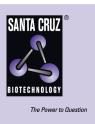
SANTA CRUZ BIOTECHNOLOGY, INC.

IL-6 (hBA-184): sc-4597



BACKGROUND

Interleukin 6, or IL-6, is a 21 kDa multifunctional protein, 212 amino acids in length, that plays critical roles in host defense, immune response, and hematopoiesis. IL-6 is constitutively expressed by epidermal Langerhans cells and its expression is induced in stimulated keratinocytes. IL-6, IL-1 β and TNF α act as endogenous pyrogens, regulating the fever response to bacterial invasion. The IL-6 receptor is a trimeric complex composed of an IL-6-specific α chain and a homodimer of the gp130 glycoprotein common to the IL-6, IL-11, CNTF, OSM and LIF receptors. Stimulation with IL-6 leads to gp130 homod-imerization and the activation of associated kinases JAK1 and JAK2. Once activated, JAK1 and JAK2 phosphorylate Stat3 causing its nuclear translocation and transcription of Stat3-responsive genes. IL-6 has also been shown to activate the Ras/MAP kinase pathway, which regulates NF-IL-6 transcription.

REFERENCES

- Hirano, T., Yasukawa, K., Harada, H., Taga, T., Watanabe, Y., Matsuda, T., Kashiwamura, S., Nakajima, K., Koyama, K., Iwamatsu, A., Tsunasawa, S., Sakiyama, F., Matsui, H., Takahara, Y., Taniguchi, T. and Kishimoto, T. 1986. Complementary DNA for a novel human interleukin (BSF-2) that induces B lymphocytes to produce immunoglobulin. Nature 324: 73-76.
- Nakajima, T., Kinoshita, S., Sasagawa, T., Sasaki, K., Naruto, M., Kishimoto, T. and Akira, S. 1993. Phosphorylation at threonine-235 by a Ras-dependent mitogen-activated protein kinase cascade is essential for transcription factor NF-IL6. Proc. Natl. Acad. Sci. USA 90: 2207-2211.
- Zhong, Z., Wen, Z. and Darnell, J.E., Jr. 1994. Stat3: A Stat family member activated by tyrosine phosphorylation in response to epidermal growth factor and interleukin-6. Science 264: 95-98.
- 4. Wang, Y. and Fuller, G.M. 1995. Interleukin-6 and ciliary neurotrophic factor trigger Janus kinase activation and early gene response in rat hepatocytes. Gene 162: 285-289.
- Wijdenes, J., Heinrich, P.C., Muller-Newen, G., Roche, C., Gu, Z.J., Clement, C. and Klein, B. 1995. Interleukin-6 signal transducer gp130 has specific binding sites for different cytokines as determined by antagonistic and agonistic anti-gp130 monoclonal antibodies. Eur. J. Immunol. 25: 3474-3481.
- Holliday, M.R., Dearman, R.J., Basketter, D.A. and Kimber, I. 1996. Stimulation by oxazolone of increased IL-6, but not IL-10, in the skin of mice. Toxicology 106: 237-242.
- 7. Chai, Z., Gatti, S., Toniatti, C., Poli, V. and Bartfai, T. 1996. Interleukin (IL)-6 gene expression in the central nervous system is necessary for fever response to lipopolysaccharide or IL-1 β : a study on IL-6-deficient mice. J. Exp. Med. 183: 311-316.

SOURCE

IL-6 (hBA-184) is produced in *E. coli* as 47 kDa biologically active, GST-tagged fusion protein corresponding to 184 amino acids of IL-6 of human origin.

PRODUCT

IL-6 (hBA-184) is purified from bacterial lysates (> 98%); supplied as 50 μg purified protein.

BIOLOGICAL ACTIVITY

IL-6 (hBA-184) is biologically active as determined by the dose-dependent stimulation of the proliferation of IL-6 dependant murine 7TD1 cells.

Expected ED₅₀: < 0.1 ng/ml.

Specific Activity: Greater than 1 x 107 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 cryopreservative (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.

SELECT PRODUCT CITATIONS

- Samaddar, S. and Koneri, R. 2019. Polyphenols of marine red macroalga Symphyocladia latiuscula ameliorate diabetic peripheral neuropathy in experimental animals. Heliyon 5: e01781.
- Al-Khalaf, H.H., Ghebeh, H., Wakil, S.M., Al-Mohanna, F. and Aboussekhra, A. 2020. IL-8 dedifferentiates primary human luminal cells to multipotent stem cells. Mol. Cell. Biol. 40: e00508-e00519.
- Al-Ansari, M.M., Al-Saif, M., Arafah, M., Eldali, A.M., Tulbah, A., Al-Tweigeri, T., Semlali, A., Khabar, K.S. and Aboussekhra, A. 2020. Clinical and functional significance of tumor/stromal ATR expression in breast cancer patients. Breast Cancer Res. 22: 49.

STORAGE

Store desiccated at -20° C. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

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