Biodiagnostika
Oligonukleotide
Markierte Biomoleküle
BIOTEZ

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Note that this data sheet is not lot-specific. Please consult the vial label and the certificate of analysis for information on specific lots.

Recombinant Human s-COMT (soluble Catechol-O-Methyltransferase), His-tagged (Uniprot P21964-2) EC 2.1.1.6

Catalogue Number: 12 211 002	Package Size: 25 µg / 50 µl
Catalogue Number: 12 211 003	Package Size: 500 µg / 1 ml

1. Enzyme characteristics

1.1 Molecular form: Recombinant human s-COMT (51-271) is produced in E. coli. The protein consists of amino acids M51-P271 of MB-COMT (membrane bound) and a C-terminal His6-tag:

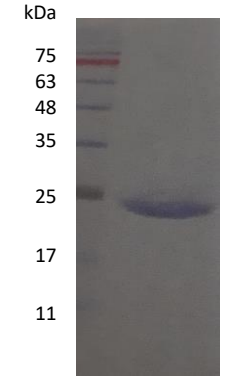
MGDTKEQRILNHVLQHAEPGNAQSVLEAIDTYCEQKEWAMNVGDKKGKIVDAVIQEHQPSVLLELGAYCGYSAVRMARLLSP
GARLITIEINPDCAAITQRMVDFAGVKDKVTLVVGASQDIIPQLKKKYDVDTLDMVFLDHWKDRYLPDTLLLEECGLLRKGTVLLA
DNVICPGAPDFLAHVRGSSCFECTHYQSFLEYREVVDGLEKAIYKGPGSEAGPHHHHHH

The calculated M_r is 24.5 kDa. COMT is solublized in 50 mM Tris-HCl, pH 7.5, 150 mM NaCl.

1.2 Purity: Recombinant COMT appears as a major protein of about 25 kDa in SDS-PAGE (> 95 % of total protein).

1.3 Inhibitors: Inhibitors of COMT are used in the therapy of Parkinson`s disease and human different disorders including estrogen-induces cancer, schizophrenia and hypertension [3]. COMT inhibitors are:

- Tolcapone
- Nitecapone
- Entacapone
- 6-Nitronoradrenaline
- Dinitrocatechol



SDS-PAGE of 7.5 µg s-COMT

1.4 Stability and storage: Recombinant s-COMT is stable until the expiry date given on when stored at -70°C. The enzyme can be kept at -20°C for several weeks. Repeated fre thawing should be avoided.

2. Applications

Recombinant s-COMT is used to study the elimination of biologically active or toxic catechols and some other hydroxylated metabolites. It acts as detoxicating barrier between blood and other tissues. COMT activity may regulated the amounts of dopamine and norepinephrine in various parts of the brain and therefore be associated with mood and other metal processes. The enzyme can also serve as standard in enzymatic and immunochemical assays.

BioTeZ Berlin-Buch GmbH
Robert-Rössle-Str. 10, 13125 Berlin, Germany
Tel.: (0)30 / 9489-2130 Fax: (0)30 / 949-4509

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3. Introduction of COMT

COMT - Catechol-O-Methyltransferase is an enzyme that catalyzes the transfer of a methyl group from the methyl donor SAM (S-adenenosy-L-methionine) to one hydroxyl moiety of the catechol ring of a substrate [1]. COMT inactivates catecholamine neurotransmitters (dopamine, epinephrine and norepinephrine) and catechol steroids (e.g. catecholestrogen), as well as xenobiotic catecholamines [1]. In mammals, COMT is present in two molecular forms: a soluble form (s-COMT) that contains 221 amino acids residues and a molecular weight of 24.7 kDa (humans) and a form associated with the rough endoplasmatic reticulum membrane - membrane bound COMT (MB-COMT). The 221 amino acid soluble isoform has an additional peptide in its amino terminal of 50 amino acid residues corresponding to a molecular weight of 30 kDa. Of these extra amino acids, function as hydrophobic membrane anchors [2]. In mammals, COMT is widely distributed throughout the organs of the body. The highest COMT activity in humans is in liver, followed by the kidney and gastrointestinal tract [4; 5].
Inhibitors of COMT are used in the therapy of Parkinson`s disease and human different disorders including estrogen-induces cancer, schizophrenia and hypertension [3].

4. Related Products - Parkinson research products

	Cat. No.	Size
ANTIBODIES		
Antibody monoclonal against human Monoamine Oxidase B (MAO-B)	12 600 001	100 µg
Antibody monoclonal against human DOPA-Decarboxylase Catechol (DDC)	12 300 001	100 µg
Antibody monoclonal against human Catechol-O-Methyltransferase (COMT)	12 200 001	100 µg
PROTEINS		
Recombinant human DOPA-Decarboxylase (DDC), His-tagged	12 310 002/3	10 µg/100 µg
Recombinant human Monoamine Oxidase B (MAO-B), His-tagged	12 610 002/3	10 µg/100 µg
Recombinant human soluble Catechol-O-Methyltransferase (s-COMT V158M), His-tagged	12 210 002/3	25 µg/500 µg

5. References

1. Axelrod, J. et al. (1958) J.Biol.Chem., 233:702-705
2. Salminen et al. (1990] Gene, 93: 241-247
3. Bertocci, B. et al. (1991) Protein Expr. Purif. 23: 106
4. Nissen et al. (1988b) Life Sci. 42: 2609-2611
5. Schultz and Nissen (1989) Biochem Pharm. 38: 3953-3956

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BioTeZ Berlin-Buch GmbH
Robert-Rössle-Str. 10, 13125 Berlin, Germany
Tel.: (0)30 / 9489-2130 Fax: (0)30 / 949-4509