SANTA CRUZ BIOTECHNOLOGY, INC.

TNFα (77-233): sc-4261 WB



BACKGROUND

Tumor necrosis factor β (TNF β), also known as lymphotoxin, is a pleiotropic cytokine that has a molecular weight of 25 kDa. TNF α , 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 β . TNF β and TNF α share 30% amino acid homology and have similar biological activities. TNF β is produced by activated lymphocytes, including CD4+ T helper cell type 1 lymphocytes, CD8+ lymphocytes and certain B lymphoblastoid cell lines. TNF α is produced by several different cell types, which include lymphocytes, neutrophils and macrophages. TNF α and TNF β 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

- 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.
- 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.
- 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.
- 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.
- 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.
- 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 α (77-233) is expressed in *E. coli* as a 44 kDa tagged fusion protein corresponding to amino acids 7-233 representing mature TNF α of human origin.

PRODUCT

 $TNF\alpha$ (77-233) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 10 μg in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

 $TNF\alpha$ (77-233) is suitable as a Western blotting control for sc-1347, sc-1348 and sc-8301.

STORAGE

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

RESEARCH USE

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