

HaploPrep™ Probe Book for HLA-A



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For Research Use Only

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Intended Use:

HaploPrep™ is intended for the separation of alleles into their haploid components for downstream analysis. This collection of probes for HLA-A is designed to separate allele combinations that cause ambiguities, or for the characterization of new alleles.

Background:

HaploPrep™ or Haplotype-Specific Extraction (HSE) physically separates diploid genomic DNA into its haploid components. These components can then be separately analyzed by routine DNA typing methods that are currently used on standard diploid DNA. By separating the alleles, HaploPrep™ provides the advantage to individually analyze each gene.

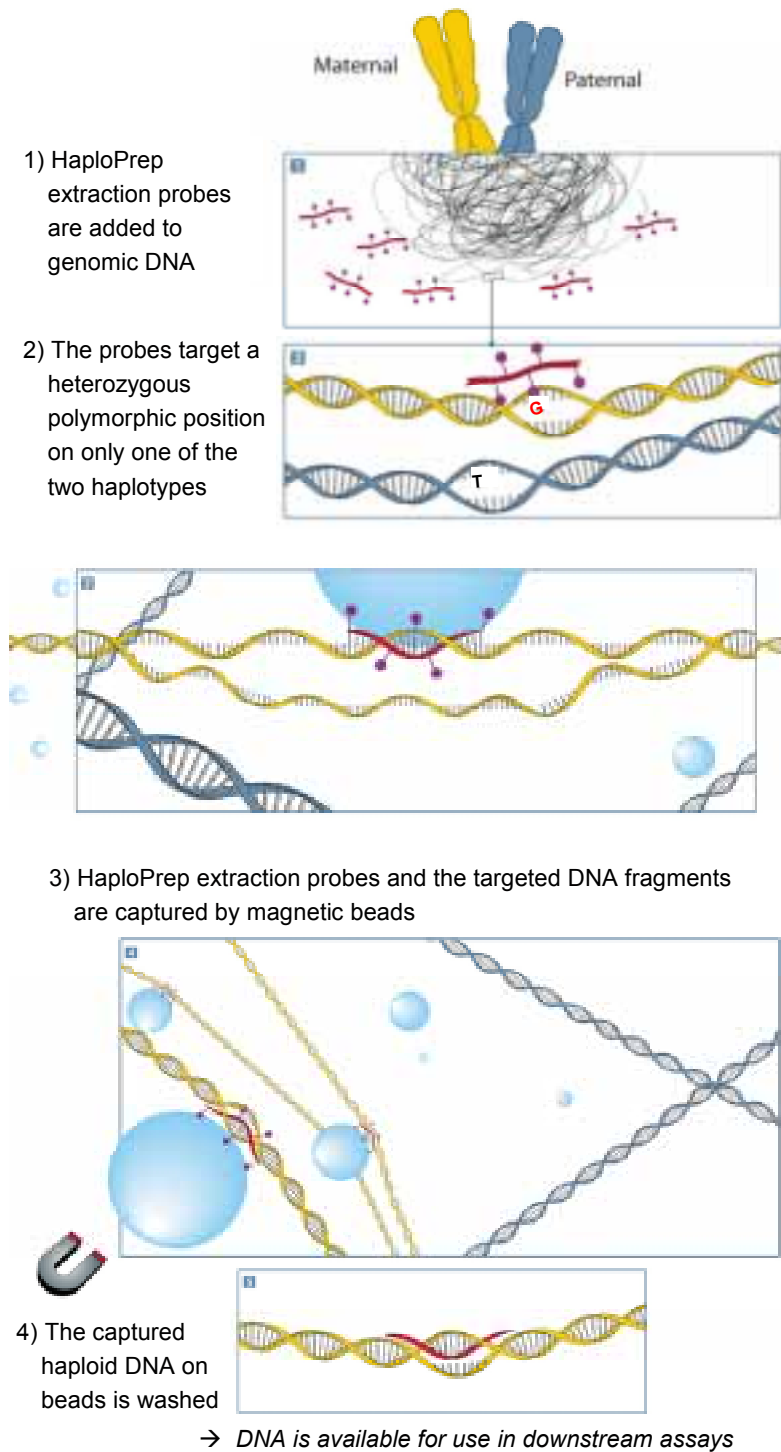
HSE has been tested with direct sequencing; forward sequence-specific oligonucleotide probes (SSO), reverse SSO, sequence-specific priming (SSP), homogeneous luminescent genotyping, and restriction fragment length polymorphism (RFLP) digests.

HSE technology for HLA is developed under a collaboration of GenoVision and Generation Biotech.

Patents pending US 09/735,099 and international applications.

Principle:

HSE separates DNA into its haploid components by exploiting the heterozygous differences between allele combinations. DNA is hybridized with specially designed probes, then magnetic beads capture the hybridized DNA fragments and the haploid component is purified, leaving the non-targeted allele in the solution.



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Probe Targets – Unique Sequence Elements

HLA-A Probe #	Unique Sequence Element	Center Position	Exon
A257A	CAGGA (reversed)	258	2
A259A	GAACA (reversed)	260	2
A299C	GCGAA (reversed)	300	2
A299T	GTGGA (reversed)	300	2
A314C	TCGCGCTCC	315	2
A362G	GAGGA	362	3
A362T	GATAA	362	3
A414C	CCACCAGT	414	3
A414G	CCGGCAGG	414	3
A538C	AGCAG	538	3
A538T	AGTTG	538	3
A571G	ACGGG (reversed)	571	3

How to Select Probes for Haplotype-Specific Extraction:

Selection of the appropriate probes is an important but complex process due to the highly polymorphic nature of HLA genes; therefore, the data and specificity of each probe is presented in several formats:

- The **Allele Level Chart** lists all alleles and their reactivity with the probes.
- The **Serology Group Chart** lists alleles in their serology groups. The probe which most effectively extracts the group is listed first. Exceptions are listed specifically indicating alleles within a group which are not captured, alleles that are weakly targeted, and alleles for which the sequence information is unknown.
- The **HLA-A Probe Matrix Chart** lists the suggested probes to use with specified serology group combinations. The probes listed will capture most of the alleles within the serology group, except those probes that are listed in **bold**. These probes capture the most frequent alleles within the serology group but may capture both alleles.
- The **Probe Chart** lists the alleles targeted by the individual probes.

The low-resolution type must be known for a sample before using HSE. The principle of the extraction is to target a known heterozygous position. A sample that is a known homozygote cannot be separated.

The following examples of how to select HLA-B probes can be extrapolated to help select probes for any HLA loci:

- Refer to the **allele level chart** and find the allele you wish to target in the first column of the chart. Probes are listed on top of the chart in the first row. Probes which target an allele are designated by black cells. Grey cells indicate that the probe targets the allele weakly. If the intersecting cell is white, the probe does not target the allele.

