Midkine Human E. coli

Product Data Sheet

Type: Recombinant
Source: E. coli
Species: Human
Other names: MK, NEGF-2, Neurite growth promoting factor 2

Cat. No.:
RD172042100 (0.1 mg)

Description

The Human Midkine is created as a recombinant protein with N terminal fusion of HisTag. The Human Midkine His-Tagged Fusion Protein, produced in *E. coli*, is 14.6 kDa protein containing 121 amino acid residues of the human Midkine and 10 additional amino acid residues - HisTag. UniProtKB acc.no. P21741.

Introduction to the Molecule

Midkine (MK, also called neurite growth promoting factor 2, NEGF-2), a product of a retinoic acid responsive gene, is a secreted 13 kDa protein belonging to the family of heparin binding growth/differentiation factors. MK shares 45% sequence identity with other member of this family called Pleiotrophin (HB-GAM). Midkine is composed of two domains held together by disulfide linkages. The C-terminally located domain contains two heparin binding sites and is usually responsible for midkine activity. Part of the MK activity is enhanced by dimerization of MK. Midkine has been found in vertebrates from human to zebrafish and is most strongly expresed in midgestation. In the adult MK expression is restricted. In addition to normal development, MK is also involved in the pathogenesis of diseases e.g. inflammatory diseases, human carcinomas such as esophageal, stomach, colon, pancreatic, thyroid, lung, urinary, hepatocellular, neuroblastoma, glioblastoma, Wilm´s tumor etc. High MK levels are associated with poor prognosis in some type of cancer. The increased expresion in many carcinomas indicates that MK can be applied to the diagnosis of malignancy. Midkine is expressed during the reparative stage of bone fractures, also supresses infection of certain viruses including HIV in target cells. Anti-apoptotic and cell protecting activity of midkine makes it to be a promissing in therapy.

Research topic

Oncology

Amino Acid Sequence

MKHHHHHHHM KKKDKVKKGG PGSECAEWAW GPCTPSSKDC GVGFREGTCG AQTQRIRCRV PCNWKKEFGA DCKYKFENWG ACDGGTGTKV RQGTLKKARY NAQCQETIRV TKPCTPKTKA KAKAKKGKGK D

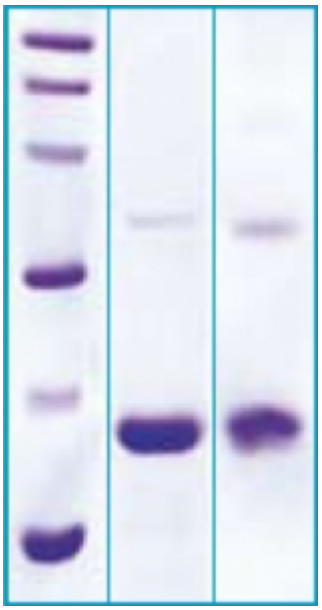
Source

E. coli

Purity

>95%

SDS-PAGE gel



12% SDS-PAGE separation of Human Midkine
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

Formulation

Filtered (0,4 µm) and lyophilized in 0.5 mg/mL in 0.05 M phosphate buffer, 0.1 M NaCl, pH 7.2

Reconstitution

Add PBS pH 7.2 to prepare a working stock solution of approximately 0.5 mg/mL and let the lyophilized pellet dissolve completely. Filter sterilize your culture media/working solutions containing this non-sterile product before using in cell culture

Shipping

At ambient temperature. 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 week.

Quality Control Test

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

Applications

ELISA, Western blotting

Note

This product is intended for research use only.

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