

TIMP-2 Protein, Human, Recombinant

General Information

Synonyms:	CSC-21K;DDC8;TIMP metalloproteinase inhibitor 2
Protein Construction:	A DNA sequence encoding the mature form of human TIMP2 (NP_003246.1) (Cys 27-Pro 220) was expressed and purified. Predicted N terminal: Met
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P16035
Molecular Weight:	22 kDa (predicted); 20 kDa (reducing conditions)

QC Testing

Biological Activity:	Measured by its ability to inhibit human MMP-2 cleavage of a fluorogenic peptide substrate MCA-PLGL-DPA-AR-NH ₂ . The IC ₅₀ value is < 4 nM.
Purity:	> 96 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
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:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

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

Tissue inhibitors of metalloproteinases (TIMP) family are natural inhibitors of the matrix metalloproteinases (MMPs), the zinc enzymes involved in extracellular matrix maintenance and remodeling. The TIMP family encompasses four members (TIMP1-4), and they inhibit most MMPs by forming non-covalent binary complex. TIMP2 is a 22 kDa non N-glycosylated protein expressed by a variety of cell types, and plays a unique role among TIMP family members owing to its functions to regulate cellular responses to growth factors. Findings establish an

unexpected, MMP-independent mechanism for TIMP2 inhibition of endothelial cell proliferation in vitro and reveal an important component of the antiangiogenic effect of TIMP2 in vivo. TIMP-2 thus is critical to the maintenance of tissue homeostasis and is involved in the regulation of tumor microenvironment.

Reference

- Stetler-Stevenson, W.G. et al., 1992, Matrix. Suppl.1: 299-306.
Stetler-Stevenson, W.G. et al., 2005, Trends. Mol. Med. 11: 97-103.
Seo, D.W. et al., 2003, Cell. 114: 171-180.

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