- For example, if you wish to separate a sample with a low-resolution type of HLA-B*08xx and HLA-B*42xx, the allele level chart lists several probes which target most *08 alleles: B261C, B277A, B317T, B355C, and B539A. Closer inspection will show that the last 3 probes do not target several of the

Allele	B261C	B277A	B317T	B355C	B539A	B261C	B277A	B317T	B355C	B539A	B261C	B277A	B317T	B355C	B539A
HLA-B*0801															
HLA-B*0802															
HLA-B*0803															
HLA-B*0804															
HLA-B*0805															
HLA-B*0806															
HLA-B*0807															
HLA-B*0808															
HLA-B*0809															
HLA-B*0810															
HLA-B*0811															
HLA-B*0812															
HLA-B*0813															
HLA-B*0814															
HLA-B*0815															
HLA-B*0816															
HLA-B*0817															
HLA-B*0818															
HLA-B*0819															
HLA-B*0820															
HLA-B*0821															

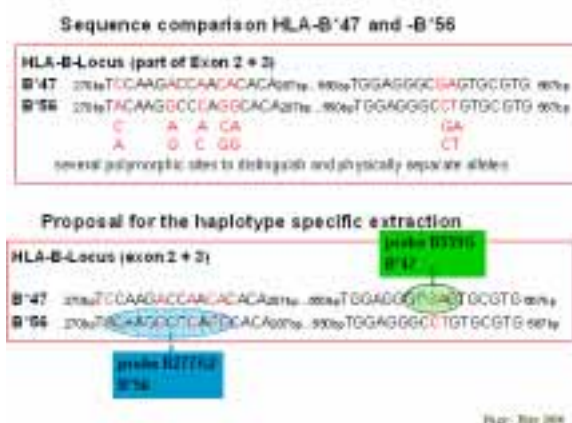
more common *08 alleles. Probes B261C and B277A target most of the *08 alleles with few exceptions. Once you've found probes which target one allele, you must check to be certain they do not target the other allele. Probe B261C also targets HLA-B*42xx and therefore would not separate this combination; however, B277A would.

- If a sample appears to have alleles in the same serology group refer to the **serology group chart**, and select probes that could separate alleles within the group.

will extract the B15 alleles. An empty cell indicates that there is no probe that will extract B14xx discretely from B15 alleles. However, if you refer to the Serology Group Chart, probe B261C will extract all of the B14 and will not extract the majority of B15 alleles: 15010101-150104, 1503-1507, 1512, 1514, ...1579. If it were determined that the sample had a HLA-B*1502, then probe B355C could be used to isolate the B14 allele.

- An alternative to using the charts included here, especially when choosing probes to separate samples with multiple possible allele combinations, would be to manually identify the polymorphic nucleotide positions and unique sequence elements between alleles which are targeted by HSE probes. Sequence alignment tools, available online from the European Bioinformatics Institute for the IMGT/HLA community at <http://www.ebi.ac.uk/imgt/hla/align.html>, can be used to align alleles, identify the polymorphic nucleotide positions and unique sequence elements between them, and match these to HSE probes.

- For example, the probe B559C targets polymorphic positions centered at the nucleotide position 559 (exon 3) that contain the target sequence GCGAG. A sample with low-resolution types HLA-B*47xx, HLA-B*56xx can be resolved.



Enter the alleles into the box for specific sequences requested as shown below.

IMGT/HLA Sequence Database

The latest version of the alignment tool now includes genomic sequences as well as alignments of polymorphic regions. Where discrepancies have arisen between reported sequences and those stored in the database, the original authors have been contacted where possible, and necessary amendments to published sequences have been incorporated into this alignment. Future sequencing very closely aligned to this list and the IMGT/HLA community would welcome any evidence that helps to maintain the accuracy of these sequence alignments.

Internet Explorer users should be aware that a bug has been reported in the Javascript that automatically updates stored alignment parameters. This bug caused the assembly not, but does mean that you may have to refresh the page before performing further alignments, or are currently looking into this problem. Alternative browsers like Firefox, have no report of bugs with the Javascript.

IMGT/HLA Sequence Database Alignment Tool

Select Locus:	B	2000
Select the position to align:	Nucleotide - CDS	1000
Enter any specific coordinates requested:	47-56	1000
Enter the reference sequence:	B*1	1000
Select how you wish to view any mismatches:	Show mismatches between sequences	1000
Select how the alignment will be combined:	In Exons - nucleotide sequence displayed in codons	1000
What allele discrepancy is in this region:	Only unsequenced alleles	1000
Select type of output:	Plain text, suited for cut & paste	1000
Do you wish to align:	Align Sequences Now	1000

The database will return sequence alignments showing mismatches between alleles as well as the exon nucleotide positions which correlate to HSE probes. Inspection of the mismatches aligned in this search reveals HLA-B*47xx matches the unique sequence element listed for HSE probe B559G while B56 alleles do not. HLA-B*56xx similarly matches HSE probe B277G2.

	510	520	530	540	550	560	570	580	590	600
D*07021	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*47011	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*47021	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4703	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4704	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4705	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4706	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4707	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4708	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4709	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4710	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4711	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4712	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4713	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4714	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4715	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4716	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4717	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4718	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4719	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4720	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4721	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4722	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4723	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4724	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4725	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4726	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4727	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4728	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4729	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4730	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4731	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4732	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4733	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4734	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4735	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG
B*4736	CCAGCGCAAG	TGGGAGGCG	CCCGGAGGC	GGAGGAGCG	AGAGGCTACT	TGGAGGAGCA	GTGGCTGAG	TGGCTCTCA	GATACCTGA	GAACGGGAG

HLA-A Probe Matrix Chart:

