

COMT (G-4): sc-137253

BACKGROUND

Catechol-O-methyltransferase (COMT) plays a crucial role in the regulation of central dopaminergic systems by catalyzing the inactivation of catecholamines. 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 antimutagenic effects of Estradiol on vascular smooth muscle cell growth via estrogen receptor-independent mechanisms.

REFERENCES

- 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.
- Inada, T., et al. 2003. Relationship between catechol-O-methyltransferase polymorphism and treatment-resistant schizophrenia. *Am. J. Med. Genet. B Neuropsychiatr. Genet.* 120B: 35-39.
- Dubey, R.K., et al. 2004. Catecholamines block the antimutagenic effect of Estradiol on human coronary artery smooth muscle cells. *J. Clin. Endocrinol. Metab.* 89: 3922-3931.
- 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: COMT (human) mapping to 22q11.21.

SOURCE

COMT (G-4) is a mouse monoclonal antibody raised against amino acids 1-271 representing full length catechol-O-methyltransferase of human origin.

PRODUCT

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

COMT (G-4) is available conjugated to agarose (sc-137253 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137253 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137253 PE), fluorescein (sc-137253 FITC), Alexa Fluor® 488 (sc-137253 AF488), Alexa Fluor® 546 (sc-137253 AF546), Alexa Fluor® 594 (sc-137253 AF594) or Alexa Fluor® 647 (sc-137253 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137253 AF680) or Alexa Fluor® 790 (sc-137253 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

COMT (G-4) is recommended for detection of soluble and membrane bound COMT of 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 COMT siRNA (h): sc-43693, COMT shRNA Plasmid (h): sc-43693-SH and COMT shRNA (h) Lentiviral Particles: sc-43693-V.

Molecular Weight of soluble COMT: 26 kDa.

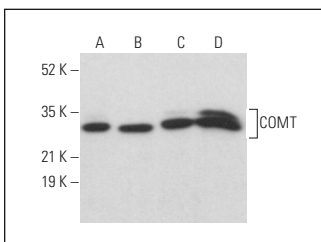
Molecular Weight of membrane bound COMT: 30 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or JAR cell lysate: sc-2276.

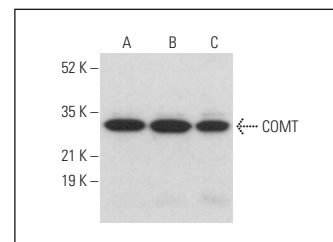
RECOMMENDED SUPPORT REAGENTS

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



COMT (G-4): sc-137253. Western blot analysis of COMT expression in Jurkat (A), JAR (B), HeLa (C) and RT-4 (D) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



COMT (G-4): sc-137253. Western blot analysis of COMT expression in K-562 (A), IMR-32 (B) and SK-BR-3 (C) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

SELECT PRODUCT CITATIONS

- Henning, S.M., et al. 2020. Prospective randomized trial evaluating blood and prostate tissue concentrations of green tea polyphenols and quercetin in men with prostate cancer. *Food Funct.* 11: 4114-4122.

RESEARCH USE

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