SANTA CRUZ BIOTECHNOLOGY, INC.

Btk (1-391): sc-4118 WB

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The Power to Question

BACKGROUND

The Tec family of non-receptor tyrosine kinases is composed of six proteins designated Tec, Emt (also known as Itk or Tsk), Btk (previously known as Atk, BPK or Emb), Bmx, Txk (also known as Rlk) and Dsrc28C. All members of the family contain SH3 and SH2 domains and, with the exception of Txk and Dsrc28C, also contain a pleckstrin homology (PH) and a Tec homology (TH) domain in their amino termini. Four alternatively spliced forms of Tec are found to be expressed broadly in cells of hematopoietic lineage and hepatocytes. The Emt gene product associates with CD28 and becomes activated subsequent to CD28 ligation. Btk is necessary for proper B cell development, and mutations in the gene encoding Btk have been associated with families suffering from X-linked agammaglobulinemia, also referred to as Bruton's disease. The Bmx protein shares a high degree of homology with Btk and seems to be expressed at highest levels in the heart. Txk expression is T cell-specific, while expression of the *Drosophila* Tec homolog, Dsrc28C, is developmentally regulated.

REFERENCES

1. Yamada, N., Kawakami, Y., Kimura, H., Fukamachi, H., Baier, G., Altman, A., Kato, T., Inagaki, Y. and Kawakami, T. 1993. Structure and expression of novel protein tyrosine kinases, Emb and Emt, in hematopoietic cells. Biochem. Biophys. Res. Commun. 192: 231-240.
2. Thomas, J.D., Sideras, P., Smith, C.I.E., Vorechovsky, I., Chapman, V. and Paul, W.E. 1993. Colocalization of X-linked agammaglobulinemia and X-linked immunodeficiency genes. Science 261: 355-358.
3. Haire, R.N., Ohta, Y., Lewis, J.E., Fu, S.M., Kroisel, P. and Litman, G.W. 1994. Txk, a novel human tyrosine kinase expressed in T cells shares sequence identity with Tec family kinases and maps to 4p12. Hum. Mol. Genet. 3: 897-901.
4. August, A., Gibson, S., Kawakami, Y., Kawakami, T., Mills, G.B. and Dupont, B. 1994. CD28 is associated with and induces the immediate tyrosine phosphorylation and activation of the Tec family kinase Itk/Emt in the human Jurkat leukemic T-cell line. Proc. Natl. Acad. Sci. USA 91: 9347-9351.
5. Tamagnone, L., Lahtinen, I., Mustonen, T., Virtaneva, K., Francis, F., Muscatelli, F., Alitalo, R., Smith, C.I.E., Larsson, C. and Alitalo, K. 1994. Bmx, a novel nonreceptor tyrosine kinase gene of the Btk/Itk/Tec/Txk family located in chromosome Xp22.2. Oncogene 9: 3683-3688.
6. Hu, Q., Davidson, D., Schwartzberg, P.L., Macchiarini, F., Lenardo, M.J., Bluestone, J.A. and Matis, L.A. 1995. Identification of Rlk, a novel protein tyrosine kinase with predominant expression in the T cell lineage. J. Biol. Chem. 270: 1928-1934.

SOURCE

Btk (1-391) is expressed in *E. coli* as an 80 kDa tagged fusion protein corresponding to amino acids 1-391 of Btk of mouse origin.

PROTOCOLS

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

PRODUCT

Btk (1-391) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 10 µg in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

Btk (1-391) is suitable as a Western blotting control for sc-1108 and sc-1696.

SELECT PRODUCT CITATIONS

1. Choi, H.K., Kang, H.R., Jung, E., Kim, T.E., Lin, J.J. and Lee, S.Y. 2013. Early estrogen-induced gene 1, a novel RANK signaling component, is essential for osteoclastogenesis. Cell Res. 23: 524-536.

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.