Allele One	A01		A02		A03		A11		A23		A24		A25	
	A01	A02	A03	A11	A23	A24	A25	A01	A02	A03	A11	A23	A24	A25
A01	A299T	A299C	A299T	A571G	A299T	A571G	A314C	A414G	A414C	A299C	A314C	A299C	A314C	A299C
	A362G	A414G	A538T	A299C	A538C	A299C	A414C	A299C	A314C	A538T	A362T	A538C	A362T	A362G
A02	A299C	A299T	A362G	A362T	A362G	A362T	A362G	A314C	A299T	A314C	A299T	A314C	A299T	A299T
	A414G	A362G	A414C	A257A	A414C	A414G	A414C	A362G	A362G	A362G	A259A	A414C	A414C	A538T
A03	A571G	A299T	A362G	A362T	A538C	A538T	A314C	A299T	A414C	A257A	A259A	A257A	A259A	A257A
	A299C	A538T	A414C	A257A	A414C	A414C	A362T	A314C	A362T	A314C	A362T	A314C	A299T	A299T
A11	A571G	A299T	A362G	A362T	A538T	A538C	A314C	A362T	A414C	A362T	A314C	A362T	A314C	A362T
	A299C	A538C	A414C	A414G	A414C	A414C	A414C	A414G	A314C	A257A	A362G	A299T	A362G	A299T
A23	A414G	A314C	A299T	A314C	A299T	A314C	A362T	A314C	A362T	A414G	A414C	A362T	A414C	A362T
	A362T	A538T	A414C	A414C	A414G	A571G	A299T	A571G	A571G	A571G	A571G	A571G	A571G	A571G
A24	A257A	A414C	A299T	A314C	A257A	A414C	A362T	A414C	A538T	A538C	A538C	A538C	A538C	A538C
	A299C	A314C	A362G	A362T	A314C	A257A	A314C	A314C	A314C	A314C	A314C	A314C	A314C	A314C
A25	A362T	A538C	A571G	A571G	A571G	A571G	A571G	A571G	A571G	A571G	A571G	A571G	A571G	A571G
	A257A	A259A	A299T	A314C	A257A	A259A	A362T	A314C	A414C	A259A	A414C	A259A	A414C	A414C
A26	A571G	A362G	A414C	A299C	A362T	A362G	A362T	A362G	A314C	A362G	A414C	A362G	A314C	A299C
	A362T	A259A	A538T	A259A	A538T	A259A	A257A	A259A	A414C	A414G	A314C	A299C	A299C	A299C
A29	A257A	A538T	A299T	A299C	A257A	A299C	A362T	A299C	A314C	A299C	A414C	A299C	A259A	A299C
	A362T	A362G	A414G	A299T	A299T	A299T	A538T	A414C	A414G	A314C	A414G	A314C	A538T	A538T
A30	A571G	A414C	A414C	A362T	A257A	A257A	A257A	A257A	A257A	A257A	A257A	A257A	A257A	A257A
	A299C	A538T	A362G	A362T	A414G	A414G	A538T	A314C	A362T	A414C	A362T	A259A	A362T	A362T
A31	A299C	A299T	A362G	A414G	A362T	A538C	A538T	A414C	A414G	A414C	A257A	A259A	A538T	A538T
	A362T	A538T	A414C	A257A	A362T	A362T	A538T	A538T	A538T	A538T	A538T	A538T	A538T	A538T
A32	A571G	A314C	A299T	A314C	A299T	A314C	A299T	A314C	A414C	A414C	A414C	A257A	A259A	A257A
	A299C	A538T	A362G	A257A	A299C	A299C	A362T	A538T	A571G	A257A	A571G	A571G	A362G	A538T
A33	A257A	A259A	A362G	A414G	A257A	A259A	A362T	A259A	A314C	A259A	A414C	A299T	A314C	A299T
	A571G	A299T	A414C	A259A	A362T	A257A	A257A	A538T	A414C	A299T	A314C	A414G	A362G	A538T
A34	A299C	A538T	A571G	A571G	A571G	A571G	A571G	A571G	A571G	A571G	A571G	A571G	A571G	A571G
	A257A	A257A	A414C	A362T	A257A	A259A	A257A	A259A	A314C	A259A	A414C	A259A	A314C	A299T
A36	A571G	A299T	A299C	A299T	A299C	A299T	A299C	A314C	A299C	A414C	A257A	A259A	A257A	A257A
	A362G	A257A	A538T	A538T	A538T	A538T	A538T	A414C	A414G	A314C	A299C	A314C	A299C	A299C
A43	A257A	A362G	A299T	A299C	A257A	A299C	A362T	A362G	A314C	A299C	A414C	A299C	A259A	A299C
	A571G	A414C	A414C	A299T	A362G	A299T	A299C	A414C	A362G	A314C	A362G	A314C	A314C	A314C
A66	A362T	A538T	A538T	A362T	A362G	A257A	A257A	A538T	A414G	A538C	A538C	A538C	A538C	A538C
	A257A	A259A	A414C	A259A	A257A	A259A	A362T	A362G	A314C	A299T	A414C	A299T	A314C	A299T
A68	A571G	A299T	A362G	A259A	A257A	A259A	A362T	A259A	A314C	A299T	A314C	A299T	A314C	A299T
	A299C	A259A	A414C	A414G	A362T	A257A	A257A	A571G	A414G	A571G	A259A	A414G	A414G	A414G
A69	A362T	A538T	A538T	A538T	A538T	A538T	A538T	A538T	A538T	A538T	A538T	A538T	A538T	A538T
	A257A	A259A	A414C	A259A	A257A	A414C	A362T	A414C	A314C	A259A	A314C	A538T	A314C	A299T
A74	A414G	A299T	A362G	A362T	A362G	A414G	A259A	A571G	A299T	A538C	A299T	A414G	A414C	A414C
	A571G	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C
A80	A362T	A538T	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C
	A299C	A299C	A299C	A299C	A299C	A299C	A299C	A299C	A299C	A299C	A299C	A299C	A299C	A299C
A80	A257A	A299T	A299C	A257A	A299C	A299T	A571G	A314C	A299C	A414C	A362T	A259A	A299C	A299C
	A362G	A362T	A299T	A299T	A299T	A299T	A299T	A414C	A362T	A314C	A299C	A314C	A314C	A314C
A80	A414C	A414G	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C	A414C
	A538C	A538C	A538C	A538C	A538C	A538C	A538C	A538C	A538C	A538C	A538C	A538C	A538C	A538C

*Probes that are listed in **italics** may capture both alleles.
Refer to the HLA-A Serology Group Chart and HLA-A Allele Level Chart.

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HaploPrep™ for HLA-A

	Allele One													
	A26	A29	A30	A31	A32	A33	A34							
A01	A362G	A571G	A538T	A257A	A538T	A414G	A299T	A299C	A314C	A571G	A259A	A257A	A257A	A257A
	A259A	A362T		A362T		A571G	A538T	A362T	A538T	A299C	A299T	A571G	A299T	A571G
		A257A		A571G		A299C		A571G		A362T	A538T	A299C	A259A	A299C
A02	A299C	A414C	A299C	A299T	A362T	A362G	A414G	A362G	A314C	A299T	A414G	A362G	A362T	A414C
	A259A	A538T	A414G	A362G	A257A	A414C	A257A	A414C	A257A	A362G	A259A	A414C	A259A	
				A414C						A414C				
A03	A362G	A362T	A299C	A257A		A414G		A362T	A314C	A299T	A259A	A257A	A259A	A257A
	A259A	A538T		A299T								A362T		
	A299C	A257A		A362T										
A11	A362G	A362T	A299C	A362T	A538T	A414G	A538T	A538C	A314C	A299T	A259A	A362T	A259A	A257A
	A259A	A257A	A538T	A299T		A538C	A362T		A538T	A362T	A538T	A257A	A538T	A538C
		A538C		A257A								A538C		
A23	A362G	A314C	A299C	A314C	A362T	A314C	A414G	A414C	A414G	A414C	A259A	A314C	A259A	A314C
	A414G	A414C	A414G	A414C		A414C	A299T		A257A	A571G	A299T	A414C	A299T	A414C
	A299C	A538T				A571G					A414G	A571G	A414G	A571G
A24	A362G	A414C	A299C	A414C	A362T	A414C	A257A	A414C	A257A	A414C	A299T	A414C	A259A	A414C
	A299C	A314C	A414G	A314C	A257A	A314C	A414G	A538C		A571G	A414G	A314C	A299T	A314C
	A259A	A571G		A571G		A538C		A571G			A538T	A538C	A414G	A538C
A25	A299C	A314C	A299C	A259A	A362T	A259A	A538T	A259A	A257A	A259A	A299T	A314C	A299T	A314C
			A538T	A314C	A257A	A314C	A257A	A362G	A538T	A362G	A538T	A362G	A538T	
				A362G	A538T	A362G	A299T							
A26			A538T	A362G	A362T	A362G	A538T	A362G	A314C	A362G	A538T	A362G	A299T	A299C
			A259A	A538T	A414G	A257A	A257A	A259A	A538T	A259A	A299T	A299C	A538T	
					A257A	A299C		A299C	A257A	A299C				
A29	A362G	A538T			A362T	A299C	A257A	A299C	A257A	A299C	A259A	A299C	A259A	A299C
	A259A				A257A	A414G	A299T		A314C		A299T		A362T	
A30	A362G	A362T	A299C	A362T			A414G	A362T	A314C	A362T	A259A	A362T	A259A	A257A
	A414G	A538T	A414G	A257A					A414G		A414G	A257A	A414G	
	A299C	A257A												
A31	A362G	A538T	A299C	A257A	A362T	A414G			A314C	A299T	A259A	A257A	A259A	A257A
	A259A	A257A		A299T										
	A299C													
A32	A362G	A314C	A299C	A257A	A362T	A314C	A299T	A314C			A259A	A257A	A259A	A257A
	A259A	A538T		A314C		A414G					A299T	A314C	A299T	A314C
	A299C	A257A												
A33	A362G	A538T	A299C	A259A	A362T	A259A	A257A	A259A	A257A	A259A			A362T	
	A299C	A299T		A299T	A257A	A414G			A314C	A299T				
A34	A299C	A299T	A299C	A259A	A257A	A259A	A257A	A259A	A257A	A259A		A362T		
		A538T		A299T		A414G			A314C	A299T				
				A362T										
A36	A362G	A257A	A538T	A257A	A538T	A299C	A538T	A299C	A314C	A299C	A259A	A257A	A259A	A257A
	A259A			A362T		A414G	A299T		A538T		A299T	A299C	A299T	A299C
											A538T	A362T		
A43	A259A		A538T	A362G	A362T	A299C	A538T	A299C	A257A	A299C	A259A	A299C	A259A	A299C
					A257A	A362G	A257A	A362G	A314C	A362G	A299T	A362G	A299T	
					A538T	A414G	A299T		A538T		A538T			
A66	A299C	A299T	A299C	A259A	A362T	A259A	A538T	A259A	A257A	A259A	A538T	A362G	A538T	
			A538T	A299T	A257A	A362G	A257A	A362G	A314C	A299T				
				A362G	A538T	A414G			A538T	A362G				
A68	A299C	A299T	A299C	A299T	A362T	A259A	A257A	A259A	A257A	A299T	A538T			
			A538T	A259A	A257A	A414G	A538T		A314C	A259A				
A69	A414G	A414C	A299C	A259A	A362T	A259A	A414G	A259A	A257A	A259A	A414G	A362G	A414G	A414C
	A299C	A538T	A414G	A299T	A257A	A362G	A257A	A362G	A314C	A299T		A414C		
				A414C		A414C		A414C	A414G	A414C				
A74	A362G	A538T	A299C	A257A	A362T	A414G			A314C	A299T	A259A	A257A	A259A	A257A
	A259A			A299T										
A80	A362G	A362T	A538T	A362T	A257A	A299C	A538T	A299C	A257A	A299C	A259A	A299C	A259A	A299C
	A259A	A571G			A538T	A414G	A257A	A571G	A314C	A571G	A299T	A362T	A299T	A571G
					A571G	A299T			A538T		A538T	A571G		
	A26	A29	A30	A31	A32	A33	A34							

