abcam

ab236781

Anti-Midkine antibody [EP1143Y] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EP1143Y
Purification technique	Affinity purification Protein A
Concentration	1.03 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

WB

Tested

Species	Synthetic peptide - Human, Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

Target data

See full target information MDK

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).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab236781 is the carrier-free version of ab52637.

Species reactivity
Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

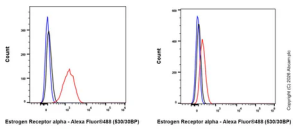
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

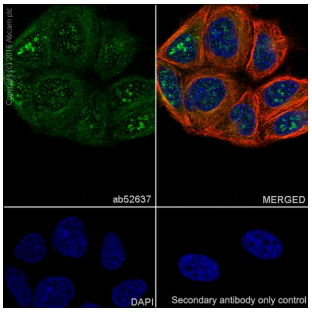
5 product images



Flow Cytometry (Intracellular) - Anti-Midkine antibody [EP1143Y] - BSA and Azide free (ab236781)

Midkine Flow Cytometry (Intracellular) staining using rabbit Anti-Midkine antibody

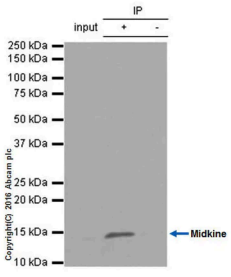
This data was developed using ab52637, the same antibody clone in a different buffer formulation. Flow cytometric overlay histogram of 4% paraformaldehyde-fixed, 90% methanol permeabilised SH-SY5Y (Human neuroblastoma epithelial cell line) positive cells (Left) and Ramos (Human Burkitt's lymphoma B lymphocyte cell line) negative cells (Right) labelling Midkine with ab52637 at 1/2000 dilution (red line). A Goat Anti-Rabbit IgG Alexa Fluor® 488 secondary antibody (ab150081) was used at 1/2000 dilution. Isotype control antibody (black line) was Rabbit monoclonal IgG (ab172730) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was cells without incubation with primary antibody and secondary antibody and was also used as a control.



Immunocytochemistry/ Immunofluorescence - Anti-Midkine antibody [EP1143Y] - BSA and Azide free (ab236781)

Midkine Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Midkine antibody

Immunocytochemistry/ Immunofluorescence analysis of HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling Midkine with purified ab52637 at 1:100 dilution (10.5µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). ab150077 Goat anti rabbit IgG(Alexa Fluor® 488) was used as the secondary antibody at 1:1000 dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab52637).



Immunoprecipitation - Anti-Midkine antibody [EP1143Y] - BSA and Azide free (ab236781)

ab52637 (purified) at 1:20 dilution (2ug) immunoprecipitating Midkine in SH-SY5Y (Human neuroblastoma cell line from bone marrow) whole cell lysate.
Lane 1 (input): SH-SY5Y (Human neuroblastoma cell line from bone marrow) whole cell lysate 10ug

Lane 2 (+): ab52637 & SH-SY5Y (Human neuroblastoma cell line from bone marrow) whole cell lysate

Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab52637 in SH-SY5Y (Human neuroblastoma cell line from bone marrow) whole cell lysate

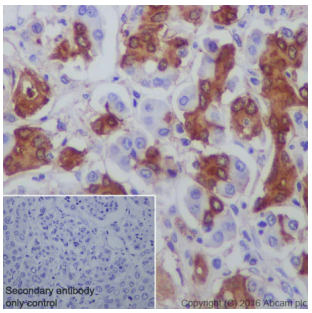
For western blotting, VeriBlot for IP Detection Reagent (HRP) (ab131366) was used for detection at 1:5000 dilution.

Blocking and diluting buffer: 5% NFDM/TBST.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab52637).
All lanes:
Immunoprecipitation - Anti-Midkine antibody [EP1143Y] (ab52637)

Predicted band size: 16 kDa

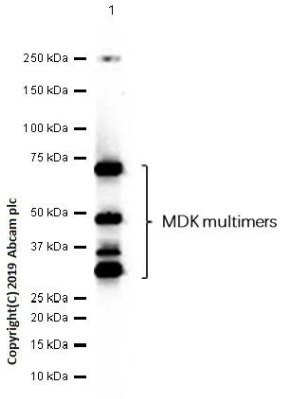
Observed band size: 16 kDa



Western blot - Anti-Midkine antibody [EP1143Y] - BSA and Azide free (ab236781)

Midkine Western blot staining using rabbit Anti-Midkine antibody

This data was developed using ab52637, the same antibody clone in a different buffer formulation. Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human pancreatic carcinoma tissue sections labeling Midkine with purified ab52637 at 1/50 dilution (2.1 µg/ml). Heat mediated antigen retrieval was performed using Perform heat mediated antigen retrieval using EDTA Buffer, pH9.0. Tissue was counterstained with Hematoxylin. ab97051 Goat Anti-Rabbit IgG H&L (HRP) secondary antibody was used at 1:500 dilution. PBS instead of the primary antibody was used as the negative control.



Western blot - Anti-Midkine antibody [EP1143Y] - BSA and Azide free (ab236781)

Midkine Western blot staining of SH-SY5Y (Human neuroblastoma epithelial cell) whole cell lysates using rabbit Anti-Midkine antibody

This data was developed using ab52637, the same antibody clone in a different buffer formulation.

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Midkine can form SDS- and β-mercaptoethanol-resistant dimers and multimers (PMID: 9083079, PMID: 7721890.

All lanes:
Western blot - Anti-Midkine antibody [EP1143Y] (ab52637) at 1/100 dilution

All lanes:
SH-SY5Y (Human neuroblastoma epithelial cell) whole cell lysates at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 15-70 kDa

Exposure time: 180s

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.