



## TNF $\alpha$ (3-101-4): sc-53457

### BACKGROUND

Tumor necrosis factor  $\beta$  (TNF $\beta$ ), also known as lymphotoxin, is a pleiotropic cytokine that has a molecular weight of 25 kDa. TNF $\alpha$ , also known as cachectin, is a smaller cytokine with a molecular weight of 26 kDa (transmembrane) and 17 kDa (soluble) 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 (55 kDa) and 2 (75 kDa) to be killed, with the p55 receptor mediating the cytotoxic response.

### REFERENCES

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2. Aggarwal, B.B., et al. 1985. Human tumor necrosis factor. Production, purification, and characterization. J. Biol. Chem. 260: 2345-2354.
3. Meager, A. et al. 1987. Preparation and characterization of monoclonal antibodies directed against antigenic determinants of recombinant human tumour necrosis factor (rTNF). Hybridoma. 6(3):305-11. PMID: 2439440
4. Vilcek, J., et al. 1991. Tumor necrosis factor. New insights into the molecular mechanisms of its multiple actions. J. Biol. Chem. 266: 7313-7316.
5. Tartaglia, L.A., et al. 1993. Tumor necrosis factor's cytotoxic activity is signaled by the p55 TNF receptor. Cell. 73: 213-216.
6. De Togni, P., et al. 1994. Abnormal development of peripheral lymphoid organs in mice deficient in lymphotoxin. Science. 264: 703-707.
7. 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.
8. Sarin, A., et al. 1995. Cytotoxic effect of TNF and lymphotoxin on T lymphoblasts. J. Immunol. 155: 3716-3718.

### CHROMOSOMAL LOCATION

Genetic locus: TNF (human) mapping to 6p21.3; Tnf (mouse) mapping to 17 B1.

### SOURCE

TNF $\alpha$  (3-101-4) is a mouse monoclonal antibody raised against recombinant tumour necrosis factor alpha from E. coli (also designated clone 357-101-4).

### 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.

Available azide-free for strong neutralizing activity, sc-53457 L, 200  $\mu$ g/0.1 ml.

### APPLICATIONS

TNF $\alpha$  (3-101-4) is recommended for detection of TNF $\alpha$  of human origin by immunoprecipitation [1–2  $\mu$ g per 100–500  $\mu$ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for TNF $\alpha$  siRNA (h): sc-37216.

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

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

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

### STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. 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](http://www.scbt.com) or our catalog for detailed protocols and support products.