*Probes that are listed in **italics** may capture both alleles. Refer to the HLA-A Serology Group Chart and HLA-A Allele Level Chart.

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Allele One													
	A36		A43		A66		A68		A69		A74		A81
	A36	A571G	A362G	A257A	A259A	A257A	A299T	A571G	A259A	A257A	A299T	A571G	A257A
A01				A571G	A299T	A571G	A259A	A299C	A299T	A414G	A538T	A362T	
				A362T	A362G	A299C		A362T	A414C	A571G			
A02	A299C	A299T	A299C	A299T	A259A	A414C	A259A	A352G	A259A		A414G	A362G	A299C
	A257A	A362G	A414G	A414C	A414G	A538T	A414G	A414C			A257A	A414C	A362T
	A414G	A414C		A538T								A414G	A414C
A03	A299C	A299T	A299C	A257A	A259A	A257A	A259A	A257A	A414C	A257A		A362T	A299C
		A538T	A362G	A299T	A362G	A362T		A362T	A362G	A362T			A571G
				A362T		A538T				A414G			A299T
A11	A299C	A299T	A362G	A362T	A362G	A362T	A259A	A362T	A414C	A362T	A538T	A362T	A571G
		A538C	A299C	A299T	A259A	A257A		A257A	A259A	A414G		A538C	A299C
				A257A		A538C			A362G	A257A			A538C
A23	A299C	A314C	A299C	A314C	A299T	A314C	A299T	A314C	A259A	A314C	A414G	A314C	A299C
	A414G	A414C	A362G	A414C	A362G	A414C	A414G	A571G	A299T	A571G	A299T	A414C	A362T
		A538T	A414G	A538T	A414G	A538T	A259A		A362G			A571G	A414G
A24	A257A	A414C	A299C	A414C	A299T	A414C	A299T	A314C	A538T	A314C	A257A	A414C	A362T
	A299C	A314C	A362G	A314C	A259A	A314C	A259A	A571G	A299T	A538C	A414G	A314C	A299C
	A414G	A538C		A538C	A362G	A538C	A414G			A571G	A538T	A538C	A538C
A25	A257A	A259A	A299C	A259A	A299T	A314C	A299T	A314C	A299T	A314C	A299T	A259A	A299C
	A299C	A314C		A314C					A414C	A414G	A538T	A314C	A362T
		A362G							A538T		A257A	A362G	A571G
A26	A257A	A362G		A259A	A299T	A299C	A299T	A299C	A414C	A414G	A538T	A362G	A362T
		A259A							A538T	A299C		A259A	A571G
													A259A
A29	A257A	A538T	A362G	A538T	A259A	A299C	A299T	A299C	A259A	A299C	A257A	A299C	A362T
	A362T				A299T	A538T	A259A	A538T	A299T	A414G	A299T		A538T
					A362G				A414C				
A30	A299C	A538T	A299C	A362T	A259A	A362T	A259A	A362T	A259A	A362T	A414G	A362T	A299C
	A414G		A362G	A257A	A362G	A257A	A414G	A257A	A362G	A257A			A414G
			A414G	A538T	A414G	A538T		A538T	A414C				A571G
A31	A299C	A538T	A299C	A538T	A259A	A538T	A259A	A257A	A259A	A414G		A299C	A538T
		A299T	A362G	A257A	A362G	A257A		A538T	A362G	A257A			A571G
				A299T					A414C				A299T
A32	A299C	A314C	A299C	A257A	A259A	A257A	A299T	A257A	A259A	A257A	A299T	A314C	A299C
		A538T	A362G	A314C	A299T	A314C	A259A	A314C	A299T	A314C			A571G
				A538T	A362G	A538T			A414C	A414G			A538T
A33	A257A	A259A	A299C	A259A	A362G	A538T		A538T	A362G	A414G	A257A	A259A	A299C
	A299C	A299T	A362G	A299T					A414C				A362T
	A362T	A538T		A538T									A571G
A34	A257A	A259A	A299C	A259A		A538T			A414C	A414G	A257A	A259A	A299C
	A299C	A299T		A299T									A571G
													A299T
A36			A362G	A257A	A259A	A257A	A299T	A257A	A299T	A257A	A538T	A362T	A362T
				A362T	A299T	A299C	A259A	A299C	A414C	A299C			A571G
					A362G	A362T		A362T	A538T	A414G			
A43	A257A	A362G			A299T	A299C	A259A	A299C	A299T	A299C	A538T	A362G	A362T
	A362T				A259A		A299T		A414C	A414G	A257A		A571G
									A538T				
A66	A257A	A259A	A299C	A299T				A362G	A414C	A414G	A538T	A259A	A299C
	A299C	A299T		A259A					A538T		A257A	A362G	A362T
	A362T	A362G											A571G
A68	A257A	A299T	A299C	A259A	A362G				A362G	A414G	A257A	A259A	A299C
	A299C	A259A		A299T					A538T		A538T		A362T
	A362T												A571G
A69	A257A	A299T	A299C	A299T	A414G	A414C	A414G	A362G				A414G	A259A
	A299C	A414C	A414G	A414C		A538T		A538T			A257A	A362G	A362T
	A414G	A538T		A538T								A414C	A414G
A74	A362T	A538T	A362G	A538T	A259A	A538T	A259A	A257A	A259A	A414G			A362T
				A257A	A362G	A257A		A538T	A362G	A257A			A571G
								A414C					A257A
A80	A257A	A362T	A362G	A362T	A259A	A299C	A299T	A299C	A299T	A299C	A538T	A362T	
		A571G		A571G	A299T	A362T	A259A	A362T	A414C	A362T	A257A	A571G	
				A362G	A571G			A571G	A538T	A414G			
													A299T

*Probes that are listed in **Italics** may capture both alleles. Refer to the HLA-A Serology Group Chart and HLA-A Allele Level Chart.

