PLATELET ANTIGEN GENOTYPING

BloodCenter of Wisconsin
Platelet and Neutrophil Immunology Laboratory
offers a platelet antigen genotyping panel for 8 alloantigen systems.
Typing for single systems is also available.

BACKGROUND:
Immune-mediated platelet disorders such as Neonatal Alloimmune Thrombocytopenia (NAT), Post-Transfusion Purpura (PTP) and Platelet Transfusion Refractory (PTR) are associated with the development of platelet-specific antibodies. Since 1994, the Platelet and Neutrophil Immunology Laboratory has identified platelet alloantigens using allele-specific amplification. This technology is used on samples obtained prenatally for early and rapid determination of the fetal platelet antigen type. It is also used to confirm antibody specificity in cases involving low frequency or “new” platelet alloantigens and for samples having platelet counts that are too low for serologic typing procedures.

REASONS FOR REFERRAL:
NAT Evaluation: For determination of maternal/paternal platelet alloantigen incompatibilities, and early rapid determination of the fetal platelet genotype on prenatal samples. The laboratory evaluation is helpful clinically in determining the need for antenatal treatment and/or route of delivery of infant.

Confirmation of Platelet Antibody Specificity: Genotyping can be used in PTP and PTR cases to confirm the specificity of platelet-specific antibodies present in the patient’s serum. Genotyping is particularly helpful in confirming antibody specificity in cases involving low frequency or “new” platelet alloantigens.

Samples With Low Platelet Counts: In contrast to standard serologic platelet typing tests, genotyping does not require that blood samples contain adequate numbers of platelets since it utilizes DNA isolated from leukocytes or other cells.

METHOD:
DNA is isolated from leukocytes, amniotic fluid, cultured amniocytes or chorionic villi, amplified by PCR followed by fluorescent allele-specific hydrolysis probes, and then analyzed by real-time polymerase chain reaction (PCR).

LIMITATIONS:
New variant alleles that possess polymorphisms within the region targeted by the oligonucleotide primers may not be identified with these assays.
SPECIMEN REQUIREMENTS:
Fetal Samples (one of the following):
- 1 ml cord EDTA whole blood
- 2 ml EDTA (lavender top) whole blood
- 7-15 ml amniotic fluid
- 5 x 10^6 cultured amniocytes
- 2 T25 flasks of cultured amniocytes

Other Samples:
- 3-5 ml EDTA (lavender top) whole blood

SHIPPING REQUIREMENTS:
Ship on an ice pack or at room temperature. Protect specimens from freezing by wrapping them in a paper towel. Insert specimens and the test requisition form into plastic bags, and seal. Place in an insulated container, then into a sturdy cardboard box and tape securely. Ship in compliance with your overnight carrier guidelines. Please contact your carrier for current biohazard shipping regulations.

Label with the following address:
Client Services/Platelet and Neutrophil Immunology Laboratory
BloodCenter of Wisconsin
638 N. 18th St.
Milwaukee, WI 53233-2121
800-245-3117, ext. 6250

TURNAROUND TIME: 7 days

CPT CODES:
Genotyping Panel: 81400 x 8
Individual Antigen Systems: 81400

REFERENCES:


