

## MDK/Midkine Protein, Human (His-Avi)

Cat. No.:	HY-P700791
Synonyms:	MK; ARAP; MDK; MEK; MK1; MKARAP; NEGF2
Species:	Human
Source:	E. coli
Accession:	P21741-1 (V21-D143)
Gene ID:	4192
Molecular Weight:	16.46 kDa

### PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.22 $\mu$ m filtered solution of PBS, pH 7.4. Normally 8% trehalose is added as protectant before lyophilization.
Endotoxin Level	<1 EU/ $\mu$ g, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 $\mu$ g/mL in ddH <sub>2</sub> 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 that serves as a multifunctional cytokine and growth factor, transmitting signals through cell-surface proteoglycan and non-proteoglycan receptors. Engaging in various physiological processes, MDK regulates inflammatory responses, cell proliferation, adhesion, growth, survival, tissue regeneration, differentiation, and migration. It plays a crucial role in inflammatory processes by mediating 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 the development of tolerogenic dendritic cells, inhibiting regulatory T cell differentiation and promoting T cell expansion through NFAT signaling and Th1 cell differentiation. MDK'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, along with facilitating liver regeneration, bone repair, and brain development. Interactions with various receptors, such as PTPRZ1, ITGA4:ITGB1 complex, LRP1, and GPC2, underscore MDK's intricate regulatory role in diverse physiological processes.</p>
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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