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HLA-A Serology Group Chart:

*(the most effective probes are listed first;
in terms of capturing the most alleles per serology group)*

	Targeted by probes:	Alleles weakly targeted	Alleles not targeted
A01	A257A		
	A414G		
	A571G		
	A299C		A*0107
	A362T		A*0103
	A538T		A*010101-0104N, 0107-0110
A02	A299T	A*020602	
	A362G		A*0204, 021701, 021702, 0257, 0265
	A414C	A*0241	A*0252, 0260, 0264, 0265
			A*0202-020302, 0205, 0208, 0212, 0213, 0219, 0222, 0227, 0237, 0238, 0244, 0247, 0249, 0250, 0254, 0263
	A538T		
	A538C		A*02010101-0211, 0214-0218, 022001-0226, 0228-0236, 0239-0243N, 0245-0253N, 0255-0272
	A571G		A*02010101-0218, 022001-023501, 0238-0253N, 0255-0272
	A257A		A*02010101-0244, 0246-0255, 0257-0272
	A259A		A*02010101-0254, 0256-0272
	A414G	A*0265	A*02010101-0264, 0266-0272
A03	A257A		
	A299T		
	A362T		
	A414G		
	A538T		A*030102, 0302, 0310
	A538C		A*03010101-030103, 0303N-0309, 0311N-0314
A11	A362T		
	A414G		
	A299T		A*1117
	A538C		A*1108
	A257A		A*1110, 1111
	A259A		A*110101-1109, 1111-1117
	A299C		A*110101-1116
A23	A314C		
	A414C		
	A538T		A*2302
	A571G		A*2304
	A257A		A*2301-2308N, 2310-2312
A24	A414C		A*2417, 2441
	A314C		A*2404, 2419, 2428
	A538C		A*2406, 2413, 2418, 2422, 2424
	A571G		A*240301, 240302, 2410, 2418, 2422, 2423, 2433
	A538T		A*24020101-2411N, 2414-2417, 2419-2423, 2425-2443
	A299T		A*24020101-2418, 2420-2427, 2429-2443
	A414G		A*24020101-2415, 2418-2440N, 2442, 2443
	A259A		A*24020101-2423, 2425-2443
	A299C		A*24020101-240302, 2405-2443
A25	A259A		
	A314C		
	A362G		
	A414G	A*250101-2504	
	A538C		A*250101-2503

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	Targeted by probes:	Alleles weakly targeted	Alleles not targeted
A26	A362G		
	A414G	A*2601, 2603-2605, 260701-2622	A*2602, 260701
	A259A		A*260701, 260702, 2619
	A299C		A*2603, 2605, 2606, 2621
	A299T		A*2601, 2602, 2604, 2605, 260701-2620, 2622
	A257A		A*2601-2618, 2620-2622
	A538C		A*2601-260702, 2609-2622
A29	A299C		
	A414G		
	A538T		A*2905
	A538C		A*29010101-2904, 2906-2911
	A571G		A*29010101-290203, 2904-2911
A30	A362T		
	A257A		A*3007
	A538T		A*3004, 3006
	A299T		A*300201-3007, 3009, 3010, 3012
A31	A538T		
	A414G	A*310102, 3102, 3105, 3107-3109	
	A257A		A*3108
	A299T		A*3107, 3108
	A314C		A*310102-3106, 3109
	A362T		A*310102, 3102, 3105-3109
	A571G		A*310102-3104, 3106-3109
A32	A314C		
	A257A		
	A414G	A*3201-3203, 3205-3208	
	A538T		A*3202
	A362T		A*3201-3203, 3205-3208
	A538C		A*3201, 3203-3208
A33	A259A		
	A299T		
	A414G	A*3301-3307	
	A538T		
A34	A259A		
	A299T		
	A414G	A*3401, 3405, 3406	
	A538T		A*3401, 3405
	A362G		A*3402-3404
	A362T		A*3401, 3405, 3406
A36	A257A		
	A299C		
	A414G		
	A362T		A*3603
A43	A299C		
	A362G		
	A414G	A*4301	

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	Targeted by probes:	Alleles weakly targeted	Alleles not targeted
A66	A259A		
	A299T		
	A362G		
	A414G	A*6601-6604	
A68	A299T		
	A259A		A*6810, 6813, 6814
	A414G		A*6802, 6806, 6807, 6815, 6818N, 6827
	A362G		A*680101-680103, 680301-6814, 6816, 6817, 6819-6822, 6824-6826
	A414C		A*680101-680103, 680301-6814, 6816, 6817, 6819-6826
	A538C		A*680101-6808, 6810-6825, 6827
	A571G		A*680101-6825, 6827
A69	A259A		
	A299T		
	A362G		
	A414C		
	A538T		
A74	A538T		
	A414G	A*7401-7410	
	A257A		A*7404
	A299T		A*7410
	A299C		A*7401-7409
A80	A299C		
	A362T		
	A414G		
	A571G		

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HLA-A Allele Level Chart:

	A257A	A259A	A299C	A299T	A314C	A362G	A362T	A414C	A414G	A538C	A538T	A571G
A*010101												
A*010102												
A*0102												
A*0103												
A*0104N												
A*0106												
A*0107												
A*0108												
A*0109												
A*0110												
A*02010101												
A*02010102L												
A*020102												
A*020103												
A*020104												
A*020105												
A*020106												
A*020107												
A*020108												
A*020109												
A*020110												
A*0202												
A*020301												
A*020302												
A*0204												
A*0205												
A*020601												
A*020602												
A*0207												
A*0208												
A*0209												
A*0210												
A*0211												
A*0212												
A*0213												
A*0214												
A*0215N												
A*0216												
A*021701												
A*021702												
A*0218												
A*0219												
A*022001												
A*022002												
A*0221												
A*0222												
A*0224												
A*0225												
A*0226												
A*0227												
A*0228												
A*0229												
A*0230												
A*0231												
A*0232N												
A*0233												
A*0234												
A*023501												
A*0236												
A*0237												
A*0238												
A*0239												
A*0240												
A*0241												
A*0242												
A*0243N												

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	A257A	A259A	A299C	A299T	A314C	A362G	A362T	A414C	A414G	A538C	A538T	A571G
A*0244												
A*0245												
A*0246												
A*0247												
A*0248												
A*0249												
A*0250												
A*0251												
A*0252												
A*0253N												
A*0254												
A*0255												
A*0256												
A*0257												
A*0258												
A*0259												
A*0260												
A*0261												
A*0262												
A*0263												
A*0264												
A*0265												
A*0266												
A*0267												
A*0268												
A*0269												
A*0270												
A*0271												
A*0272												
A*03010101												
A*03010102N												
A*030102												
A*030103												
A*0302												
A*0303N												
A*0304												
A*0305												
A*0306												
A*0307												
A*0308												
A*0309												
A*0310												
A*0311N												
A*0312												
A*0313												
A*0314												
A*110101												
A*110102												
A*1102												
A*1103												
A*1104												
A*1105												
A*1106												
A*1107												
A*1108												
A*1109												
A*1110												
A*1111												
A*1112												
A*1113												
A*1114												
A*1115												
A*1116												
A*1117												
A*2301												
A*2302												
A*2303												

