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**Lab Dept:** Chemistry

**Test Name:** METANEPHRINES, FRACTIONATED, FREE, PLASMA

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***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.

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***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](#).

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***Specimen***

**Specimen Type:** Blood

**Container:** Lavender top (EDTA) tube

**Draw Volume:** 3 mL (Minimum: 0.9 mL) blood

**Processed Volume:** 1 mL (Minimum: 0.3 mL) EDTA plasma

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

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### ***Interpretive***

<b>Reference Range:</b>	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. Artificially 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:** [Mayo Medical Laboratories](#) December 2017

**Updates:** 12/14/2017: Draw volume update.

