Lab Dept:	**Chemistry**
Test Name:	**METANEPHRINES, FRACTIONATED, FREE, PLASMA**

General Information

Lab Order Codes:	METF
Synonyms:	Normetanephrine, Free; Free Metanephrine; Free Normetanephrine
CPT Codes:	83835 - Metanephrines
Test Includes:	Plasma levels for Free Metanephrine and Free Normetanephrine reported in nmol/L.

Logistics

Test Indications:	Screening test for presumptive diagnosis of catecholamine-secreting pheochromocytomas or paragangliomas.
Lab Testing Sections:	Chemistry - Sendouts
Referred to:	Mayo Medical Laboratories (MML Test: 81609/PMET)
Phone Numbers:	MIN Lab: 612-813-6280 STP Lab: 651-220-6550
Test Availability:	Daily, 24 hours
Turnaround Time:	2 – 4 days
Special Instructions:	If plasma catecholamines will be performed along with this test, please see the special requirements for the specimen in the Catecholamine test listing.

Specimen

Specimen Type:	Blood
Container:	Lavender top (EDTA) tube
Draw Volume:	7.5 mL (Minimum: 3.3 mL) blood
Processed Volume:	2.5 mL (Minimum: 1.1 mL) EDTA plasma

Collection:	Routine venipuncture or if being collected with Catecholamines, physician/nurse draw from an indwelling catheter
Special Processing:	Lab Staff: Centrifuge specimen, remove plasma aliquot into a screw-capped round bottom plastic vial. Store and ship at frozen temperatures.
Patient Preparation:	None, or refer to Catecholamines if drawing both tests simultaneously
Sample Rejection:	Mislabeled or unlabeled specimens, warm specimens

Interpretive

Reference Range:	Metanephrine, Free	<0.50 nmol/L
	Normetanephrine, Free	<0.90 nmol/L

Critical Values: N/A

Limitations:

While most circulating metanephrines are derived directly from adrenal secretion, peripheral concentration of catecholamines makes a small contribution. Therefore, substances that increase endogenous catecholamine levels can result in borderline elevations of plasma metanephrines. These include:

- Monamine oxidase inhibitors (MOI's – a class of anti-depressants with marked effects on catecholamine levels, particularly if the patient consumes tyrosine-rich foods such as nuts, bananas, or cheese)
- Catecholamine reuptake inhibitors including cocaine and synthetic cocaine derivatives such as many local anesthetics, some of which also are antiarrhythmic drugs (eg. licocaine)
- Some anesthetic gases, particularly halothane
- Withdrawal from sedative drugs, medicinal or recreational, in particular alcohol, benzodiazepines (eg. Valium), opioids, and some central acting antihypertensive drugs, particularly clonidine, but, generally no cannabis or other hallucinogens such as lysergic acid diethylamide (LSD), mescal or peyote.

Mayo is not aware of any substances that interfere directly with the assay.

The observed elevations of plasma metanephrines are usually minor. Artifactually decreased plasma metanephrine levels may be observed when patients are already receiving metyrosine treatment. This drug may be administered in suspected or confirmed cases of pheochromocytoma while awaiting definitive treatment. It inhibits tyrosine hydroxylase, the enzyme that catalyzes the first step in catecholamine synthesis.

Methodology: Liquid Chromatography – Tandem Mass Spectrophotometry (LC-MS/MS)

References:

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