

# TNF $\alpha$ (AS1): sc-52791

## 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.

## REFERENCES

1. Nedwin, G.E., et al. 1985. Human lymphotoxin and tumor necrosis factor genes: structure, homology and chromosomal localization. *Nucleic Acids Res.* 13: 6361-6373.
2. Aggarwal, B.B., et al. 1985. Human tumor necrosis factor. Production, purification, and characterization. *J. Biol. Chem.* 260: 2345-2354.
3. Vilcek, J., et al. 1991. Tumor necrosis factor. New insights into the molecular mechanisms of its multiple actions. *J. Biol. Chem.* 266: 7313-7316.
4. Tartaglia, L.A., et al. 1993. Tumor necrosis factor's cytotoxic activity is signaled by the p55 TNF receptor. *Cell* 73: 213-216.
5. De Togni, P., et al. 1994. Abnormal development of peripheral lymphoid organs in mice deficient in lymphotoxin. *Science* 264: 703-707.
6. Qin, Z., et al. 1995. Tumor growth inhibition mediated by lymphotoxin: evidence of B lymphocyte involvement in the antitumor response. *Cancer Res.* 55: 4747-4751.
7. Sarin, A., et al. 1995. Cytotoxic effect of TNF and lymphotoxin on T lymphoblasts. *J. Immunol.* 155: 3716-3718.
8. Pandey, J.P., et al. 1999. TNF $\alpha$  and TNF $\beta$  gene polymorphisms in systemic sclerosis. *Hum. Immunol.* 60: 1128-1130.

## CHROMOSOMAL LOCATION

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

## SOURCE

TNF $\alpha$  (AS1) is a mouse monoclonal antibody raised against TNF $\alpha$  of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

TNF $\alpha$  (AS1) 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with human TNF $\beta$  or a panel of other human cytokines.

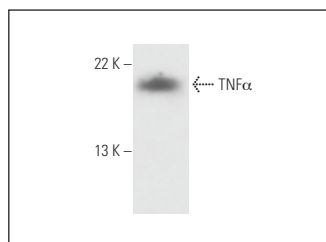
Suitable for use as control antibody for TNF $\alpha$  siRNA (h): sc-37216, TNF $\alpha$  shRNA Plasmid (h): sc-37216-SH and TNF $\alpha$  shRNA (h) Lentiviral Particles: sc-37216-V.

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

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

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

## DATA



TNF $\alpha$  (AS1): sc-52791. Western blot analysis of human recombinant TNF $\alpha$ .

## SELECT PRODUCT CITATIONS

1. Taurone, S., et al. 2015. Immunohistochemical profile of cytokines and growth factors expressed in vestibular schwannoma and in normal vestibular nerve tissue. *Mol. Med. Rep.* 12: 737-745.
2. Han, K., et al. 2018. Ghrelin improves pilocarpine-induced cerebral cortex inflammation in epileptic rats by inhibiting NF $\kappa$ B and TNF $\alpha$ . *Mol. Med. Rep.* 18: 3563-3568.
3. Li, W., et al. 2021. Papaverine perfusion via the aortic root before heart re-beating alleviates myocardial injury after heart valve replacement. *Arch. Med. Res.* 52: 405-413.

## RESEARCH USE

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

## PROTOCOLS

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



See **TNF $\alpha$  (C-4): sc-133192** for TNF $\alpha$  antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.