Revision 1

Store at -20C

#14678

Phospho-ALK (Tyr1507) (D6F1V) Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-IC, FC-FP	H	Endogenous	80 (NPM-ALK), 220 (ALK)	Rabbit IgG	#Q9UM73	238

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100
Immunofluorescence (Immunocytochemistry)	1:400
Flow Cytometry (Fixed/Permeabilized)	1:200

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Phospho-ALK (Tyr1507) (D6F1V) Rabbit mAb recognizes endogenous levels of ALK protein only when phosphorylated at Tyr1507 (equivalent to Tyr567 of NPM-ALK).

Species predicted to react based on 100% sequence homology

Mouse, Rat

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr1507 of human ALK protein.

Background

Anaplastic lymphoma kinase (ALK) is a tyrosine kinase receptor for pleiotrophin (PTN), a growth factor involved in embryonic brain development (1-3). In ALK-expressing cells, PTN induces phosphorylation of both ALK and the downstream effectors IRS-1, Shc, PLCγ, and PI3 kinase (1). ALK was originally discovered as a nucleophosmin (NPM)-ALK fusion protein produced by a translocation (4). Investigators have found that the NPM-ALK fusion protein is a constitutively active, oncogenic tyrosine kinase associated with anaplastic lymphoma (4). Research literature suggests that activation of PLCγ by NPM-ALK may be a crucial step for its mitogenic activity and involved in the pathogenesis of anaplastic lymphomas (5).
A distinct ALK oncogenic fusion protein involving ALK and echinoderm microtubule-associated protein like 4 (EML4) has been described in the research literature from a non-small cell lung cancer (NSCLC) cell line, with corresponding fusion transcripts present in some cases of lung adenocarcinoma. The short, amino-terminal region of the microtubule-associated protein EML4 is fused to the kinase domain of ALK (6-8).
Phosphorylation of ALK on Tyr1507 was identified at Cell Signaling Technology using PhosphoScan®, an LC-MS/MS platform used for phosphorylation site discovery (6). Phosphorylation of ALK at Tyr1507 (Tyr567 in NPM-ALK) has been shown to be important for interaction with the adaptor proteins Shc, FRS2-α, and FRS2-β (9,10).

Background References

1. Stoica, G.E. et al. (2001) *J Biol Chem* 276, 16772-9.
2. Iwahara, T. et al. (1997) *Oncogene* 14, 439-49.
3. Morris, S.W. et al. (1997) *Oncogene* 14, 2175-88.
4. Morris, S.W. et al. (1994) *Science* 263, 1281-4.
5. Bai, R.Y. et al. (1998) *Mol Cell Biol* 18, 6951-61.
6. Rikova, K. et al. (2007) *Cell* 131, 1190-203.
7. Takeuchi, K. et al. (2008) *Clin Cancer Res* 14, 6618-24.
8. Soda, M. et al. (2007) Nature 448, 561-6.
9. Turner, S.D. et al. (2007) *Cell Signal* 19, 740-7.
10. Chikamori, M. et al. (2007) *Oncogene* 26, 2950-4.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: Human

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Limited Uses