Data Sheet (Cat.No.TMPY-04487)

TargetMol

Osteomodulin Protein, Human, Recombinant (His)

General Information

Synonyms:	SLRR2C;osteomodulin;OSAD
Protein Construction:	A DNA sequence encoding the human OMD (NP_005005.1) (Met1-Glu421) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Gln 21
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q99983
Molecular Weight:	48.6 kDa (predicted)

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:	> 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:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

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

Osteomodulin (OMD), also known as Osteoadherin (OSAD), Keratan sulfate proteoglycan osteomodulin, KSPG osteomodulin, and SLRR2C, is a secreted protein that belongs to the small leucine-rich proteoglycan (SLRP) family and Class II subfamily. SLRP family proteins are normally found in extracellular matrices, but Osteomodulin is the only member restricted to mineralized tissues. Osteomodulin is primarily expressed by osteoblasts and might have a role in the regulation of mineralization. In bone, OSAD has been localized in the primary spongiosa within the

bovine fetal rib growth plate. Moreover, in situ hybridization has shown expression of OSAD in osteoblasts close to the cartilage and bone border in the growth plate of rat femur. OSAD may play an important role during tooth development and biomineralization of dentin. Osteomodulin is a cell binding keratan sulfate proteoglycan that was recently isolated from mineralized bovine bone and subsequently cloned and sequenced. Osteomodulin may be implicated in biomineralization processes. It has a function in the binding of osteoblasts via the alpha (V) beta (3)-integrin. Osteomodulin is likely an osteoblast maturation marker that is induced by osteoclast activity. Osteomodulin is also an early marker for terminally differentiated matrix producing osteoblasts.

Reference

Buchaille R, et al. (2000) Expression of the small leucine-rich proteoglycan osteoadherin/osteomodulin in human dental pulp and developing rat teeth. Bone. 27(2): 265-70.

Petersson U, et al. (2003) Identification, distribution and expression of osteoadherin during tooth formation. Eur J Oral Sci. 111(2): 128-36.

Rehn AP, et al. (2006) Differential regulation of osteoadherin (OSAD) by TGF-beta1 and BMP-2. Biochem Biophys Res Commun. 349(3): 1057-64.