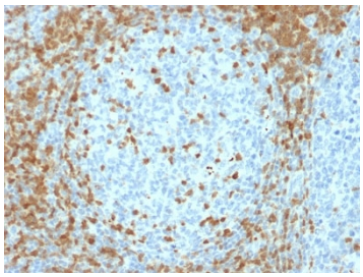
ZAP70 Antibody / Cytotoxic Lymphocyte Signaling Antibody [clone ZAP70/2035] (V3942)

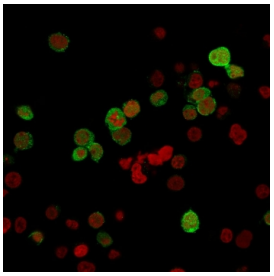
Catalog No.	Formulation	Size
V3942-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V3942-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V3942SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

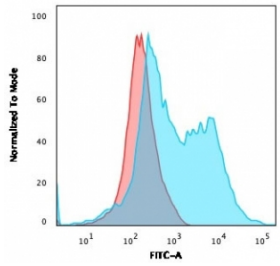
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	ZAP70/2035
Purity	Protein G affinity chromatography
UniProt	P43403
Localization	Cytoplasmic, cell surface
Applications	Flow Cytometry : 1-2ug/10^6 cells Immunofluorescence : 1-2ug/ml ELISA : 2-4ug/ml (order BSA/azide-free format) Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This ZAP70 antibody is available for research use only.



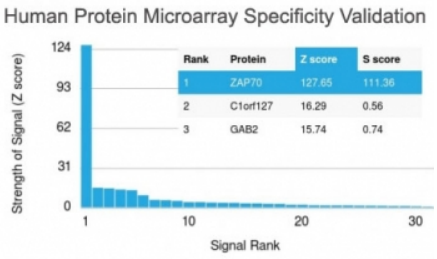
ZAP70 Antibody / Cytotoxic Lymphocyte Signaling Antibody. Immunohistochemistry analysis of formalin-fixed, paraffin-embedded human tonsil tissue using ZAP70 Antibody / Cytotoxic Lymphocyte Signaling Antibody (clone ZAP70/2035). Antigen retrieval was performed by boiling sections in pH 9 Tris-EDTA buffer for 10-20 minutes followed by cooling at room temperature. Cytoplasmic HRP-DAB brown staining is observed in lymphoid cell populations, with stronger staining in interfollicular regions surrounding lighter germinal centers. This pattern is consistent with Zeta-chain-associated protein kinase 70 (ZAP70) expression in cytotoxic T lymphocytes, highlighting effector cell-rich areas and supporting its role in cytotoxic lymphocyte signaling within tonsillar tissue architecture.



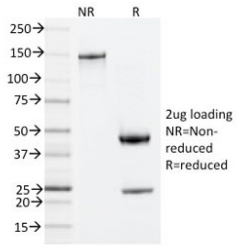
ZAP70 Antibody / Cytotoxic Lymphocyte Signaling Antibody. Immunofluorescence analysis of PFA-fixed human Jurkat T lymphocyte cells using ZAP70 Antibody / Cytotoxic Lymphocyte Signaling Antibody (clone ZAP70/2035). ZAP70 antibody staining (green) shows predominantly cytoplasmic localization consistent with Zeta-chain-associated protein kinase 70 (ZAP70) function in cytotoxic lymphocyte signaling pathways, while Reddot nuclear stain (red) marks cell nuclei. The staining pattern supports visualization of intracellular signaling components associated with cytotoxic T-cell function and highlights ZAP70 distribution within lymphocyte populations by immunofluorescence imaging.



ZAP70 Antibody / Cytotoxic Lymphocyte Signaling Antibody. Flow cytometry analysis of PFA-fixed human Jurkat T lymphocyte cells using ZAP70 Antibody / Cytotoxic Lymphocyte Signaling Antibody (clone ZAP70/2035). Cells were fixed and permeabilized to enable intracellular detection of Zeta-chain-associated protein kinase 70 (ZAP70), a cytoplasmic tyrosine kinase involved in cytotoxic lymphocyte signaling pathways. The blue histogram shows a clear rightward fluorescence shift compared to the red isotype control, indicating specific intracellular ZAP70 staining. This pattern supports detection of signaling-associated ZAP70 expression in lymphocyte populations relevant to cytotoxic immune responses.



Analysis of HuProt(TM) microarray containing more than 19,000 full-length human proteins using ZAP70 antibody (clone ZAP70/2035). These results demonstrate the foremost specificity of the ZAP70/2035 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 ZAP70/2035) as confirmation of integrity and purity.

Description

Zeta-chain-associated protein kinase 70 (ZAP70) is a cytoplasmic tyrosine kinase that plays a central role in cytotoxic

lymphocyte signaling, particularly in T cells and natural killer cells responsible for immune-mediated killing of target cells. ZAP70 Antibody is uniquely positioned for studying cytotoxic lymphocyte signaling, where it contributes to activation pathways that regulate target cell recognition, synapse formation, and effector responses. ZAP70 antibody, also known as Zeta-chain-associated protein kinase 70 antibody or ZAP-70 antibody, is widely used to investigate signaling mechanisms underlying cytotoxic immune function.

In cytotoxic T lymphocytes, ZAP70 is activated following engagement of the T-cell receptor with antigen-presenting target cells. This activation triggers signaling cascades that lead to polarization of cytotoxic granules toward the immunological synapse and subsequent release of perforin and granzymes. These effector molecules mediate target cell lysis, making ZAP70 a key regulator of cytotoxic immune responses. In natural killer cells, ZAP70 participates in signaling pathways initiated by activating receptors, supporting immune surveillance and elimination of infected or transformed cells.

This ZAP70 Antibody is uniquely positioned for studying cytotoxic signaling pathways, with emphasis on effector function rather than receptor initiation or general signal transduction. Its use supports investigation of processes such as granule polarization, degranulation, and target cell killing, which are central to cytotoxic lymphocyte activity. This differentiator clearly separates it from pages focused on receptor signaling initiation, intracellular signaling networks, or kinase regulation mechanisms.

ZAP70-mediated signaling is essential for effective immune defense, as it enables cytotoxic lymphocytes to respond rapidly and specifically to abnormal cells. Its role in both adaptive and innate immune responses highlights its importance in maintaining immune surveillance and controlling infection and malignancy.

In experimental models, cytotoxic lymphocyte activity can be assessed using co-culture systems with target cells, where ZAP70 activation serves as a key indicator of functional signaling. Detection of ZAP70 allows researchers to evaluate how signaling pathways drive cytotoxic responses and how these processes are regulated under different conditions.

Overall, ZAP70 Antibody provides a focused tool for studying cytotoxic lymphocyte signaling, enabling detailed investigation of immune effector mechanisms, cell killing pathways, and signaling processes that drive cytotoxic immune responses in both T cells and natural killer cells.

Application Notes

Optimal dilution of the ZAP70 Antibody / Cytotoxic Lymphocyte Signaling 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 / Cytotoxic Lymphocyte Signaling Antibody.

Storage

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

Alternate Names

ZAP70 antibody, Zeta-chain-associated protein kinase 70 antibody, ZAP70 cytotoxic lymphocyte antibody, ZAP70 NK cell signaling antibody, ZAP70 cytotoxic response antibody