Osteoblast Specific Factor 2 Human E. coli

Product Data Sheet

Type: Recombinant
Source: E. coli
Species: Human
Other names: Periostin, PN, OSF-2, POSTN, Fasciclin-I like

Cat. No.:

RD172045100 (0.1 mg)

Description

Total 671 AA. MW: 75 kDa (calculated). N-Terminal HisTag and Xa - cleavage site 23 AA (highlighted).

Introduction to the Molecule

Periostin is a disulfide linked 90 kDa, 811 amino acid protein. It was originally isolated as a osteoblast-specific factor that functions as a cell adhesion molecule for preosteoblasts. It is involved in osteoblast recruitment, attachment and spreading. Additionally, it has been shown that periostin expression is significantly increased by both transforming growth factor beta-1(TGFbeta1) and bone morphogenetic protein (BMP-2).

OSF-2 has a typical signal sequence, followed by a cysteine-rich domain, a fourfold repeated domain and a C-terminal domain. The fourfold repeated domain of OSF-2 shows homology with the insect protein fasciclin. Periostin mRNA is expressed in the developing mouse embryonic and fetal heart. It is localized to the endocardial cushions that ultimately divides the primitive heart tube into a four-chambered heart.

Research topic

Bone and cartilage metabolism, Cardiovascular disease, Cytokines and chemokines and related molecules

Amino Acid Sequence

MGHHHHHHHH HHSSGHIEGR HMRNNHYDKI LAHSRIRGRD QGPNVCALQQ ILGTKKKYFS TCKNWYKKSI CGQKTTVLYE
CCPGYMRMEG MKGCPAVLPI DHVYGTLGIV GATTTQRYSD ASKLREEIEG KGSFTYFAPS NEAWDNLDSD IRRGLESNVN
VELLNALHSH MINKRMLTKD LKNGMIIPSM YNNLGLFINH YPNGVVTVNC ARIIHGNQIA TNGVVHVIDR VLTQIGTSIQ
DFIEAEDDLS SFRAAAITSD ILEALGRDGH FTLFAPTNEA FEKLPRGVLE RFMGDKVASE ALMKYHILNT LQCSESIMGG
AVFETLEGNT IEIGCDGDSI TVNGIKMVNK KDIVTNNGVI HLIDQVLIPD SAKQVIELAG KQQTTFTDLV AQLGLASALR
PDGEYTLLAP VNNAFSDDTL SMVQRLLKLI LQNHILKVKV GLNELYNGQI LETIGGKQLR VFVYRTAVCI ENSCMEKGSK
QGRNGAIHIF REIIKPAEKS LHEKLKQDKR FSTFLSLLEA ADLKELLTQP GDWTLFVPTN DAFKGMTSEE KEILIRDKNA
LQNIILYHLT PGVFIGKGFE PGVTNILKTT QGSKIFLKEV NDTLLVNELK SKESDIMTTN GVIHVVDKLL YPADTPVGND
QLLEILNKLI KYIQIKFVRG STFKEIPVTV Y

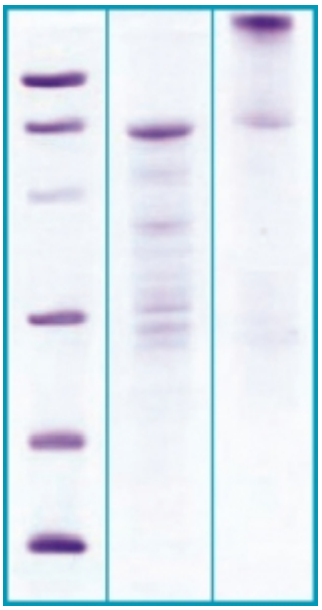
Source

E. coli

Purity

>90%

SDS-PAGE gel



12% SDS-PAGE separation of Human OSF-2
1. M.W. marker - 14, 21, 31, 45, 66, 97 kDa
2. reduced and heated sample, 5µg/lane
3. non-reduced and non-heated sample, 5µg/lane

Endotoxin

< 1.0 EU/ug

Formulation

Filtered (0,4 µm) and lyophilized in 0.5 mg/mL in 0.05 M Acetate buffer pH=4.0

Reconstitution

Add 0.1M Acetate buffer pH=4.0 to prepare a working stock solution of approximately 0.5 mg/mL and let the lyophilized pellet dissolve completely at 37°C. For conversion into higher pH value, we recommend intensive dilution by relevant buffer to a concentration of 10µg/mL. In higher concentrations the solubility of this antigen is limited. Product is not sterile! Please filter the product by an appropriate sterile filter before using it in the cell culture.

Shipping

At temperature 2 - 8°C Upon receipt, store the product at the temperature recommended below.

Storage, Stability/Shelf Life

Store lyophilized protein at -80°C. Lyophilized protein remains stable until the expiry date when stored at -80°C. Aliquot reconstituted protein to avoid repeated freezing/thawing cycles and store at -80°C for long term storage. Reconstituted protein can be stored at 4°C for a limited period of time; it does not show any change after one week at 4°C.

Quality Control Test

BCA to determine quantity of the protein.
SDS PAGE to determine purity of the protein.
LAL to determine quantity of endotoxin.

Applications

ELISA, Western blotting

Note

This product is intended for research use only. The Certificate of Analysis is available on www.biovendor.com

References to this Product

- Utispan K, Thuwajit P, Abiko Y, Charngkaew K, Paupairoj A, Chau-in S, Thuwajit C. *Gene expression profiling of cholangiocarcinoma-derived fibroblast reveals alterations related to tumor progression and indicates periostin as a poor prognostic marker.* Mol Cancer. 2010;9:13
- Lorts A, Schwanekamp JA, Elrod JW, Sargent MA, Molkentin JD. *Genetic manipulation of periostin expression in the heart does not affect myocyte content, cell cycle activity, or cardiac repair.* Circ Res. 2009 Jan 2;104 (1):e1-7
- Erkan M, Kleeff J, Gorbachevski A, Reiser C, Mitkus T, Esposito I, Giese T, Büchler MW, Giese NA, Friess H *.Periostin creates a tumor-supportive microenvironment in the pancreas by sustaining fibrogenic stellate cell activity.*

- Kuhn B, Del Monte F, Hajjar RJ, Chang YS, Lebeche D, Arab S, Keating MT . *Periostin induces proliferation of differentiated cardiomyocytes and promotes cardiac repair.* Nat Med . Jul 15 (2007)
- Sen K, Lindenmeyer MT, Gaspert A, Eichinger F, Neusser MA, Kretzler M, Segerer S, Cohen CD. *Periostin is induced in glomerular injury and expressed de novo in interstitial renal fibrosis.* Am J Pathol. 2011 Oct;179 (4):1756-67
- Butcher JT, Norris RA, Hoffman S, Mjaatvedt CH, Markwald RR . *Periostin promotes atrioventricular mesenchyme matrix invasion and remodeling mediated by integrin signaling through Rho/PI 3-kinase.* Dev Biol . Oct 4 (2006)

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