ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

TNF-α Converting Enzyme (TACE)

Cat. # TACE15-R-10 Purified Human TACE protein **SIZE**: 10 ug
FORM: Soln Lyophilized

β-amyloid **(Aβ)** deposition in the brain is the hallmark of Alzheimer's Disease (**AD**). To initiate Aβ formation, **β-secretase** cleaves APP at the N-terminus of Aβ to release APPsβ (~100 kDa soluble NT-fragment), and C99, a 12-kDa CT membrane fragment. Alternatively, **α-secretase** cleaves within the Aβ to prevent the formation of Aβ. Cleavage by α-secretase produces a soluble N-terminal fragment, APPsα, and a 10-kDa membrane C-terminal fragment, C83. Both C99 and C83 can be further cleaved by **γ-secretase** releasing Aβ and a nonpathogenic p3 peptide, respectively. Recently **TACE**, a member of the ADAM family (A Disintegrin And Metalloprotease family) protease has been shown to play a central role in a regulated cleavage of human APP. Inhibition of TACE affects both APP secretion and Aβ formation in cultured cells (1). Membrane-bound TNF-α, like APP, is transmembrane protein that can undergo TACE-mediated proteolysis to release the extracellular domain as soluble TNF-α. TACE contain an autoinhibitory domain that must be removed for activity, a proteolytic domain, a disintegrin domain, a cysteine-rich domain, and a Transmembrane domain.

Source of Antigen and Antibodies

The extracellular domain of human TACE (1-671 aa) was expressed as his-tag protein in the insect cell line and purified (>90%). It exists as two forms, the 100-kda pro-enzyme and the mature ~80 kda active enzyme (SDS-PAGE, reducing gels ~70 kDa). This preparation is enzymatically active. It is supplied in 25 mM Tris buffer, pH 8.0 (lyophilized). Reconstitute in 100 ul water. The solution can sterile filtered if necessary.

Specific activity

1,000 pmol/min/ug as measured by the cleavage of 10 uM of fluorescent substrate (**MCA**-Pro-Leu-Ala-Gln-Ala-Val-Dpa-Arg-Ser-Ser-Ser-Arg-NH2;) **Cat # TACE-SW2**.

Recommended Usage

Western Blotting (load 50-200 ng/lane). Major form of recombinant TACE migrates as ~70 Kda.

ELISA (coat at 50-100 ng /well).

Recommended for substrate cleavage assay.

General References (1) Buxbaum JD et al (1998) J. Biol. Chem. 273, 27765-27767; Hall L (1998) Gene Accession # AJ012603; Lammich S et al (1999) PNAS 96, 3922-3927; Vassar R et al (1999) Science 286, 735-741; Yan R et al (1999) Nature 402, 533-537; Sinha S et al (1999) Nature 537-540; Hussain I et al (1999) Mol. Cell Neurosci. 14, 419-427; Lin X et al (2000) PNAS 97, 1456-1460; Black et al (1997) Nature 385, 729; Moss et al (1997) Nature 385, 733.

Citations of ADI's antibodies for Beta-site cleaving enzymes (BACE) and TACE, see updated list at www.4adi.com\flr\baceflr.html)

Storage

Short-term: unopened, undiluted vials for up to 1 month.

Long-term: at –20C or below for up to 3 months. Do not freeze and thaw and store working, diluted solutions.

Stability: 3 months at –20oC or below.

Shipping: 4oC for solutions and room temp for powder.

*This product is for In vitro research use only.

Related material available from ADI

Ant-Beta amyloid 1-40, 1-42, APP, Parkin, Synucleins (α, β, γ), Presenilins 1, 2, BACE/Asp2 and BACE2/Asp1

TACE15-R 40519A

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