

Syk (257-352): sc-4063 WB

BACKGROUND

The Src-related protein tyrosine kinases Lck p56 and Fyn p59 are critically involved in T cell antigen receptor (TCR)/CD3-triggered activation. T lymphocytes also express a second class of non-receptor protein tyrosine kinases, Syk p70 and ZAP p72. These kinases resemble the Src family protein tyrosine kinases in that they have a C-terminal catalytic domain, but differ in that they are characterized by two SH2 domains but no SH3 domains. Evidence for the involvement of the Syk/ZAP family proteins in T cell activation was suggested by the finding that Syk p72 kinase fused to the transmembrane and extracellular domains of CD7 and DC16, respectively, can induce complete T cell activation. In contrast, the ZAP p70 kinase was insufficient unless it was coaggregated with a Fyn p59-containing chimera, suggesting that regulation of ZAP p70 activity may require a functional interaction with Src family kinases.

REFERENCES

1. Zioncheck, T.F., Harrison, M.L., and Gaehlen, R.L. 1986. Purification and characterization of a protein-tyrosine kinase from bovine thymus. *J. Biol. Chem.* 261: 15637-15643.
2. Cooke, M.P., Abraham, K.M., Forbush, K.A., and Perlmutter, R.M. 1991. Regulation of T cell receptor signaling by a Src family protein-tyrosine kinase (p59Fyn). *Cell* 65: 281-291.
3. Taniguchi, T., Kobayashi, T., Kondo, J., Takahashi, K., Nakamura, H., Suzuki, J., Nagai, K., Yamada, T., Nakamura, S., and Yamamura, H. 1991. Molecular cloning of a porcine gene syk that encodes a 72 kDa protein-tyrosine kinase showing high susceptibility to proteolysis. *J. Biol. Chem.* 266: 15790-15796.
4. Straus, D.B. and Weiss, A. 1992. Genetic evidence for the involvement of the Lck tyrosine kinase in signal transduction through the T cell antigen receptor. *Cell* 70: 585-593.
5. Molina, T.J., Kishihara, K., Siderovski, D.P., van Ewijk, W., Narendran, A., Timms, E., Wakeham, A., Paige, C.J., Hartmann, K.U., Veillette, A., Davidson, D., and Mak, T.W. 1992. Profound block in thymocyte development in mice lacking p56Lck. *Nature* 357: 161-164.
6. Chan, A.C., Iwashima, M., Turck, C.W., and Weiss, A. 1992. ZAP-70: a 70 kd protein-tyrosine kinase that associates with the TCR z chain. *Cell* 71: 649-662.
7. Kolanus, W., Romeo, C., and Seed, B. 1993. T cell activation by clustered tyrosine kinases. *Cell* 74: 171-183.
8. Couture, C., Baier, G., Altman, A., and Mustelin, T. 1994. p56Lck-independent activation and tyrosine phosphorylation of p72Syk by T-cell antigen receptor/CD3 stimulation. *Proc. Natl. Acad. Sci. USA* 91: 5301-5305.

SOURCE

Syk (257-352) is expressed in *E. coli* as a 28 kDa polyhistidine tagged fusion protein corresponding to the "linker" domain (amino acids 257-352) of Syk protein of human origin.

PRODUCT

Syk (257-352) is purified from bacterial lysates (>98%) by Ni⁺⁺ affinity chromatography; supplied as 10 µg in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

Syk (257-352) is suitable as a Western blotting control for sc-573 and sc-1240.

STORAGE

Store at -20° C; stable for one year from the date of shipment.

RESEARCH USE

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