

# MTAC2D1 (E-12): sc-138454

## BACKGROUND

MTAC2D1 (membrane targeting tandem C2 domain-containing protein 1), also known as TC2N (tandem C2 domains nuclear protein), C2CD1 or Tac2-N, is a 490 amino acid protein that localizes to the nucleus and contains one C2 domain. Existing as two alternatively spliced isoforms, MTAC2D1 is encoded by a gene that maps to human chromosome 14q32.12 and mouse chromosome 12 E. Chromosome 14 houses over 700 genes and comprises nearly 3.5% of the human genome. Chromosome 14 encodes the presenilin 1 (PSEN1) gene, which is one of the three key genes associated with the development of Alzheimer's disease (AD). The SERPINA1 gene is also located on chromosome 14 and, when defective, leads to the genetic disorder  $\alpha$ 1-antitrypsin deficiency, which is characterized by severe lung complications and liver dysfunction.

## REFERENCES

1. Fukuda, M., et al. 2001. Tac2-N, an atypical C-type tandem C2 protein localized in the nucleus. *FEBS Lett.* 503: 217-218.
2. Avramopoulos, D., et al. 2005. Linkage to chromosome 14q in Alzheimer's disease (AD) patients without psychotic symptoms. *Am. J. Med. Genet. B Neuropsychiatr. Genet.* 132B: 9-13.
3. Kimura, K., et al. 2006. Diversification of transcriptional modulation: large-scale identification and characterization of putative alternative promoters of human genes. *Genome Res.* 16: 55-65.
4. Zahedi, R.P., et al. 2008. Phosphoproteome of resting human platelets. *J. Proteome Res.* 7: 526-534.
5. Lerner, A.J., et al. 2009. Genotype-phenotype relationships of presenilin-1 mutations in Alzheimer's disease: an update. *J. Alzheimers Dis.* 17: 259-265.
6. Topic, A., et al. 2009.  $\alpha$ -1-antitrypsin phenotypes in adult liver disease patients. *Ups. J. Med. Sci.* 114: 228-234.

## CHROMOSOMAL LOCATION

Genetic locus: TC2N (human) mapping to 14q32.12; Tc2n (mouse) mapping to 12 E.

## SOURCE

MTAC2D1 (E-12) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of MTAC2D1 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-138454 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

MTAC2D1 (E-12) is recommended for detection of MTAC2D1 isoforms 1 and 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MTAC2D1 (E-12) is also recommended for detection of MTAC2D1 isoforms 1 and 2 in additional species, including equine and bovine.

Suitable for use as control antibody for MTAC2D1 siRNA (h): sc-92165, MTAC2D1 siRNA (m): sc-149668, MTAC2D1 shRNA Plasmid (h): sc-92165-SH, MTAC2D1 shRNA Plasmid (m): sc-149668-SH, MTAC2D1 shRNA (h) Lentiviral Particles: sc-92165-V and MTAC2D1 shRNA (m) Lentiviral Particles: sc-149668-V.

Molecular Weight of MTAC2D1 isoform 1: 55 kDa.

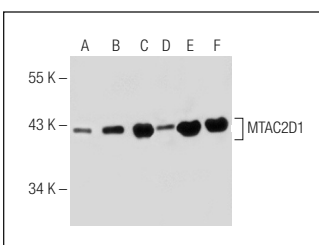
Molecular Weight of MTAC2D1 isoform 2: 48 kDa.

Positive Controls: MTAC2D1 (h): 293T Lysate: sc-129179, NIH/3T3 whole cell lysate: sc-2210 or MCF7 whole cell lysate: sc-2206.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



MTAC2D1 (E-12): sc-138454. Western blot analysis of MTAC2D1 expression in non-transfected 293T: sc-117752 (A), human MTAC2D1 transfected 293T: sc-129179 (B), NIH/3T3 (C) and MCF7 (D) whole cell lysates and NIH/3T3 (E) and MCF7 (F) nuclear extracts.

## RESEARCH USE

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