

DESCRIPTION

Source *E. coli*-derived
Arg105-His249, with an N-terminal Met and a 6-His tag
Accession # O54907.2

N-terminal Sequence Analysis Met

Predicted Molecular Mass 17 kDa

SPECIFICATIONS

Activity Measured in a cell proliferation assay using HUVEC human umbilical vein endothelial cells.
The ED₅₀ for this effect is 0.03-0.3 µg/mL.

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

Purity >90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

Formulation Lyophilized from a 0.2 µm filtered solution in PBS and NaCl. 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.

BACKGROUND

TNF-related weak inducer of apoptosis (TWEAK) is a type II transmembrane protein belonging to the TNF superfamily and has been designated TNFSF12. Mouse TWEAK is a 249 amino acid (aa) protein with an N-terminal 21 aa cytoplasmic domain, a 21 aa transmembrane region and a 204 aa C-terminal extracellular domain (1). The primary structures of the extracellular domains of human and mouse TWEAK are 88% identical. A soluble form of TWEAK is generated from the membrane-associated molecules by proteolytic cleavage suggesting that TWEAK may have long-range effects. TWEAK is expressed widely in many tissues and cells (1). Although TWEAK has been proposed as a ligand that signals through the death domain receptor 3 (DR3) (2), a TNF receptor superfamily member currently designated TNFRSF25, subsequent studies did not demonstrate binding of TWEAK to cell lines that express DR3 (3). In cells that lack DR3, TWEAK has been shown to bind TWEAK receptor (TWEAK R), a novel TNF receptor superfamily member designated TNFRSF12A (4-7). TWEAK R, also known as fibroblast growth factor-inducible 14 (Fn14), is a growth factor-inducible immediate-early response gene that is expressed in fibroblasts, hepatocellular carcinomas and endothelial cells. TWEAK-TWEAK R interaction has been shown to promote NF-κB activation and mediate multiple cell death pathways. On endothelial cells, TWEAK R plays a role in endothelial cell growth and migration. This effect of TWEAK is not due to up-regulation of VEGF (8).

References:

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4. Schneider, P. *et al.* (1999) *Eur. J. Immunol.* **29**:1785.
5. Nakayama, M. *et al.* (2002) *J. Immunol.* **168**:734.
6. Feng, S.L. *et al.* (2000) *Am. J. Pathol.* **156**:1253.
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