Test Definition: IL6P

Interleukin 6, Plasma (Non-Orderable)

Overview

Useful For

Only orderable as part of a profile. For more information see CYTOP / Cytokine Panel, Plasma.

Assessment of interleukin 6 levels in plasma to understand the etiology of autoimmune and pro-inflammatory conditions when used in conjunction with clinical information and other laboratory testing

Method Name

Only orderable as part of a profile. For more information see CYTOP / Cytokine Panel, Plasma.

Immunoassay

NY State Available

No

Specimen

Specimen Type

Plasma EDTA

Specimen Required

Only orderable as part of a profile. For more information see CYTOP / Cytokine Panel, Plasma.

Supplies: Sarstedt Aliquot Tube, 5 mL (T914)
Collection Container/Tube: Lavender-top (EDTA)
Submission Container/Tube: Plastic vial
Specimen Volume: 0.5 mL Plasma
Collection Instructions:
1. Immediately after specimen collection, place the tube on wet ice.
2. Within 2 hours of collection, centrifuge at 4 degrees C, 1500 x *g* for 10 minutes and aliquot plasma into a plastic vial.
3. Freeze immediately.

Additional Information: If a refrigerated centrifuge is not available, it is acceptable to use a room temperature centrifuge, provided the sample is kept on ice before centrifugation and is frozen immediately afterward.

Specimen Minimum Volume

Plasma: 0.3 mL

Reject Due To

Gross	Reject

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

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Plasma EDTA	Frozen	14 days	

Clinical & Interpretive

Clinical Information

Interleukin 6 (IL-6) has important roles in both innate and adaptive immunity.(1) IL-6 can be produced by a variety of different cell types, including macrophages, endothelial cells, and T cells. This production can be initiated in response to microbial invasion or other cytokines, such as tumor necrosis factor. As part of the innate immune system, IL-6 acts on hepatocytes to induce expression of C-reactive protein (CRP), fibrinogen, and serum amyloid A, also known as the acute phase response. Within the adaptive immune response, IL-6 plays a key role in activating antibody-producing B cells to proliferate, leading to an enhanced antibody response.

Concentrations of IL-6 are elevated in patients with infection, sepsis, and septicemia. During inflammatory conditions, the concentration of IL-6 can increase severalfold, highlighting its clinical relevance as a major alarm signal in response to infections (sepsis/septicemia), inflammation, autoimmunity, and cancer, including Castleman disease. In addition, IL-6 concentrations appear to correlate with the severity of sepsis, as defined by clinical and laboratory parameters.(2) Elevations in IL-6 also appear to be associated with more localized infections, such as prosthetic joint infections (PJI).(3) A recent meta-analysis demonstrated that IL-6 had improved diagnostic accuracy for PJI compared to CRP, erythrocyte sedimentation rate, and white blood cell counts. IL-6 is also elevated in numerous chronic inflammatory disorders, including rheumatoid arthritis (RA), systemic lupus erythematosus, ankylosing spondylitis, and inflammatory bowel disease.(4)

There is evidence that IL-6 is involved in the pathogenesis of certain chronic inflammatory disorders. Tocilizumab, an antibody that blocks IL-6 function by binding to the IL-6 receptor, has been approved for the treatment of RA. In a randomized trial, 50% to 60% of patients receiving tocilizumab and methotrexate showed improvement in clinical signs and symptoms of RA, compared to only 25% of patients receiving methotrexate alone.(5) Siltuximab, a monoclonal antibody against IL-6, is also sometimes used to treat Castleman disease. However, the presence of Siltuximab may interfere with some IL-6 assays, leading to the proposed use of CRP as a surrogate marker to monitor Siltuximab efficacy.(6-8)

Interleukin 6 has also been shown to be elevated in COVID-19 patients. There is some indication that patients with more severe disease may develop elevated circulating IL-6. The significance of this finding is still being elucidated, including whether monitoring of circulating IL-6 levels can help with patient management, prognosis, or response to treatment.(9,10)

Reference Values

Only orderable as part of a profile. For more information see CYTOP / Cytokine Panel, Plasma.

<18 years: Not established
> or =18 years: < or =4.4 pg/mL

Interpretation

Elevated cytokine concentrations could be consistent with the presence of infection or another inflammatory process.

Cautions

Results from cytokine testing should not be used to establish or exclude a specific diagnosis.

Cytokine testing should only be used in conjunction with clinical information and other laboratory testing as part of a patient's overall assessment.

Normal concentrations of cytokines do not exclude the possibility of infection or another inflammatory condition.

Interleukin 6 (IL-6) concentrations may be elevated in patients receiving IL-6 receptor inhibitors, such as tocilizumab, due to receptor blockade and reduced clearance of IL-6. As a result, IL-6 concentrations are not reflective of adequate tocilizumab response. Additionally, patients receiving anti-IL-6 monoclonal antibodies such as siltuximab may also exhibit interference in IL-6 measurements. For both patient cohorts, a more reliable assessment of IL-6-mediated inflammation can be obtained by measuring downstream acute-phase reactants, such as C-reactive protein.

Clinical Reference

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7. Sarosiek S, Shah R, Munshi NC. Review of siltuximab in the treatment of multicentric Castleman's disease. Ther Adv Hematol. 2016;7(6):360-366. doi:10.1177/2040620716653745
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Interleukin 6, Plasma (Non-Orderable)

Performance

Method Description
Testing for interleukin 6 is performed using a laboratory-developed immunoassay.(Unpublished Mayo method)

PDF Report
No

Day(s) Performed
Wednesday

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
83529

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
IL6P	Interleukin 6, P	26881-3

Result ID	Test Result Name	Result LOINC® Value
IL6P	Interleukin 6, P	26881-3