SANTA CRUZ BIOTECHNOLOGY, INC.

COMTD1 (C-5): sc-515490

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Catechol-O-methyltransferase (COMT) plays a crucial role in the regulation of central dopaminergic systems by catalyzing the inactivation of catechol-amines. It is widely distributed in most tissues in soluble and membrane-bound forms. COMT-mediated methylation metabolism of catecholamine neurotransmitters is a first-line detoxification pathway. A Val158Met polymorphism of the COMT gene affects activity of the enzyme and influences performance and efficiency of the prefrontal cortex of the brain. Sequential conversion of estradiol to methoxyestradiol by COMT, contributes to the antimitogenic effects of estradiol on vascular smooth muscle cell growth via estrogen receptor-independent mechanisms. COMTD1 (catechol O-methyltransferase domain-containing protein 1) is a 262 amino acid single-pass type II membrane protein that belongs to the methyltransferase superfamily. A putative O-methyltransferase, COMTD1 exists as a homodimer and is encoded by a gene that maps to human chromosome 10q22.2.

REFERENCES

1. Masuda, M., et al. 2002. Assay of catechol-O-methyltransferase activity in human erythrocytes using norepinephrine as a natural substrate. Ann. Clin. Biochem. 39: 589-594.
2. Dubey, R.K., et al. 2004. Catecholamines block the antimitogenic effect of estradiol on human coronary artery smooth muscle cells. J. Clin. Endocrinol. Metab. 89: 3922-3931.
3. Tunbridge, E.M., et al. 2004. Catechol-O-methyltransferase inhibition improves set-shifting performance and elevates stimulated dopamine release in the rat prefrontal cortex. J. Neurosci. 24: 5331-5335.

CHROMOSOMAL LOCATION

Genetic locus: COMTD1 (human) mapping to 10q22.2; Comtd1 (mouse) mapping to 14 A3.

SOURCE

COMTD1 (C-5) is a mouse monoclonal antibody raised against amino acids 78-181 mapping within an internal region of COMTD1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

COMTD1 (C-5) is available conjugated to agarose (sc-515490 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515490 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515490 PE), fluorescein (sc-515490 FITC), Alexa Fluor® 488 (sc-515490 AF488), Alexa Fluor® 546 (sc-515490 AF546), Alexa Fluor® 594 (sc-515490 AF594) or Alexa Fluor® 647 (sc-515490 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515490 AF680) or Alexa Fluor® 790 (sc-515490 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

COMTD1 (C-5) is recommended for detection of COMTD1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for COMTD1 siRNA (h): sc-90777, COMTD1 siRNA (m): sc-142492, COMTD1 shRNA Plasmid (h): sc-90777-SH, COMTD1 shRNA Plasmid (m): sc-142492-SH, COMTD1 shRNA (h) Lentiviral Particles: sc-90777-V and COMTD1 shRNA (m) Lentiviral Particles: sc-142492-V.

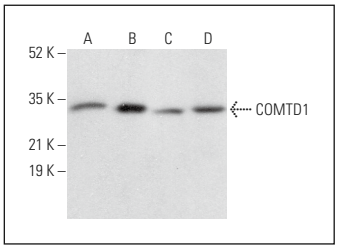
Molecular Weight of COMTD1: 29 kDa.

Positive Controls: NCI-H460 whole cell lysate: sc-364235, Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

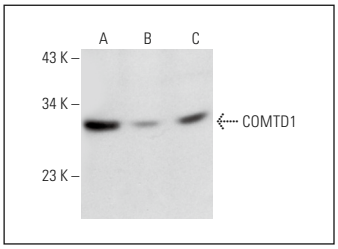
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



COMTD1 (C-5): sc-515490. Western blot analysis of COMTD1 expression in NCI-H460 (**A**), SK-BR-3 (**B**) and NIH/3T3 (**C**) whole cell lysates and rat cerebellum



COMTD1 (C-5): sc-515490. Western blot analysis of COMTD1 expression in NCI-H460 (**A**), HeLa (**B**) and Hep G2 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Hegazy, M., et al. 2020. Pioglitazone ameliorates high fat diet-induced hypertension and induces catechol O-methyl transferase expression in rats. Eur. J. Pharmacol. 885: 173383.

STORAGE

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