

ZAP-70 (h2): 293T Lysate: sc-116483

BACKGROUND

The activation of T lymphocytes by antigens is mediated by the T cell receptor (TCR) which is a multisubunit complex assembled from at least six different genes. The TCR subunits include the Ti α and β chains, the CD3 γ , δ and ϵ chains and a ζ -containing homodimer or heterodimer. The disulfide-linked Ti α - β heterodimer is responsible for antigen recognition, but the short five amino acid cytoplasmic domains of Ti α and β are unlikely to be sufficient to couple to intracellular signaling pathways. In contrast, the structured features of the CD3 and ζ subunits suggest a role in signal transduction. Of these, the ζ chain, which is expressed as either a homodimer or heterodimer, has a short extracellular domain of only nine amino acids, but a larger 113 amino acid cytoplasmic domain. A tyrosine phosphoprotein, ZAP-70, has been identified that associates with ζ and undergoes tyrosine phosphorylation following TCR stimulation.

REFERENCES

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2. Baniyash, M., Garcia-Morales, P., Bonifacio, J.S., Samelson, L.E. and Klausner, R.D. 1988. Disulfide linkage of the ζ and η chains of the T cell receptor. Possible identification of two structural classes of receptors. *J. Biol. Chem.* 263: 9874-9878.
3. Baniyash, M., Garcia-Morales, P., Luong, E., Samelson, L.E. and Klausner, R.D. 1988. The T cell antigen receptor ζ chain is tyrosine phosphorylated upon activation. *J. Biol. Chem.* 263: 18225-18230.
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5. Frank, S.J., Samelson, L.E. and Klausner, R.D. 1990. The structure and signaling function of the invariant T cell receptor components. *Semin. Immunol.* 2: 89-97.
6. Clayton, L.K., D'Adamio, L.D., Howard, F.D., Sieh, M., Hussey, R.E., Koyasu, S. and Reinherz, E.L. 1991. CD3 η and CD3 ζ are alternatively spliced products of a common genetic locus and are transcriptionally and/or post-transcriptionally regulated during T-cell development. *Proc. Natl. Acad. Sci. USA* 88: 5202-5206.
7. Chan, A.C., Irving, B., Fraser, J.D. and Weiss, A. 1991. The TCR ζ chain is associated with a tyrosine kinase and upon T cell antigen receptor stimulation associates with ZAP-70, a 70-kDa tyrosine phosphoprotein. *Proc. Natl. Acad. Sci. USA* 88: 9166-9170.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: ZAP70 (human) mapping to 2q11.2.

PRODUCT

ZAP-70 (h2): 293T Lysate represents a lysate of human ZAP-70 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

ZAP-70 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive ZAP-70 antibodies. Recommended use: 10-20 μ l per lane.

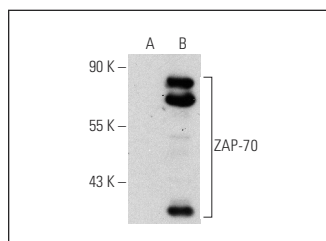
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

ZAP-70 (1E7.2): sc-32760 is recommended as a positive control antibody for Western Blot analysis of enhanced human ZAP-70 expression in ZAP-70 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™
Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



ZAP-70 (1E7.2): sc-32760. Western blot analysis of ZAP-70 expression in non-transfected: sc-117752 (A) and human ZAP-70 transfected: sc-116483 (B) 293T whole cell lysates.

RESEARCH USE

For research use only, not for use in diagnostic procedures.