

**DESCRIPTION**

**Source** *E. coli*-derived  
Val63-Leu108, with an N-terminal Met  
Accession # O14944

**N-terminal Sequence Analysis** Met

**Predicted Molecular Mass** 5.4 kDa

**SPECIFICATIONS**

**Activity** Measured in a cell proliferation assay using Balb/3T3 mouse embryonic fibroblast cells. Rubin, J.S. *et al.* (1991) Proc. Natl. Acad. Sci. USA 88:415.  
The ED<sub>50</sub> for this effect is typically 0.125-0.75 ng/mL.

**Endotoxin Level** <0.10 EU per 1 µg of the protein by the LAL method.

**Purity** >97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

**Formulation** Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

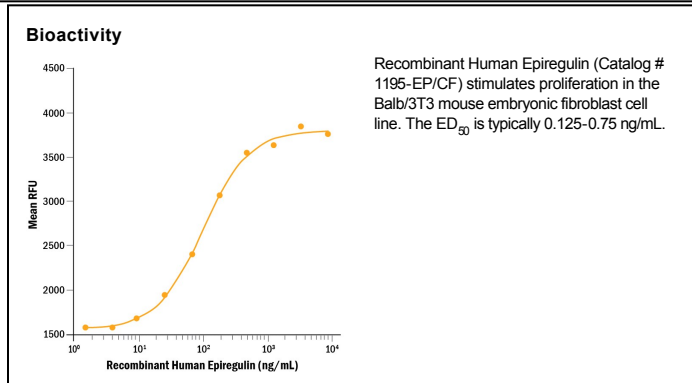
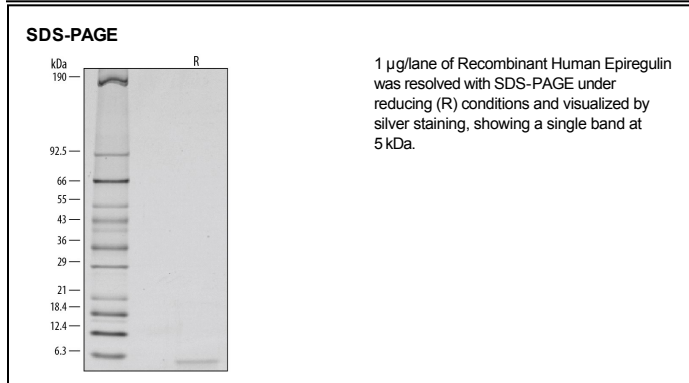
**Reconstitution** Reconstitute at 100 µg/mL in sterile PBS.

**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

**DATA**



**BACKGROUND**

Epiregulin is a member of the EGF family of growth factors which includes, among others, epidermal growth factor (EGF), transforming growth factor (TGF)-alpha, amphiregulin (ARG), HB (heparin-binding)-EGF, betacellulin, and the various heregulins. All EGF family members are synthesized as transmembrane precursors and are converted to soluble forms by proteolytic cleavage. Epiregulin was originally purified from the mouse fibroblast-derived tumor cell line NIH3T3/T7 (1). The human epiregulin cDNA encodes a 169 amino acid (aa) residues transmembrane precursor with a 29 aa signal peptide, a 21 aa transmembrane domain and a 21 aa cytoplasmic domain. The putative soluble mature Epiregulin comprising the EGF-like domain (aa residues 64-104) is formed by proteolytic removal of the propeptide regions (2). There is 85% aa sequence homology between human and mouse epiregulins. Epiregulin is expressed primarily in the placenta and macrophages (3). High level expression has also been detected in various carcinomas. Epiregulin specifically binds EGFR (ErbB1) and ErbB4 but not ErbB2 and ErbB3. It activates the homodimers of both ErbB1 and ErbB4. In addition, epiregulin can also activate all possible heteromeric combinations of the four ErbB family members (4). Epiregulin stimulates the proliferation of fibroblasts, smooth muscle cells and hepatocytes. It has been shown to be an autocrine growth factor for epidermal keratinocytes as well as mesangial cells (5, 6). Epiregulin has also been shown to inhibit growth of several epithelial tumor cells. In addition, Epiregulin has been implicated in the implantation process during pregnancy (7).

**References:**

1. Toyoda, H. *et al.* (1995) J. Biol. Chem. **270**:7495.
2. Toyoda, H. *et al.* (1997) Biochem. J. **326**:69.
3. Komurasaki, T. *et al.* (1997) Oncogene **15**:2841.
4. Shelly, M. *et al.* (1998) J. Biol. Chem. **273**:10496.
5. Shirakata, Y. *et al.* (2000) J. Biol. Chem. **275**:5748.
6. Mishre, R. *et al.* (2002) Am. J. Physiol. Renal. Physiol. **283**:F1151.
7. Das, S.K. *et al.* (1997) Dev. Biol. **190**:178.