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	A257A	A259A	A299C	A299T	A314C	A362G	A362T	A414C	A414G	A538C	A538T	A571G
A*2303												
A*2304												
A*2305												
A*2306												
A*2307N												
A*2308N												
A*2309												
A*2310												
A*2311N												
A*2312												
A*24020101												
A*24020102L												
A*240202												
A*240203												
A*240204												
A*240205												
A*240301												
A*240302												
A*2404												
A*2405												
A*2406												
A*2407												
A*2408												
A*2409N												
A*2410												
A*2411N												
A*2413												
A*2414												
A*2415												
A*2417												
A*2418												
A*2419												
A*2420												
A*2421												
A*2422												
A*2423												
A*2424												
A*2425												
A*2426												
A*2427												
A*2428												
A*2429												
A*2430												
A*2431												
A*2432												
A*2433												
A*2434												
A*2435												
A*2436N												
A*2437												
A*2438												
A*2439												
A*2440N												
A*2441												
A*2442												
A*2443												
A*250101												
A*250102												
A*2502												
A*2503												
A*2504												
A*2601												
A*2602												
A*2603												
A*2604												
A*2605												
A*2606												

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	A257A	A259A	A299C	A299T	A314C	A362G	A362T	A414C	A414G	A538C	A538T	A571G
A*2606												
A*260701												
A*260702												
A*2608												
A*2609												
A*2610												
A*2611N												
A*2612												
A*2613												
A*2614												
A*2615												
A*2616												
A*2617												
A*2618												
A*2619												
A*2620												
A*2621												
A*2622												
A*29010101												
A*29010102N												
A*290201												
A*290202												
A*290203												
A*2903												
A*2904												
A*2905												
A*2906												
A*2907												
A*2908N												
A*2909												
A*2910												
A*2911												
A*3001												
A*300201												
A*300202												
A*3003												
A*3004												
A*3006												
A*3007												
A*3008												
A*3009												
A*3010												
A*3011												
A*3012												
A*310102												
A*3102												
A*3103												
A*3104												
A*3105												
A*3106												
A*3107												
A*3108												
A*3109												
A*3201												
A*3202												
A*3203												
A*3204												
A*3205												
A*3206												
A*3207												
A*3208												
A*3301												
A*330301												
A*330302												
A*3304												
A*3305												
A*3306												

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HaploPrep™ for HLA-A

	A257A	A259A	A299C	A299T	A314C	A362G	A362T	A414C	A414G	A538C	A538T	A571G
A*3306												
A*3307												
A*3401												
A*3402												
A*3403												
A*3404												
A*3405												
A*3406												
A*3601												
A*3602												
A*3603												
A*3604												
A*4301												
A*6601												
A*6602												
A*6603												
A*6604												
A*680101												
A*680102												
A*680103												
A*6802												
A*680301												
A*680302												
A*6804												
A*6805												
A*6806												
A*6807												
A*6808												
A*6809												
A*6810												
A*6811N												
A*6812												
A*6813												
A*6814												
A*6815												
A*6816												
A*6817												
A*6818N												
A*6819												
A*6820												
A*6821												
A*6822												
A*6823												
A*6824												
A*6825												
A*6826												
A*6827												
A*6901												
A*7401												
A*7402												
A*7403												
A*7404												
A*7405												
A*7406												
A*7407												
A*7408												
A*7409												
A*7410												
A*8001												

?: Probe is located in portion of exon not yet sequenced

For Research Use Only

Foot Notes: *Due to the sharing of sequence motifs between Class I alleles, some non HLA-A, Class I alleles may be captured with these probes:*

¹Probe A314C: B*0736, B*0803, B*1513, B*1516, B*15170101, B*15170102, B*1523, B*1524, B*1567, B*2702, B*3801, B*3805, B*3806, B*3807, B*3809, B*4013, B*4019, B*4406, B*4418, B*4425, B*4901, B*4903, B*510101, B*510102, B*510103, B*510104, B*510105, B*510201, B*510202, B*5103, B*5104, B*5105, B*5106, B*5107, B*5108, B*5109, B*5110, B*5111N, B*5112, B*511301, B*511302, B*5114, B*5115, B*5116, B*5117, B*5118, B*5119, B*5120, B*5121, B*5122, B*5123, B*5124, B*5126, B*5127N, B*5128, B*5129, B*5130, B*5131, B*5132, B*5133, B*5134, B*520101, B*520102, B*520103, B*520104, B*5202, B*5203, B*5204, B*5205, B*5301, B*5302, B*5304, B*5305, B*5306, B*5307, B*5308, B*570101, B*570102, B*5702, B*570301, B*570302, B*5704, B*5705, B*5706, B*5707, B*5709, B*5801, B*5802, B*5804, B*5805, B*5806, B*5807, B*5808, B*5809, B*5901

²Probe A362G: B*0707, B*0712, B*0714, B*0718, B*0812, B*0816, B*1301, B*1306, B*1307N, B*1310, B*1311, B*1312, B*140601, B*140602, B*15010101, B*15010102N, B*150102, B*150103, B*150104, B*1502, B*1503, B*1505, B*1506, B*1508, B*1509, B*1510, B*151101, B*151102, B*1512, B*1513, B*1514, B*1515, B*15170101, B*15170102, B*1518, B*1519, B*1520, B*1521, B*1523, B*1524, B*1525, B*1526N, B*1527, B*1528, B*1529, B*1530, B*1531, B*1532, B*1533, B*1534, B*1536, B*1537, B*1538, B*1539, B*1540, B*1543, B*1544, B*1546, B*1547, B*1548, B*1549, B*1550, B*1551, B*1552, B*1553, B*1554, B*1556, B*1557, B*1558, B*1560, B*1561, B*1562, B*1563, B*1564, B*1565, B*1566, B*1569, B*1570, B*1571, B*1572, B*1573, B*1574, B*1575, B*1576, B*1577, B*1578, B*1579N, B*1580, B*1581, B*1582, B*180101, B*180102, B*1803, B*1804, B*1805, B*1806, B*1807, B*1808, B*1809, B*1810, B*1811, B*1812, B*1813, B*1815, B*1817N, B*1818, B*1819, B*2719, B*2721, B*350101, B*350102, B*3502, B*3503, B*3504, B*3506, B*3507, B*3508, B*350901, B*350902, B*3510, B*3511, B*3512, B*3513, B*351401, B*351402, B*3515, B*3518, B*3519, B*3520, B*3521, B*3523, B*3524, B*3525, B*3526, B*3527, B*3528, B*3529, B*3532, B*3533, B*3534, B*3535, B*3536, B*3538, B*3539, B*3540N, B*3541, B*3542, B*3543, B*3544, B*3545, B*3546, B*3547, B*3548, B*3701, B*3703N, B*3704, B*3705, B*3801, B*380201, B*380202, B*3803, B*3804, B*3805, B*3806, B*3807, B*3808, B*3809, B*390101, B*390103, B*390104, B*390201, B*390202, B*3904, B*3905, B*3907, B*3908, B*3909, B*3910, B*3911, B*3912, B*3913, B*3915, B*3917, B*3918, B*3919, B*3920, B*3922, B*3923, B*3925N, B*3926, B*3927, B*400101, B*400102, B*400103, B*400104, B*4004, B*4007, B*4010, B*4011, B*4012, B*401401, B*401402, B*401403, B*4020, B*4021, B*4022N, B*4023, B*4025, B*4026, B*4028, B*4033, B*4036, B*4038, B*4042, B*4043, B*4046, B*4047, B*4048, B*4103, B*44020101, B*44020102S, B*440202, B*440203, B*440301, B*440302, B*4404, B*4405, B*4406, B*4407, B*4408, B*4409, B*4410, B*4411, B*4412, B*4413, B*4414, B*4416, B*4417, B*4419N, B*4421, B*4422, B*4423N, B*4424, B*4425, B*4426, B*4427, B*4428, B*4429, B*4430, B*4431, B*4432, B*4433, B*4434, B*4435, B*4436, B*4437, B*4438, B*4439, B*4601, B*4602, B*47010101, B*47010102, B*4702, B*4703, B*4802, B*4803, B*5104, B*5106, B*5301, B*5302, B*5303, B*5304, B*5305, B*5306, B*5307, B*5308, B*5309, B*5508, B*5602,

