

Human Osteopontin / SPP1 / ETA-1 Protein (His Tag)

Catalog Number: 10352-H08H



Sino Biological Inc.
Biological Solution Specialist

General Information

Gene Name Synonym:

BNSP; BSPI; ETA-1; OPN; 2AR; Apl-1; BNSP; Bsp; BSPI; Eta; ETA-1; OP; Opn; Opnl; Ric; Spp-1

Protein Construction:

A DNA sequence encoding the pro form of human SPP1 (NP_001035147.1) (Met 1-Asn 314) was fused with a polyhistidine tag at the C-terminus.

Source: Human

Expression Host: Human Cells

QC Testing

Purity: > 80 % as determined by SDS-PAGE

Bio Activity:

Measured by the ability of the immobilized protein to support the adhesion of HEK293 human embryonic kidney cells. When cells are added to coated plates (2 µg/mL, 100 µL/well), approximately 60% will adhere after 1 hour of incubation at 37°C.

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Ile 17

Molecular Mass:

The recombinant human SPP1 consists of 309 amino acids after removal of the signal peptide and has a calculated molecular mass of 35 kDa. The apparent molecular mass of rh SPP1 is approximately 60-65 kDa in SDS-PAGE under reducing conditions due to glycosylation.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

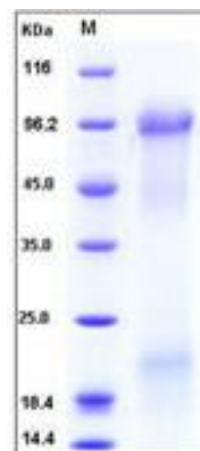
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Osteopontin, also known as Secreted phosphoprotein 1, Bone sialoprotein 1, BSP-1, OPN, and SPP1, is a member of the osteopontin family and a SIBLING glycoprotein. Osteopontin has been classified as T-helper 1 cytokine and thus believed to exacerbate inflammation in several chronic inflammatory diseases, including atherosclerosis. Besides proinflammatory functions, physiologically Osteopontin is a potent inhibitor of mineralization, it prevents ectopic calcium deposits and is a potent inducible inhibitor of vascular calcification. Osteopontin is expressed and secreted by various cells, and has a role in cell adhesion, chemotaxis, prevention of apoptosis, invasion, migration and anchorage-independent growth of tumor cells. Osteopontin recruitment functions of inflammatory cells are thought to be mediated through its adhesive domains, especially the arginine-glycine-aspartate (RGD) sequence that interacts with several integrin heterodimers. Osteopontin has emerged as a potential biomarker and mediator in cardiovascular disease. In the context of atherosclerosis, OPN is generally regarded as a proinflammatory and proatherogenic molecule. However, the role of OPN in vascular calcification (VC), which is closely related to chronic and active inflammation, is that of a negative regulator because it is an inhibitor of calcification and an active inducer of decalcification. Extensive research has demonstrated the pivotal participation of Osteopontin in the regulation of cell signaling which controls neoplastic and malignant transformation. The elevated expression of Osteopontin has been observed in a variety of cancers. It has been linked with tumor metastasis and signifies a poor prognosis for the patient.

References

1. Scatena M, *et al.* (2007) Osteopontin: a multifunctional molecule regulating chronic inflammation and vascular disease. *Arterioscler Thromb Vasc Biol.* 27(11): 2302-9.
2. Johnston NI, *et al.* (2008) Osteopontin as a target for cancer therapy. *Front Biosci.* 13: 4361-72.
3. Cho HJ, *et al.* (2009) Osteopontin: a multifunctional protein at the crossroads of inflammation, atherosclerosis, and vascular calcification. *Curr Atheroscler Rep.* 11(3): 206-13.

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