BioArray™ HPA BeadChip™

Extended Platelet Antigen Typing by DNA Analysis

BioArray HPA BeadChip is a high-throughput molecular assay that detects 22 human platelet antigens by multiplex DNA analysis.

HPA Assay Antigen Coverage	
HPA-1a/HPA-1b	GPIIIa
HPA-2a/HPA-2b	GPIb
HPA-3a/HPA-3b	GPIIb
HPA-4a/HPA-4b	GPIIIa
HPA-5a/HPA-5b	GPIa
HPA-6a/HPA-6b	GPIIIa
HPA-7a/HPA-7b	GPIIIa
HPA-8a/HPA-8b	GPIIIa
HPA-9a/HPA-9b	GPIIb
HPA-11a/HPA-11b	GPIIIa
HPA-15a/HPA-15b	CD109

FEATURES AND BENEFITS

ENHANCED CAPABILITIES

→ Perform extended typing of patients and donors without the need for actual platelets or rare typing sera

QUICK TURNAROUND

→ Complete HPA protocol in less than 5 hours post extraction

→ Obtain extended platelet antigen typing results within a single shift

HIGH THROUGHPUT

→ 8-test slide or 96-test plate configurations

→ Generate over 2000 results simultaneously across 22 platelet antigens in a single test
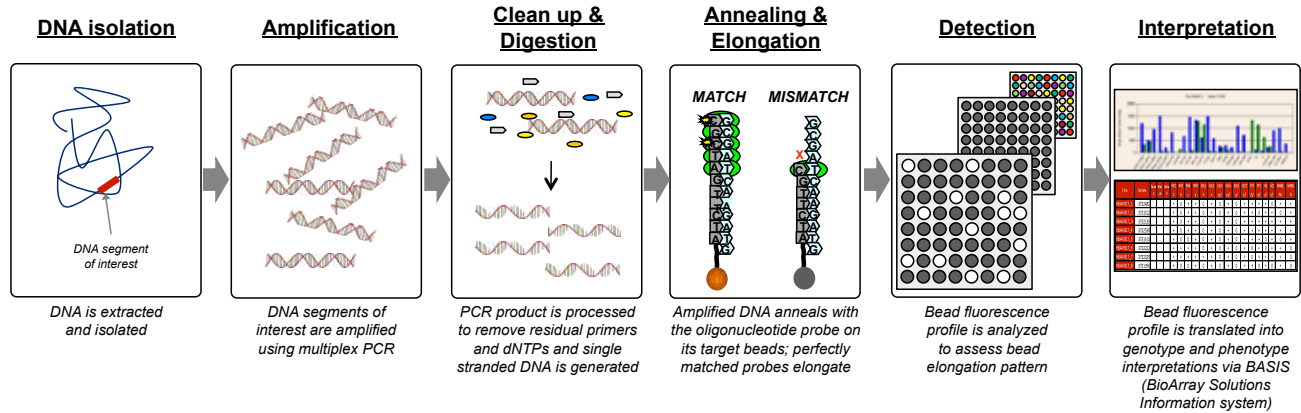
ASSAY OVERVIEW

Molecular Immunohematology (MIH) is a rapidly emerging technology within Transfusion Medicine. Platelet antigen expression may be altered by variations in DNA sequences. Novel molecular techniques have been developed to identify the single nucleotide polymorphisms (SNPs) responsible for many of these variations.

The BioArray BeadChip is a high throughput molecular assay that tests for a wide range of SNPs affecting antigen expression. The BioArray Elongation mediated Multiplexed Analysis of Polymorphisms (eMAP) technology identifies the presence or absence of these polymorphisms via multiplex PCR reaction. On the BioArray BeadChip system, genomic DNA targets isolated from whole blood are amplified, captured and fluorescently labeled by elongation on allele specific probes immobilized on synthetic microparticles. The fluorescence of each bead is analyzed on the Array Imaging System (AIS) to determine positive and negative reactions. BioArray Solutions Information System (BASIS) software calculates the adjusted intensity of every reaction to assign a genotype and predicted phenotype for each polymorphism.

The BioArray HPA BeadChip detects 22 platelet antigens in a single test. Extended platelet antigen typing information can aid in the diagnosis and management of neonatal alloimmune thrombocytopenia, post-transfusion purpura and platelet refractoriness.

BioArray HPA eMAP™ protocol

DNA isolation	Amplification	Clean up & Digestion	Annealing & Elongation	Detection	Interpretation

MATCH   **MISMATCH**

| DNA is extracted and isolated | DNA segments of interest are amplified using multiplex PCR | PCR product is processed to remove residual primers and dNTPs and single stranded DNA is generated | Amplified DNA anneals with the oligonucleotide probe on its target beads; perfectly matched probes elongate | Bead fluorescence profile is analyzed to assess bead elongation pattern | Bead fluorescence profile is translated into genotype and phenotype interpretations via BASIS (BioArray Solutions Information system) |

DNA segment of interest

PRODUCT LINE OVERVIEW

The BioArray product line provides a platform of solutions for molecular immunohematology. Our assays are currently available as Research Use Only (RUO) for a wide range of red blood cell and platelet compatibility cases.

WE KNOW BLOODBANKING

→ BioArray's high throughput BeadChip assays are innovative tools in Transfusion Medicine that enhance donor and patient matching capability and complement our Echo and NEO automated serological testing systems.

WE ARE SETTING THE STANDARD IN MOLECULAR IMMUNOHEMATOLGY

→ With 5 years of development and over 200,000 tests completed, BioArray's core assay, HEA, has been refined and proven at many of the world's leading Centers of Excellence in Transfusion Medicine.

WE ARE FOCUSED ON THE NEEDS OF OUR CUSTOMERS AND THEIR PATIENTS

→ BioArray's BeadChip assays deliver deep insight into antigen typing and provide the information needed to solve complex red blood cell and platelet compatibility cases.

RED BLOOD CELL ASSAYS

→ **HEA**   38 Human Erythrocyte Antigens and phenotypic variants

→ **RHD**   RHD variant alleles

→ **RHCE**   RhCE variant alleles

PLATELET ASSAYS

→ **HPA**   22 Human Platelet Antigens

→ **HLA-A / HLA-B**   Class I Human Leukocyte Antigens

To learn more about Extended Platelet Typing by DNA analysis, contact your sales rep or visit
www.immucor.com/bioarray/

BioArray Solutions, an Immucor Company.
35 Technology Drive, Suite 100, Warren NJ 07059
T: 908.226.8200 T: 866.566.8200 F: 908.226.0800
email: CustomerServiceNJ@immucor.com

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