

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived human Periostin/OSF-2 protein
Asn22-Gln836, with a C-terminal 6-His tag
Accession # Q15063

N-terminal Sequence Analysis Asn22

Predicted Molecular Mass 91.7 kDa

SPECIFICATIONS

SDS-PAGE 85-90 kDa, reducing conditions

Activity Measured by its ability to induce adhesion of ATDC5 mouse chondrogenic cells.
Immobilized Recombinant Human Periostin/OSF-2 at 10 µg/mL (100 µL/well) induces >50% cell adhesion.

Endotoxin Level <1.0 EU per 1 µg of the protein by the LAL method.

Purity >90%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 µm filtered solution in Tris-Citrate and NaCl. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 µg/mL in sterile PBS.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Periostin, also known as OSF-2, is a secreted matricellular protein with functions in extracellular matrix formation, cell migration, and inflammation (1). It is secreted as a 90 kDa monomer that can aggregate into >170 kDa higher-order multimers (2). Periostin contains an N-terminal EMI domain followed by four tandem FAS1 domains (3). Mature human Periostin shares 91% aa sequence identity with mouse and rat Periostin. Alternative splicing generates additional isoforms with various deletions in the C-terminal region following the FAS domains. Periostin is expressed by mesenchymal cells such as vascular smooth muscle cells, fibroblasts, osteoblasts, and odontoblasts in developing teeth (4-7). It is up-regulated in many carcinomas (2, 8). Periostin binds to Integrins $\alpha_3\beta_3$ and $\alpha_5\beta_5$ (2, 9), leading to enhanced cell adhesion and cell migration (2, 5, 6). It enhances Fibronectin and Collagen I production and promotes collagen fibrillogenesis (10, 11). It also induces epithelial-mesenchymal transition, tumor growth, invasion, and metastasis (9). Periostin induces the expression of VEGF R2 on endothelial cells and VEGF-C in tumor cells, and it can induce tumor lymphangiogenesis (8, 12). Periostin plays an important role in heart valve development and tissue healing after myocardial infarction (5, 13, 14). In asthma, it is up-regulated in bronchial epithelium and plays both destructive and protective roles by inducing eosinophil infiltration and inhibiting goblet cell metaplasia and mucus production, respectively (15, 16).

References:

1. Liu, A.Y. *et al.* (2014) *Matrix Biol.* **37**:150.
2. Gillan, L. *et al.* (2002) *Cancer Res.* **62**:5358.
3. Takeshita, S. *et al.* (1993) *Biochem. J.* **294**:271.
4. Kruzynska-Frejtag, A. *et al.* (2004) *Dev. Dyn.* **229**:857.
5. Lindner, V. *et al.* (2005) *Arterioscler. Thromb. Vasc. Biol.* **25**:77.
6. Horiuchi, K. *et al.* (1999) *J. Bone Miner. Res.* **14**:1239.
7. Li, G. *et al.* (2006) *Atherosclerosis* **188**:292.
8. Shao, R. *et al.* (2004) *Mol. Cell. Biol.* **24**:3992.
9. Yan, W. and R. Shao (2006) *J. Biol. Chem.* **281**:19700.
10. Erkan, M. *et al.* (2007) *Gastroenterology* **132**:1447.
11. Norris, R.A. *et al.* (2007) *J. Cell. Biochem.* **101**:695.
12. Kudo, Y. *et al.* (2012) *PLoS One* **7**:e44488.
13. Snider, P. *et al.* (2008) *Circ. Res.* **102**:752.
14. Kuhn, B. *et al.* (2007) *Nat. Med.* **13**:962.
15. Blanchard, C. *et al.* (2008) *Mucosal Immunol.* **1**:289.
16. Sehra, S. *et al.* (2011) *J. Immunol.* **186**:4959.