SANTA CRUZ BIOTECHNOLOGY, INC.

IL-7 (D-9): sc-365306

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Interleukin-7 (IL-7) was originally described as a factor capable of inducing *in vitro* proliferation of pre-B cells from marrow cultures. The IL-7 gene encodes a protein 177 amino acids in length. IL-7 exerts its biological function through the IL-7 receptor which is expressed on pre-B cells, thymocytes and bone marrow-derived macrophages. The IL-7 receptor is composed of an IL-7 receptor-specific chain and the IL-2 receptor γ chain common to the IL-2, IL-4, IL-7, IL-9 and IL-15 receptors. IL-7 stimulation leads to the activation of Janus tyrosine kinase family members JAK1 and JAK3. Other studies have shown that in T cells, the IL-7 receptor-specific chain associates with the Src kinases family Lck and Fyn. IL-7 induces phosphorylation of Insulin receptor substrate-1 (IRS-1) and Insulin receptor substrate-2 (IRS-2), originally called 4PS.

REFERENCES

1. Whitlock, C.A. and Witte, O.N. 1982. Long-term culture of B lymphocytes and their precursors from murine bone marrow. Proc. Natl. Acad. Sci. USA 79: 3608-3612.
2. Mosley, B., et al. 1989. The murine interleukin-4 receptor: molecular cloning and characterization of secreted and membrane bound forms. Cell 59: 335-348.
3. Goodwin, R.G., et al. 1990. Cloning of the human and murine interleukin-7 receptors: demonstration of a soluble form and homology to a new receptor superfamily. Cell 60: 941-951.
4. Abrams, J.S., et al. 1992. Strategies of anti-cytokine monoclonal antibody development: immunoassay of IL-10 and IL-5 in clinical samples. Immunol. Rev. 127: 5-24.

CHROMOSOMAL LOCATION

Genetic locus: IL7 (human) mapping to 8q21.12.

SOURCE

IL-7 (D-9) is a mouse monoclonal antibody raised against amino acids 27-177 of IL-7 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IL-7 (D-9) is available conjugated to agarose (sc-365306 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365306 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365306 PE), fluorescein (sc-365306 FITC), Alexa Fluor® 488 (sc-365306 AF488), Alexa Fluor® 546 (sc-365306 AF546), Alexa Fluor® 594 (sc-365306 AF594) or Alexa Fluor® 647 (sc-365306 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365306 AF680) or Alexa Fluor® 790 (sc-365306 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

IL-7 (D-9) is recommended for detection of IL-7 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecip-itation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

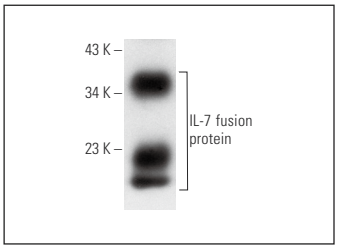
Suitable for use as control antibody for IL-7 siRNA (h): sc-39629, IL-7 shRNA Plasmid (h): sc-39629-SH and IL-7 shRNA (h) Lentiviral Particles: sc-39629-V.

Molecular Weight of IL-7: 25 kDa.

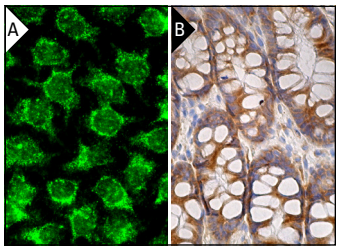
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



IL-7 (D-9): sc-365306. Western blot analysis of full length human recombinant IL-7 fusion protein.



IL-7 (D-9): sc-365306. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Ming, J., et al. 2012. Interleukin-7 up-regulates cyclin D1 via activator protein-1 to promote proliferation of cell in lung cancer. Cancer Immunol. Immunother. 61: 79-88.
2. Luo, B., et al. 2018. The interplay of BMP4 and IL-7 regulates the apoptosis of intestinal intraepithelial lymphocytes under conditions of ischemia/reperfusion. Int. J. Mol. Med. 41: 2640-2650.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.