SANTA CRUZ BIOTECHNOLOGY, INC.

# IL-4 (OX81): sc-53084

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Interleukin-4 (IL-4), also designated B cell stimulatory factor-1, is a glycosylated cytokine secreted by activated T lymphocytes, basophils and mast cells. The secreted IL-4 protein promotes the growth and differentiation of cells that participate in immune defense by favoring such events as the expansion of the Th2 lineage relative to Th1 cells. These T helper cell subsets are defined by their pattern of cytokine secretion: Th1 cells secrete IL-2, TNFβ and IFN-γ, while Th2 cells secrete IL-4, IL-5 and IL-10. Another key immunological function of IL-4 is to induce immunoglobulin class switching. IL-4 has been shown to induce the production of IgE and enhance $IgG_4$ secretion by B cells, but suppress the production of IgM, IgA, $IgG_1$, $IgG_2$ and $IgG_3$. It has been determined that Stat6 is rapidly tyrosine phosphorylated following stimulation of IL-3 or IL-4, but is not detectably phosphorylated following stimulation with IL-2, IL-12 or erythropoietin.

## CHROMOSOMAL LOCATION

Genetic locus: Il4 (mouse) mapping to 11 B1.3.

## SOURCE

IL-4 (OX81) is a mouse monoclonal antibody raised against full length IL-4 of rat 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. Also available azide-free for blocking, sc-53084 L, 200 µg/0.1 ml.

IL-4 (OX81) is available conjugated to agarose (sc-53084 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53084 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53084 PE), fluorescein (sc-53084 FITC), Alexa Fluor® 488 (sc-53084 AF488), Alexa Fluor® 546 (sc-53084 AF546), Alexa Fluor® 594 (sc-53084 AF594) or Alexa Fluor® 647 (sc-53084 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53084 AF680) or Alexa Fluor® 790 (sc-53084 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.



## APPLICATIONS

IL-4 (OX81) is recommended for detection of IL-4 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [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), flow cytometry (1 µg per 1 x $10^6$ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

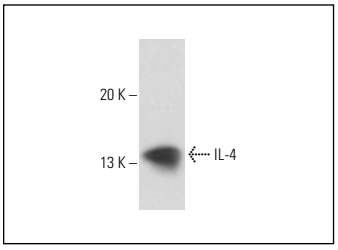
Suitable for use as control antibody for IL-4 siRNA (m): sc-39624, IL-4 shRNA Plasmid (m): sc-39624-SH and IL-4 shRNA (m) Lentiviral Particles: sc-39624-V.

Molecular Weight of IL-4: 18 kDa.

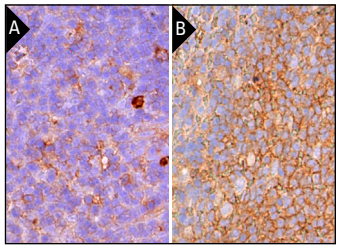
## STORAGE

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

## DATA




IL-4 (OX81): sc-53084. Western blot analysis of rat recominant IL-4.




IL-4 (OX81): sc-53084. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat thymus tissue showing membrane staining of cortical cells and medullary cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat spleen tissue showing membrane and cytoplasmic staining of cells in white pulp and cells in red pulp (**B**).

## SELECT PRODUCT CITATIONS

1. Pokrywczynska, M., et al. 2013. Do mesenchymal stem cells modulate the milieu of reconstructed bladder wall? Arch. Immunol. Ther. Exp. 61: 483-493.
2. He, D., et al. 2015. Enhanced M1/M2 macrophage ratio promotes orthodontic root resorption. J. Dent. Res. 94: 129-139.
3. Sun, Y., et al. 2016. Mineralized collagen regulates macrophage polarization during bone regeneration. J. Biomed. Nanotechnol. 12: 2029-2040.
4. Ullah, I., et al. 2018. Dental pulp-derived stem cells can counterbalance peripheral nerve injury-induced oxidative stress and supraspinal neuroinflammation in rat brain. Sci. Rep. 8: 15795.
5. Chen, S., et al. 2019. Eluted 25-hydroxyvitamin $D_3$ from radially aligned nanofiber scaffolds enhances cathelicidin production while reducing inflammatory response in human immune system-engrafted mice. Acta Biomater. 97: 187-199.
6. Chen, M., et al. 2020. Tanshinone IIA promotes M2 microglia by ERβ/IL-10 pathway and attenuates neuronal loss in mouse TBI model. Neuropsychiatr. Dis. Treat. 16: 3239-3250.
7. Park, Y., et al. 2021. Effects of hypothermia on inflammatory cytokine expression in rat liver following asphyxial cardiac arrest. Exp. Ther. Med. 21: 626.
8. Choreño-Parra, J.A., et al. 2021. Clinical and immunological factors that distinguish COVID-19 from pandemic influenza A(H1N1). Front. Immunol. 12: 593595.
9. Maglie, R., et al. 2022. Over-expression of Th2-related molecules in the skin of patients with eosinophilic dermatosis of hematologic malignancy. J. Am. Acad. Dermatol. 87: 761-770.

## RESEARCH USE

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