# Data Sheet (Cat.No.TMPY-01560)

TargetMol

## EGF Protein, Human, Recombinant

### General Information

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| Synonyms: | URG;epidermal growth factor;HOMG4 |
| Protein Construction: | A DNA sequence encoding the mature form of human EGF (NP_001954.2) (Asn971-Arg1023) was expressed and purified with an initial Met at the N-terminus. Predicted N terminal: Met |
| Species: | Human |
| Expression Host: | E. coli |
| Accession: | P01133-1 |
| Molecular Weight: | 6.35 kDa (predicted); 6.35 kDa (reducing conditions) |

### QC Testing

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| Biological Activity: | 1.iPSC-derived human vascular organoids (Day 7) were cultured with FGF2 , VEGFA , EGF . Red arrows represent vascular organoids. Image taken at 10x magnification.(Routinely tested) 2.Measured in a cell proliferation assay using Balb/C 3T3 mouse embryonic fibroblasts. The ED50 for this effect is typically 0.02-0.2ng/ml. |
| Purity: | ≥ 95 % as determined by SDS-PAGE. ≥ 95 % as determined by SEC-HPLC. |
| Endotoxin: | < 5 EU/mg of the protein. |
| Formulation: | Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization. |

### Preparation and Storage

Reconstitution:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

EGF is the founding member of the EGF-family of proteins. Members of this protein family have highly similar structural and functional characteristics. EGF contains 9 EGF-like domains and 9 LDL-receptor class B repeats. Human EGF is a 6045-Da protein with 53 amino acid residues and three intramolecular disulfide bonds. As a low-

molecular-weight polypeptide, EGF was first purified from the mouse submandibular gland, but since then it was found in many human tissues including submandibular gland, parotid gland. It can also be found in human platelets, macrophages, urine, saliva, milk, and plasma. EGF is a growth factor that stimulates the growth of various epidermal and epithelial tissues in vivo and in vitro and of some fibroblasts in cell culture. It results in cellular proliferation, differentiation, and survival. Salivary EGF, which seems also regulated by dietary inorganic iodine, also plays an important physiological role in the maintenance of oro-esophageal and gastric tissue integrity. EGF acts by binding with high affinity to epidermal growth factor receptor on the cell surface and stimulating the intrinsic protein-tyrosine kinase activity of the receptor. The tyrosine kinase activity, in turn, initiates a signal transduction cascade that results in a variety of biochemical changes within the cell - a rise in intracellular calcium levels, increased glycolysis and protein synthesis, and increases in the expression of certain genes including the gene for EGFR - that ultimately lead to DNA synthesis and cell proliferation.

Reference

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Guo Y, et al. (2012) Correlations among ERCC1, XPB, UBE2I, EGF, TAL2 and ILF3 revealed by gene signatures of histological subtypes of patients with epithelial ovarian cancer. Oncol Rep. 27(1):286-92.

Kim S, et al. (2012) Smad7 acts as a negative regulator of the epidermal growth factor (EGF) signaling pathway in breast cancer cells. Cancer Lett. 314(2):147-54.

Chatterton RT Jr, et al. (2010) Breast ductal lavage for assessment of breast cancer biomarkers. Horm Cancer. 1(4): 197-204.