

## Product Information

### ANTI-ADAM 17 (TACE)

Developed in Rabbit, Affinity Isolated Antibody

Product Number **T 5442**

#### Product Description

Anti-ADAM 17 (TACE) is developed in rabbits using a peptide corresponding to C-terminal amino acids 807-823 of human TNF- $\alpha$  converting enzyme (TACE)<sup>1,2</sup> as immunogen. This peptide differs from mouse and rat by only one amino acid.<sup>3</sup>

Anti-ADAM 17 (TACE) recognizes TACE by immunoblotting using HeLa or Jurkat cell lysates. Species reactivity is observed with human, mouse and rat.

Tumor-necrosis factor- $\alpha$  is a proinflammatory cytokine and contributes to a variety of inflammatory disease responses and apoptosis. TNF- $\alpha$  is synthesized as a 26 kDa type II membrane-bound precursor that is cleaved by a convertase to generate secreted 17 kDa mature TNF- $\alpha$ . TACE (TNF- $\alpha$  converting enzyme), also known as cSVP, has been purified and the human and mouse TACE cDNAs has been cloned by several groups.<sup>1-3</sup> TACE is a membrane-bound metalloprotease-disintegrin in the family of mammalian ADAM (for a disintegrin and metalloprotease). TACE has been designated ADAM 17. TACE processes other cell surface proteins, including TNF receptor, TGF- $\alpha$ , the L-selectin adhesion molecule, and alpha-cleavage of amyloid protein precursor (APP).<sup>4,5</sup> Preceding cleavage by the  $\beta$ -secretase-like activity, TACE cleaves the extracellular part of the Notch1 receptor and plays a prominent role in the activation of the Notch pathway.<sup>6</sup> TACE mRNA is expressed in a variety of human and murine tissues. TACE was selected as one of the few targets in cytokine activation by the Eighth International Conference of the Inflammation Research Association.<sup>7</sup>

#### Reagents

Anti-ADAM 17 (TACE) is supplied as 0.5 mg/ml of affinity isolated antibody in phosphate buffered saline, containing 0.02% sodium azide.

#### Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) has been sent to the attention of the safety officer at your institution. Consult the MSDS for information regarding hazards and safe handling practices.

#### Storage/Stability

For continuous use, store at 2-8°C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

#### Product Profile

The recommended working concentration is 0.25 – 1  $\mu$ g/ml (1:2,000 - 1:500 dilution) by immunoblotting using HeLa or Jurkat cell lysates. A wide band of 80-130 kDa can be detected. This represents mature protein, precursor and glycosylated TACE.

Note: In order to obtain best results and assay sensitivities to different techniques and preparations, we recommend determining optimal working dilutions by titration test.

#### References

1. Black, R.A., et al A metalloproteinase disintegrin that releases tumour-necrosis factor- $\alpha$  from cells. *Nature*, **385**, 729-733 (1997).
2. Moss, M.L., et al., Cloning of a disintegrin metalloproteinase that processes precursor tumour-necrosis factor- $\alpha$ . *Nature*, **385**, 733-736 (1997).
3. Mizui, Y., et al., CDNA cloning of mouse tumor necrosis factor- $\alpha$  converting enzyme (TACE) and partial analysis of its promoter. *Gene*. **233**, 67-74 (1999).
4. Peschon, J.J., et al., An essential role for ectodomain shedding in mammalian development. *Science*, **282**, 1281-1284 (1998).
5. Buxbaum, J.D., et al., Evidence that tumor necrosis factor alpha converting enzyme is involved in regulated alpha-secretase cleavage of the Alzheimer amyloid protein precursor. *J. Biol. Chem.*, **273**, 27765-27767 (1998).

6. Brou, C., et al., A novel proteolytic cleavage involved in Notch signaling: the role of the disintegrin-metalloprotease TACE. *Mol. Cell*, **5**, 207-216 (2000).

7. Giegel, D.A., and Chaplin, D.D., Targets in cytokine activation. *Agents Actions Suppl.* 49, 1-3 (1998).

lpg 9/00

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.