

Product datasheet PS027

MONOSAN[®]

Polyclonal Rabbit anti-ZAP-70

Clone no. -

MONOSAN

Product name	Polyclonal Rabbit anti-ZAP-70
Host	Rabbit
Applications	WB
Species reactivity	Human
Conjugate	-
Immunogen	Bacterially expressed fusion protein representing C-terminal part (160 amino acids) of human ZAP70 with histidine tag
Isotype	-
Clonality	Polyclonal
Clone number	-
Size	0.1 mg
Concentration	1 mg/ml
Format	-
Storage buffer	Phosphate buffered saline (PBS) solution with 15 mM sodium azide
Storage until expiry date	2-8°C

FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES

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Additional info

The ZAP70 (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. ZAP70 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, ZAP70 gene mutations resulting in lower ZAP70 protein expression levels or expression of catalytically inactive ZAP70 proteins, have been identified. ZAP70 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), ZAP70 expression on B cell was shown to be correlated with disease progression and survival. ZAP70 contains two N-terminal SH2 domains (Src homology domain 2) and a C-terminal kinase domain. During T cell activation, the binding of ZAP70 SH2 domains to the phosphorylated zeta subunit on the activated TCR complex causes a colocalization with the Lck tyrosine kinase that phosphorylates ZAP70 on Tyr493 in the activation loop. ZAP70 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. ZAP70-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.

References

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