PRODUCT INFORMATION

Osteomodulin (human, recombinant)

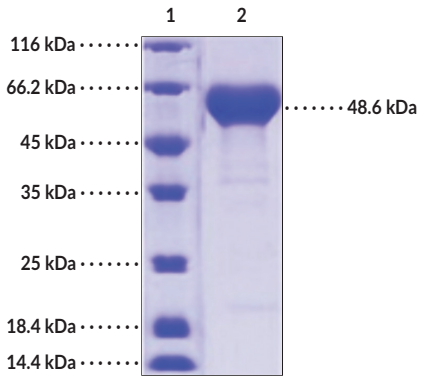
Item No. 38054

Overview and Properties

Synonyms:	Keratan Sulfate Proteoglycan Osteomodulin, KSPG Osteomodulin, OMD, OSAD, Osteoadherin
Source:	Recombinant human C-terminal His-tagged osteomodulin expressed in HEK293 cells
Amino Acids:	21-421
Uniprot No.:	Q99983
Molecular Weight:	48.6 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing:	<1.0 EU/µg, determined by the LAL endotoxin assay

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: Osteomodulin

SDS-PAGE Analysis of Osteomodulin. This protein has a calculated molecular weight of 48.6 kDa.

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Description

Osteomodulin (OMD), is a class II keratan sulfate small leucine-rich proteoglycan (SLRP) with roles in bone mineralization, cell adhesion, tooth formation, and the regulation of collagen fibrils.[1,2] It is primarily expressed in mineralized tissues, including bones and teeth, but is also expressed in articular chondrocytes and fibrochondrocytes.[1] OMD binds to bone morphogenetic protein 2 (BMP2), promoting SMAD signaling and osteogenesis. It also binds to type I collagen and induces morphology and size changes in collagen fibrils, indicating a role in the regulation of extracellular matrix components during bone formation.[2] Increased plasma levels of OMD are associated with cardiac calcification in patients with chronic kidney disease (CKD).[3] Serum levels of OMD are increased and positively correlated with plaque calcification in patients with carotid atherosclerosis. Serum levels of OMD are also decreased in patients with osteoarthritis.[4] Cayman's Osteomodulin (human, recombinant) protein consists of 412 amino acids, has a calculated molecular weight of 48.6 kDa, and a predicted N-terminus of Gln21 after signal peptide cleavage.

References

1. Lin, W., Zhu, X., Gao, L., *et al.* Osteomodulin positively regulates osteogenesis through interaction with BMP2. *Cell Death Dis.* **12(2)**, 147 (2021).
2. Tashima, T., Nagatoishi, S., Sagara, H., *et al.* Osteomodulin regulates diameter and alters shape of collagen fibrils. *Biochem. Biophys. Res. Commun.* **463(3)**, 292-296 (2015).
3. Skenteris, N.T., Seime, T., Witasp, A., *et al.* Osteomodulin attenuates smooth muscle cell osteogenic transition in vascular calcification. *Clin. Transl. Med.* **12(2)**, e682 (2022).
4. Sanchez, C., Mazzucchelli, G., Lambert, C., *et al.* Proteomic analysis of osteoblasts secretome provides new insights in mechanisms underlying osteoarthritis subchondral bone sclerosis. *Osteoarthritis Cartilage* **26(Suppl 1)**, S89 (2018).

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