MAYO CLINIC LABORATORIES

Test Definition: IMPLF

Immature Platelet Fraction, Blood

Overview

Useful For

Assessing thrombopoietic activity with increased values observed when bone marrow is stimulated to produce platelets

Differentiating causes of thrombocytopenia

Predicting platelet recovery in patients undergoing treatments that affect platelet counts, such as chemotherapy

Method Name

Flow Cytometry

NY State Available

Yes

Specimen

Specimen Type

Whole Blood EDTA

Specimen Required

Container/Tube: Lavender top (EDTA)
Specimen Volume: 3 mL
Collection Instructions: Send whole blood specimen in original tube. **Do not aliquot.**

Specimen Minimum Volume

0.5 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	OK
Gross icterus	OK
Clotted	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Whole Blood EDTA	Refrigerated (preferred)	48 hours	
	Ambient	24 hours	

Clinical & Interpretive

Clinical Information

Immature platelets or reticulated platelets are newly released thrombocytes. They can be identified by their large size and high RNA concentration in their cytoplasm. Immature platelet fraction (IPF) represents the number of immature platelets compared to the total number of platelets as a percentage.(1)

Immature platelet fraction is a direct cellular measurement of thrombopoiesis. It can be used to differentiate causes of thrombocytopenia. IPF can be low or normal in the setting of decreased platelet production (hypoproductive) and increased in the setting of platelet destruction (hyperdestructive/consumptive).(1)

Immature platelet fraction increases prior to platelet recovery after chemotherapy and after stem cell transplantation by 2 to 3 days. This can prevent unnecessary platelet transfusion and provide an indicator for a successful engraftment after both autologous and allogeneic stem cell transplantation.(2)

Reference Values

1.1-8.6%

Interpretation

Results that increase from baseline or that are above the established reference intervals indicate increased thrombopoiesis. Values lower than normal may indicate decreased thrombopoiesis.

Cautions

Transfusions have been shown to lower immature platelet fraction percentage, either as a result of suppression of thrombopoiesis (negative feedback on thrombopoietin), due to dilution, or both.(1)

Clinical Reference

1. Benlachgar N, Doghmi K, Masrar A, Mahtat EM, Harmouche H, Mezalek ZT. Immature platelets: a review of the available evidence. Thromb Res. 2020;195:43-50
2. Yang T, Tsai C, Wang H, Ko P, Shien S, Lin T, et al. Early prediction of platelet recovery with immature platelet fraction in patients receiving hematopoietic stem cell transplantation. Ann Hematol. 2024;103(11):4661-4670

Performance

Method Description

The Sysmex XN platelet fluorescent (PLT-F) analysis is based on flow cytometry method using a semiconductor laser, a two-dimensional scattergram is plotted, with the X-axis representing the intensity of the side fluorescent light, and the Y-axis representing the intensity of the forward scattered light. The scattergram displays groups of platelets, part of red blood cells, part of white blood cells, and debris.

The immature platelet fraction (IPF) is obtained as a ratio of platelet count in the area with strong fluorescent light intensity in the PLT-F scattergram (IPF zone), to the total platelet count.(Instruction manual: Automated Hematology Analyzer XN series [XN-9000/XN-9100] North American Edition. Code No. BF691913 en-am. Sysmex Corp; rev: 09/2022)

Test Definition: IMPLF

Immature Platelet Fraction, Blood

PDF Report
No

Day(s) Performed
Monday through Sunday

Report Available
Same day/1 day

Specimen Retention Time
3 days

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Main Campus

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 has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information
85055

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
IMPLF	Immature Platelet Fraction, B	71693-6

Result ID	Test Result Name	Result LOINC® Value
IPF	Immature Platelet Fraction	71693-6
IPFRE	IPF Trigger Retic	No LOINC Needed
JIMPL	CBC Type	No LOINC Needed