

Recombinant Human ALK Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50026

Size: 10ug, 100ug

Protein Name: ALK tyrosine kinase receptor (EC 2.7.10.1) (Anaplastic lymphoma kinase) (CD antigen CD246)

Synonym: ALK

UniProt ID: Q9UM73

UniProt Link: www.uniprot.org/uniprotkb/Q9UM73/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1620 AA

Molecular Weight: 176 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MGAIGLLWLLPLLLSTAAVGSGMGTGQRAGSPAAGPPLQPREPLSYSRLQRKSLAVDFVVP SLFRV
YARDLLLPPSSSELKAGRPEARGLALDCAPLLRLLGPAPGVSWTAGSPAPAEARTLSRVLKGGSV
RKLRRAKQLVLELGEEAILEGCVGPPGEAAVGLLQFNLSWIRQGEGLRIRLMPEKKASEVG
REGRLSAAIRASQPRLLFQIFGTGHSSLESPTNMPSPSPDYFTWNLTWIMKDSFPFLSHRSRYGLEC
SDFDPCELEYSPLHDLRNQSWSWRRIPSEEASQMDLLDGPGAERSKEMPRGSFLLLNTSADSKHT
ILSPWMRSSSEHCTLAVSVHRHLQPSGRYIAQLLPHNEAAREILLMPTPGKHGWTVLQGRIGRPDNP
FRVALEYISSGNRSLSAVDFFALKNCSEGTSPGSKMALQSSFTCWNGTVLQLGQACDFHQDCAQG
EDESQMCRKLPVGFYCNFEDGFCGWTQGTLSPTPQWQVRTLKDARFQDHDHALLSTTDVPAS
ESATVTSATFPAPIKSSPCELMSWLIRGVLRGNVSLVLVENKTGKEQGRMVWHVAAYEGLSLWQ
WMVLPLLDVSDRFLQMVAVWWGQGSRAIVAFDNISISLDCYLTISGEDKILQNTAPKSRNLFERNPN
KELKPGENSPTQPIFDPTVHWLFTTCGASGPHGPTQAQCNNAYQNSNLSVEVGSEGPLKGIQIWK
VPATDTYSISGYGAAGGKGGKNTMMRSHGVSVLGIFNLEKDDMLYILVGQQGEDACPSTNQLIQKV
CIGENNVIEEIRVNRSVHEWAGGGGGGGGATYVFKMKDGPVPLIAAGGGGRAYGAKTDTFHPE
RLENNSSVLGLNGNSGAAGGGGGGWNNTSLLWAGKSLQEGATGGHSCPQAMKKWGWETRGGF
GGGGGGCSSLGGGGGGYIGGNAASNNDPEMDGEDGVSFISPLGILYTPALKVMEGHGEVNIKHLYLN
CSHCEVDECHMDPESHKVICFDHGTVLAEDGVSCIVSPTPEPHLPLSLILSVVTSALVAALVLA FSGI
MIVYRRKHQELQAMQMELOQSPEYKLSKLRTSTIMTDYNPNYCFAGKTSSISDLKEVPRKNITLIRGLG
HGA FGEVYEGQVSGMPNDPSPLQVAVKTLPEVCSEQDELDFLMEALIISKFNHQNIVRCIGVSLQSL



PRFILLELMAGGDLKSFLRETRPRPSQPSSLAMLDLLHVARDIACGCQYLEENHFIHRDIAARNCLLT
CPGPGRVAKIGDFGMARDIYRASYRKGGCAMLVPVKWMPPEAFMEGIFTSKTDTSFSGVLLWEIFS
LGYMPYPSKSNQEVLFTSGGRMDPPKNCPPVYRIMTQCWQHQPEDRPNFAILERIEYCTQDP
DVINTALPIEYGPLVEEEEKVPVRPKDPEGVPPLLVSQQAQKREEERSPAAPPPLPTTSSGKAAKKPTA
AEISVRVPRGPAVEGGHVNMAFSQSNPPSELHKVHGSRNKPTSLWNPTYGSWFTEKPTKKNNPIAK
KEPHDRGNLGLGEGSCTVPPNVATGRLPGASLLLEPSSLTANMKEVPLFRLRHFP CGNVNYGYQQQ
GLPLEAATAPGAGHYEDTILKSKNSMNQPGP

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant ALK tyrosine kinase receptor (EC 2.7.10.1) (Anaplastic lymphoma kinase) (CD antigen CD246) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein 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).

Subcellular Localization: Cell membrane ; Single-pass type I membrane protein . Note=Membrane attachment is essential for promotion of neuron-like differentiation and cell proliferation arrest through specific activation of the MAP kinase pathway.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.