B*5603, B*5604, B*5609, B*5610, B*5611, B*5612, B*5705, B*5801, B*5804, B*5805, B*5809, B*670101, B*670102, B*6702, B*8201, B*8202, B*8301
Cw*0105, Cw*020201, Cw*020202, Cw*020203, Cw*020204, Cw*020205, Cw*0203, Cw*0204, Cw*0206, Cw*0207, Cw*0208, Cw*030301, Cw*030302, Cw*030303, Cw*030401, Cw*030402, Cw*030403, Cw*0306, Cw*0307, Cw*0308, Cw*0309, Cw*0310, Cw*0311, Cw*0312, Cw*0313, Cw*0314, Cw*04010101, Cw*04010102, Cw*040102, Cw*0403, Cw*040401, Cw*040402, Cw*0405, Cw*0406, Cw*0407, Cw*0408, Cw*0409N, Cw*0410, Cw*0411, Cw*0412, Cw*0413, Cw*0501, Cw*0502, Cw*0503, Cw*0504, Cw*0505, Cw*0506, Cw*0507N, Cw*0508, Cw*070101, Cw*070102, Cw*07020101, Cw*07020102, Cw*0703, Cw*070401, Cw*070402, Cw*0706, Cw*0707, Cw*0708, Cw*0709, Cw*0710, Cw*0711, Cw*0712, Cw*0713, Cw*0714, Cw*0715, Cw*0716, Cw*0717, Cw*0718, Cw*0719, Cw*0720, Cw*0721, Cw*0722, Cw*080101, Cw*080102, Cw*0802, Cw*0803, Cw*0804, Cw*0805, Cw*0806, Cw*0807, Cw*0809, Cw*0810, Cw*120201, Cw*120202, Cw*120203, Cw*1208, Cw*1210, Cw*150201, Cw*150202, Cw*1503, Cw*1504, Cw*150501, Cw*150502, Cw*150503, Cw*1506, Cw*1507, Cw*1508, Cw*1509, Cw*1510, Cw*1511, Cw*1606, Cw*1701, Cw*1702, Cw*1703, Cw*1801, Cw*1802

³Probe A571G: B*1512, B*1519

HLA-A Probe A257A

Product Name	Size	Product Number
HaploPrep HLA-A A257A	25 Separations	H111.PA257A

Probe target sequence (unique sequence element, center nucleotide position & exon):

USE	center nt pos	exon
CAGGA (reversed)	258	2

HLA-A Alleles Targeted:

A*010101, A*010102, A*0102, A*0103, A*0104N, A*0106, A*0107, A*0108, A*0109, A*0110, A*0245, A*0256, A*03010101, A*03010102N, A*030102, A*030103, A*0302, A*0303N, A*0304, A*0305, A*0306, A*0307, A*0308, A*0309, A*0310, A*0311N, A*0312, A*0313, A*0314, A*110101, A*110102, A*1102, A*1103, A*1104, A*1105, A*1106, A*1107, A*1108, A*1109, A*1112, A*1113, A*1114, A*1115, A*1116, A*1117, A*2309, A*2619, A*3001, A*3002, A*3003, A*3004, A*3006, A*3008, A*3009, A*3010, A*3011, A*3012, A*310102, A*3102, A*3103, A*3104, A*3105, A*3106, A*3107, A*3109, A*3201, A*3202, A*3203, A*3204, A*3205, A*3206, A*3207, A*3208, A*3601, A*3602, A*3603, A*3604, A*7401, A*7402, A*7403, A*7405, A*7406, A*7407, A*7408, A*7409, A*7410

- W = weakly targeted

HLA-A Probe A259A

Product Name	Size	Product Number
HaploPrep HLA-A A259A	25 Separations	H1111.PA259A

Probe target sequence (unique sequence element, center nucleotide position & exon):

USE	center nt pos	exon
GAACA (reversed)	260	2

HLA-A Alleles Targeted:

A*0255, A*1110, A*2424, A*250101, A*250102, A*2502, A*2503, A*2504, A*2601, A*2602, A*2603, A*2604, A*2605, A*2606, A*2608, A*2609, A*2610, A*2611N, A*2612, A*2613, A*2614, A*2615, A*2616, A*2617, A*2618, A*2620, A*2621, A*2622, A*3301, A*330301, A*330302, A*3304, A*3305, A*3306, A*3307, A*3401, A*3402, A*3403, A*3404, A*3405, A*3406, A*6601, A*6602, A*6603, A*6604, A*680101, A*680102, A*680103, A*6802, A*680301, A*680302, A*6804, A*6805, A*6806, A*6807, A*6808, A*6809, A*6811N, A*6812, A*6815, A*6816, A*6817, A*6818N, A*6819, A*6820, A*6821, A*6822, A*6823, A*6824, A*6825, A*6826, A*6827, A*6901

- W = weakly targeted

HLA-A Probe A299C

Product Name	Size	Product Number
HaploPrep HLA-A A299C	25 Separations	H1111.PA299C

Probe target sequence (unique sequence element, center nucleotide position & exon):

USE	center nt pos	exon
GCGAA (reversed)	300	2

HLA-A Alleles Targeted:

A*010101, A*010102, A*0102, A*0103, A*0104N, A*0106, A*0108, A*0109, A*0110, A*1117, A*2404, A*2601, A*2602, A*2604, A*260701, A*260702, A*2608, A*2609, A*2610, A*2611N, A*2612, A*2613, A*2614, A*2615, A*2616, A*2617, A*2618, A*2619, A*2620, A*2621, A*2622, A*29010101, A*29010102N, A*290201, A*290202, A*290203, A*2903, A*2904, A*2905, A*2906, A*2907, A*2908N, A*2909, A*2910, A*2911, A*3601, A*3602, A*3603, A*3604, A*4301, A*7410, A*8001

- W = weakly targeted

HLA-A Probe A299T

Product Name	Size	Product Number
HaploPrep HLA-A A299T	25 Separations	H111.PA299T

Probe target sequence (unique sequence element, center nucleotide position & exon):

USE	center nt pos	exon
GTGGA (reversed)	300	2

HLA-A Alleles Targeted:

