

## Mast Cell Mediators, 24 Hour, Urine

**Test ID:** MCM24**Useful for:**

Evaluating patients at risk for mast cell activation syndrome (eg, systemic mastocytosis) using 24-hour urine collections

**Profile Tests:**

Test ID	Reporting Name	Available Separately	Always Performed
CRT2F	Creatinine, 24 HR, U	No	Yes
TLTE1	Leukotriene E4, 24 Hr, U	Yes	Yes
T23B1	2,3-dinor 11B-Prostaglandin F2a	Yes	Yes
TNMH1	N-Methylhistamine, 24 Hr, U	Yes	Yes

**Methods:**

CRT2F: Enzymatic Colorimetric Assay

TLTE1, T23B1, TNMH1: Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS)

**Reference Values:**

LEUKOTRIENE E4:

< or =104 pg/mg creatinine

2,3-DINOR 11B-PROSTAGLANDIN F2a:

<1802 pg/mg creatinine

N-METHYLHISTAMINE:

0-5 years: 120-510 mcg/g creatinine

6-16 years: 70-330 mcg/g creatinine

>16 years: 30-200 mcg/g creatinine

CREATININE:

> or =18 years old: 16-326 mg/dL

Reference values have not been established for patients who are younger than 18 years.

## Specimen Requirements:

### Patient Preparation

1. Patient must not be taking monoamine oxidase inhibitors (MAOI) or aminoguanidine, as these medications increase N-methylhistamine (NMH) levels.
2. Patients taking aspirin or nonsteroidal anti-inflammatory drugs (NSAID) may have decreased concentrations of prostaglandin F2 alpha (23BP). If possible, the patient should discontinue use for 2 weeks or 72 hours, respectively, before specimen collection.

### Supplies:

Urine Container, 60 mL (T313)

### Collection Container/Tube:

Plastic urine container

### Submission Container/Tube:

Plastic, 60-mL urine bottle

### Specimen Volume:

20 mL

### Collection Instructions:

1. Collect urine for 24 hours.
2. No preservative.
3. Aliquot urine into plastic tube and send to lab.

### Minimum Volume:

10 mL

## Specimen Stability Information:

Specimen Type	Temperature	Time
Urine	Frozen	28 days

## Cautions:

### N-methylhistamine:

While an average North American diet has no effect on urinary N-methylhistamine (NMH) levels, mild elevations (around 30%) may be observed on very histamine-rich diets. This problem is more pronounced in random urine specimens, especially when collected following a histamine-rich meal.

NMH levels may be depressed in individuals who have an alteration in the histamine-N-methyltransferase gene (HNMT), which encodes the enzyme that catalyzes NMH formation. This alteration results in an amino acid change that decreases the rate of NMH synthesis.

When N-acetylcysteine is administered at levels sufficient to act as an antidote for the treatment of acetaminophen overdose, it may lead to falsely decreased creatinine results.

### 2,3-Dinor-11beta-prostaglandin F2 alpha:

Elevated levels of 2,3-dinor-11beta-prostaglandin F2 alpha (2,3 BPG) in urine are not specific for systemic mast cell disease and may be found in patients with angioedema, diffuse urticaria, or myeloproliferative diseases in the absence of diffuse mast cell proliferation. Systemic mast cell disease is a heterogeneous disease, and some patients may not have elevated 2,3 BPG in urine.

### Leukotriene E4:

Patients taking 5-lipoxygenase inhibitor zileuton (Zyflo) may have decreased concentrations of leukotriene E4 (LTE4) if dosage has not been discontinued for 48 hours. Systemic mastocytosis is a heterogeneous disease, and lack of elevated LTE4 does not exclude the diagnosis of mast cell disease. Increased excretion of LTE4

has also been reported in the following conditions: asthma, eosinophilic pneumonia, respiratory syncytial virus infection, atopic dermatitis, Crohn disease, and rheumatoid arthritis.

**CPT Code:**

84150

82542 x 2

**Day(s) Performed:** Monday, Tuesday, Thursday    **Report Available:** 3 to 7 days

**Questions**

Contact Joshua Yang, Laboratory Resource Coordinator at 800-533-1710.