
anti-ZAP-70

Cat #: HM1399
Mouse monoclonal IgG
0.2 µg/µl, store at 4 °C

For research use only

BACKGROUND

ZAP70, a 70 kDa member of the Syk tyrosine kinase family, plays a central role in lymphocyte activation and development, and is implicated in several immune disorders. Upon T cell antigen receptor (TCR) engagement, ZAP70 is phosphorylated on tyrosines 292, 315 and 319 in the interdomain B, located between the SH2 and kinase domains. Phosphorylation of both tyrosines 315 (a Vav binding site) and 319 (a Lck binding site) enhances ZAP70 function in mediating lymphocyte signaling, while tyrosine 292 terminates the transient activation of ZAP70 and attenuates lymphocyte signaling. Phosphorylation of tyrosines 315 and 319 plays an important role in mediating the positive and negative selection of T cells in thymus. Mutations in ZAP70 gene results in a form of Severe Combined Immunodeficiency Syndrome (SCID) in humans. ZAP70 expression also defines a subset of Chronic Lymphocytic Leukemia (CLL) in patients with unmutated Ig gene and poor clinical course. Recent studies suggest that protein levels of ZAP70 are elevated in B cells of CLL patients with non mutant heavy chain variable region (IgVH) but not those with the mutant regions. Recent evidence suggests that ZAP70 could be an excellent prognostic biomarker with high levels of the proteins indicating a poor prognosis.

SPECIFICITY

The antibody reacts with ZAP-70 of mouse, rat and human origin by Western blotting, immunoprecipitation and immunohistochemistry; non cross-reactive with Syk.

Molecular Weight of ZAP-70: 70 kDa. Western blotting positive control: Jurkat cell lysate.

IMMUNOGEN

A peptide at the "linker" region of human ZAP-70.

STORAGE

This antibody is stable for 12 months when stored at 2-8°C.

REFERENCES

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3. Kolanus, W., Romeo, C., and Seed, B. 1993. T cell activation by clustered tyrosine kinases. *Cell* 74: 171-183.

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6. Alonso, A., Rahmouni, S., Williams, S., van Stipdonk, M., Jaroszewski, L., Godzik, A., Abraham, R.T., Schoenberger, S.P. and Mustelin, T. (2003) Tyrosine phosphorylation of VHR phosphatase by ZAP-70. *Nat. Immunol.* 4, 44-48.

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