

## 30-1342: Anti-ZAP-70 Monoclonal Antibody (Clone:ZAP-03)

<b>Clonality :</b>	Monoclonal
<b>Clone Name :</b>	ZAP-03
<b>Application :</b>	FACS, WB, ICC
<b>Reactivity :</b>	Human
<b>Gene :</b>	ZAP70
<b>Gene ID :</b>	7535
<b>Uniprot ID :</b>	P43403
<b>Format :</b>	Purified
<b>Alternative Name :</b>	ZAP70,SRK
<b>Isotype :</b>	Mouse IgG1
<b>Immunogen Information :</b>	Bacterially expressed fusion protein representing C-terminal part (160 amino acids) of human ZAP-70 with histidine tag

### Description

The ZAP-70 (zeta-associated protein of 70 kDa) tyrosine kinase was identified as a tyrosine phosphoprotein that associates with TCR zeta subunit and undergoes tyrosine phosphorylation following TCR stimulation. ZAP-70 is a Syk family tyrosine kinase primarily expressed in T and NK cells that plays an essential role in signaling through the TCR. TCR-mediated activation of T cells is crucial to the immune response. In humans, ZAP-70 gene mutations resulting in lower ZAP-70 protein expression levels or expression of catalytically inactive ZAP-70 proteins, have been identified. ZAP-70 deficiency results in the absence of mature CD8+ T cells and the prevention of TCR-mediated activation of CD4+ T cells, and it can lead to severe combined immunodeficiency. In patients with chronic lymphocytic leukemia (B-CLL), ZAP-70 expression on B cell was shown to be correlated with disease progression and survival. ZAP-70 contains two N-terminal SH2 domains (Src homology domain 2) and a C-terminal kinase domain. During T cell activation, the binding of ZAP-70 SH2 domains to the phosphorylated zeta subunit on the activated TCR complex causes a colocalization with the Lck tyrosine kinase that phosphorylates ZAP-70 on Tyr493 in the activation loop. ZAP-70 autophosphorylates multiple tyrosines in the region between the SH2 domains and the kinase domain, including the binding sites for additional SH2-containing signaling proteins such as SLP76, LAT, Lck, PLCgamma1, Vav, Shc, Ras-GAP, and Abl. ZAP-70-mediated activation of these downstream effectors leads to the release of intracellular calcium stores, and the transcription of interleukin-2 and other genes important for an immune response.

### Product Info

<b>Amount :</b>	0.1 mg
<b>Purification :</b>	Purified by protein-A affinity chromatography
<b>Storage condition :</b>	Store at 2-8°C. Do not freeze.

### Application Note

**Western Blotting** Recommended dilution: 0,5  $\mu$ g/ml

*Positive control:*

HPB-ALL human peripheral blood T cell leukemia cell line

*Negative control:*

RAMOS human Burkitt lymphoma cell line

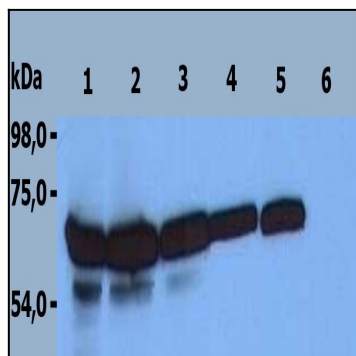


Figure 1: Western Blotting analysis (reducing conditions) of HPB-ALL peripheral blood T cell leukemia cell line. Lane 2, 3, 4: immunostaining with dilution range of anti-ZAP-70 (ZAP-03; 4  $\mu\text{g/ml}$  (1), 2  $\mu\text{g/ml}$  (2), 1  $\mu\text{g/ml}$  (3), 0.5  $\mu\text{g/ml}$  (4). Lane 5: immunostaining with anti-ZAP-70 comparative antibody. Lane 6: immunostaining with Isotype mouse IgG1 control (PPV-06; )

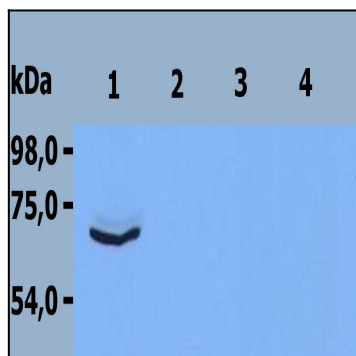


Figure 2: Western Blotting analysis (reducing conditions) of HPB-ALL peripheral blood T cell leukemia cell line (1, 3) and RAMOS human Burkitt lymphoma cell line (2, 4); Lane 2: immunostaining with anti-ZAP-70 (ZAP-03; 0.5  $\mu\text{g/ml}$ ) Lane 3, 4: immunostaining with Isotype mouse IgG1 control (PPV-06; )