

# TACE (235-404): sc-4985 WB

## BACKGROUND

Tumor necrosis factor  $\beta$  (TNF $\beta$ ), also known as lymphotoxin, is a pleiotropic cytokine. TNF $\alpha$ , also known as cachetin, is a cytokine that binds to the same receptors, producing an 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, including lymphocytes, neutrophils and macrophages. TNF $\beta$  and TNF $\alpha$  can modulate many immune and inflammatory functions while having the ability to inhibit tumor growth. TACE (for TNF $\alpha$  converting enzyme) is a metalloproteinase that cleaves the membrane-bound TNF $\alpha$  precursor to release soluble TNF $\alpha$ .

## REFERENCES

- Nedwin, G.E., Naylor, S.L., Sakaguchi, A.Y., Smith, D., Jarret-Nedwin, J., Pennica, D., Goddel, D.V. and Gray, P.W. 1985. Human lymphotoxin and tumor necrosis factor genes: structure, homology and chromosomal localization. *Nucleic 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.
- De Togni, P., Gollern, J., Ruddle, N.H., Streeter, P.R., Fick, A., Mariathasan, S., Smith, S.C., Carlson, R., Shornick, L.P. and Strauss-Schoenberger, J. 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.
- Black, R.A., Rauch, C.T., Kozlosky, C.J., Peschon, J.J., Slack, J.L., Wolfson, M.F., Castner, B.J., Stocking, K.L., Reddy, P., Srinivasan, S., Nelson, N., Boiani, N., Schooley, K.A., Gerhart, M., Davis, R., Fitzner, J.N., Johnson, R.S., Paxton, R.J., March, C.J. and Cerretti, D.P. 1997. A metalloproteinase disintegrin that releases tumour-necrosis factor  $\alpha$  from cells. *Nature* 385: 729-733.
- Moss, M.L., Jin, S.L., Milla, M.E., Burkhart, W., Carter, H.L., Chen, W.J., Clay, W.C., Didsbury, J.R., Hassler, D., Hoffman, C.R., Kost, T.A., Lambert, M.H., Leesnitzer, M.A., McCauley, P., McGeehan, G., Mitchell, J., Moyer, M., Pahel, G., Rocque, W., Overton, L.K., Schoenen, F., Seaton, T., Su, J.L., Warner, J. and Becherer, J.D. 1997. Cloning of a disintegrin metalloproteinase that processes precursor tumour-necrosis factor  $\alpha$ . *Nature* 385: 733-736.

## PROTOCOLS

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

## CHROMOSOMAL LOCATION

Genetic locus: ADAM17 (human) mapping to 2p25.

## SOURCE

TACE (235-404) is produced in *E. coli* as 46 kDa tagged fusion protein corresponding to amino acids 235-404 of TACE of human origin.

## PRODUCT

TACI (235-404) is purified by bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 10  $\mu$ g in 0.1 ml SDS-PAGE loading buffer.

## APPLICATIONS

TACE (235-404) is suitable as a Western blotting control for sc-13973 and sc-25782.

## 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.