CELL APPLICATIONS, INC.

ALK Antibody

Cat. No. CC10035

Applications:	**WB, IHC, ICC**
Detected MW:	**220 (ALK), 80 (NPM-ALK), 117 (EML4-ALK v1), 90 (EML4-ALK v3) kDa**
Species & Reactivity:	**Human**
Isotype:	**Mouse IgG**

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). Moreover, ALK was 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). Investigators have identified ALK translocations with other fusion partners, such as TRK-fused gene (TFG) and KIF5B, which have also been associated with NSCLC (6, 7). In particular, the EML4-ALK fusion protein has been found in 3-7% of NSCL patients (6-14).

References:

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4. Morris, S.W. et al. (1994) *Science* 263, 1281-4.
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7. Takeuchi, K. et al. (2008) *Clin Cancer Res* 14, 6618-24.
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11. Horn, L. and Pao, W. (2009) *J Clin Oncol* 27, 4232-5.
12. Rodig, S.J. et al. (2009) *Clin Cancer Res* 15, 5216-23.
13. Mino-Kenudson, M. et al. (2010) *Clin Cancer Res* 16, 1561-71.
14. Kwak, E.L. et al. (2010) *N Engl J Med* 363, 1693-703.
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TECHNICAL INFORMATION

Source:
Recombinant human ALK fusion protein (1421-1620aa) expressed in mammalian cells.

Specificity and Sensitivity:
Detects endogenous ALK proteins without cross-reactivity with other family members.

Storage Buffer: Supplied in 50mM Tris-HCl (pH 7.4), 50% glycerol and 0.01% NaN_3.

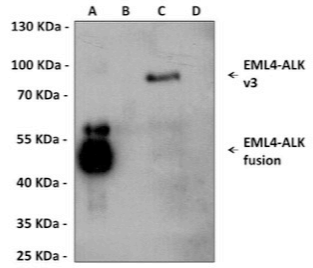
Storage:
Store at -20°C, 4°C for frequent use. Avoid repeated freeze-thaw cycles.

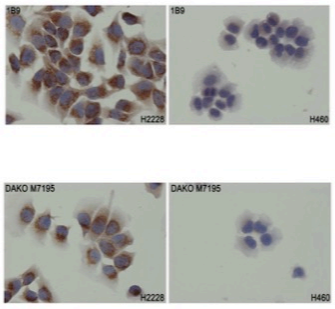
APPLICATIONS

Application:	*Dilution:
WB	1:1,000-1:2,000
IP	n/d
IHC	1:200
ICC	1:200
FACS	n/d

**Optimal dilutions must be determined by end user.*

QUALITY CONTROL DATA





Top: Western Blot detection of ALK fusion protein expression using ALK-specific monoclonal antibody. ALK is found as a fusion protein in NSCLC cell lines and is reported to be expressed by H2228 cells with a MW of 90kDa (11, 15). Lane A: 293 cells transfected with plasmid encoding EML4 (1-200aa)-ALK (1421-1620aa) fusion protein. Lane B: 293 cells transfected with mock vector. Lane C: H2228 cells with endogenous EML4-ALK v3, EML4 (1-222aa)-ALK (1058-1620aa), fusion protein. Lane D: H460 cells (negative control cell lysate).
Middle: Immunocytochemical staining of H2228 cells and H460 (ALK-negative) cells using ALK-specific monoclonal antibody (1:200 dilution).
Bottom: Immunocytochemical staining of H2228 cells and H460 (ALK-negative) cells using ALK-specific monoclonal antibody.