

Neuro-Biogenic Amines, Comprehensive; Urine

Urinary neuro-biogenic amines provide an overall assessment of a patient's ability to synthesize and metabolize neurotransmitters, both in the periphery and, for some enzymes, behind the blood brain barrier as well. Alterations in urinary neurotransmitter status may be associated with a variety of conditions including metabolic disorders, mood/behavioral disorders, and in rare occasions the presence of certain tumors. Associations between urinary neurotransmitter levels and health conditions have been documented in scientific literature and may provide valuable insights as part of a comprehensive health assessment.

Turnaround Time

5 to 7 days

Analytes Tested

Analyte	CPT	ABN Required
3,4-Dihydroxyphenylacetic acid (DOPAC); urine	82542	No
3-Methoxytyramine (3-MT); urine	82542	No
5-Hydroxyindolacetic acid (5-HIAA); urine	83497	No
Catecholamine Fractionation, free:	82384	No
Creatinine; urine	82570	No
Dopamine, free; urine	82384	No
Epinephrine, free; urine	82384	No

Gamma-aminobutyrate; urine	82139	No
Glutamate; urine	82139	No
Glycine; urine	82139	No
Histamine; urine	83088	Yes
Metanephrine Fractionation:	83835	No
Metanephrine; urine	83835	No
Norepinephrine, free; urine	82384	No
Normetanephrine; urine	82385	No
Phenethylamine (PEA); urine	82139	No
Serotonin; urine	84260	No
Taurine; urine	82139	No
Tryptamine; urine	82139	No
Tyramine; urine	82139	No
Tyrosine; urine	82139	No

This test is useful for

Functional testing for COMT and MAOA

Identifying neurological imbalances

Measuring response to therapy

Risk assessment

Detailed Information

Analysis of urinary neuro-biogenic amines (neurotransmitters), and their metabolites, provides a non-invasive assessment of neurotransmitter metabolism. Neurotransmitter testing may provide therapeutic opportunities that improve clinical success and patient health outcomes.

A review of the current scientific literature demonstrates how urinary neuro-biogenic amine testing may be used in clinical practice:

- Functional testing - Neuro-biogenic amine metabolism may be mediated by a variety of enzymes, including catechol-O-methyltransferase (COMT) and monoamine oxidase (MAO). Patterns of neurotransmitters and their metabolites may provide functional information about these two important enzymes.
- Identify imbalances - research indicates that urinary neuro-biogenic amine measurements may correlate with neurological conditions such as depression and PTSD.
- Response to therapy - certain neuro-biogenic amines, such as serotonin, may be altered by the addition of neurotransmitter precursors such as 5-hydroxytryptophan (5-HTP). These changes may be apparent in the urine.
- Risk assessment - Changes in urinary serotonin, dopamine, and glutamate levels have been suggested as biomarkers for neurobehavioral toxicology (symptoms from chemical or toxicant element environmental exposures) Neurotransmitters, or "biogenic amines" are secreted from pre-synaptic neurons into the synapse between nerve cells to stimulate receptors on post-synaptic neurons. The neurotransmitters are all produced from essential aromatic amino acids. Neurotransmitter metabolism may be mediated by a variety of enzymes expressed differently throughout the body. Circulating levels of neurotransmitters and metabolites may have distinctive sources. Urinary levels of neuro-biogenic amines primarily reflect the activity of the peripheral and GIT enteric nervous systems. Up to 20% of urinary neurotransmitters are estimated to originate in the CNS.

A lack of nutritional cofactors (vitamins, minerals) required for normal enzyme function may decrease enzyme function and neurotransmitter levels. Neurotransmitter receptors and metabolic enzymes may be subject to mutations and single nucleotide polymorphisms (SNPs) that may affect receptor or enzyme function. Normal neurotransmitter receptor function is also necessary for normal neurotransmitter activity. Neurotransmitter levels may be influenced by diet, lifestyle and other health conditions such as: high sodium intake, age, gender, body mass index, kidney function, environmental

exposures, infection and tobacco use.

Urinary neuro-biogenic amines provide an overall assessment of a patient's ability to synthesize and metabolize neurotransmitters, which must occur in both the peripheral nervous system and behind the blood brain barrier (BBB). Alterations in urinary neurotransmitter status may result from a variety of conditions including metabolic disorders, mood/behavioral disorders, environmental exposures or (rarely) the presence of certain tumors. Evaluation of neurotransmitters may provide increased clarity about a patient's health and functional status.

Urinary neuro-biogenic amines are a non-invasive way to assess the synthesis and metabolism of neurotransmitter molecules essential for normal function. Information gained through neurotransmitter testing may provide therapeutic opportunities that improve clinical success and patient health outcomes. Associations between urinary neurotransmitter levels and health conditions have been documented in scientific literature and may provide valuable insight as part of a comprehensive health assessment.