

#3710 Store at -20C

## Phospho-ALK (Tyr1278) Antibody



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TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	H	Endogenous	220 (ALK), 80 (NPM-ALK)	Rabbit	#Q9UM73	238

### Product Usage Information

#### Application

Western Blotting

#### Dilution

1:1000

### Storage

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

### Specificity / Sensitivity

Phospho-ALK (Tyr1278) Antibody detects ALK only when phosphorylated at Tyr1278, which is equivalent to Tyr338 of NPM-ALK. This antibody also reacts with leukocyte tyrosine kinase (LTK) phosphorylated at Tyr672, and may cross-react with other activated protein tyrosine kinases including Bcr-Abl.

### Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr1278 of human ALK. Antibodies are purified by protein A and peptide affinity chromatography.

### 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 Tyr1278 was identified at Cell Signaling Technology (CST) using PhosphoScan®, CST's LC-MS/MS platform for phosphorylation site discovery. Phosphorylation of ALK at Tyr1278 was observed in select carcinoma cell lines and in tumors (6).

### 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.

### 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

**WB:** Western Blotting

### Cross-Reactivity Key

**H:** human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster  
**X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse  
**GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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