abcam

ab305097

Anti-ALK(pY1586) antibody [EPR26900-88]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR26900-88
Purification technique	Affinity purification Protein A
Concentration	0.507 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

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

Dot

Tested

Species	Synthetic peptide - Human
Dilution info	1/1000
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	-
Notes	

	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

ICC/IF

Not recommended

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

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

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

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

Target data

See full target information ALK pY1586

Function

Neuronal receptor tyrosine kinase that is essentially and transiently expressed in specific regions of the central and peripheral nervous systems and plays an important role in the genesis and differentiation of the nervous system (PubMed:11121404, PubMed:11387242, PubMed:16317043, PubMed:17274988, PubMed:30061385, PubMed:34646012, PubMed:34819673). Also acts as a key thinness protein involved in the resistance to weight gain: in hypothalamic neurons, controls energy expenditure acting as a negative regulator of white adipose tissue lipolysis and sympathetic tone to fine-tune energy homeostasis (By similarity). Following activation by ALKAL2 ligand at the cell surface, transduces an extracellular signal into an intracellular response (PubMed:30061385, PubMed:33411331, PubMed:34646012, PubMed:34819673). In contrast, ALKAL1 is not a potent physiological ligand for ALK (PubMed:34646012). Ligand-binding to the extracellular domain induces tyrosine kinase activation, leading to activation of the mitogen-activated protein kinase (MAPK) pathway (PubMed:34819673). Phosphorylates almost exclusively at the first tyrosine of the Y-x-x-x-Y-Y motif (PubMed:15226403, PubMed:16878150). Induces tyrosine phosphorylation of CBL, FRS2, IRS1 and SHC1, as well as of the MAP kinases MAPK1/ERK2 and MAPK3/ERK1 (PubMed:15226403, PubMed:16878150). ALK activation may also be regulated by pleiotrophin (PTN) and midkine (MDK) (PubMed:11278720, PubMed:11809760, PubMed:12107166, PubMed:12122009). PTN-binding induces MAPK pathway activation, which is important for the anti-apoptotic signaling of PTN and regulation of cell proliferation (PubMed:11278720, PubMed:11809760, PubMed:12107166). MDK-binding induces phosphorylation of the ALK target insulin receptor substrate (IRS1), activates mitogen-activated protein kinases (MAPKs) and PI3-kinase, resulting also in cell proliferation induction (PubMed:12122009). Drives NF-kappa-B activation, probably through IRS1 and the activation of the AKT serine/threonine kinase (PubMed:15226403, PubMed:16878150). Recruitment of IRS1 to activated ALK and the activation of NF-kappa-B are essential for the autocrine growth and survival signaling of MDK (PubMed:15226403, PubMed:16878150). May function as regulator of gastric epithelial differentiation (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

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.

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.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The Anaplastic Lymphoma Kinase commonly referred to as ALK is a receptor tyrosine kinase known for its role in cell signaling. It is sometimes called CD246. ALK has a molecular mass of approximately 180 kDa. This protein finds expression predominantly in the central and peripheral nervous system with prominence in neural tissue during development. The ALK protein belongs to the insulin receptor superfamily exhibiting kinase activity that promotes signal transduction processes associated with growth and differentiation.
Biological function summary	ALK influences cell growth survival and differentiation playing a significant role during the development of the nervous system. As part of its biological activity the ALK protein can become a component of larger signaling complexes participating as an important activator or mediator. Evidence suggests ALK's involvement in

	neuronal differentiation and synaptogenesis. Its activity impacts intracellular pathways consequently modulating biological processes relevant to neural tissue and oncogenesis.
Pathways	ALK acts within the MAPK and PI3K-AKT signaling pathways. These pathways enable the transduction of signals from the cell surface to the nucleus influencing cellular outcomes such as proliferation and survival. In these pathways ALK interacts with various other proteins including GRB2 and PI3K which further facilitate downstream signaling. Proper functioning of these pathways is essential to maintaining cellular homeostasis and development.
Associated diseases and disorders	ALK has a significant relationship with certain types of cancer such as non-small cell lung carcinoma and anaplastic large cell lymphoma. Genetic alterations in ALK such as translocations or mutations can lead to the uncontrolled activation of its kinase activity resulting in oncogenic transformation. In these contexts the ALK protein often interacts with EML4 in lung cancer through a fusion forming an oncogenic driver. Targeting ALK with anti-ALK antibodies or small molecule inhibitors has emerged as a therapeutic strategy to manage these malignancies.

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

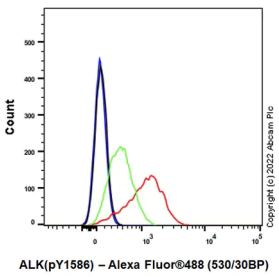
We do not recommend this combination. It is not covered by our product promise.

