

## SMOC1 Protein, Human, Recombinant (His)

### General Information

Synonyms:	OAS;SPARC related modular calcium binding 1
Protein Construction:	A DNA sequence encoding the human SMOC1 isoform 1 (NP_001030024.1) (Met 1-Val 435) was expressed, fused with a polyhistidine tag at the C-terminus. Predicted N terminal: His 27
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q9H4F8-2
Molecular Weight:	47 kDa (predicted); 55-60 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 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

SPARC-related modular calcium-binding protein 1, also known as secreted modular calcium-binding protein 1 and SMOC1, is a member of the SPARC family. SMOC1 is widely expressed in many tissues with a strongest signal in ovary. It contains two EF-hand domains, one Kazal-like domain and two thyroglobulin type-1 domains. Extracellular matrix proteins have been implicated in the regulation of osteoblast differentiation of bone marrow-derived mesenchymal stem cells (BMSCs) through paracrine or autocrine mechanisms. SMOC1 is a regulator of

osteoblast differentiation of BMSCs. SMOC1 is highly expressed and secreted in BMSCs stimulated with osteogenic medium (OSM). SMOC1 and SMOC2 are extracellular matrix proteins thought to influence growth factor signaling, migration, proliferation, and angiogenesis. SMOC1 and SMOC2 may mediate intercellular signaling and cell type-specific differentiation during gonad and reproductive tract development.

### Reference

Vannahme C. et al., 2002 J. Biol. Chem. 277:37977-86.

Pazin, D.E. et al., 2009, Dev Dyn. 238 (11): 2877-90.

Choi, Y.A. et al., 2010, J Proteome Res. 9 (6):2946-56.

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