

TECHNICAL DATA SHEET

CyFlow™ ZAP-70 Purified Anti-Hu; Clone ZAP-03

REF AY657586

For Research Use Only.

Not for use in diagnostic or therapeutic procedures.

Specifications

Antigen	ZAP-70
Alternative Names	—
Clone	ZAP-03
Clonality	monoclonal
Format	Purified
Host / Isotype	Mouse / IgG1
Species Reactivity	Human
Negative Species Reactivity	—
Quantity [Concentration]	0.1 mg [1 mg/ml]
Immunogen	Bacterially expressed fusion protein representing C-terminal part (160 amino acids) of human ZAP-70 with histidine tag

Specificity

The mouse monoclonal antibody ZAP-03 recognizes ZAP-70 antigen, a 70 kDa protein tyrosine kinase expressed in T and NK cells. ZAP-70 is a molecule susceptible to degradation. It is recommended to use

Contact Information:

Sysmex Partec GmbH • Am Flugplatz 13 • 02828 Görlitz • Germany
Tel +49 3581 8746 0 • Fax +49 3581 8746 70 • E-mail: info@sysmex-partec.com

freshly prepared cell lysates (protease inhibitors are essential) to avoid non-specific staining of degradation products.

Application

Based on published sources, this antibody is suitable for the following applications:

- Flow cytometry
- Western blot
- Immunocytochemistry

Storage Buffer

The reagent is provided in phosphate buffered saline (PBS) solution, pH \approx 7.4, containing 0.1% (w/v) sodium azide.

Storage and Stability

Storage	Avoid prolonged exposure to light. Store in the dark at 2-8°C. Do not freeze.
Stability	Do not use after expiration date stamped on vial label.

Background Information

The ZAP-70; ζ -associated protein of 70 kDa tyrosine kinase, was identified as a tyrosine phosphoprotein that associates with TCR ζ 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 ζ 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, PLC γ 1, Vav, Shc, Ras-GAP, and Abl. ZAP-70-mediated activation of

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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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The Safety Data Sheet for this product is available at www.sysmex-partec.com/services.

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