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.

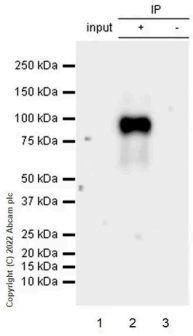
5 product images



Flow Cytometry (Intracellular) - Anti-ALK(pY1586) antibody [EPR26900-88] (ab305097)

ALK(pY1586) Flow Cytometry (Intracellular) staining using rabbit Anti-ALK(pY1586) antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized KARPAS-299 (human anaplastic large cell lymphoma) treated with 50uM pervanadate for 30min (Red) / Untreated control (Green) cells labelling ALK(pY1586) with ab305097 at 1/500 dilution (0.1ug) (Red) and Green (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-ALK(pY1586) antibody [EPR26900-88] (ab305097)

ALK (pY1586) was immunoprecipitated from 0.35 mg KARPAS-299 (human T cell lymphoma cell) treated with 50uM pervanadate for 30min, whole cell lysate 10ug with ab305097 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab305097 at 1/1000 dilution. VeriBlot for IP secondary antibody (HRP)(ab131366) was used at 1/5000 dilution.
Lane 1: KARPAS-299 (human T cell lymphoma cell) treated with 50uM pervanadate for 30min, whole cell lysate 10ug

Lane 2: ab305097 IP in KARPAS-299 treated with 50uM pervanadate for 30min, whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab305097 in KARPAS-299 treated with 50uM pervanadate for 30min, whole cell lysate

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

Exposure time: 32 seconds

Lysate was freshly made and used for IP immediately to minimize protein degradation.

All lanes:
Immunoprecipitation - Anti-ALK(pY1586) antibody [EPR26900-88] (ab305097) at 1/1000 dilution

All lanes:
ab305097 IP in KARPAS-299 treated with 50uM pervanadate for 30min, whole cell lysate

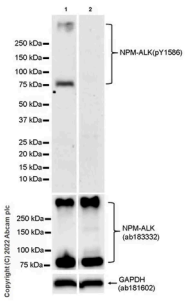
Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Predicted band size: 80 kDa

Observed band size: 80 kDa

Exposure time: 32s



Western blot - Anti-ALK(pY1586) antibody [EPR26900-88] (ab305097)

ALK(pY1586) Western blot staining using rabbit Anti-ALK(pY1586) antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST KARPAS-299 cells carry the NPM-ALK fusion (PMID: 32193476, 9736036). Phosphorylated Tyr646 of NPM-ALK is equivalent to Tyr1586 of full length ALK. Bands around 300 kDa may be due to protein aggregation (PMID: 9121481). Lysates were freshly made and used for Western blotting immediately to minimize protein degradation. Exposure time: 180 seconds
All lanes:
Western blot - Anti-ALK(pY1586) antibody [EPR26900-88] (ab305097) at 1/1000 dilution

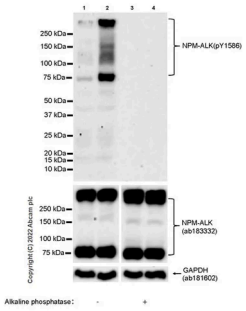
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 176 kDa

Observed band size: 80 kDa, 300 kDa

Exposure time: 180s



Western blot - Anti-ALK(pY1586) antibody [EPR26900-88] (ab305097)

ALK(pY1586) Western blot staining using rabbit Anti-ALK(pY1586) antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST KARPAS-299 cells carry the NPM-ALK fusion (PMID: 32193476, 9736036). Phosphorylated Tyr646 of NPM-ALK is equivalent to Tyr1586 of full length ALK. Bands around 300 kDa may be due to protein aggregation (PMID: 9121481). Lysates were freshly made and used for Western blotting immediately to minimize protein degradation. Exposure time: 180 seconds
All lanes:
Western blot - Anti-ALK(pY1586) antibody [EPR26900-88] (ab305097) at 1/1000 dilution

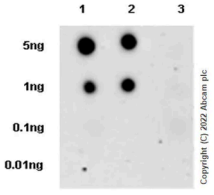
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 176 kDa

Observed band size: 80 kDa, 300 kDa

Exposure time: 180s



Dot Blot - Anti-ALK(pY1586) antibody [EPR26900-88] (ab305097)

ALK(pY1586) Dot Blot staining of ALK(pY1586) using rabbit Anti-ALK(pY1586) antibody

Dot blot analysis of ALK(pY1586) using ab305097 at 1:1000 (0.507 ug/ml) followed by a Goat Anti-Rabbit IgG (H+L) Peroxidase conjugated (ab97051) at 1:100000 dilution. Exposure time: 180 secondsBlocking and diluting buffer and concentration: 5% NFDM/TBST

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