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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 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

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 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.

Specimen Required
Supplies: Sarstedt Aliquot Tube, 5 mL (T914)
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.

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 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

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.

Recent IVIg treatment, an intravenous drug therapy that is given to patients for many different conditions, may cause false positivity against certain glycoproteins.

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 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;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;109(2):190-195
3. Warkentin TE, Smith JW. The alloimmune thrombocytopenic syndromes. Transfus Med Rev. 1997;11(4):296-307
4. Metcalfe P, Watkins NA, Ouwehand WH, et al. Nomenclature of human platelet antigens. Vox Sang. 2003;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;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;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;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

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

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