ARG51657
anti-ZAP70 phospho (Tyr319) antibody

Package: 100 µl, 50 µl
Store at: -20°C

Summary

Product Description	Rabbit Polyclonal antibody recognizes ZAP70 phospho (Tyr319)
Tested Reactivity	Hu, Ms, Rat
Tested Application	ICC/IF, WB
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Target Name	ZAP70
Species	Human
Immunogen	Peptide sequence around phosphorylation site of tyrosine 319 (S-P-Y(p)-S-D) derived from Human Zap-70.
Conjugation	Un-conjugated
Alternate Names	STD; SRK; STCD; 70 kDa zeta-chain associated protein; Tyrosine-protein kinase ZAP-70; TZK; Syk-related tyrosine kinase; ZAP-70; EC 2.7.10.2

Application Instructions

Application table

Application	Dilution
ICC/IF	1:100 - 1:200
WB	1:500 - 1:1000

Application Note: * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

Properties

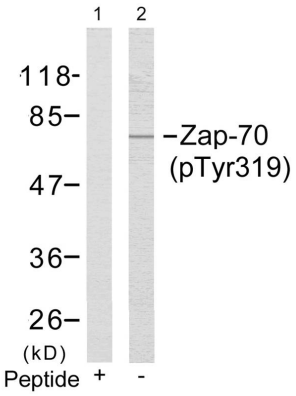
Form	Liquid
Purification	Antibodies were produced by immunizing rabbits with KLH-conjugated synthetic phosphopeptide. Antibodies were purified by affinity-chromatography using epitope-specific phosphopeptide. In addition, non-phospho specific antibodies were removed by chromatogramphy using non-phosphopeptide.
Buffer	PBS (without Mg2+ and Ca2+, pH 7.4), 150mM NaCl, 0.02% Sodium azide and 50% Glycerol.
Preservative	0.02% Sodium azide
Stabilizer	50% Glycerol
Concentration	1 mg/ml
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.

Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

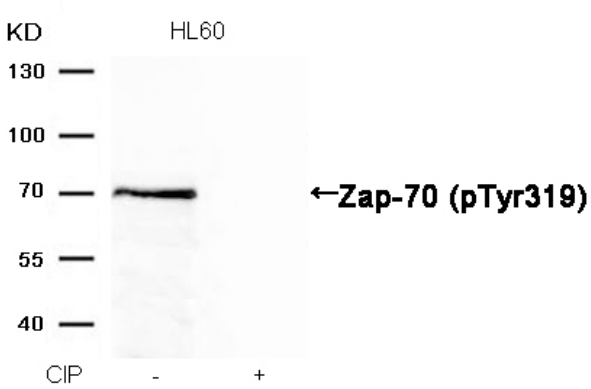
Database links	GeneID: 22637 Mouse GeneID: 7535 Human Swiss-port # P43403 Human Swiss-port # P43404 Mouse
Gene Symbol	ZAP70
Gene Full Name	zeta-chain (TCR) associated protein kinase 70kDa
Background	Plays a role in T-cell development and lymphocyte activation. Essential for TCR-mediated IL-2 production. Isoform 1 induces TCR-mediated signal transduction, isoform 2 does not.
Function	Tyrosine kinase that plays an essential role in regulation of the adaptive immune response. Regulates motility, adhesion and cytokine expression of mature T-cells, as well as thymocyte development. Contributes also to the development and activation of primary B-lymphocytes. When antigen presenting cells (APC) activate T-cell receptor (TCR), a serie of phosphorylations lead to the recruitment of ZAP70 to the doubly phosphorylated TCR component CD247/CD3Z through ITAM motif at the plasma membrane. This recruitment serves to localization to the stimulated TCR and to relieve its autoinhibited conformation. Release of ZAP70 active conformation is further stabilized by phosphorylation mediated by LCK. Subsequently, ZAP70 phosphorylates at least 2 essential adapter proteins: LAT and LCP2. In turn, a large number of signaling molecules are recruited and ultimately lead to lymphokine production, T-cell proliferation and differentiation. Furthermore, ZAP70 controls cytoskeleton modifications, adhesion and mobility of T-lymphocytes, thus ensuring correct delivery of effectors to the APC. ZAP70 is also required for TCR-CD247/CD3Z internalization and degradation through interaction with the E3 ubiquitin-protein ligase CBL and adapter proteins SLA and SLA2. Thus, ZAP70 regulates both T-cell activation switch on and switch off by modulating TCR expression at the T-cell surface. During thymocyte development, ZAP70 promotes survival and cell-cycle progression of developing thymocytes before positive selection (when cells are still CD4/CD8 double negative). Additionally, ZAP70-dependent signaling pathway may also contribute to primary B-cells formation and activation through B-cell receptor (BCR). [UniProt]
Highlight	Related Antibody Duos and Panels: ARG30033 Phospho ZAP70 Antibody Duo (Total, pY319) ARG30043 Phospho ZAP70 Antibody Duo (pY319, pY493) Related products: ZAP70 antibodies; ZAP70 Duos / Panels; Anti-Rabbit IgG secondary antibodies;
Research Area	Controls and Markers antibody; Immune System antibody; Signaling Transduction antibody; SyK / Zap70 Pathway antibody
Calculated Mw	70 kDa
PTM	Phosphorylated on tyrosine residues upon T-cell antigen receptor (TCR) stimulation. Phosphorylation of Tyr-315 and Tyr-319 are essential for ZAP70 positive function on T-lymphocyte activation whereas Tyr-292 has a negative regulatory role. Within the C-terminal kinase domain, Tyr-492 and Tyr-493 are phosphorylated after TCR induction, Tyr-492 playing a negative regulatory role and Tyr-493 a positive. Tyr-493 is dephosphorylated by PTN22. Ubiquitinated in response to T cell activation. Deubiquitinated by OTUD7B.

Images



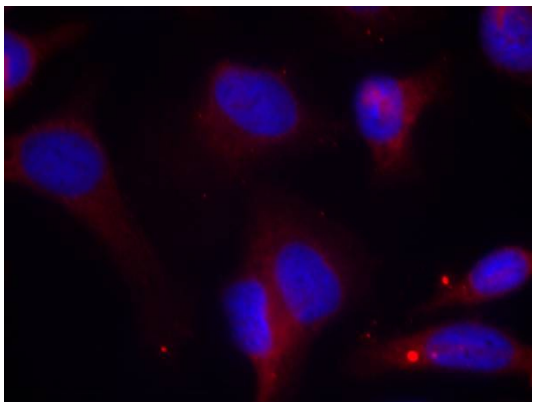
ARG51657 anti-ZAP70 phospho (Tyr319) antibody WB image

Western blot: Extracts from Jurkat cells stained with ARG51657 anti-ZAP70 phospho (Tyr319) antibody (Lane 2) and the same antibody preincubated with blocking peptide (Lane1).



ARG51657 anti-ZAP70 phospho (Tyr319) antibody WB image

Western blot: Extracts from HL60 cells, treated with calf intestinal phosphatase (CIP), stained with ARG51657 anti-ZAP70 phospho (Tyr319) antibody.



ARG51657 anti-ZAP70 phospho (Tyr319) antibody ICC/IF image

Immunofluorescence: methanol-fixed HeLa cells stained with ARG51657 anti-ZAP70 phospho (Tyr319) antibody.