Recombinant Human ALK/CD246 His-tag

Catalog Number: 4210-CD

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived human ALK/CD246 protein Val19-Ser1038, with a C-terminal 6-His tag Accession # Q9UM73.3
N-terminal Sequence Analysis	Val19
Predicted Molecular Mass	111 kDa

SPECIFICATIONS

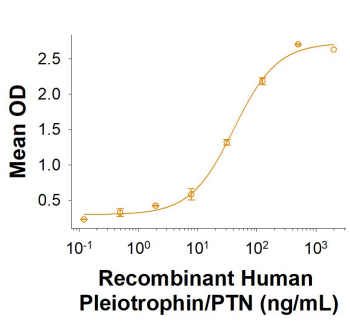
SDS-PAGE	130-150 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. In a Human ALK/CD246 Antibody (Catalog # AF4210) coated plate, when Recombinant Human ALK/CD246 is present at 0.5 µg/mL, Recombinant Human Pleiotrophin/PTN (Catalog # 252-PL) binds with an ED_{50} of 20-100 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

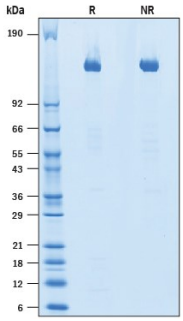
DATA

Binding Activity



In a Human ALK/CD246 Antibody (Catalog # AF4210) coated plate, when Recombinant Human ALK/CD246 (Catalog # 4210-CD) is present at 0.5 µg/mL, Recombinant Human Pleiotrophin/PTN (Catalog # 252-PL) binds with an ED_{50} of 20-100 ng/mL.

SDS-PAGE



2 µg/lane of Recombinant Human ALK.CD246 His-tag (Catalog # 4210-CD) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 130-150 kDa.

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BACKGROUND

Anaplastic Lymphoma Kinase (ALK), also known as CD246, is a transmembrane receptor tyrosine kinase in the Insulin Receptor family. The ALK gene is a target of multiple chromosomal translocations in cancer that encode hybrid proteins which promote cellular transformation (1, 2). Human ALK consists of a 1020 amino acid (aa) extracellular domain (ECD) with two MAM domains that flank an LDLR class A domain, a 21 aa transmembrane segment, and a 561 aa cytoplasmic domain that contains the tyrosine kinase domain (3, 4). Within the ECD, human ALK shares 89% aa sequence identity with mouse and rat ALK. It is primarily expressed in the developing nervous system but is also found in various non-neural tissues (3 - 6). Mature ALK is expressed on the cell surface as a 200 - 220 kDa N-glycosylated protein (3, 4, 7). Proteolytic cleavage of ALK liberates an 80 kDa soluble fragment from the ECD with a 140 kDa fragment remaining cell-associated (8, 9). ALK is classified as a dependence receptor, a protein that promotes apoptosis in the absence of ligand but is anti-apoptotic upon stimulation (2, 7). Its cytoplasmic domain is cleaved following Asp1160 by Caspases during apoptosis (7). ALK stimulation by antibody ligation induces activation of its kinase domain and receptor phosphorylation, enabling the association of ALK with signal transduction proteins (4, 9). ALK binds the cytokines Pleiotrophin and Midkine, although their effects on cellular responses are not consistent between different systems (8, 10 - 12). ALK promotes neurite formation in neuroblastoma cells and mediates the neuroprotective effects of Pleiotrophin in motor neurons (9, 12). A t(2;5) chromosomal translocation with Nucleophosmin (NPM) in human anaplastic large cell lymphoma results in a hybrid protein consisting of NPM fused to the kinase domain of ALK (6, 13). NPM-ALK as well as other ALK fusion proteins are aberrantly localized to the cytoplasm and nucleus, have constitutively active kinase domains, and promote cellular transformation (1, 13, 14).

References:

1. Chiarle, R. *et al.* (2008) Nat. Rev. Cancer **8**:11.
2. Allouche, M. (2007) Cell Cycle **6**:1533.
3. Iwahara, T. *et al.* (1997) Oncogene **14**:439.
4. Morris, S.W. *et al.* (1997) Oncogene **14**:2175.
5. Vernersson, E. *et al.* (2006) Gene Expr. Patterns **6**:448.
6. Morris, S.W. *et al.* (1994) Science **263**:1281.
7. Mourali, J. *et al.* (2006) Mol. Cell. Biol. **26**:6209.
8. Moog-Lutz, C. *et al.* (2005) J. Biol. Chem. **280**:26039.
9. Motegi, A. *et al.* (2004) J. Cell Sci. **117**:3319.
10. Stoica, G.E. *et al.* (2001) J. Biol. Chem. **276**:16772.
11. Stoica, G.E. *et al.* (2002) J. Biol. Chem. **277**:35990.
12. Mi, R. *et al.* (2007) Proc. Natl. Acad. Sci. **104**:4664.
13. Fujimoto, J. *et al.* (1996) Proc. Natl. Acad. Sci. **93**:4181.
14. Bischof, D. *et al.* (1997) Mol. Cell. Biol. **17**:2312.

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