MAYO CLINIC LABORATORIES

Test Definition: IDCOR

Red Blood Cell Antigen Genotyping, PCR, Blood

Overview

Useful For

Determining the red blood cell status of any patient but more useful than serology in the following situations:
-Recently transfused patient.
-Patient with a positive direct antiglobulin test.
-Patient with a discrepant antigen typing with antibodies present.

This test is **not useful** for the purpose of:
-Establishing paternity
-Diagnosing McLeod syndrome or determining the McLeod phenotype
-Determining A1 subtype

Highlights

This test can be used to determine red blood cell genotype and predict the red blood cell phenotype. The following red cell antigens will be displayed in the final report:
C, E, c, e, CW, V, hrS, VS, hrB, K, k, Kpa, Kpb, Jsa, Jsb, Jka, Jkb, Fya, Fyb, M, N, S, s, U, Mia, Dia, Dib, Doa, Dob, Hy, Joa, Coa, Cob, Yta, Ytb, Lua, and Lub.

Method Name

Molecular Genotyping

NY State Available

No

Specimen

Specimen Type

Whole Blood EDTA

Ordering Guidance

This test is used to determine red blood cell genotype and predict the phenotype. It does not determine the A1 phenotype subtype or aid in the diagnosis of McLeod syndrome.
-If testing for McLeod syndrome (phenotype) is desired, order SPAGR / Special Red Cell Antigen Typing, Whole Blood and note "K system antigens" on the order.
-If the A1 subtype is requested, order SPAGR and note "A1 antigen" on the order.

Shipping Instructions

1. Specimen must arrive within 7 days of collection.
2. Collect and package specimen as close to shipping time as possible.

Necessary Information

Pertinent clinical history, including whether the patient has received a bone marrow transplant, is required.

Specimen Required

Container/Tube:

Preferred: Pink top (EDTA)

Acceptable: Lavender top (EDTA)

Specimen Volume: 6 mL

Pediatric Volume: 3 mL

Collection Instructions:

1. Invert several times to mix blood.
2. Label specimen as blood.
3. Send whole blood specimen in the original tube. **Do not aliquot**.

Specimen Minimum Volume

3 mL

Reject Due To

Gross hemolysis	OK
Gross lipemia	OK
Gross icterus	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Whole Blood EDTA	Refrigerated (preferred)	7 days	
	Ambient	7 days	

Clinical & Interpretive

Clinical Information

The predicted red blood cell (RBC) phenotype will determine the presence or absence of an RBC antigen. As a general rule, individuals will not make an antibody directed against an antigen present on their own RBCs.

Reference Values

The presence or absence of each red blood cell antigen is identified.

Interpretation

Each antigen will be listed by name, followed by a "+" indicating the antigen is present, or by a "0" indicating the antigen is absent. Additional footnotes may be included indicating additional information is present along with the result.

Cautions

Samples yielding low DNA concentration (<20 ng/mcL) that falls outside a DNA purity range (A260/A280) of 1.65 to 2.00 may not provide valid results. Additionally, the assay will not detect all variants of allele haplotypes.

Clinical Reference

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5. Goldman M, Cemborain A, Cote J, et al. Identification of six new RHCE variant alleles in individuals of diverse racial origin. Transfusion. 2016;56(1):244-248. doi:10.1111/trf.13357
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11. Noizat-Pirenne F, Mouro I, Gane P, et al. Heterogeneity of blood group RhE variants revealed by serological analysis and molecular alteration of the RHCE gene and transcript. Br J Haematol. 1998;103(2):429-436. doi:10.1046/j.1365-2141.1998.01004.x
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13. Zimmerman PA, Woolley I, Masinde GL, et al. Emergence of FY*A(null) in a Plasmodium vivax-endemic region of Papua New Guinea. Proc Natl Acad Sci U S A. 1999;96(24):13973-13977. doi:10.1073/pnas.96.24.13973
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Performance

Method Description

The ID CORE XT assay utilizes Luminex xMAP technology. Genomic DNA extracted from human EDTA anticoagulated whole blood is amplified and biotinylated by multiplex polymerase chain reaction (PCR). PCR products are denatured and hybridized to oligonucleotide probes coupled to color-coded beads. Hybridized DNA is labeled with a fluorescent conjugate, and the resulting signal is detected with a Luminex 200 system. Raw data are processed with ID CORE XT analysis software to obtain benign alteration (previously polymorphism) genotypes, predicted allele genotypes, and predicted phenotypes for: C, E, c, e, CW, V, hrS, VS, hrB, K, k, Kpa, Kpb, Jsa, Jsb, Jka, Jkb, Fya, Fyb, M, N, S, s, U, Mia, Dia, Dib, Doa, Dob, Hy, Joa, Coa, Cob, Yta, Ytb, Lua, and Lub.(Package insert: ID CORE XT. Grifols; PI_1021720000_05, 01/2023)

PDF Report

Supplemental

Day(s) Performed

Monday through Friday

Report Available

2 to 7 days

Specimen Retention Time

14 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

0084U

LOINC® Information

Test Definition: IDCOR

Red Blood Cell Antigen Genotyping, PCR, Blood

Test ID	Test Order Name	Order LOINC® Value
IDCOR	IDCORE XT RBC Genotype	93914-0

Result ID	Test Result Name	Result LOINC® Value
623290	IDCORE XT RBC Genotype	906-8