Data Sheet (Cat.No.TMPY-00798)

TargetMol

ESAM Protein, Human, Recombinant

General Information

Synonyms:	endothelial cell adhesion molecule;W117m
Protein Construction:	The mature form of human ESAM (NP_620411.2) extracellular domain (Met 1-Ala 248) with five amino acids (DDDDK) at the C-terminus was expressed and purified. Predicted N terminal: Gln 30
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q96AP7-1
Molecular Weight:	24.5 kDa (predicted); 40-45 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 92 % 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 100 mM NaCl, 50 mM Tris, pH 7.5. 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

Endothelial cell-selective adhesion molecule (ESAM) is a member of JAM family of immunoglobulin superfamily and consists of one V-type and one C2-type immunoglobulin domain, as well as a hydrophobic signal sequence, a single transmembrane region, and a cytoplasmic domain. It is specifically expressed at endothelial tight junctions and on activated platelets. ESAM at endothelial tight junctions participates in the migration of neutrophils through

the vessel wall, possibly by influencing endothelial cell contacts. The adaptor protein membrane-associated guanylate kinase MAGI-1 has been identified as an intracellular binding partner of ESAM. Previous studies have indicated that ESAM regulates angiogenesis in the primary tumor growth and endothelial permeability. It suggest that ESAM has a redundant functional role in physiological angiogenesis but serves a unique and essential role in pathological angiogenic processes such as tumor growth.

Reference

Ishida T, et al. (2003) Targeted disruption of endothelial cell-selective adhesion molecule inhibits angiogenic processes in vitro and in vivo. J Biol Chem. 278(36): 34598-604.
Wegmann F, et al. (2004) Endothelial adhesion molecule ESAM binds directly to the multidomain adaptor MAGI-1 and recruits it to cell contacts. Exp Cell Res. 300(1): 121-33.
Wegmann F, et al. (2006) ESAM supports neutrophil extravasation, activation of Rho, and VEGF-induced vascular permeability. J Exp Med. 203(7): 1671-7.
Hara T, et al. (2009) Endothelial cell-selective adhesion molecule regulates albuminuria in diabetic nephropathy. Microvasc Res. 77(3): 348-55.
Cangara HM, et al. (2010) Role of endothelial cell-selective adhesion molecule in hematogeneous metastasis. Microvasc Res. 80(1): 133-41.

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