MAYO CLINIC LABORATORIES

Test Definition: PLABN

Platelet Antibody Screen, Serum

Overview

Useful For

Detecting alloantibodies to epitopes on platelet glycoproteins IIb/IIIa, Ib/Ix, Ia/IIa, IV and class I human leukocyte antigens (HLA) to evaluate cases of immune mediated refractoriness to platelet transfusions, posttransfusion purpura, or neonatal alloimmune thrombocytopenia

Testing Algorithm

For more information see Platelet Antibody Testing Algorithm.

Special Instructions

- Platelet Antibody Testing Algorithm
- Platelet Antibody Screen, Serum Patient Information

Method Name

Solid Phase Enzyme-Linked Immunosorbent Assay (ELISA)

NY State Available

Yes

Specimen

Specimen Type

Serum Red

Ordering Guidance

For neonate testing, consider sending a maternal specimen instead of a neonate specimen as unbound platelet antibodies may not be detected in the neonate serum.

This test **is not recommended for** the diagnosis of immune thrombocytopenia (ITP) or autoimmune thrombocytopenia. Tests that are optimized to detect antibodies bound to the platelets will be useful in these situations; cell-bound platelet antibody (direct) test is strongly recommended.

Necessary Information

If ordering electronically, answer all prompt questions for timely result reporting:

1. **Reason for request is required** for result interpretation.
 a. Use provided diagnosis options if appropriate. If specific diagnosis is unknown, select the generic answer of alloimmune thrombocytopenia.
 b. Record only the diagnosis pertaining to this test.
 c. Record diagnosis description instead of code.
2. Indicate if patient has had intravenous immunoglobulin (IVIg) therapy in the last month: Yes or No

3. Indicate if the patient has received a platelet transfusion within 72 hours of collection (Transfused platelets will interfere with assay): Yes or No
4. Record the most recent platelet count, if available. If not available, enter "Not Available." Platelet count conversion: 93 x10(9)/L =93 x10(6)/mL =93 x 10(3)/microliter

Specimen Required

Patient Preparation: Do not collect within 72 hours of a platelet transfusion. Transfused platelets will interfere with this assay.
Collection Container/Tube: Red top
Submission Container/Tube: Plastic vial
Specimen Volume: 1.5 mL
Collection Instructions: Centrifuge and aliquot serum into a plastic vial.

Forms

Platelet Antibody Screen, Serum Patient Information

Specimen Minimum Volume

0.5 mL

Reject Due To

Gross hemolysis	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum Red	Frozen (preferred)	365 days	
	Refrigerated	48 hours	

Clinical & Interpretive

Clinical Information

Platelet antibodies may be allo- or autoantibodies and may be directed to a wide range of antigenic "targets" carried on platelet cytoplasmic membranes. Serum platelet antibody test is optimized to identify the presence of platelet alloantibodies in the patient.

Platelet alloantibodies are involved in several clinical situations such as:
-Immune mediated refractoriness to platelet transfusions usually due to antibodies to class I human leukocyte antigens (HLA) and sometimes to antibodies specific to platelet antigens.
-Neonatal alloimmune thrombocytopenia
-Posttransfusion purpura, which are usually associated with platelet-specific antibodies

Reference Values

Not applicable

Interpretation

This assay screens patient sera for platelet-reactive antibodies via enzyme-linked immunosorbent assay.

Cautions

Erroneous results can occur from bacterial contamination of test materials, inadequate incubation periods, inadequate washing or decanting of test wells, exposure of substrate to stray light, omission of test reagents, exposure to higher or lower than prescribed temperature requirements, insufficient or excessive platelets, or omission of steps.

This assay is intended for use as a screening assay. The results of this assay should not be used as the sole basis for a clinical decision. The reaction patterns a test sample produces with this product should not be relied on solely to establish the identity of a platelet antibody. Therefore, positive or negative results obtained using this assay should be used in conjunction with clinical findings or other serological tests.

Some low-titer, low-avidity antibodies may not be detected using this assay.

