SANTA CRUZ BIOTECHNOLOGY, INC.

TNFβ (R-20): sc-1353

BACKGROUND

Tumor necrosis factor β (TNFβ), also known as lymphotoxin, is a pleiotropic cytokine that has a molecular weight of 25 kDa. TNFα, also known as cachectin, is a smaller cytokine with a molecular weight of 17 kDa that binds to the same receptors producing a vast array of effects similar to those of TNFβ. TNFβ and TNFα share 30% amino acid homology and have similar biological activities. TNFβ is produced by activated lymphocytes, including $CD4^+$ T helper cell type 1 lymphocytes, $CD8^+$ lymphocytes and certain B lymphoblastoid cell lines. TNFα is produced by several different cell types, which include lymphocytes, neutrophils and macrophages. TNFα and TNFβ 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

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.

CHROMOSOMAL LOCATION

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

SOURCE

TNFβ (R-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of TNFβ of rat origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1353 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

TNFβ (R-20) is recommended for detection of TNFβ of mouse, rat and human 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TNFβ (R-20) is also recommended for detection of TNFβ in additional species, including canine and bovine.

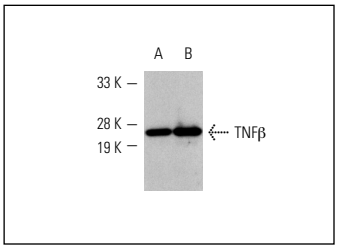
Suitable for use as control antibody for TNFβ siRNA (h): sc-37218, TNFβ siRNA (m): sc-37219, TNFβ shRNA Plasmid (h): sc-37218-SH, TNFβ shRNA Plasmid (m): sc-37219-SH, TNFβ shRNA (h) Lentiviral Particles: sc-37218-V and TNFβ shRNA (m) Lentiviral Particles: sc-37219-V.

Molecular Weight of TNFβ: 19-25 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



TNFβ (R-20): sc-1353. Western blot analysis of human recombinant TNFβ (**A**,**B**).

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.