

Orders: 877-616-CELL (2355)
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cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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Phospho-ALK (Tyr1078) Antibody

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

Applications: W, IP	Reactivity: H	Sensitivity: Endogenous	MW (kDa): 80 (NPM-ALK) 220 (ALK)	Source/Isotype: Rabbit	UniProt ID: #Q9UM73	Entrez-Gene Id: 238
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Product Usage Information	Application Western Blotting Immunoprecipitation	Dilution 1:1000 1:50
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 (Tyr1078) Antibody detects ALK only when phosphorylated at Tyr1078, which is equivalent to Tyr138 in NPM-ALK. This antibody may also cross-react with other overexpressed tyrosine phosphorylated proteins.	
Species predicted to react based on 100% sequence homology	Mouse, Rat	
Source / Purification	Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr1078 of human ALK protein. Antibodies are purified by protein A and peptide affinity chromatography.	
Background	<p>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).</p> <p>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).</p> <p>Phosphorylation of ALK on Tyr1078 was identified at Cell Signaling Technology (CST) using PhosphoScan®, CST's LC-MS/MS platform for phosphorylation site discovery. Phosphorylation of ALK at Tyr1078 was observed in select carcinoma cell lines and in tumors.</p>	
Background References	<ol style="list-style-type: none"> 1. Stoica, G.E. et al. (2001) <i>J Biol Chem</i> 276, 16772-9. 2. Iwahara, T. et al. (1997) <i>Oncogene</i> 14, 439-49. 3. Morris, S.W. et al. (1997) <i>Oncogene</i> 14, 2175-88. 4. Morris, S.W. et al. (1994) <i>Science</i> 263, 1281-4. 5. Bai, R.Y. et al. (1998) <i>Mol Cell Biol</i> 18, 6951-61. 6. Rikova, K. et al. (2007) <i>Cell</i> 131, 1190-203. 7. Takeuchi, K. et al. (2008) <i>Clin Cancer Res</i> 14, 6618-24. 8. Soda, M. et al. (2007) <i>Nature</i> 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	W: Western Blotting IP: Immunoprecipitation

Cross-Reactivity Key

H: Human

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