



# Test Definition: FNEU

Neurotransmitter Metabolites (5HIAA, HVA, 3OMD) (CSF)

## Overview

### Method Name

HPLC-Electrochemistry

### NY State Available

Yes

## Specimen

### Specimen Type

CSF

### Specimen Required

Medical Neurogenetics collection kit (MCL Supply T657) required.

Each collection kit contains 5 microcentrifuge tubes.

#### COLLECTION PROTOCOL:

1) CSF should be collected from the first drop into the tubes in the numbered order. Fill each tube to the marked line with the required volumes

Tube 1: 0.5 mL

Tube 2: 1.0 mL

Tube 3: 1.0 mL (contains antioxidants necessary to protect the sample integrity)

Tube 4: 1.0 mL

Tube 5: 1.0 mL

- If sample's not blood contaminated, the tubes should be placed on dry ice at bedside
- If sample's are blood contaminated, the tubes should immediately be centrifuged (prior to freezing) and the clear CSF transferred to new similarly labeled tubes, then frozen
- Store samples at -80 until they can be shipped

2) Complete Medical Neurogenetics, LLC request form. Include test required, sample date and date of birth.

3) Label tubes with patient name and ID number, leaving the tube number viewable.

4) Place samples inside a specimen transport bag and the Medical Neurogenetics, LLC request form inside the pouch of the transport bag.

5) Ship samples frozen on dry ice.

### Specimen Minimum Volume

4.5 mL

### Reject Due To

Specimens other than	CSF in special collection kit (MCL supply T657)
Anticoagulants other than	NA
Hemolysis	NA
Lipemia	NA
Icteric	NA

## Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
CSF	Frozen		CSF KIT

## Clinical & Interpretive

### Clinical Information

CSF Neurotransmitter Metabolites (5HIAA, HVA, 3OMD) (NC04) is useful for diagnosis of certain disorders of neurotransmitter metabolism. This testing may also be used for assessment of Variants of Uncertain Significance (VUS) identified during genetic testing (e.g. Next Generation Sequencing or Capillary Sequencing Testing). CLINICAL Monoamine metabolite testing includes homovanillic acid (HVA), 3-O-methyl-Dopa (3-OMD), and 5-hydroxyindole acetic acid (5-HIAA). This test is useful in diagnosing pediatric neurotransmitter diseases affecting dopamine and serotonin metabolism in the brain. Inborn errors of metabolism and various drugs may lead to severe imbalances and disturbances in these neurotransmitter systems that are reflected by changes in the concentration of monoamines metabolites in CSF. Primary inherited defects involve deficiencies in tyrosine and tryptophan hydroxylase, aromatic amino acid decarboxylase, monoamine oxidase, dopamine beta hydroxylase and the dopamine transporter. Other defects in the biopterin synthesis pathway may also affect dopamine and serotonin metabolism. These disorders are characterized by a wide range of symptoms that may include developmental delay, mental disability, behavioral disturbances, dystonia, seizures, encephalopathy, athetosis and ptosis.

### Reference Values

Age (years)	<u>5HIAA</u> (nmol/L)	<u>HVA</u> (nmol/L)	<u>3-O-MD</u> (nmol/L)
0-0.2	208-1159	337-1299	<300
0.2-0.5	179-711	450-1132	<300
0.5-2.0	129-520	294-1115	<300
2.0-5.0	74-345	233-928	<150
5.0-10	66-338	218-852	<100
10-15	67-189	167-563	<100
Adults	67-140	145-324	<100

Interpretation performed by Keith Hyland, Ph.D.

Note: If test results are inconsistent with the clinical presentation, please call our laboratory to discuss the case and/or submit a second sample for confirmatory testing.

## Performance

### PDF Report

Referral

### Day(s) Performed

Monday through Friday

### Report Available

10 to 18 days

### Performing Laboratory Location

Medical Neurogenetics, LLC

## Fees & Codes

### Fees

- Authorized users can sign in to [Test Prices](#) for detailed fee information.
- Clients without access to Test Prices can contact [Customer Service](#) 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact [Customer Service](#).

### CPT Code Information

82542

83497

83150

### LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
FNEU	Neurotransmitter Metabolites	Not Provided

Result ID	Test Result Name	Result LOINC® Value
Z0852	5-Hydroxyindoleacetic acid	47544-2
Z0849	Homovanillic acid	40846-8
Z0850	3-O-methyldopa	34596-7
Z0851	Interpretation:	59462-2