

Molecular Testing

Several molecular tests are offered by ImpactLife. All specialized molecular testing is performed at the Springfield, Illinois Immunohematology Reference Laboratory.

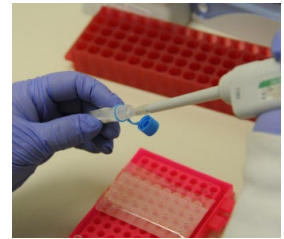
1. HEA (Human Erythrocyte Antigen)
2. RHD Variant assay
3. RHCE Variant assay
4. HPA (Human Platelet Antigen)
5. HLA (Human Leukocyte Antigen)

HEA (Red Cell Molecular) Test:

- First ever FDA approved red cell molecular test available.
 - Immucor BeadChip™
- Detects and predicts the following blood groups:
 - Rh, Kell, Duffy, Kidd, MNS, Lutheran, Dombrock
 - Landsteiner-Weiner, Diego, Colton, Scianna
- Used to build donor database to provide antigen negative units for client hospitals.
- Used to screen and identify donors for our Red4Life (Sickle Cell Donor) Program.

HEA molecular testing is recommended for the following patients and situations:

- Sickle Cell Patients
- Bone marrow transplant patients
- Warm autoantibody Patients
- Patients with difficult antibodies:
 - Antibody to high frequency antigen
 - HTLA antibodies
 - Possible autoantibodies
- Recently transfused patients when a phenotype is necessary



RHD and RHCE Variant Molecular Testing:

The RH blood group system is one of the most important and complex blood group systems. The complexity of RHD and RHCE genes result in large number of red cell antigens that are involved in alloimmunization, hemolytic transfusion reactions, and hemolytic disease of fetus and newborn. Alloimmunization has been a major issue in patients with hemoglobinopathies such as sickle cell disease and thalassemia. RHD and RHCE variant molecular assays (separate assays) can:

- Detect variants in patients' DNA that may cause variation in expression of Rh antigens such as weak D, partial D, partial e, and many others.
- Help identify clinically significant Rh antibodies in anti-D, anti-hrs.
- Resolve RhD discrepancy in pregnant women to accurately guide transfusion and Rh immune globulin prophylaxis.
- The RHD and RHCE genes are closely related and the variant testing is usually most useful when being performed together.

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HPA BeadChip Assay:

- Performed when the PakLx screen detects the presence of an HPA antibody.
- Includes a phenotype for 22 human platelet antigens.
- May help in the diagnosis and management of neonatal alloimmune thrombocytopenia, post-transfusion purpura and platelet refractoriness.
- Also performed on platelet donors to provide HPA matched platelet products.



HLA Molecular Typing:

- Performed when the PakLx screen detects the presence of HLA antibodies.
- HLA-A and HLA-B test performed to provide HLA phenotype.
- Also performed on platelet donors to provide HLA matched platelet products.

HLA test utilizes the LifeCodes SSO (Sequence-Specific Oligonucleotides) method which is analyzed with the Luminex instrument.

