

# Human Midkine / MDK Protein

Catalog Number: 10247-HNAB



Sino Biological  
Biological Solution Specialist

## General Information

### Gene Name Synonym:

ARAP; MK; NEGF2

### Protein Construction:

A DNA sequence encoding the human MDK (P21741) (Met 1-Asp 143) was expressed and purified.

**Source:** Human

**Expression Host:** Baculovirus-Insect Cells

## QC Testing

**Purity:** > 95 % as determined by SDS-PAGE

### 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:** Val 21

### Molecular Mass:

The secreted recombinant human MDK consists of 123 amino acids and predicts a molecular mass of 13.4 kDa. It migrates as an approximately 18 kDa band in SDS-PAGE under reducing conditions.

### Formulation:

Lyophilized from sterile 50mM PBS, 1 M NaCl, pH 6.8

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:

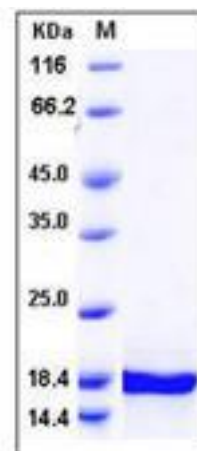
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

Midkine (MK or MDK) also known as neurite growth-promoting factor 2 (NEGF2) is a basic heparin-binding growth factor of low molecular weight, and forms a family with pleiotrophin. Midkine is a retinoic acid-responsive, heparin-binding growth factor expressed in various cell types during embryogenesis. It promotes angiogenesis, cell growth, and cell migration. Midkine is also expressed in several carcinomas, suggesting that it may play a role in tumorigenesis, perhaps through its effects on angiogenesis. Midkine binds anaplastic lymphoma kinase (ALK) which induces ALK activation and subsequent phosphorylation of the insulin receptor substrate (IRS1), followed by the activation of mitogen-activated protein kinase (MAPK) and PI3-kinase, and the induction of cell proliferation. Midkine is involved in neointima formation after arterial injury, possibly by mediating leukocyte recruitment. Also involved in early fetal adrenal gland development. Midkine exhibited increased expression in the breast carcinomas but showed much lower expression in the normal breast tissue. Thus, it can be used as breast carcinomas marker.

## References

1. Kadomatsu K, et al. (2004) Midkine and pleiotrophin in neural development and cancer. *Cancer Lett.* 204(2): 127-43.
2. Muramatsu H, et al. (1993) Midkine, a retinoic acid-inducible growth/differentiation factor: immunochemical evidence for the function and distribution. *Dev Biol.* 159(2): 392-402.
3. Muramatsu T. (2002) Midkine and pleiotrophin: two related proteins involved in development, survival, inflammation and tumorigenesis. *J Biochem.* 132(3): 359-71.

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