MAYO CLINIC LABORATORIES

NEW TEST

Notification Date: May 10, 2021
Effective Date: June 10, 2021

Catechol-O-Methyltransferase (*COMT*) Genotype, Varies

Test ID: COMTQ

Useful for:
Prediction of response to nicotine replacement therapy for smoking cessation

Investigation of inhibitor dosing for decreasing levodopa metabolism

Research use for assessing estrogen metabolism

Advisory Information:
This test should not be ordered for pheochromocytoma or paraganglioma assessment. Instead, order 1 of the following:

-METAF / Metanephrines, Fractionated, 24 Hour, Urine

-PMET / Metanephrines, Fractionated, Free, Plasma

-CATU / Catecholamine Fractionation, Free, 24 Hour, Urine

-CATP / Catecholamine Fractionation, Free, Plasma

Testing is available as the single gene assay (this test) and as a part of a psychotropic pharmacogenomics panel. If genotype testing for psychotropic medications is desired, order PSYQP / Psychotropic Pharmacogenomics Gene Panel, Varies.

Method:
Real-Time Polymerase Chain Reaction (PCR) with Allelic Discrimination Analysis

Reference Values:
An interpretive report will be provided.

Specimen Requirements:
Multiple genotype tests can be performed on a single specimen after a single extraction.

Submit only 1 of the following specimens:

Specimen Type: Whole blood
Container/Tube: Lavender top (EDTA)
Specimen Volume: 3 mL
Collection Instructions:
1. Invert several times to mix blood.
2. Send specimen in original tube.
Specimen Stability Information: Ambient (preferred) 9 days/Refrigerated 30 days

Specimen Type: Saliva
Patient Preparation: Patient should not eat, drink smoke, or chew gum 30 minutes prior to collection.
Supplies: Saliva Swab Collection Kit (T786)
Specimen Volume: 1 Swab
Collection Instructions: Collect and send specimen per kit instructions.
Specimen Stability Information: Ambient 30 days

Specimen Type: Extracted DNA
Container/Tube: 2 mL screw top tube
Specimen Volume: 100 mcL (microliters)
Collection Instructions:
1. The preferred volume is 100 mcL at a concentration of 50 ng/mcL.
2. Include concentration and volume on tube.
Specimen Stability Information: Frozen (preferred) 1 year/Ambient/Refrigerated

Specimen Stability Information:

Specimen Type	Temperature	Time
Varies	Varies	

Cautions:

Samples may contain donor DNA if obtained from patients who received non-leukoreduced blood transfusions or allogeneic hematopoietic stem cell transplantation. Results from samples obtained under these circumstances may not accurately reflect the recipient's genotype. For individuals who have received blood transfusions, the genotype usually reverts to that of the recipient within 6 weeks. For individuals who have received allogeneic hematopoietic stem cell transplantation, a pretransplant DNA specimen is recommended for testing.

COMT genetic test results in patients who have undergone liver transplantation may not accurately reflect the patient's catechol-O-methyltransferase (COMT) status.

This test does not detect variants other than those listed. Variants in primer binding may affect test results and ultimately the genotyping calls made.

Absence of a detectable variant does not rule out the possibility that a patient has an intermediate or poor metabolizer phenotype. Patients with a normal (extensive) or intermediate metabolizer genotype may have COMT enzyme activity inhibited by a variety of medications, or their metabolites. The following is a partial listing of drugs known to affect COMT activity.

Drugs that undergo metabolism by COMT:
-Alpha-methyl DOPA
-Apomorphine
-Benserazide
-Bitolterol
-Dihydroxyphenylserine
-Dobutamine
-Dopamine
-Epinephrine
-2-Hydroxyestrogens
-4-Hydroxyestogens

-Isoetherine
-Isoprenaline
-Isoproterenal
-Norepinephrine
-Rimiterol
Coadministration may decrease the rate of elimination of other drugs metabolized by COMT.

Drugs that undergo structural modification but are not metabolized by COMT:
-Albuterol
-Metaproterenol
-Methoxamine
-Phenylephrine
-Perbuterol
-Terbutaline
Coadministration will not decrease the rate of elimination metabolism of other drugs metabolized by COMT.

Drugs known to inhibit COMT activity:
-Entacapone
-Tolcapone
-Nitecapone

Dietary components that inhibit COMT activity:
-Quercetin
-Tea catechins
Coadministration will decrease the rate of metabolism of COMT metabolized drugs, increasing the possibility of toxicity, including in heterozygous individuals.

CPT Code:
0032U

Day(s) Setup: Monday through Friday

Analytic Time: 3 days; not reported on Saturday or Sunday

Questions
Contact Heather Flynn Gilmer, Laboratory Technologist Resource Coordinator at 800-533-1710.