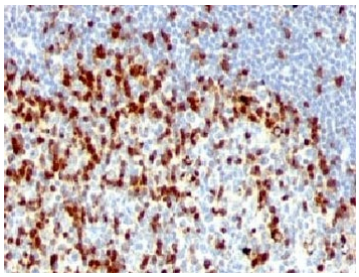
ZAP70 Antibody / Immune Checkpoint Signaling Antibody [clone ZAP70/528 + 2F3.2] (V2937)

Catalog No.	Formulation	Size
V2937-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V2937-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V2937SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug
V2937IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7 ml

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2a, kappa
Clone Name	ZAP70/528 + 2F3.2
Purity	Protein G affinity chromatography
UniProt	P43403
Localization	Cytoplasmic
Applications	Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT
Limitations	This ZAP70 antibody cocktail is available for research use only.



ZAP70 Antibody / Immune Checkpoint Signaling Antibody. Immunohistochemistry analysis of formalin-fixed, paraffin-embedded human tonsil tissue using ZAP70 Antibody / Immune Checkpoint Signaling Antibody (clones ZAP70/528 and 2F3.2). Cytoplasmic HRP-DAB brown staining is observed in lymphoid cell populations within tonsillar follicles and interfollicular regions, with heterogeneous staining intensity across adjacent cells. This pattern is consistent with Zeta-chain-associated protein kinase 70 (ZAP70) expression and reflects dynamic modulation of signaling activity associated with immune checkpoint regulation. The variable staining highlights subsets of lymphocytes undergoing inhibitory signaling, supporting the role of ZAP70 as a central node where checkpoint pathways attenuate T-cell receptor signaling within lymphoid tissue architecture.

Description

Zeta-chain-associated protein kinase 70 (ZAP70) is a cytoplasmic tyrosine kinase that functions as a key integration point between activating and inhibitory signaling pathways in T cells. ZAP70 Antibody is uniquely positioned for studying immune checkpoint signaling, where inhibitory receptors such as PD-1 and CTLA-4 actively suppress T-cell receptor signaling by modulating ZAP70 activity. ZAP70 antibody, also referred to as Zeta-chain-associated protein kinase 70 antibody or ZAP-70 antibody, is widely used to investigate how checkpoint pathways attenuate intracellular signaling and regulate immune responses.

Immune checkpoint signaling operates by recruiting phosphatases and inhibitory complexes that directly interfere with phosphorylation-dependent activation of ZAP70. These mechanisms reduce ZAP70 signaling output, limiting downstream pathway activation and preventing excessive immune responses. This form of active signaling suppression is distinct from immune tolerance, as checkpoint pathways dynamically regulate signaling in response to environmental cues rather than establishing long-term non-responsive states.

This ZAP70 Antibody is uniquely positioned for studying checkpoint-mediated signaling inhibition, with emphasis on dynamic suppression of signaling through inhibitory receptor pathways rather than tolerance induction or activation threshold tuning. Its use supports investigation of how PD-1 and related pathways alter ZAP70 phosphorylation status, signaling intensity, and downstream pathway activity. This differentiator clearly separates it from tolerance-focused pages that emphasize anergy and from threshold-focused pages that emphasize sensitivity.

ZAP70 serves as a critical node through which inhibitory signals reshape T-cell function, affecting proliferation, cytokine production, and effector responses. Modulation of ZAP70 activity is a key mechanism by which checkpoint pathways regulate immune responses in cancer, infection, and immune homeostasis. This makes ZAP70 an important target for studying how inhibitory signaling pathways influence immune cell behavior.

In experimental systems, immune checkpoint signaling can be studied by engaging inhibitory receptors or modulating checkpoint ligands, with ZAP70 serving as a direct readout of signaling suppression. Detection of ZAP70 enables researchers to examine how inhibitory pathways dynamically reduce signaling output and alter intracellular signaling networks.

Overall, ZAP70 Antibody provides a specialized tool for investigating immune checkpoint signaling, enabling detailed study of inhibitory pathway regulation, dynamic suppression of signaling activity, and the molecular mechanisms that control T-cell function in immune regulation and disease contexts.

Application Notes

Optimal dilution of the ZAP70 Antibody / Immune Checkpoint Signaling Antibody should be determined by the researcher.

1. Staining of formalin-fixed tissues requires boiling tissue sections in 10mM Tris with 1mM EDTA, pH 9, for 10-20 min followed by cooling at RT for 20 min.

2. The prediluted format is supplied in a dropper bottle and is optimized for use in IHC. After epitope retrieval step (if required), drip mAb solution onto the tissue section and incubate at RT for 30 min.

Immunogen

Recombinant full-length human protein was used as the immunogen for the ZAP70 Antibody / Immune Checkpoint Signaling Antibody.

Storage

Store the ZAP70 antibody cocktail 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 immune checkpoint antibody, ZAP70 inhibitory signaling antibody, ZAP70 PD-1 pathway antibody

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