

## Recombinant Human Midkine

### Information

<b>Gene ID</b>	4192
<b>Accession #</b>	P21741
<b>Alternate Names</b>	ARAP, Midgestation and Kidney Protein, Neurite Outgrowth-promoting Factor 2, Neurite Outgrowth-promoting Protein
<b>Source</b>	Escherichia coli.
<b>M.Wt</b>	Approximately 13.4 kDa, a single non-glycosylated polypeptide chain containing 123 amino acids.
<b>AA Sequence</b>	VAKKKDKVKK GPGSECAEW AWGPCTPSSK DCGVGFREGT CGAQTQRIRC RVPCNWKKEF GADCKYKFEN WGACDGGTGT KVRQGTLLKA RYNAQCQETI RVTKPCTPKT KAKAKAKKGK GKD
<b>Appearance</b>	Sterile Filtered White lyophilized (freeze-dried) powder.
<b>Stability &amp; Storage</b>	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
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered concentrated solution in PBS, pH7.4.
<b>Reconstitution</b>	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/ml. Stock solutions should be apportioned into working aliquots and stored at ≤ -20 °C. Further dilutions should be made in appropriate buffered solutions.
<b>Biological Activity</b>	Fully biologically active when compared to standard. The biological activity determined by a chemotaxis bioassay using human neutrophils is in a concentration range of 0.1-10 ng/ml.
<b>Shipping Condition</b>	Gel pack.
<b>Handling</b>	Centrifuge the vial prior to opening.
<b>Usage</b>	For Research Use Only! Not to be used in humans.

### Components and Storage

Components	5µg	100µg	500µg
Recombinant Human Midkine	5µg	100µg	500µg

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

## Quality Control

Purity	> 97 % by SDS-PAGE and HPLC analyses.
Endotoxin	Less than 1 EU/ $\mu$ g of rHuMidkine as determined by LAL method.

## Description

Midkine, also named MK, MK1, NEGF 2, is belonging to the neurotrophic and developmentally-regulated heparin-binding molecules family. It is encoded by the MDK gene. The Midkine protein includes five intrachain disulfide bonds which hold two domains and there are three antiparallel beta-sheets in each domain. A chondroitin sulfate proteoglycan, protein-tyrosine phosphatase zeta (PTPzeta), is a receptor for MK. MK promotes the growth, survival, and migration of various cells, and plays roles in neurogenesis and epithelial mesenchymal interactions during organogenesis. The predicted molecular weight is approximately 13.3 kDa, based on a mature peptide length of 118 amino acid residues in the mouse and 121 amino acid residues in the human. Across species, MK shows 87 % identity between the human and murine proteins.

## Reference

1. Kaname T, Kuwano A, Murano I, et al. 1993. Genomics. 17:514-5
2. Ikematsu S, Yano A, Aridome K, et al. 2000. Br J Cancer. 83:701-6
3. Muramatsu T. 2002. J Biochem. 132:359-71.

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**[www.apexbt.com](http://www.apexbt.com)**

7505 Fannin street, Suite 410, Houston, TX 77054.

Tel: +1-832-696-8203 | Fax: +1-832-641-3177 | Email: [info@apexbt.com](mailto:info@apexbt.com)