

TWEAK/TNFSF12 Protein, Human/Cynomolgus (HEK293, Fc)

Cat. No.:	HY-P77263
Synonyms:	Tumor necrosis factor ligand superfamily member 12; TWEAK; APO3L; DR3LG
Species:	Cynomolgus
Source:	HEK293
Accession:	F7HGN4 (S94-H249)
Gene ID:	407977
Molecular Weight:	Approximately 34&47 kDa

PROPERTIES

AA Sequence	<p>S A P K G R K T R A R R A I A A H Y E V H P R P G Q D G A Q A G V D G T V S G W</p> <p>E E A R I N S S S P L R Y N R Q I G E F I V T R A G L Y Y L Y C Q V H F D E G K</p> <p>A V Y L K L D L L V D G V L A L R C L E E F S A T A A S S L G P Q L R L C Q V S</p> <p>G L L A L R P G S S L R I R T L P W A H L K A A P F L T Y F G L F Q V H</p>
Biological Activity	<p>1. Measured in a cell proliferation assay using HUVEC human umbilical vein endothelial cells. The ED₅₀ for this effect is typically 2-8 ng/mL.</p> <p>2. Immobilized Cynomolgus mFc-TNFSF12 at 10 µg/ml (100 µl/well) can bind human Fc-TNFRSF12A, The EC₅₀ of human Fc-TNFRSF12A is 0.07-0.15 µg/ml.</p>
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 µm filtered solution of 20 mM PB, 150 mM NaCl, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	TWEAK Protein refers to the cytokine tumor necrosis factor-like weak inducer of apoptosis. It is a multifunctional cytokine belonging to tumor necrosis factor (TNF) superfamily, acts function by binding TweakR/Fn14 receptor. TWEAK is a cell surface-associated type II transmembrane protein with 2 types protein chain: the membrane form and the secreted or
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soluble form. The soluble form derives from the membrane form by proteolytic processing. The protein sequences in human and mouse is very different with similarity of 24.79%^[1].

TWEAK binds to FN14 and possibly also to TNFRSF12/APO3, is a weak inducer of apoptosis in some cell types. TWEAK mediates NF-kappa-B activation, promotes angiogenesis and the proliferation of endothelial cells^[2].

TWEAK has multiple biological activities, many of which are associated with immune system development and function^[1].

TWEAK does have pro-apoptotic activity on a select group of human tumor cell lines and on monocytes, while it promotes cell proliferation in human vascular EC and SMC. Furthermore, FGF-2 co-treatment can potentiate TWEAK-stimulated HUVEC proliferation, an effect that may be due to the ability of FGF-2 to up-regulate TweakR/Fn14 gene expression. At the meanwhile TWEAK-TweakR/Fn14 autocrine signaling promotes human microvascular renal EC (HMREC) migration^[1].

TWEAK also plays key role in inflammatory response. TWEAK, stimulates interleukin (IL)-8 secretion in human tumor cell lines, WI-38 fibroblasts and astrocytes. TWEAK also increases IL-6 secretion and ICAM-1 expression in astrocyte cell.

Moreover, TWEAK co-incubation could potentiate the pro-inflammatory activities of TNF and IL-1, and concluded that TWEAK could be involved in the pathogenesis of chronic inflammatory diseases^[3].

Above all, TWEAK involves in stimulation of cell growth and angiogenesis, induction of inflammatory cytokines, and under some experimental conditions, stimulation of apoptosis^[1].

REFERENCES

[1]. Wiley SR, et al. TWEAK, a member of the TNF superfamily, is a multifunctional cytokine that binds the TweakR/Fn14 receptor. *Cytokine Growth Factor Rev.* 2003 Jun-Aug;14(3-4):241-9.

[2]. Lammens A, et al. Crystal structure of human TWEAK in complex with the Fab fragment of a neutralizing antibody reveals insights into receptor binding. *PLoS One.* 2013 May 8;8(5):e62697.

[3]. Lynch CN, et al. TWEAK induces angiogenesis and proliferation of endothelial cells. *J Biol Chem.* 1999 Mar 26;274(13):8455-9.

[4]. Lynch CN, et al. TWEAK induces angiogenesis and proliferation of endothelial cells. *J Biol Chem.* 1999 Mar 26;274(13):8455-9.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA