Data Sheet (Cat.No.TMPY-01194)

TargetMol

OSTM1 Protein, Human, Recombinant (His)

General Information

Synonyms:	GL;GIPN;OPTB5;HSPC019;osteopetrosis associated transmembrane protein 1
Protein Construction:	A DNA sequence encoding the extracellular domain of human OSTM1 (NP_054747.2) (Met 1-Pro 284) was expressed, fused with a C-terminal polyhistidine tag. Predicted N terminal: Ala 32
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q86WC4
Molecular Weight:	29.7 kDa (predicted); 40-50 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:	> 97 % 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

Osteopetrosis-associated transmembrane protein 1 (OSTM1) is a Single-pass type I membrane protein. It is expressed in many hematopoietic cells of the myeloid and lymphoid B- and T-lineages. The analysis of OSTM1 association with CLCN7 demonstrated that OSTM1 requires CLCN7 to localize to lysosomes, whereas the formation of a CLCN7-OSTM1 complex is required to stabilize CLCN7. OSTM1 plays a major role in myelopoiesis and

lymphopoiesis and provided evidence of a crosstalk mechanism between hematopoietic cells for osteoclast activation. Thus, OSTM1 has an important role in osteoclast function and activation. The loss of function of OSTM1 results in deregulation of multiple hematopoietic lineages in addition to osteoclast lineage, OSTM1-defect patients display the most severe recessive osteopetrosis phenotype and die at early ages. Furthermore, it is suggested that OSTM1 has a primary role in neural development not related to lysosomal dysfunction. The canonical Wnt/beta-catenin signaling pathway may be a molecular basis for OSTM1 mutations and severe autosomal recessive osteopetrosis (ARO).

Reference

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