

## TNF $\beta$ (35-205): sc-4465 WB

### 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 17 kDa 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 percent 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

1. Nedwin, G.E., Naylor, S.L., Sakaguchi, A.Y., Smith, D., Jarrett-Nedwin, J., Pennica, D., Goeddel, D.V., and Gray, P.W. 1985. Human lymphotoxin and tumor necrosis factor genes: structure, homology and chromosomal localization. *Nucl. Acids Res.* 13: 6361-6373.
2. Aggarwal, B.B., Kohr, W.J., Hass, P.E., Moffat, B., Spencer, S.A., Henzel, W.J., Bringman, T.S., Nedwin, G.E., Goeddel, D.V., and Harkins, R.N. 1985. Human tumor necrosis factor. Production, purification, and characterization. *J. Biol. Chem.* 260: 2345-2354.
3. Vilcek, J. and Lee, T.H. 1991. Tumor necrosis factor. New insights into the molecular mechanisms of its multiple actions. *J. Biol. Chem.* 266: 7313-7316.
4. Tartaglia, L.A., Rothe, M., Hu, Y.-F., and Goeddel, D.V. 1993. Tumor necrosis factor's cytotoxic activity is signaled by the p55 TNF receptor. *Cell* 73: 213-216.
5. De Togni, P., Goellner, J., Ruddle, N.H., Streeter, P.R., Fick, A., Mariathasan, S., Smith, S.C., Carlson, R., Shornick, L.P., Strauss-Schoenberger, J., Russell, J.H., Karr, R., and Chaplin, D.D. 1994. Abnormal development of peripheral lymphoid organs in mice deficient in lymphotoxin. *Science* 264: 703-707.
6. Qin, Z. and Blankenstein, T. 1995. Tumor growth inhibition mediated by lymphotoxin: evidence of B lymphocyte involvement in the antitumor response. *Cancer Res.* 55: 4747-4751.
7. Sarin, A., Conan-Cibotti, M., and Henkart, P.A. 1995. Cytotoxic effect of TNF and lymphotoxin on T lymphoblasts. *J. Immunol.* 155: 3716-3718.

### SOURCE

TNF $\beta$  (35-205) is expressed in *E. coli* as a 46 kDa tagged fusion protein corresponding to amino acids 35-205 of TNF $\beta$  of human origin.

### PRODUCT

TNF $\beta$  (35-205) is purified from bacterial lysates (>98%) by column chromatography; supplied as 10  $\mu$ g protein in 0.1 ml SDS-PAGE loading buffer.

### APPLICATIONS

TNF $\beta$  (35-205) is suitable as a Western blotting control for sc-1352, sc-1353, sc-1354 and sc-8302.

### RESEARCH USE

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

### STORAGE

Store at -20° C; stable for one year from the date of shipment.