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Anti-Midkine Antibody
Catalog # ABO12734

Specification

Anti-Midkine Antibody - Product Information

Application	**WB**
Primary Accession	P21741
Host	**Rabbit**
Reactivity	**Human**
Clonality	**Polyclonal**
Format	**Lyophilized**

Description
Rabbit IgG polyclonal antibody for Midkine(MDK) detection. Tested with WB in Human.

Reconstitution
Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-Midkine Antibody - Additional Information

Gene ID 4192

Other Names
Midkine, MK, Amphiregulin-associated protein, ARAP, Midgestation and kidney protein, Neurite outgrowth-promoting factor 2, Neurite outgrowth-promoting protein, MDK, MK1, NEGF2

Calculated MW
15585 MW KDa

Application Details
Western blot, 0.1-0.5 µg/ml, Human

Subcellular Localization
Secreted.

Tissue Specificity
Expressed in various tumor cell lines. In insulinoma tissue predominantly expressed in precancerous lesions. .

Protein Name
Midkine

Contents
Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.

Immunogen
E.coli-derived human Midkine recombinant protein (Position: V21-D143). Human Midkine shares 87% and 89% amino acid (aa) sequence identity with mouse and rat Midkine, respectively.

Purification

Immunogen affinity purified.

Cross Reactivity
No cross reactivity with other proteins

Storage	**At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.**

Anti-Midkine Antibody - Protein Information

Name MDK (HGNC:6972)

Synonyms MK1, NEGF2

Function
Secreted protein that functions as a cytokine and growth factor and mediates its signal through cell-surface proteoglycan and non-proteoglycan receptors (PubMed:10212223, PubMed:10772929, PubMed:12084985, PubMed:12122009, PubMed:12573468, PubMed:15466886, PubMed:18469519, PubMed:24458438). Binds cell-surface proteoglycan receptors via their chondroitin sulfate (CS) groups (PubMed:10212223, PubMed:12084985). Thereby regulates many processes like inflammatory response, cell proliferation, cell adhesion, cell growth, cell survival, tissue regeneration, cell differentiation and cell migration (PubMed:10212223, PubMed:10683378, PubMed:10772929, PubMed:12084985, PubMed:12122009, PubMed:12573468, PubMed:15466886, PubMed:22323540, PubMed:24458438). Participates in inflammatory processes by exerting two different activities. Firstly, mediates neutrophils and macrophages recruitment to the sites of inflammation both by direct action by cooperating namely with ITGB2 via LRP1 and by inducing chemokine expression (PubMed:10683378, PubMed:24458438). This inflammation can be accompanied by epithelial cell survival and smooth muscle cell migration after renal and vessel damage, respectively (PubMed:10683378). Secondly, suppresses the development of tolerogenic dendric cells thereby inhibiting the differentiation of regulatory T cells and also promote T cell expansion through NFAT signaling and Th1 cell differentiation (PubMed:22323540). Promotes tissue regeneration after injury or trauma. After heart damage negatively regulates the recruitment of inflammatory cells and mediates cell survival through activation of anti-apoptotic signaling pathways via MAPKs and AKT pathways through the

activation of angiogenesis (By similarity). Also facilitates liver regeneration as well as bone repair by recruiting macrophage at trauma site and by promoting cartilage development by facilitating chondrocyte differentiation (By similarity). Plays a role in brain by promoting neural precursor cells survival and growth through interaction with heparan sulfate proteoglycans (By similarity). Binds PTPRZ1 and promotes neuronal migration and embryonic neurons survival (PubMed:10212223). Binds SDC3 or GPC2 and mediates neurite outgrowth and cell adhesion (PubMed:12084985, PubMed:1768439). Binds chondroitin sulfate E and heparin leading to inhibition of neuronal cell adhesion induced by binding with GPC2 (PubMed:12084985). Binds CSPG5 and promotes elongation of oligodendroglial precursor-like cells (By similarity). Also binds ITGA6:ITGB1 complex; this interaction mediates MDK-induced neurite outgrowth (PubMed:15466886, PubMed:1768439). Binds LRP1; promotes neuronal survival (PubMed:10772929). Binds ITGA4:ITGB1 complex; this interaction mediates MDK-induced osteoblast cells migration through PXN phosphorylation (PubMed:15466886). Binds anaplastic lymphoma kinase (ALK) which induces ALK activation and subsequent phosphorylation of the insulin receptor substrate (IRS1), followed by the activation of mitogen-activated protein kinase (MAPK) and PI3-kinase, and the induction of cell proliferation (PubMed:12122009). Promotes epithelial to mesenchymal transition through interaction with NOTCH2 (PubMed:18469519). During arteriogenesis, plays a role in vascular endothelial cell proliferation by inducing VEGFA expression and release which in turn induces nitric oxide synthase expression. Moreover activates vasodilation through nitric oxide synthase activation (By similarity). Negatively regulates bone formation in response to mechanical load by inhibiting Wnt/beta- catenin signaling in osteoblasts (By similarity). In addition plays a role in hippocampal development, working memory, auditory response, early fetal adrenal gland development and the female reproductive system (By similarity).

Cellular Location
Secreted.

Tissue Location
Expressed in various tumor cell lines. In insulinoma tissue predominantly expressed in precancerous lesions

Anti-Midkine Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-Midkine Antibody - Images

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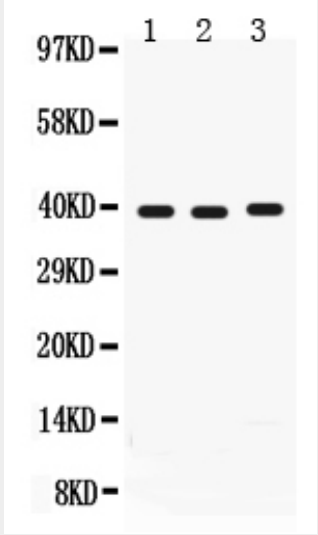

Anti-Midkine antibody, ABO12734, Western blottingAll lanes: Anti Midkine (ABO12734) at 0.5ug/mlLane 1: HELA Whole Cell Lysate at 40ugLane 2: SMMC Whole Cell Lysate at 40ugLane 3: SW620 Whole Cell Lysate at 40ugPredicted bind size: 16KDObserved bind size: 38KD

Anti-Midkine Antibody - Background

Midkine(MK or MDK), also known as neurite growth-promoting factor 2(NEGF2), is a protein that in humans is encoded by the MDK gene. Midkine is a basic heparin-binding growth factor of low molecular weight, and forms a family with pleiotrophin(NEGF1, 46% homologous with MK). It is a nonglycosylated protein, composed of two domains held by disulfide bridges. It is a developmentally important retinoic acid-responsive gene product strongly induced during mid-gestation, hence the name midkine. Restricted mainly to certain tissues in the normal adult, it is strongly induced during oncogenesis, inflammation and tissue repair. Midkine is pleiotropic, capable of exerting activities such as cell proliferation, cell migration, angiogenesis and fibrinolysis. A molecular complex containing receptor-type tyrosine phosphatase zeta(PTPÎ¶), low density lipoprotein receptor-related protein(LRP1), anaplastic leukemia kinase (ALK) and syndecans is considered to be its receptor.