Catechol O-Methyltransferase (human recombinant)
Item No. 15563

Overview and Properties

Synonyms: COMT, Pyrocatechol-O-methyltransferase, S-Adenosyl-L-methionine:Catechol O-methyltransferase
Source: Recombinant N-terminal hexahistidine- and SUMOpro-tagged protein expressed in E. coli
Amino Acids: 2-221 (full-length)
Uniprot No.: P21964

Batch specific information can be found on the Certificate of Analysis or by contacting Technical Support

Molecular Weight: 37.6 kDa
Storage: -80°C (as supplied); avoid freeze/thaw cycles by aliquoting protein.
Stability: As supplied, 6 months from the QC date provided on the Certificate of Analysis, when stored properly
Purity: batch specific (estimated by SDS-PAGE)
Supplied in: 50 mM Tris-HCl, pH 8.0, containing 500 mM sodium chloride
Protein Concentration: batch specific mg/ml
Activity: batch specific U/ml
Specific Activity: batch specific U/mg
Unit Definition: One unit produces 1 nmol/hr of O-methylated products from 3,4-dihydroxyacetophenone (DHAP) with S-adenosyl-L-methionine (SAM) as substrate at pH 7.6, 37°C, measured by absorbance at 344 nm.

Image(s)

![Image](image_url)

Lane 1: MW Markers
Lane 2: COMT (2 µg)
Lane 3: COMT (5 µg)
Lane 4: COMT (10 µg)

Representative gel image shown; actual purity may vary between each batch.
Catechol-O-methyltransferase (COMT) plays an important role in normal brain function and has been implicated in human disorders, such as Parkinson’s disease. Using S-adenosyl-L-methionine (SAM) as a methyl donor, COMT methylates catechol substrates, which include neurotransmitters, such as dopamine, norepinephrine, epinephrine, and catecholestrogens; ascorbic acid; and carcinogenic flavonoids.¹ There are two classes of COMT, the soluble cytosolic form (S-COMT), and the rough endoplasmic reticulum membrane bound form (MB-COMT).² Both forms are coded by a single gene using two separate promoters.² Cayman’s COMT is the soluble S-COMT isoform and is composed of 221 amino acids, whereas MB-COMT has an additional 50 amino acid residues, including 21 hydrophobic amino acid residues that compose the membrane anchor region.³ While S-COMT is predominant in most tissues, MB-COMT is found in higher concentrations in the brain.⁴ A common variant in exon 4 of the COMT gene leads to a substitution of valine by methionine, Val158Met, which affects the stability of COMT and may diminish activity by 50% in the human brain. Since COMT is one of the primary regulators of prefrontal cortex dopamine levels, it plays an important role in cognition.⁵

References