Test Definition: CYTH1

T-Helper Cell Type 1 Cytokine Panel, Plasma

Overview

Useful For

Assessment of plasma cytokine levels to understand the etiology of autoimmune and proinflammatory conditions when used in conjunction with clinical information and other laboratory testing

Method Name

Bead-Based Multiplex Immunoassay

NY State Available

Yes

Specimen

Specimen Type

Plasma EDTA

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 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:
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

Plasma: 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

Cytokines are important mediators of cell-to-cell communication within the innate and adaptive immune systems. The expression of most cytokines is highly regulated and generally occurs in response to foreign or self-antigenic stimulation. The functions of cytokines are extremely varied, with many cytokines also displaying pleiotropic effects, depending on their cellular target. As a group, cytokines and their receptors represent a highly complex and critical regulator of a normal immune response.

Reference Values

Tumor necrosis factor:
<18 years: Not established
> or =18 years: <10.0 pg/mL

Interferon-gamma:
<18 years: Not established
> or =18 years: <60.0 pg/mL

Interleukin (IL)-2:
<18 years: Not established
> or =18 years: <60.0 pg/mL

IL-2 receptor alpha soluble:
<18 years: Not established
> or =18 years: < or =959 pg/mL

IL-12p70:
<18 years: Not established
> or =18 years: <200 pg/mL

Interpretation

Elevated cytokine concentrations could be consistent with the presence of infection or other 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 other inflammatory condition.

Cytokine concentrations could be affected by immunomodulatory agents.

Clinical Reference

1. Cerrillo E, Moret I, Iborra M, et al. A nomogram combining fecal calprotectin levels and plasma cytokine profiles for individual prediction of postoperative Crohn's disease recurrence. Inflamm Bowel Dis. 2019;25(10):1681-1691. doi:10.1093/ibd/izz053
2. Li S, Hao X, Gong Y, et al. Effect of shenling baizhu powder on the serum TH1 cytokines of elderly patients with ulcerative colitis complicated by bloody purulent stool. Am J Transl Res. 2021;13(8):9701-9707
3. Abdelrahman AH, Salama, II, Salama SI, et al. Role of some serum biomarkers in the early detection of diabetic cardiomyopathy. Future Sci OA. 2021;7(5):FSO682. doi:10.2144/fsoa-2020-0184
4. Weng L, Chen Y, Liang T, et al. Biomarkers of interstitial lung disease associated with primary Sjogren's syndrome. Eur J Med Res. 2022;27(1):199. doi:10.1186/s40001-022-00828-3
5. Popova V, Geneva-Popova M, Kraev K, Batalov A. Assessment of TNF-alpha expression in unstable atherosclerotic plaques, serum IL-6 and TNF-alpha levels in patients with acute coronary syndrome and rheumatoid arthritis. Rheumatol Int. 2022;42(9):1589-1596. doi:10.1007/s00296-022-05113-4
6. Li L, Chen B, Zhao H, Wang G. Bone changes and curative effect of infliximab in patients with ankylosing spondylitis. J Musculoskelet Neuronal Interact. 2020;20(3):437-443
7. Zhao S, Liu Y, Zhou C, et al. Prediction model of delayed graft function based on clinical characteristics combined with serum IL-2 levels. BMC Nephrol. 2022;23(1):284. doi:10.1186/s12882-022-02908-2
8. Ye Q, Shao WX, Xu XJ, Yang YZ. The clinical application value of cytokines in treating infectious diseases. PLoS One. 2014;9(6):e98745. doi:10.1371/journal.pone.0098745
9. Wang Q, Wang C, Yang M, Li X, Cui J, Wang C. Diagnostic efficacy of serum cytokines and chemokines in patients with candidemia and bacteremia. Cytokine. 2020;130:155081. doi:10.1016/j.cyto.2020.155081

Performance

Method Description

Measurements of the cytokines tumor necrosis factor, interferon-gamma, interleukin (IL)-2, soluble IL-2 receptor alpha, and IL-12p70 in plasma are performed using a laboratory-developed immunoassay.(Unpublished Mayo method)

PDF Report

No

Day(s) Performed

Thursday

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 x5

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
CYTH1	Th1 Cytokine Panel, P	82335-1

Result ID	Test Result Name	Result LOINC® Value
622037	TNF	3074-2
622038	IFN-gamma	27415-9
622039	IL-2	33939-0
622040	IL-2 receptor alpha soluble	76039-7
622041	IL-12p70	41760-0