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Mouse Alk Blocking Peptide (P1517)

Synthetic peptide
Catalog # BP21260a

Specification

Mouse Alk Blocking Peptide (P1517) - Product Information

Primary Accession P97793

Mouse Alk Blocking Peptide (P1517) - Additional Information

Gene ID 11682

Other Names
ALK tyrosine kinase receptor, Anaplastic lymphoma kinase, CD246, Alk

Target/Specificity
The synthetic peptide sequence is selected from aa 1517-1530 of HUMAN Alk

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

Mouse Alk Blocking Peptide (P1517) - Protein Information

Name Alk {ECO:0000303|PubMed:9053841, ECO:0000312|MGI:MGI:103305}

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:15226403, PubMed:16458083, PubMed:16878150, PubMed:19200234, PubMed:30497772). 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 (PubMed:32442405). Following activation by ALKAL2 ligand at the cell surface, transduces an extracellular signal into an intracellular response. In contrast, ALKAL1 is not a potent physiological ligand for ALK. Ligand-binding to the extracellular domain induces tyrosine kinase activation, leading to activation

of the mitogen-activated protein kinase (MAPK) pathway. Phosphorylates almost exclusively at the first tyrosine of the Y-x-x-x- Y-Y motif. Induces tyrosine phosphorylation of CBL, FRS2, IRS1 and SHC1, as well as of the MAP kinases MAPK1/ERK2 and MAPK3/ERK1. ALK activation may also be regulated by pleiotrophin (PTN) and midkine (MDK). PTN-binding induces MAPK pathway activation, which is important for the anti-apoptotic signaling of PTN and regulation of cell proliferation. 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. Drives NF-kappa-B activation, probably through IRS1 and the activation of the AKT serine/threonine kinase. Recruitment of IRS1 to activated ALK and the activation of NF-kappa-B are essential for the autocrine growth and survival signaling of MDK (By similarity).

Cellular Location
Cell membrane {ECO:0000250|UniProtKB:Q9UM73}; Single-pass type I membrane protein {ECO:0000250|UniProtKB:Q9UM73} Note=Membrane attachment is essential for promotion of neuron-like differentiation and cell proliferation arrest through specific activation of the MAP kinase pathway. {ECO:0000250|UniProtKB:Q9UM73}

Tissue Location
Mainly expressed in central nervous system (CNS) and other parts of the brain such as the paraventricular nucleus (PVN) of the hypothalamus. Expression is also found in peripheral nervous systems, eye, nasal epithelium, olfactory nerve, tongue, skin, tissue surrounding the esophagus, stomach, midgut, as well as testis and ovary.

Mouse Alk Blocking Peptide (P1517) - Protocols

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

- Blocking Peptides

Mouse Alk Blocking Peptide (P1517) - Images

Mouse Alk Blocking Peptide (P1517) - Background

Neuronal orphan 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. Transduces signals from ligands at the cell surface, through specific activation of the mitogen-activated protein kinase (MAPK) pathway. Phosphorylates almost exclusively at the first tyrosine of the Y-x-x-x-Y-Y motif. Following activation by ligand, ALK induces tyrosine phosphorylation of CBL, FRS2, IRS1 and SHC1, as well as of the MAP kinases MAPK1/ERK2 and MAPK3/ERK1. Acts as a receptor for ligands pleiotrophin (PTN), a secreted growth factor, and midkine (MDK), a PTN-related factor, thus participating in PTN and MDK signal transduction. PTN-binding induces MAPK pathway activation, which is important for the anti-apoptotic signaling of PTN and regulation of cell proliferation. 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. Drives NF-kappa-B activation, probably through IRS1 and the activation of the AKT serine/threonine kinase. Recruitment of IRS1 to activated ALK and the activation of NF-kappa-B are essential for the autocrine growth and survival signaling of MDK.

Mouse Alk Blocking Peptide (P1517) - References

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