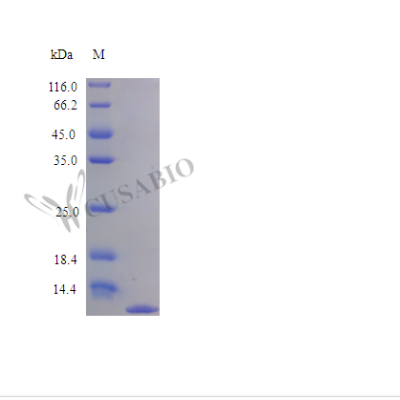
Recombinant Human Tumor necrosis factor receptor superfamily member 12A protein (TNFRSF12A), partial (Active)

Product Code	CSB-AP001931HU
Abbreviation	Recombinant Human TNFRSF12A protein, partial (Active)
Uniprot No.	Q9NP84
Storage Buffer	0.2 μm filtered PBS, pH 7.4 ,lyophilized
Product Type	Tumor Necrosis Factors
Immunogen Species	Homo sapiens (Human)
Biological Activity	Fully biologically active when compared to standard. The ED50 as determined by inhibiting TWEAK- dependent proliferation of human umbilical vein endothelial cells (HUVEC) is less than 30 ng/ml, corresponding to a specific activity of >3.3x10^4 IU/mg, in the presence of 15 ng/ml of rHuTWEAK.
Purity	>95% as determined by SDS-PAGE.
Sequence	EQAPGTAPCS RGSSWSADLD KCMDCASCRA RPHSDFCLGC AAAPPAPFRL LWP
Research Area	Cancer
Source	E.Coli
Target Names	TNFRSF12A
Expression Region	28-80aa
Tag Info	Tag-Free
Mol. Weight	5.6 kDa
Protein Length	Partial
PubMed ID	10751351; 15489334; 11728344; 19241374
Image	

Description

Recombinant Human Tumor necrosis factor receptor superfamily member 12A protein (TNFRSF12A) is expressed in E. coli and spans the 28-80 amino acid region. This tag-free protein is available at a high purity of over 95%, confirmed by SDS-PAGE analysis. It exhibits full biological activity, with an ED50 of less than 30 ng/ml in inhibiting TWEAK-dependent proliferation of HUVECs. The endotoxin level is maintained below 1.0 EU/μg, ensuring suitability for research applications.

TNFRSF12A belongs to the tumor necrosis factor receptor superfamily and appears to play a critical role in cellular signaling pathways. The receptor is involved in processes such as cell proliferation and survival, particularly in response to the ligand TWEAK. As researchers work to understand inflammatory and immune responses, TNFRSF12A has emerged as a valuable target for investigating cell signaling and therapeutic development.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. TWEAK-TNFRSF12A Interaction Studies

This recombinant TNFRSF12A protein can be used to investigate the molecular mechanisms of TWEAK-TNFRSF12A binding and signaling pathways in vitro. The protein's demonstrated ability to inhibit TWEAK-dependent cellular responses makes it valuable for competitive binding assays and receptor-ligand interaction studies. Scientists may apply this protein to map binding domains, determine binding kinetics, and characterize the structural requirements for TWEAK-TNFRSF12A interactions. High purity and biological activity should ensure reliable and reproducible results in biochemical binding experiments.

2. Endothelial Cell Function Research

Given the established activity in inhibiting TWEAK-dependent proliferation of human umbilical vein endothelial cells, this protein serves as a research tool for studying endothelial cell biology. Scientists can apply it to investigate the role of TWEAK signaling in endothelial cell proliferation, migration, and angiogenesis-related processes in controlled in vitro experiments. The defined ED50 value provides a quantitative reference point for dose-response studies examining endothelial cell responses to TWEAK pathway modulation.

3. TWEAK Pathway Antagonist Development

This biologically active TNFRSF12A protein may serve as a reference standard or positive control in screening assays for identifying novel TWEAK pathway inhibitors. The protein's characterized inhibitory activity against TWEAK-dependent cellular responses provides a benchmark for comparing the efficacy

of potential small molecule or peptide antagonists. Scientists can apply this protein in competitive inhibition assays to evaluate the potency and specificity of candidate compounds targeting the TWEAK-TNFRSF12A axis.

4. Antibody Development and Validation

The high purity recombinant TNFRSF12A protein can be applied as an immunogen or coating antigen for developing research antibodies specific to this receptor. The protein can also serve as a positive control in immunoassays such as ELISA, Western blotting, or immunoprecipitation experiments targeting TNFRSF12A. Its defined biological activity allows researchers to validate whether developed antibodies interfere with the functional properties of the receptor in cell-based assays.

5. Cell Signaling Pathway Analysis

This protein may be applied to dissect downstream signaling cascades activated or inhibited by TWEAK-TNFRSF12A interactions in various cell types. Scientists can work with the protein alongside pathway-specific inhibitors or activators to map signal transduction networks and identify key regulatory nodes. The low endotoxin level helps ensure that observed cellular responses are specifically attributable to TNFRSF12A-mediated effects rather than inflammatory artifacts.

Endotoxin	Less than 1.0 EU/μg as determined by LAL method.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.