

Cytokines

Human Recombinant Midkine

Midkine



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TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713

INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM

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Catalog #100-0933

20 µg

Product Description

Midkine is a member of a unique family of heparin-binding growth factors that are structurally different from other fibroblast growth factors (Muramatsu; Takada et al.). Midkine is a proinflammatory cytokine, promoting the migration of leukocytes, fibrinolysis, and acting as a chemotactic agent towards neutrophils (Muramatsu; Said et al.; Takada et al.). It also regulates growth, differentiation, and development during the midgestation stage of embryogenesis, and promotes angiogenesis (Muramatsu; Said et al.; Takada et al.). The protein structure consists of three antiparallel β -sheets and is highly conserved between species (Muramatsu; Takada et al.). While the exact signal pathway is not known, proposed pathways include promoting LRP, inhibiting Src kinase, activating paxillin and STAT1 α , activating PI2 and MAP kinases, suppressing caspases, binding to $\alpha 6\beta 1$ -integrin and tetraspanin, activating FAK, phosphorylating STAT3, suppressing STAT5 phosphorylation, activating ALK, activating PI3 kinase and transcription of NF κ B, binding to neuroglycan C or nucleolin, and binding to eIF3 (Muramatsu). In cultured cells, midkine influences growth and survival of neural precursor cells, synthesis of cytokines from endothelial and renal epithelial cells, and promotes synthesis of extracellular matrices from fibroblasts (Muramatsu; Takada et al.).

Product Information

Alternative Names:	Amphiregulin-associated protein, ARAP, MDK, MEK, Midgestation and kidney protein, MK1, MKARAP, NEGF2, NEGF2FLJ27379, Neurite outgrowth-promoting factor 2, Neurite outgrowth-promoting protein
Accession Number:	P21741 (Val21-Asp143)
Amino Acid Sequence:	VAKKKDKVKK GPGSECAEW AWGPCTPSSK DCGVGFREGT CGAQTQRIRC RVPCNWKKEF GADCKYKFEN WGACDGGTGT KVRQGTLLKKA RYNAQCQETI RVTKPCTPKT KAKAKAKKGK GKD
Predicted Molecular Mass:	13.4 kDa
Species:	Human
Formulation:	Lyophilized from sterile 50 mM PBS, 1 M NaCl, pH 6.8. Trehalose (5% - 8%), mannitol, and 0.01% TWEEN® 80 are normally added as protectants before lyophilization.
Source:	Baculovirus-insect cells

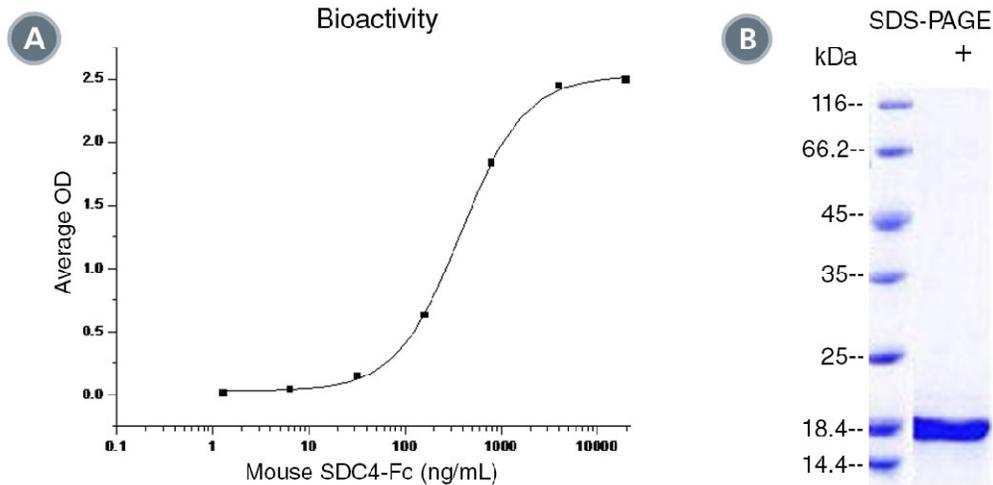
Specifications

Activity:	Binding ability was measured in a functional ELISA. Immobilized Human Recombinant Midkine at 10,000 ng/mL can bind mouse SDC4-Fc with a linear range of 160 - 1250 ng/mL.
Purity:	≥ 92%
Endotoxin Level:	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 1.0 EU/µg protein.

Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The binding activity of Human Recombinant Midkine was tested by functional ELISA with immobilized Human Recombinant Midkine at 10,000 ng/mL. Immobilized Human Recombinant Midkine can bind mouse SDC4-Fc with a linear range of 160 - 1250 ng/mL.

(B) Human Recombinant Midkine was resolved with SDS-PAGE under reducing (+) conditions and visualized by Coomassie Blue staining. Human Recombinant Midkine has a predicted molecular mass of 13.4 kDa and an apparent molecular mass of 18 kDa (Kaneda et al.).

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

- Kaneda N et al. (1996) Midkine, a Heparin-binding growth/differentiation factor, exhibits nerve cell adhesion and guidance activity for neurite outgrowth in vitro. *J Biochem* 119(6): 1150–6.
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- Said EA et al. (2002) The anti-HIV cytokine midkine binds the cell surface-expressed nucleolin as a low affinity receptor. *J Biol Chem* 277(40): 37492–502.
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