

# TNF $\alpha$ (4E1): sc-130349

## BACKGROUND

Tumor necrosis factor  $\beta$  (TNF $\beta$ ), also known as lymphotoxin, is a pleiotropic cytokine. TNF $\alpha$ , also known as cachectin, is a smaller cytokine that binds to the same receptors producing a vast array of effects similar to those of TNF $\beta$ . TNF $\beta$  and TNF $\alpha$  share 30% amino acid homology and have similar biological activities. TNF $\beta$  is produced by activated lymphocytes, including CD4<sup>+</sup> T helper cell type 1 lymphocytes, CD8<sup>+</sup> lymphocytes and certain B lymphoblastoid cell lines. TNF $\alpha$  is produced by several different cell types, which include lymphocytes, neutrophils and macrophages. TNF $\alpha$  and TNF $\beta$  can modulate many immune and inflammatory functions, while having the ability to inhibit tumor growth. Target tumor cells must express TNF receptors 1 and 2 to be killed, with the p55 receptor mediating the cytotoxic response.

## CHROMOSOMAL LOCATION

Genetic locus: TNF (human) mapping to 6p21.33.

## SOURCE

TNF $\alpha$  (4E1) is a mouse monoclonal antibody raised against recombinant TNF $\alpha$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TNF $\alpha$  (4E1) is available conjugated to agarose (sc-130349 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-130349 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-130349 PE), fluorescein (sc-130349 FITC), Alexa Fluor<sup>®</sup> 488 (sc-130349 AF488), Alexa Fluor<sup>®</sup> 546 (sc-130349 AF546), Alexa Fluor<sup>®</sup> 594 (sc-130349 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-130349 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-130349 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-130349 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA

## APPLICATIONS

TNF $\alpha$  (4E1) is recommended for detection of TNF $\alpha$  of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for TNF $\alpha$  siRNA (h): sc-37216, TNF $\alpha$  shRNA Plasmid (h): sc-37216-SH and TNF $\alpha$  shRNA (h) Lentiviral Particles: sc-37216-V.

Molecular Weight of transmembrane TNF $\alpha$ : 26 kDa.

Molecular Weight of soluble TNF $\alpha$ : 17 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

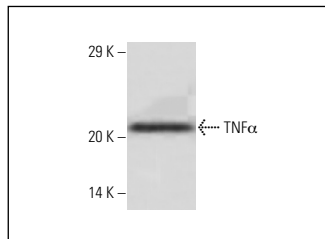
## RESEARCH USE

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

## STORAGE

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

## DATA



TNF $\alpha$  (4E1): sc-130349. Western blot analysis of human recombinant TNF $\alpha$ .

## SELECT PRODUCT CITATIONS

- He, S., et al. 2011. CD14<sup>+</sup> cell-derived IL-29 modulates proinflammatory cytokine production in patients with allergic airway inflammation. *Allergy* 66: 238-246.
- Menekse, G., et al. 2013. The neuroprotective effects of rituximab in rat spinal cord injury model: an immunohistochemical study. *Turk. Neurosurg.* 23: 783-790.
- Yang, H., et al. 2015. Low back pain associated with lumbar disc herniation: role of moderately degenerative disc and annulus fibrous tears. *Int. J. Clin. Exp. Med.* 8: 1634-1644.
- Wang, T., et al. 2017. Regulation of autophagy inhibition and inflammatory response in glioma by Wnt signaling pathway. *Oncol. Lett.* 14: 7197-7200.
- Yu, C.D., et al. 2018. Inhibition of miR-126 protects chondrocytes from IL-1 $\beta$  induced inflammation via upregulation of Bcl-2. *Bone Joint Res.* 7: 414-421.
- Zhao, B., et al. 2019. Vitamin D/VDR signaling suppresses microRNA-802-induced apoptosis of keratinocytes in oral lichen planus. *FASEB J.* 33: 1042-1050.
- Amini, M., et al. 2020. Involvement of endocannabinoid system, inflammation and apoptosis in diabetes induced liver injury: role of 5-HT3 receptor antagonist. *Int. Immunopharmacol.* 79: 106158.
- Karslioglu, T., et al. 2021. The effects of micronized progesterone and cabergoline on a rat autotransplantation endometriosis model: a placebo controlled randomized trial. *J. Invest. Surg.* 34: 897-901.
- Dehqanizadeh, B., et al. 2022. Effect of early exercise on inflammatory parameters and apoptosis in CA1 area of the hippocampus following cerebral ischemia-reperfusion in rats. *Brain Res. Bull.* 182: 102-110.
- Borgo Sarmento, E., et al. 2023. Proinflammatory cytokine expression in apical periodontitis from diabetic patients. *Int. J. Dent.* 2023: 4961827.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.