The presence of other human platelet antigen (HPA) polymorphic variants located on glycoprotein (GP)IIb/IIIa (HPA-6, 7, 8, 9, 10, 11, 14, 16, 17, 19, 20, 21), GPIa/IIa (HPA-13, 18), and GPIb/IX (HPA-12) has not been determined for the antigens captured in this kit. Antibodies to these systems may be reactive in this assay.

Antibodies to low incidence class I human leukocyte antigens (HLA) may not be detected using this product.

This test has not been evaluated for the detection of autoantibodies to platelet antigens.

Clinical Reference

1. Kiefel V, Santoso S, Weisheit M, Mueller-Eckhardt C: Monoclonal antibody-specific immobilization of platelet antigens (MAIPA): A new tool for the identification of platelet-reactive antibodies. Blood. 1987 Dec;70(6):1722-1726

2. Moore SB, De Goey SR: Serum platelet antibody testing: evaluation of solid-phase enzyme immunoassay and comparison with indirect immunofluorescence. Am J Clin Pathol. 1998 Feb;109(2):190-195

3. Warkentin TE, Smith JW: The alloimmune thrombocytopenic syndromes. Transfus Med Rev. 1997 Oct;11(4):296-307

4. Metcalfe P, Watkins NA, Ouwehand WH, et al: Nomenclature of human platelet antigens. VoxSang. 2003 Oct;85(3):240-245

5. Liebman HA: Immune thrombocytopenia (ITP): an historical perspective. Hematology Am Soc Hematol Educ Program. 2008;205

6. Kjeldsen-Kragh J, Killie MK, Tomter G, et al: A screening and intervention program aimed to reduce mortality and serious morbidity associated with severe neonatal alloimmune thrombocytopenia. Blood. 2007 Aug 1;110(3):833-839

7. Hoffbrand AV, Steensma D: Post transfusion purpura. In: Hoffbrand's Essential Haematology. 8th ed. Blackwell Publishing; 2019

8. Juskewitch JE, Norgan AP, De Goey SR, et al: How do I…manage the platelet transfusion-refractory patient? Transfusion. 2017 Dec;57(12):2828-2835. doi: 10.1111/trf.14316

9. Crighton GL, Scarborough R, McQuilten ZK, et al; Australian NAIT registry steering committee: Contemporary management of neonatal alloimmune thrombocytopenia: good outcomes in the intravenous immunoglobulin era: results from the Australian neonatal alloimmune thrombocytopenia registry. J Matern Fetal Neonatal Med. 2017 Oct;30(20):2488-2494. doi: 10.1080/14767058.2016.1253064

Performance

Method Description

Patient serum is added to microwells coated with platelet and human leukocyte antigen (HLA) glycoproteins, allowing antibody, if present, to bind. Unbound antibodies are then washed away. An alkaline phosphatase-labeled antihuman globulin reagent (anti-IgG/A/M) is added to the microwells and incubated. The unbound anti-IgG/A/M is washed away and the substrate p-nitrophenylphosphate (PNPP) is added to the wells and incubated. The reaction is stopped with stopping solution. The optical density of the color that develops is measured in a spectrophotometer and results are interpreted.(Package insert: PakPlus. Immucor GTI Diagnostics; 303469.IFUEN Rev E; 07/2015)

PDF Report

No

Day(s) Performed

Monday through Friday

Report Available

2 to 4 days

Specimen Retention Time

7 days

Performing Laboratory Location

Rochester

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

86022

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value

PLABN	Platelet Ab Screen, S	95270-5

Result ID	Test Result Name	Result LOINC® Value
PTL01	Overall Result	24375-8
PTL02	Interpretation	59466-3
PTL03	GPIIb/IIIa (Cell-1)	48505-2
PTL04	GPIIb/IIIa (Cell-2)	48505-2
PTL05	GPIa/IIa (Cell-1)	47084-9
PTL06	GPIa/IIa (Cell-2)	47084-9
PTL07	GPIb/IX	48506-0
PTL08	GPIV	87757-1
PTL09	HLA Class I	95269-7
PTL15	Reason for request?	29548-5
PTL16	IVIg in last month?	95268-9
PTL17	Plt Transfusion in last 72 hours?	95268-9
PTL18	Platelet Count x 10(9)/L?	26515-7