Recombinant Rat Periostin/OSF-2

Catalog Number: 8994-F2

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived rat Periostin/OSF-2 protein Asn24-Ser800, with a C-terminal 6-His tag Accession # D3ZAF5
N-terminal Sequence Analysis	Asn24
Predicted Molecular Mass	87 kDa

SPECIFICATIONS

SDS-PAGE	77-95 kDa, reducing conditions
Activity	Measured by its ability to induce adhesion of ATDC5 mouse chondrogenic cells. The ED_{50} for this effect is 0.6-3.6 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in MES, NaCl and Brij-35. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in 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). Alternative splicing generates additional isoforms of rat Periostin with various deletions in the C-terminal region following the FAS domains. This recombinant protein corresponds to the isoform of rat Periostin that lacks aa 785-812. It shares 90% and 97% aa sequence identity with comparable isoforms of human and mouse Periostin, respectively. 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 $\alpha_v\beta_3$ and $\alpha_v\beta_5$ (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:

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