Test Definition: TNFP

Tumor Necrosis Factor Alpha, Plasma
(Non-Orderable)

Overview

Useful For

Only orderable as part of a profile. For more information see:
TH1CP / T-Helper Cell Type 1 Cytokine Panel, Plasma
CYTOP / Cytokine Panel, Plasma

Assessment of tumor necrosis factor alpha 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

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Immunoassay

NY State Available

No

Specimen

Specimen Type

Plasma EDTA

Specimen Required

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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.

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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	14 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 regulatory system for normal immune response.

Tumor necrosis factor alpha (TNF-alpha) is a highly pleiotropic cytokine involved in a spectrum of physiological processes that control inflammation, anti-tumor responses, and homeostasis.(1-3) The main sources of TNF-alpha are macrophages and T cells; however, many other cell types such as B cells, neutrophils, and endothelial cells have been described to produce TNF-alpha. When evaluated in conjunction with other cytokines in the multiplexed panel, TNF-alpha plasma concentrations may aid in evaluating the etiology of immune-mediated disorders.(1-3)

Reference Values

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CYTOP / Cytokine Panel, Plasma

<18 years: Not established
> or =18 years: < or =11.8 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.

Cytokine concentrations could be affected by immunomodulatory agents.

Clinical Reference

1. Chauhan P, Nair A, Patidar A, Dandapat J, Sarkar A, Saha B. A primer on cytokines. Cytokine. 2021;145:155458. doi:10.1016/j.cyto.2021.155458
2. Karki R, Netea MG, Diorio C, Kanneganti TD. Cytokine storm. Nat Rev Dis Primers. 2026;12(1):1. doi:10.1038/s41572-025-00677-4
3. Siegmund D, Wajant H. TNF and TNF receptors as therapeutic targets for rheumatic diseases and beyond. Nat Rev Rheumatol. 2023;19(9):576-591. doi:10.1038/s41584-023-01002-7

Performance

Method Description

Testing for tumor necrosis factor alpha 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

83520

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
TNFP	Tumor Necrosis Factor Alpha, P	3074-2

Result ID	Test Result Name	Result LOINC® Value
TNFP	Tumor Necrosis Factor Alpha, P	3074-2