Data Sheet (Cat.No.TMPY-00783)

TargetMol

Endoglin/CD105 Protein, Human, Recombinant (hFc)

General Information

Synonyms:	END;HHT1;ORW1;endoglin
Protein Construction:	A DNA sequence encoding the extracellular domain (Met 1-Gly 586) of human CD105 (NP_001108225.1) precursor was expressed with C-terminal fused human IgG1 Fc region. Predicted N terminal: Glu 26
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P17813
Molecular Weight:	87.5 kDa (predicted); 115-120 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	1. Measured by its ability to bind biotinylated Human TGFRB1 in a functional ELISA. 2. Measured by its ability to bind biotinylated Human ALK1-Fc in functional Elisa.
Purity:	> 95 % 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

Endoglin, also known as CD105, is a type I homodimeric transmembrane glycoprotein with a large, disulfide-linked, extracellular region and a short, constitutively phosphorylated cytoplasmic tail. Endoglin contains an RGD tripeptide which is a key recognition structure in cellular adhesion,,suggesting a critical role for endoglin in the binding of endothelial cells to integrins and/or other RGD receptors. Endoglin is highly expressed on vascular

endothelial cells, chondrocytes, and syncytiotrophoblasts of term placenta. It is also found on activated monocytes, mesenchymal stem cells and leukemic cells of lymphoid and myeloid lineages. As an accessory receptor for the TGF-β superfamily ligands, endoglin binds TGF-β1 and TGF-β3 with high affinity not by itself but by associating with TGF-β type II receptor (TβRII) and activates the downstream signal pathways. In addition, in human umbilical vein endothelial cells, ALK-1 is also a receptor kinase for endoglin threonine phosphorylation, and mutations in either of the two genes result in the autosomal-dominant vascular dysplasia, hereditary hemorrhagic telangiectasia (HHT). Endoglin has been regarded as a powerful biomarker of neovascularization, and is associated with several solid tumor types.

Reference

Bellon T., et al.,(1993), Identification and expression of two forms of the human transforming growth factor-beta-binding protein endoglin with distinct cytoplasmic regions. Eur. J. Immunol. 23:2340-2345.
Humphray S.J., et al., (2004), DNA sequence and analysis of human chromosome 9.Nature 429:369-374.
Gougos A., et al.,(1990), Primary structure of endoglin, an RGD-containing glycoprotein of human endothelial cells.J. Biol. Chem. 265:8361-8364.