

Histamine Assay

Test Name: Histamine Assay

Tests Available/Codes:

- 1134 Urinary Histamine (24 hr urine)
- 1135 Urinary Histamine (Random)
- 1136 Plasma Histamine
- 1137 Whole Blood Histamine

CPT Code: 83088

Description: Histamine is an important inter-cellular mediator exerting potent effects on various tissues. It is a low molecular weight molecule (MW=111) produced by decarboxylation of the amino acid histidine. Although it is found in tissues throughout the body, it is stored in large amounts in the granules of mast cells and basophils. When these cells are activated by the cross-linking of membrane bound IgE, histamine is actively released. It usually peaks in the blood within 10 - 20 minutes following the activation reaction. It decays from the plasma rapidly and then can be found in the urine.

Method: Enzyme Immunoassay (monoclonal-based competitive binding EIA) after chemical derivatization by acylation (See McBride reference). This test has not been approved or cleared by the FDA. There is no FDA approved histamine test. The performance characteristics of this test were determined by IBT Laboratories.

Specimen Requirements:

Urine (Random or 24 Hour). A 5 mL aliquot of urine should be sent. If it is a 24 hour urine, indicate the total 24 hour volume on the tube. Do not use a glass container to collect or ship the specimen. Freeze the specimen and ship frozen in plastic.

Plasma. 1mL of plasma is required. Collect 3 mL of blood in an EDTA tube (Lavender Top). Cool immediately on ice. Centrifuge at 1500rpm for 10 minutes at 4°C. The centrifugation should be performed within 20 minutes of collection. Carefully remove 1 mL of plasma from the upper part of the tube and transfer to a plastic vial and freeze. Ship frozen.

Whole Blood. Collect 5 mL of blood into a heparin tube (Green Top). Do not use EDTA, Freeze immediately and send on dry ice.

Units Reported and Normal Range:

Random Urinary Histamine	0 - 88 Ng/mL
24 Hr Urinary Histamine	0 -118 Mcg/24 hr.
Plasma Histamine	0 - 1.0 Ng/mL
Whole Blood	20 – 200 Ng/mL

Comments: Histamine measurements are often useful in evaluating patients with suspected anaphylaxis, mastocytosis, gastrointestinal disease, reactions to radiocontrast media, and drug-induced anaphylactoid reactions. Additional information may also be obtained by measuring the concentration of tryptase, a mast cell enzyme. Unlike histamine, tryptase is not found in basophils.

References:

- ❑ McBride P, Bradley D, Kaliner M. Evaluation of a radioimmunoassay for histamine measurement in biologic fluids. *J Allergy Clin Immunol* 1988; 82: 638 - 646.
- ❑ Myers GM, Donlon M, Kaliner M. Measurement of urinary histamine: Development of methodology and normal values. *J Allergy Clin Immunol* 1981;67:305-311.
- ❑ Naclerio RM et al Clinical aspects of allergic disease. *J Allergy Clin Immunol* 1996; 98: 721-723.
- ❑ Immunotech (A Beckman Coulter Co). Package insert for Histamine Enzyme Immunoassay Kit.

For more information, contact

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