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**Lab Dept:** Transfusion Services

**Test Name:** **NAIT – NEONATAL ALLOIMMUNE  
THROMBOCYTOPENIA INITIAL SCREEN  
MATERNAL & PATERNAL**

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**General Information**

**Lab Order Codes:** Mother/Maternal: NAITM  
Father/Paternal: NAITP

**Synonyms:** N/A

**CPT Codes:**

- 81105x2 - Human Platelet Antigen 1 genotyping (HPA-1), ITGB3 (integrin, beta 3 [platelet glycoprotein IIIa], antigen CD61 [GPIIIa]) (eg, neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant, HPA-1a/b (L33P)
- 81106x2 - Human Platelet Antigen 2 genotyping (HPA-2), GP1BA (glycoprotein Ib [platelet], alpha polypeptide [GPIba]) (eg, neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant, HPA-2a/b (T145M)
- 81107x2 - Human Platelet Antigen 3 genotyping (HPA-3), ITGA2B (integrin, alpha 2b [platelet glycoprotein IIb of IIb/IIIa complex], antigen CD41 [GPIIb]) (eg, neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant, HPA-3a/b (I843S)
- 81108x2 - Human Platelet Antigen 4 genotyping (HPA-4), ITGB3 (integrin, beta 3 [platelet glycoprotein IIIa], antigen CD61 [GPIIIa]) (eg, neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant, HPA-4a/b (R143Q)
- 81109x2 - Human Platelet Antigen 5 genotyping (HPA-5), ITGA2 (integrin, alpha 2 [CD49B, alpha 2 subunit of VLA-2 receptor] [GPIa]) (eg, neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant (eg, HPA-5a/b [K505E])
- 81110x2 - Human Platelet Antigen 6 genotyping (HPA-6w), ITGB3 (integrin, beta 3 [platelet glycoprotein IIIa, antigen CD61] [GPIIIa]) (eg, neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant, HPA-6a/b (R489Q)
- 81111x2 - Human Platelet Antigen 9 genotyping (HPA-9w), ITGA2B (integrin, alpha 2b [platelet glycoprotein IIb of IIb/IIIa complex, antigen CD41] [GPIIb]) (eg, neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant, HPA-9a/b (V837M)
- 81112x2 - Human Platelet Antigen 15 genotyping (HPA-15), CD109 (CD109 molecule) (eg, neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant, HPA-15a/b (S682Y)
- 86022 - Antibody identification; platelet antibodies

**Test Includes:** Includes Platelet Antigen Genotyping Panel of mother and father and Platelet Antibody Identification Panel of mother including crossmatches.

Maternal platelet antibody detection and identification including alloantibodies reactive with alloantigens HPA-1a, -1b; HPA-2a, -2b; HPA-3a, -3b; HPA-4a, -4b; HPA-5a, -5b; HPA-15A, -15b; and other specificities on GPIIb/IIIa, GPIa/IIa, GPIb/IX, and GPIV. A crossmatch of maternal serum against paternal platelets is also performed to detect antibodies against low frequency and new HPA. Reactivity against Class I HLA antigens is also detected.

Maternal and paternal HPA genotyping including alleles of HPA-1 through 6, HPA-9 and HPA-15.

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### ***Logistics***

**Test Indications:** To demonstrate parental HPA incompatibility.

Neonatal alloimmune thrombocytopenia (NAIT) is a rare syndrome caused by maternal IgG antibody directed against a fetal platelet antigen inherited from the father. Approximately 1 in 1000 pregnancies is affected, with about half of the cases occurring in first pregnancies. Although HPA-1a (PIA1) is the dominant human platelet alloantigen (HPA) incompatibility causing NAIT, a significant number of cases are caused by other HPA incompatibilities.

**Lab Testing Sections:** Transfusion Services - Sendouts

**Referred to:** Versiti -Platelet and Neutrophil Immunology Laboratory  
Versiti test codes:5603 Maternal /5703 Paternal

**Phone Numbers:** MIN Lab: 612-813-6280

STP Lab: 651-220-6550

**Test Availability:** Monday – Friday ONLY

**Turnaround Time:** 10 days

**Special Instructions:** Both parents should be drawn. Please have both register and orders placed for each. Testing should be collected Monday – Friday ONLY.

One result report for maternal and paternal results will be provided under the maternal name and medical record number.

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### ***Specimen***

**Specimen Type:** Blood

**Container:** **Mother:** Yellow ACDA (Solution A) **and** Red Top NO GEL

**Father:** Yellow ACDA (Solution A)

Alternate: Blue (NaCit) tops can be substituted for the Yellow tubes, but Yellow is preferred.

**Draw Volume:** **Mother:** 60 mL (min: 30 mL), **please try to draw the full volume**  
Yellow ACDA: 30 mL (min: 20 mL)  
Red NO GEL: 30 mL (min: 10 mL)

**Father:** 30 mL (min: 20 mL), **please try to draw the full volume**  
Yellow ACDA: 30 mL (min: 20 mL),

**Processed Volume:** **Mother:**  
Yellow ACDA: Do not process, submit as whole blood in original containers  
Red NO GEL: 10 mL (3 mL) serum

**Father:**  
Yellow ACDA: Do not process, submit as whole blood in original containers

**Collection:** Routine venipuncture

**Special Processing:** Lab Staff:  
**Mother:**  
Yellow ACDA: Do not process, submit as whole blood in original containers  
Red NO GEL: Centrifuge specimen, remove serum aliquot into a screw-capped round bottom plastic vial.  
Make sure specimens are clearly labeled as "Mother" with mother's name and demographics.  
**Father:**  
Yellow ACDA: Do not process, submit as whole blood in original containers  
Make sure specimens are clearly labeled as "Father" with father's name and demographics.

Ship specimens in same shipment in separate bags for mother and father at refrigerated temperatures, Monday-Friday, NEXT DAY Delivery. Mark box "Refrigerate upon collect". Versiti accepts Saturday deliveries. Call Versiti Client Services at 1-800-245-3117 ext 6255 if samples will be shipped near a major holiday.

See Platelet and Neutrophil Immunology Laboratory test requisition form for current shipping address and further information. [Versiti - Requisitions](#)

Specimen stability: Whole blood must be received by testing lab within 4 days of collection. Older serum may be acceptable if it had been frozen.

**Patient Preparation:** None

**Sample Rejection:** Mislabeled or unlabeled specimens; frozen whole blood specimens; specimens collected in incorrect container; specimens incorrectly processed.

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***Interpretive***

**Reference Range:** An interpretive report will be provided.

**Critical Values:** N/A

**Limitations:** N/A

**Methodology:** PCR and Fluorescent Hydrolysis Probes, Platelet Antibody Bead Array (PABA) and Flow Cytometry

**References:** [Versiti](#) (December 2023)

**Updates:** 2017: Initial entry  
12/11/2023: Updated CPT codes, reference lab name, serum minimum volume, shipping information and methodology. Added specimen stability. Clarified distinction between maternal and paternal reference lab test codes.