancreatic juice, cerebrospinal fluid, and amniotic fluid. Four ErbB (HER) family receptor tyrosine kinases including EGFR/ErbB1, ErbB2, ErbB3 and ErbB4, mediate responses to EGF family members. EGF binds ErbB1 and depending on the context, induces the formation of homodimers or heterodimers containing ErbB2. Biological activities ascribed to EGF include epithelial development, angiogenesis, inhibition of gastric acid secretion, fibroblast proliferation, and colony formation of epidermal cells in culture.

References

1. Harris RC et al, Exp Cell Res 284:2, 2003
2. Carpenter G and Cohen S, J Biol Chem 265:7709, 1990
3. Bell GI et al, Nucl Acids Res 14:8427, 1986
4. Carpenter G and Zendegui JG, Exp Cell Res 164:1, 1986
5. Jorissen RN et al, Exp Cell Res 284:31, 2003
6. Gamett DC et al, J Biol Chem 272:12052, 1997
7. Qian X et al, Proc Natl Acad Sci 91:1500, 1994
8. Qian X et al, J Biol Chem 274:574, 1999

Sequence

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MNSDSECPLSHDGYCLHDGVCMYIEALDKYACNCVVGYIGERCQYRDLKWW
ELR
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Database references

Protein RefSeq:	NP_001954.2
Uniprot ID:	P01133
mRNA RefSeq:	NM_001178131

Product Specifications

Expressed in	E.coli
Purity	> 95% by SDS-PAGE & silver stain
Buffer	PBS
Stabilizer	None
Formulation	lyophilized
Length (aa):	54
MW:	6.35 kDa
N-terminal seq	MNSDSECPLS

Stability: The lyophilized protein is stable for a few weeks at room temperature, but best stored at –20°C. Reconstituted EGF should be stored in working aliquots at –20°C.

Reconstitution: Centrifuge the vial prior to opening! We recommend a quick spin followed by reconstitution in water to a concentration of 0.1-1.0mg/ml. This solution can then be diluted into other aqueous buffers and stored at 4°C for 1 week or -20°C for future use.

AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: The biological activity was determined by the ability to induce EGF receptor phosphorylation in the A431 tumor cell line [Soler et al, J Chromatography B, 788, 2003] and the induction of proliferation in NHDF cells (Normal Human Dermal Fibroblasts).

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Handling/Applications

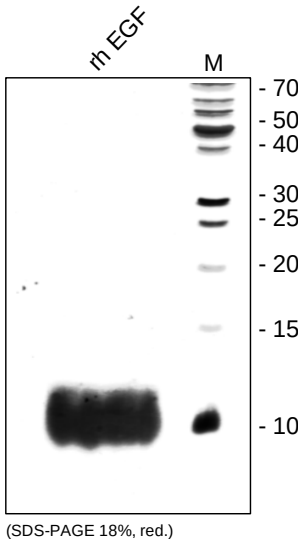

Fig. 1: SDS-PAGE analysis of recombinant human EGF. Sample was loaded in 18% SDS-polyacrylamide gel under reducing conditions and stained with Silver stain.

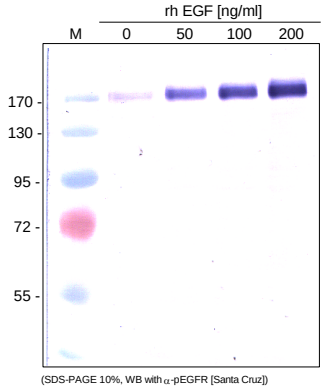

Fig. 2: EGF-induced phosphorylation of EGFR in the A431 tumor cell line (Soler et al, J Chromatography B, 788,113, 2003).

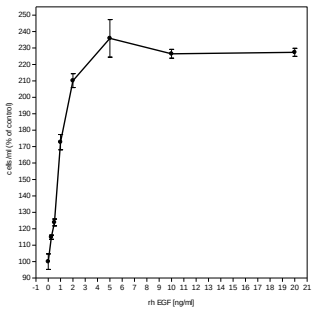

Fig. 3: EGF-induced proliferation of NHDF cells (Normal Human Dermal Fibroblast cells).