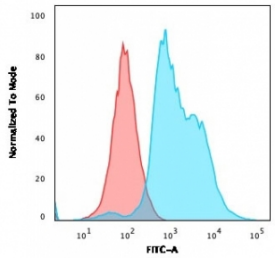
# ZAP70 Antibody for FACS / T-cell Signaling Flow Cytometry Antibody [clone ZAP70/2047] (V3946)

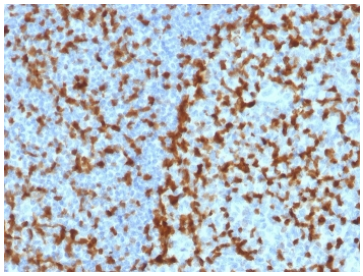
| Catalog No. | Formulation | Size |
|---|---|---|
| V3946-100UG | 0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide | 100 ug |
| V3946-20UG | 0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide | 20 ug |
| V3946SAF-100UG | 1 mg/ml in 1X PBS; BSA free, sodium azide free | 100 ug |

## Bulk quote request

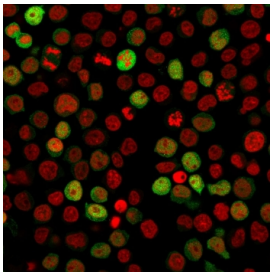
| | |
|---|---|
| **Availability** | 1-3 business days |
| **Species Reactivity** | Human |
| **Format** | Purified |
| **Host** | Mouse |
| **Clonality** | Monoclonal (mouse origin) |
| **Isotype** | Mouse IgG1, kappa |
| **Clone Name** | ZAP70/2047 |
| **Purity** | Protein G affinity chromatography |
| **UniProt** | P43403 |
| **Localization** | Cytoplasmic, cell surface |
| **Applications** | ELISA : 2-4ug/ml (order BSA/azide-free format)<br>Flow Cytometry : 1-2ug/10^6 cells<br>Immunofluorescence : 1-2ug/ml<br>Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT |
| **Limitations** | This ZAP70 antibody is available for research use only. |



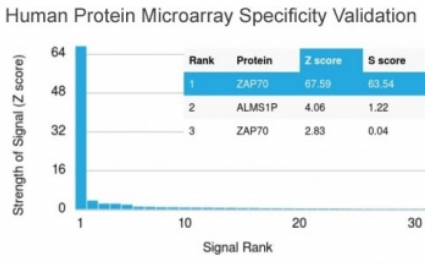

ZAP70 Antibody for FACS / T-cell Signaling Flow Cytometry Antibody. Flow cytometry analysis of intracellular ZAP70 expression in PFA-fixed human Jurkat T lymphocyte cells using clone ZAP70/2047. Cells were fixed and permeabilized to enable detection of the cytoplasmic tyrosine kinase Zeta-chain-associated protein kinase 70 (ZAP70), a key mediator of T-cell receptor signaling. The blue histogram shows specific intracellular staining of ZAP70-positive Jurkat cells, while the red histogram represents the isotype control, demonstrating a clear rightward shift consistent with T-cell signaling-associated ZAP70 expression.



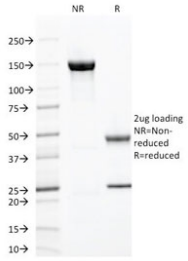
IHC testing of FFPE human tonsil with ZAP70 antibody (clone ZAP70/2047). HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 10-20 min followed by cooling at RT for 20 min.



Immunofluorescent staining of PFA-fixed human Jurkat cells with ZAP70 antibody (green, clone ZAP70/2047) and Reddot nuclear stain (red).




Analysis of HuProt(TM) microarray containing more than 19,000 full-length human proteins using ZAP70 antibody (clone ZAP70/2047). These results demonstrate the foremost specificity of the ZAP70/2047 mAb.
Z- and S- score: The Z-score represents the strength of a signal that an antibody (in combination with a fluorescently-tagged anti-IgG secondary Ab) produces when binding to a particular protein on the HuProt(TM) array. Z-scores are described in units of standard deviations (SD's) above the mean value of all signals generated on that array. If the targets on the HuProt(TM) are arranged in descending order of the Z-score, the S-score is the difference (also in units of SD's) between the Z-scores. The S-score therefore represents the relative target specificity of an Ab to its intended target.




SDS-PAGE analysis of purified, BSA-free ZAP70 antibody (clone ZAP70/2047) as confirmation of integrity and purity.

## Description

ZAP70 antibody, also known as Zeta-chain-associated protein kinase 70 antibody, recognizes a cytoplasmic tyrosine kinase that serves as a central mediator of T-cell receptor signaling and adaptive immune activation. ZAP70 Antibody for FACS is specifically suited for intracellular flow cytometry analysis of signaling pathways in lymphocyte populations, enabling precise interrogation of T-cell receptor (TCR)-driven signaling events at the single-cell level. ZAP70 is localized in the cytoplasm of T cells and natural killer cells and is highly expressed in lymphoid tissues including thymus, spleen, and circulating lymphocytes.

ZAP70 is rapidly recruited to phosphorylated immunoreceptor tyrosine-based activation motifs (ITAMs) on the CD3 complex following antigen engagement, where it becomes activated and initiates downstream signaling cascades. These pathways regulate T-cell activation, proliferation, and differentiation through coordinated phosphorylation events involving adaptor proteins such as LAT and SLP-76. In flow cytometry, intracellular detection of ZAP70 provides a direct readout of signaling competency within defined T-cell subsets, allowing researchers to distinguish signaling-active from signaling-inactive populations.

This ZAP70 Antibody for FACS is uniquely positioned for dissecting T-cell signaling architecture, with emphasis on receptor-proximal kinase activity rather than general immune activation. Its application supports high-resolution analysis of TCR signaling dynamics in fixed and permeabilized cells, particularly when combined with surface markers to map signaling responses across phenotypically distinct lymphocyte populations. This makes it highly valuable for studies focused on signaling thresholds, pathway modulation, and intracellular signal propagation.

In addition to T cells, ZAP70 contributes to activation signaling in natural killer cells, reinforcing its role as a core intracellular signaling node within the immune system. Its defined position within the TCR signaling cascade makes it a preferred marker for mechanistic flow cytometry studies investigating early signaling events and pathway integrity. Overall, ZAP70 Antibody for FACS provides a specialized tool for analyzing intracellular T-cell signaling pathways, enabling detailed characterization of immune signaling networks in flow cytometry-based assays.

## Application Notes

Optimal dilution of the ZAP70 Antibody for FACS / T-cell Signaling Flow Cytometry Antibody should be determined by the researcher.

## Immunogen

A portion of amino acids 247-382 from the human protein was used as the immunogen for the ZAP70 Antibody for FACS / T-cell Signaling Flow Cytometry Antibody.

## Storage

Store the ZAP70 antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

## Alternate Names

ZAP70 flow cytometry antibody, Zeta-chain-associated protein kinase 70 FACS antibody, ZAP70 intracellular flow cytometry antibody, T-cell receptor signaling ZAP70 antibody, ZAP70 T-cell signaling antibody