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**#6941** Store at -20C

## Phospho-ALK (Tyr1278) (D59G10) Rabbit mAb

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

<b>Applications:</b> W, IP	<b>Reactivity:</b> H	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 80 (NPM-ALK); 220 (ALK)	<b>Source/Isotype:</b> Rabbit IgG	<b>UniProt ID:</b> #Q9UM73	<b>Entrez-Gene Id:</b> 238
<b>Product Usage Information</b>	<b>Application</b>		<b>Dilution</b>			
	Western Blotting		1:1000			
	Immunoprecipitation		1:100			
<b>Storage</b>	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.					
<b>Specificity/Sensitivity</b>	Phospho-ALK (Tyr1278) (D59G10) Rabbit mAb detects endogenous levels of 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 such as EGFR.					
<b>Species predicted to react based on 100% sequence homology</b>	Mouse					
<b>Source / Purification</b>	Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr1278 of human ALK protein.					
<b>Background</b>	<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 Tyr1278 was identified at Cell Signaling Technology using PTMScan® technology, a proprietary LC-MS/MS method for phosphorylation site discovery. Phosphorylation of ALK at Tyr1278 was observed in select carcinoma cell lines and in tumors (6).</p>					
<b>Background References</b>	<ol style="list-style-type: none"> <li>1. Stoica, G.E. et al. (2001) <i>J Biol Chem</i> 276, 16772-9.</li> <li>2. Iwahara, T. et al. (1997) <i>Oncogene</i> 14, 439-49.</li> <li>3. Morris, S.W. et al. (1997) <i>Oncogene</i> 14, 2175-88.</li> <li>4. Morris, S.W. et al. (1994) <i>Science</i> 263, 1281-4.</li> <li>5. Bai, R.Y. et al. (1998) <i>Mol Cell Biol</i> 18, 6951-61.</li> <li>6. Rikova, K. et al. (2007) <i>Cell</i> 131, 1190-203.</li> <li>7. Takeuchi, K. et al. (2008) <i>Clin Cancer Res</i> 14, 6618-24.</li> <li>8. Soda, M. et al. (2007) <i>Nature</i> 448, 561-6.</li> </ol>					

**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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