Revision 4

Store at -20C

#14368

COMT (D4N6M) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IHC-P	H	Endogenous	24, 28	Rabbit IgG	#P21964	1312

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunohistochemistry (Paraffin)	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #84315.

Specificity/Sensitivity

COMT (D4N6M) Rabbit mAb recognizes endogenous levels of total COMT protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val100 of human COMT protein.

Background

Catechol-O-methyltransferase (COMT) is an intracellular enzyme that catalyzes the O-methylation and inactivation of catecholamine neurotransmitters and hormones, including dopamine, epinephrine, and norepinephrine (1). Two distinct COMT proteins are generated from separate promoters in cells, including a 28 kDa, membrane-bound protein (mb-COMT), and a soluble protein (s-COMT) of 24 kDa (2,3). The soluble s-COMT is the predominant form of COMT found in peripheral organs, while the mb-COMT protein is more abundant in the central nervous system (4,5).
In addition to inactivating endogenous catecholamines, COMT can also inhibit catechol-based drugs used to treat a number of disorders, including Parkinson's disease and schizophrenia. Research studies using COMT inhibitors indicate that these reagents can prolong the bioavailability of psychoactive drugs such as levodopa by preventing O-methylation and subsequent degradation (6). A Val158Met polymorphism in the corresponding *COMT* gene reduces COMT enzymatic activity and leads to increased cortical dopamine levels (7). Several research studies suggest that this reduced COMT activity is associated with a large number of mental disorders, including schizophrenia, bipolar disorder, attention deficit hyperactivity disorder, obsessive-compulsive disorder, and anorexia nervosa (reviewed in 8).

Background References

1. Weinshilboum, R.M. et al. (1999) *Annu Rev Pharmacol Toxicol* 39, 19-52.
2. Roth, J.A. (1992) *Rev Physiol Biochem Pharmacol* 120, 1-29.
3. Tenhunen, J. and Ulmanen, I. (1993) *Biochem J* 296 (Pt 3), 595-600.
4. Männistö, P.T. et al. (1992) *Prog Drug Res* 39, 291-350.
5. Männistö, P.T. and Kaakkola, S. (1999) *Pharmacol Rev* 51, 593-628.
6. Rivest, J. et al. (1999) *Can J Neurol Sci* 26 Suppl 2, S34-8.
7. Chen, J. et al. (2004) *Am J Hum Genet* 75, 807-21.
8. Hosák, L. (2007) *Eur Psychiatry* 22, 276-81.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin)

Cross-Reactivity Key

H: Human

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