SANTA CRUZ BIOTECHNOLOGY, INC.

IL-2 (hBA-133): sc-4593

BACKGROUND

Lymphokines are a group of signaling molecules involved in communication between cells of the immune system. Lymphokines secreted by activated lymphocytes include proteins such as interleukin-2. This protein is secreted primarily by helper T cells that have been activated through the T cell receptor complex or by other mitogens. IL-2 targets activated T helper and cytotoxic T cells, inducing their proliferation. The secretion of IL-2 can also act as a growth factor for B cells. To date, three different IL-2-dependent signal transduction pathways have been identified: the c-Fos/c-Jun induction pathway mediated by Src family protein-tyrosine kinases, the c-Myc induction pathway and the rapamycin-sensitive pathway, all of which result in the induction of Bcl-2. In addition, the transcription factor NFAT has been shown to play a major role in the regulation of IL-2 transcription and correlates to an age-related decline in the expression of IL-2.

REFERENCES

1. Smith, K.A. 1980. T-cell growth factor. Immunol. Rev. 51: 337-357.
2. Taniguchi, T., Matsui, H., Fujita, T., Takaoka, C., Kashima, N., Yoshimoto, R., and Hamuro, J. 1983. Structure and expression of a cloned cDNA for human interleukin-2. Nature 302: 305-310.
3. Lowenthal, J.W., Zubler, R.H., Nabholz, M., and MacDonald, H.R., 1985. Similarities between interleukin-2 receptor number and affinity on activated B and T lymphocytes. Nature 315: 669-672.
4. Guy, G.R., Bee, N.S., and Peng, C.S. 1990. Lymphokine signal transduction. Prog. Growth Fact. Res. 2: 45-70.5.
5. Germann, T., Jin, S.C., Mattner, F., and Rude, E. 1991. Components of an antigen-/T cell receptor-independent pathway of lymphokine production. Euro. J. Immunol. 21: 1857-1861.
6. Miyazaki, T., Liu, Z.J., Kawahara, A., Minami, Y., Yamada, K., Tsujimoto, Y., Barsoumian, E.L., Permutter, R.M., and Taniguchi, T. 1995. Three distinct IL-2 signaling pathways mediated by Bcl-2, c-Myc, and Lck cooperate in hematopoietic cell proliferation. Cell 81: 223-231.
7. Eljaafari, A., Dorval, I., Soula, M., et al. 1995. Contribution of p56lck to the upregulation of cytokine production and T cell proliferation by IL-2 in human CD3-stimulated T cell clones. Cell. Immunol. 160: 152-156.
8. Pahlavani, M.A., Harris, M.D., and Richardson, A. 1995. The age-related decline in the induction of IL-2 transcription is correlated to changes in the transcription factor NFAT. Cell. Immunol. 165: 84-91.

SOURCE

IL-2 (hBA-133) is produced in *E. coli* as 42 kDa biologically active, GST-tagged fusion protein corresponding to 133 amino acids of IL-2 of human origin.

PRODUCT

IL-2 (hBA-133) is purified from bacterial lysates (>98%); supplied as 50 µg purified protein.

RESEARCH USE

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

BIOLOGICAL ACTIVITY

IL-2 (hBA-133) is biologically active as determined by the dose-dependent stimulation of murine CTLL-2 cells.

Expected ED_{50}: <0.0645 ng/ml.

Specific Activity: Greater than 1 x 10^7 units/mg.

RECONSTITUTION

In order to avoid freeze/thaw damaging of the active protein, dilute protein when first used to desired working concentration. Either a sterile filtered standard buffer (such as 50mM TRIS or 1X PBS) or water can be used for the dilution. Store any thawed aliquot in refrigeration at 2° C to 8° C for up to four weeks, and any frozen aliquot at -20° C to -80° C for up to one year. It is recommended that frozen aliquots be given an amount of standard cryo-preservative (such as Ethylene Glycol or Glycerol 5-20% v/v), and refrigerated samples be given an amount of carrier protein (such as heat inactivated FBS or BSA to 0.1% v/v) or non-ionic detergent (such as Triton X-100 or Tween 20 to 0.005% v/v), to aid stability during storage.

STORAGE

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

PROTOCOLS

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