



## Midkine, human recombinant

**Catalog No:** 97607  
**Lot No:** XXXXX  
**Source:** *E. coli*  
**Synonyms:** NEGF-2, Neurite Growth-Promoting Factor 2, MK, Neurite outgrowth-promoting protein, Midgestation and kidney protein, Amphiregulin-associated protein, ARAP, Neurite outgrowth-promoting factor 2, FLJ27379, Midkine, MK1, NEGF2

### Background

Midkine (MK) is the product of a retinoic acid responsive gene, MK, and is a member of a family of heparin binding factors. It contains 121 amino acid residues including 10 conserved cysteine residues, all of which appear to be disulphide linked.

Midkine is expressed during embryogenesis, showing an expression pattern that suggests functions in neurogenesis, cell migration, secondary organogenetic induction, and mesoderm-epithelial interaction. The widespread downregulation of MK in the adult human is reverted in a number of cancers, in which polypeptides are able to act as both transforming growth factors and promoters of angiogenesis. Midkine (MK), induces chemotaxis of human neutrophils and was found to trigger mobilization of intracellular calcium of these cells. Midkine induces histamine release from rat peritoneal mast cells with a rapid response in a dose dependent manner. Midkine is also a potent stimulator of collagen and glycosaminoglycan synthesis.

### Description

Midkine human recombinant produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 123 amino acids and having a molecular mass of 13.4 kDa. Midkine is purified by proprietary chromatographic techniques.

### Physical Appearance

Sterile filtered white lyophilized (freeze-dried) powder.

### Formulation

Lyophilized from a 0.2 µm filtered concentrated solution in 1xPBS, pH 7.4.

### Solubility

It is recommended to reconstitute the lyophilized Midkine in sterile 18 MΩ-cm H<sub>2</sub>O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

### Stability

Lyophilized Midkine, although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution Midkine should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

### Purity

Greater than 95.0% as determined by (a) Analysis by RP-HPLC, (b) Analysis by SDS-PAGE.

### Amino Acid Sequence

VAKKKDKVKK GPGSECAEW AWGPTPSSK DCGVGFREGT CGAQTQRIRC RVPCNWKKEF GADCKYKFEN WGACDGGTGT  
KVRQGTLLKA RYNAQCQETI RVTKPCTPKT KAKAKAKKGG KGD

**CONTACT US TODAY**

BIOMOL GmbH • Kieler Straße 303a • 22525 Hamburg • Germany • info@biomol.de • www.biomol.de

Fon: +49 (0)40-853 260 0 • TOLL FREE IN GERMANY: Fon: 0800-246 66 51



### **Activity**

Determined by its ability to chemoattract human neutrophils using a concentration range of 0.1 - 10 ng/ml corresponding to a specific activity of 100,000 - 10,000,000 IU/mg.

### **Usage**

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