SANTA CRUZ BIOTECHNOLOGY, INC.

Lck (54-226): sc-4037

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

A total of eight membrane associated tyrosine protein kinases have been identified within the Src gene family. These include c-Src, c-Yes, Fyn, Lck, Hck, Lyn, Blk and c-Fgr. The major translational product of the human Lck gene is a lymphocyte-specific tyrosine kinase designated pp56Lck. This a membrane associated molecule, most likely via covalently associated myristate at the amino terminus. The Lck gene has been shown to undergo rearrangement and overexpression in some murine lymphomas. In human studies, it has been demonstrated that the Lck gene is localized to a site in the genome which undergoes frequent chromosomal abnormalities in lymphomas and neuroblastomas. Resting T cells contain high levels of the Lck protein and mRNA both of which decline upon activation of the T cells. These and other observations suggest that alterations in Lck expression may contribute to the pathogenesis of some types of neoplastic disease.

REFERENCES

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3. Voronova, A.F. and Sefton, B.M. 1986. Expression of a new tyrosine protein kinase is stimulated by retrovirus promoter insertion. Nature 319: 682-685.
4. Marth, J.D., Disteche, C., Pravcheva, D., Ruddle, F., Krebs, E.G. and Perlmutter, R.M. 1986. Localization of a lymphocyte-specific protein tyrosine kinase gene (Lck) at a site of frequent chromosomal abnormalities in human lymphomas. Proc. Natl. Acad. Sci. USA 83: 7400-7404.
5. Marth, J.D., Lewis, D.B., Wilson, C.B., Gearn, M.E., Krebs, E.G. and Perlmutter, R.M. 1987. Regulation of pp56Lck during T cell activation: functional implications for the src-like protein tyrosine kinases. EMBO J. 6: 2727-2734.
6. Adler, H.T., Reynolds, P.J., Kelley, C.M. and Sefton, B.M. 1988. Transcriptional activation of Lck by retrovirus promoter insertion between two lymphoid-specific promoters. J. Virol. 62: 4113-4122.
7. Bolen, J.B., Thompson, P.A., Eiseman, E. and Horak, I.D. 1991. Expression and interactions of the Src family of tyrosine protein kinases in T lymphocytes. Adv. Cancer Res. 57: 103-149.

CHROMOSOMAL LOCATION

Genetic locus: LCK (human) mapping to 1p35.1; Lck (mouse) mapping to 4 D2.2.

SOURCE

Lck (54-226) is expressed in *E. coli* as a 49 kDa tagged fusion protein corresponding to amino acids 54-226 of Lck of mouse origin containing the SH3-SH2 domains.

RESEARCH USE

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

PRODUCT

Lck (54-226) is purified from bacterial lysates (> 98%) by glutathione agarose chromatography and supplied as 50 µg purified protein in PBS containing 5 mM DTT and 50% glycerol.

Also available in agarose conjugate format; 100 µg purified Lck (54-226) protein conjugated to 0.1 ml agarose in PBS containing0.1% azide, 0.1% BSA and 10% glycerol: Lck (54-226) AC: sc-4037 AC.

APPLICATIONS

Lck (54-226) in its soluble, non-conjugated form (sc-4037) is recommended for purification of target proteins containing appropriate proline-rich sequences and/or phosphotyrosine binding sites when used in combination with glutathione agarose (sc-2009).

Alternatively, the agarose conjugated form of this product (sc-4037 AC) can be used directly for target protein binding. Lck (54-226) is also recommended as a Western blotting control for sc-433.

Molecular Weight of Lck: 56 kDa.

SELECT PRODUCT CITATIONS

1. Briggs, S., Bryant, S.S., Jove, R., Sanderson, S.D. and Smithgall, T.E. 1995. The Ras GTPase-activating protein (GAP) is an SH3 domain-binding protein and substrate for the Src-related tyrosine kinase, Hck. J. Biol. Chem. 270: 14718-14724.
2. Price, D.J., Rivnay, B. and Avraham. H. 1999. CHK down-regulates SCF/KL-activated Lyn kinase activity in Mo7e megakaryocytic cells. Biochem. Biophys. Res. Commun. 259: 611-616.
3. Yaqub, S., Abrahamsen, H., Zimmerman, B., Kholod, N., Torgersen, K.M., Mustelin, T., Herberg, F.W., Tasken, K. and Vang. T. 2003. Activation of C-terminal Src kinase (Csk) by phosphorylation at Serine-364 depends on the Csk-Src homology 3 domain. Biochem. J. 372: 271-278.

STORAGE

Store Lck (54-226): sc-4037 at -20° C and Lck (54-226) AC: sc-4037 AC at 4° C; stable for one year from the date of shipment.

PROTOCOLS

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