

Animal-Free Midkine Protein, Mouse (His)

Cat. No.:	HY-P700223AF
Synonyms:	Midkine; Mdk; MK; Retanoic acid-responsive protein; Retinoic acid-induced differentiation factor
Species:	Mouse
Source:	E. coli
Accession:	P12025 (K23-D140)
Gene ID:	17242
Molecular Weight:	Approximately 14.02 kDa

PROPERTIES

AA Sequence	<p>M K K K E K V K K G S E C S E W T W G P C T P S S K D C G M G F R E G T C G A Q</p> <p>T Q R V H C K V P C N W K K E F G A D C K Y K F E S W G A C D G S T G T K A R Q</p> <p>G T L K K A R Y N A Q C Q E T I R V T K P C T S K T K S K T K A K K G K G K D</p>
Appearance	Lyophilized powder.
Formulation	Lyophilized from a solution containing 1X PBS, pH 7.4.
Endotoxin Level	<0.1 EU per 1 µg of the protein by the LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<p>Midkine (MDK) is a secreted protein functioning as a versatile cytokine and growth factor, transmitting signals through both cell-surface proteoglycan and non-proteoglycan receptors. It engages in diverse cellular processes, such as inflammatory response, cell proliferation, adhesion, survival, tissue regeneration, differentiation, and migration. MDK plays a pivotal role in inflammatory processes by orchestrating the recruitment of neutrophils and macrophages to inflammation sites, exhibiting dual activities that include promoting epithelial cell survival and facilitating smooth muscle cell migration following renal and vessel damage. Moreover, MDK suppresses tolerogenic dendritic cell development, inhibiting regulatory T cell differentiation, and fosters T cell expansion through NFAT signaling, influencing Th1 cell differentiation. The protein's involvement extends to tissue regeneration, contributing to heart damage recovery by negatively regulating inflammatory cell recruitment and mediating cell survival through MAPKs and AKT pathways. Additionally, MDK facilitates liver regeneration, bone repair, and brain development, promoting neural precursor cell survival, neurite outgrowth, and</p>
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embryonic neurons' survival. Its interactions with various receptors, such as PTPRZ1, ITGA4:ITGB1 complex, LRP1, and GPC2, underscore MDK's intricate regulatory role in diverse physiological processes.

Caution: Product has not been fully validated for medical applications. For research use only.

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