

## Overview

### Useful For

Measuring the concentration of interleukin-1 beta in plasma

Evaluating patients experiencing inflammatory conditions, autoinflammatory disorders, and infection

### Highlights

This test may aid the evaluation and monitoring of patients experiencing inflammatory conditions, autoinflammatory disorders, and infection.

### Method Name

Bead-Based Multiplex Immunoassay

### NY State Available

Yes

## Specimen

### Specimen Type

Plasma EDTA

### Ordering Guidance

If this test is ordered with CYPAN / Cytokine Panel, Plasma, this test will be canceled as duplicate and CYPAN performed as ordered.

### Specimen Required

**Supplies:** Sarstedt Aliquot Tube, 5 mL (T914)

**Collection Container/Tube:** Lavender top (EDTA)

**Submission Container/Tube:** Plastic vial

**Specimen Volume:** 0.5 mL

#### Collection Instructions:

1. Immediately after specimen collection, place tube on wet ice.
2. Centrifuge at 4 degrees C, 1500 x g for 10 minutes.
3. Aliquot plasma into plastic vial.
4. Freeze specimen within 2 hours of collection.

#### Additional Information:

1. Plasma for this test cannot be shared with other tests. Submit specimen for this test in its own vial.
2. This test cannot be added on to a previously collected specimen.

### Specimen Minimum Volume

0.3 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
Gross icterus	Reject
Heat-treated specimen	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Plasma EDTA	Frozen	21 days	

Clinical & Interpretive

Clinical Information

Interleukin-1 (IL-1) beta is a potent pro-inflammatory cytokine that is crucial for host-defence responses to infection and injury. IL-1 beta binds to IL-1 receptor 1 (IL-1R1) and initiates inflammatory responses in T-lymphocytes, epithelial cells and endothelial cells.(1,2) Excess IL-1 beta signaling have been associated with acute inflammation and chronic autoinflammatory diseases.(3) Plasma IL-1 beta concentrations are elevated in some rheumatoid arthritis patients compared to healthy volunteers. There are increased concentrations of IL-1 beta and tumor necrosis factor-alpha in synovial fluid of rheumatoid arthritis patients.

Several biologics, such as anakinra and canakinumab, have been developed to inhibit the IL-1 signaling pathway by blocking IL-1 beta binding to IL-1 receptors in rheumatoid arthritis, familial Mediterranean fever, cryopyrin-associated periodic syndromes, etc.(2,4)

Reference Values

<18 years: Not established  
> or =18 years: <20.0 pg/mL

Interpretation

Elevated interleukin-1 beta concentrations could indicate the presence of inflammatory or infectious condition.

Cautions

Results from interleukin-1 (IL-1) beta testing should not be used to establish or exclude a specific diagnosis.

Testing for IL-1 beta should only be used in conjunction with clinical information and other laboratory testing as part of a patient's overall assessment.

Normal concentration of IL-1 beta does not exclude the possibility of infection or inflammatory disorders.

Concentrations of IL-1B could be affected by immunomodulatory agents.

### Clinical Reference

1. Pretre V, Papadopoulos D, Regard J, Pelletier M, Woo J. Interleukin-1 (IL-1) and the inflammasome in cancer. Cytokine. 2022;153:155850
2. Imazio M, Lazaros G, Gattorno M, et al. Anti-interleukin-1 agents for pericarditis: a primer for cardiologists. Eur Heart J. 2022;43(31):2946-2957
3. Carta S, Semino C, Sitia R, Rubartelli A. Dysregulated IL-1 beta Secretion in Autoinflammatory Diseases: A Matter of Stress?. Front Immunol. 2017;8:345
4. Kaneko N, Kurata M, Yamamoto T, Morikawa S, Masumoto J. The role of interleukin-1 in general pathology. Inflamm Regen. 2019;39:12

### Performance

#### Method Description

Testing for interleukin-1 beta levels is performed using a laboratory-developed bead-based immunoassay.(Unpublished Mayo method)

#### PDF Report

No

#### Day(s) Performed

Tuesday

#### Report Available

2 to 8 days

#### Specimen Retention Time

14 days

#### Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Superior Drive

### 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](#).

#### Test Classification

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA

requirements. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

83520

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
IL1B	IL-1 Beta, P	13629-1

Result ID	Test Result Name	Result LOINC® Value
622327	IL-1 beta	13629-1