A*02010101, A*02010102L, A*020102, A*020103, A*020104, A*020105, A*020106, A*020107, A*020108, A*020109, A*020110, A*0202, A*020301, A*020302, A*0204, A*0205, A*020601, A*020602, A*0207, A*0208, A*0209, A*0210, A*0211, A*0212, A*0213, A*0214, A*0215N, A*0216, A*021701, A*021702, A*0218, A*0219, A*022001, A*022002, A*0221, A*0222, A*0224, A*0225, A*0226, A*0227, A*0228, A*0229, A*0230, A*0231, A*0232N, A*0233, A*0234, A*0235, A*0236, A*0237, A*0238, A*0239, A*0240, A*0241, A*0242, A*0243N, A*0244, A*0245, A*0246, A*0247, A*0248, A*0249, A*0250, A*0251, A*0252, A*0253N, A*0254, A*0255, A*0256, A*0257, A*0258, A*0259, A*0260, A*0261, A*0262, A*0263, A*0264, A*0265, A*0266, A*0267, A*0268, A*0269, A*0270, A*0271, A*0272, A*03010101, A*03010102N, A*030102, A*030103, A*0302, A*0303N, A*0304, A*0305, A*0306, A*0307, A*0308, A*0309, A*0310, A*0311N, A*0312, A*0313, A*0314, A*110101, A*110102, A*1102, A*1103, A*1104, A*1105, A*1106, A*1107, A*1108, A*1109, A*1110, A*1111, A*1112, A*1113, A*1114, A*1115, A*1116, A*2419, A*2428, A*2603, A*2606, A*2621, A*3001, A*3008, A*3011, A*310102, A*3102, A*3103, A*3104, A*3105, A*3106, A*3109, A*3301, A*330301, A*330302, A*3304, A*3305, A*3306, A*3307, A*3401, A*3402, A*3403, A*3404, A*3405, A*3406, A*6601, A*6602, A*6603, A*6604, A*680101, A*680102, A*680103, A*6802, A*680301, A*680302, A*6804, A*6805, A*6806, A*6807, A*6808, A*6809, A*6810, A*6811N, A*6812, A*6813, A*6814, A*6815, A*6816, A*6817, A*6818N, A*6819, A*6820, A*6821, A*6822, A*6823, A*6824, A*6825, A*6826, A*6827, A*6901, A*7401, A*7402, A*7403, A*7404, A*7405, A*7406, A*7407, A*7408, A*7409

- W = weakly targeted

HLA-A Probe A314C

Product Name	Size	Product Number
HaploPrep HLA-A A314C	25 Separations	H1111.PA314C

Probe target sequence (unique sequence element, center nucleotide position & exon):

USE	center nt pos	exon
TCGCGCTCC	315	2

HLA-A Alleles Targeted:

A*2301, A*2302, A*2303, A*2304, A*2305, A*2306, A*2307N, A*2308N, A*2309, A*2310, A*2311N, A*2312, A*24020101, A*24020102L, A*240202, A*240203, A*240204, A*240205, A*240301, A*240302, A*2405, A*2406, A*2407, A*2408, A*2409N, A*2410, A*2411N, A*2413, A*2414, A*2415, A*2417, A*2418, A*2420, A*2421, A*2422, A*2423, A*2424, A*2425, A*2426, A*2427, A*2429, A*2430, A*2431, A*2432, A*2433, A*2434, A*2435, A*2436N, A*2437, A*2438, A*2439, A*2440N, A*2441, A*2442, A*2443, A*250101, A*250102, A*2502, A*2503, A*2504, A*3107, A*3108, A*3201, A*3202, A*3203, A*3204, A*3205, A*3206, A*3207, A*3208

Non HLA-A Alleles captured:

B*0736, B*0738, B*0803, B*1513, B*1516, B*15170101, B*15170102, B*1523, B*1524, B*1567, B*1587, B*2702, B*3801, B*3805, B*3806, B*3807, B*3809, B*4013, B*4019, B*4406, B*4418, B*4425, B*4901, B*4903, B*510101, B*510102, B*510103, B*510104, B*510105, B*510201, B*510202, B*5103, B*5104, B*5105, B*5106, B*5107, B*5108, B*5109, B*5110, B*5111N, B*5112, B*511301, B*511302, B*5114, B*5115, B*5116, B*5117, B*5118, B*5119, B*5120, B*5121, B*5122, B*5123, B*5124, B*5126, B*5127N, B*5128, B*5129, B*5130, B*5131, B*5132, B*5133, B*5134, B*520101, B*520102, B*520103, B*520104, B*5202, B*5203, B*5204, B*5205, B*5301, B*5302, B*5304, B*5305, B*5306, B*5307, B*5308, B*570101, B*570102, B*5702, B*570301, B*570302, B*5704, B*5705, B*5706, B*5707, B*5709, B*5801, B*5802, B*5804, B*5805, B*5806, B*5807, B*5808, B*5809, B*5901

- W = weakly targeted

HLA-A Probe A362G

Product Name	Size	Product Number
HaploPrep HLA-A A362G	25 Separations	H111.PA362G

Probe target sequence (unique sequence element, center nucleotide position & exon):

USE	center nt pos	exon
GAGGA	362	3

HLA-A Alleles Targeted:

A*02010101, A*02010102L, A*020102, A*020103, A*020104, A*020105, A*020106, A*020107, A*020108, A*020109, A*0202, A*0203, A*0205, A*0206, A*0207, A*0208, A*0209, A*0210, A*0211, A*0212, A*0213, A*0214, A*0215N, A*0216, A*0218, A*0219, A*022001, A*022002, A*0221, A*0222, A*0224, A*0225, A*0226, A*0227, A*0228, A*0229, A*0230, A*0231, A*0232N, A*0233, A*0234, A*0235, A*0236, A*0237, A*0238, A*0239, A*0240, A*0241, A*0242, A*0243N, A*0244, A*0245, A*0246, A*0247, A*0248, A*0249, A*0250, A*0251, A*0252, A*0253N, A*0254, A*0255, A*0256, A*0258, A*0259, A*0260, A*0261, A*0262, A*0263, A*0264, A*0266, A*0267, A*0268, A*0269, A*0270, A*0271, A*0272, A*2414, A*250101, A*250102, A*2502, A*2503, A*2504, A*2601, A*2602, A*2603, A*2604, A*2605, A*2606, A*260701, A*260702, A*2608, A*2609, A*2610, A*2611N, A*2612, A*2613, A*2614, A*2615, A*2616, A*2617, A*2618, A*2619, A*2620, A*2621, A*2622, A*3401, A*3405, A*3406, A*4301, A*6601, A*6602, A*6603, A*6604, A*6802, A*6815, A*6818N, A*6823, A*6827, A*6901

Non HLA-A Alleles captured:

B*0707, B*0712, B*0714, B*0718, B*0812, B*0816, B*1301, B*1306, B*1307N, B*1310, B*1311, B*1312, B*1313, B*140601, B*140602, B*15010101, B*15010102N, B*150102, B*150103, B*150104, B*1502, B*1503, B*1505, B*1506, B*1508, B*1509, B*1510, B*151101, B*151102, B*1512, B*1513, B*1514, B*1515, B*15170101, B*15170102, B*1518, B*1519, B*1520, B*1521, B*1523, B*1524, B*1525, B*1526N, B*1527, B*1528, B*1529, B*1530, B*1531, B*1532, B*1533, B*1534, B*1536, B*1537, B*1538, B*1539, B*1540, B*1543, B*1544, B*1546, B*1547, B*1548, B*1549, B*1550, B*1551, B*1552, B*1553, B*1554, B*1556, B*1557, B*1558, B*1560, B*1561, B*1562, B*1563, B*1564, B*1565, B*1566, B*1569, B*1570, B*1571, B*1572, B*1573, B*1574, B*1575, B*1576, B*1577, B*1578, B*1579N, B*1580, B*1581, B*1582, B*1584, B*1585, B*1587, B*1588, B*1589, B*180101, B*180102, B*1803, B*1804, B*1805, B*1806, B*1807, B*1808, B*1809, B*1810, B*1811, B*1812, B*1813, B*1815, B*1817N, B*1818, B*1819, B*2719, B*2721, B*350101, B*350102, B*3502, B*3503, B*3504, B*3506, B*3507, B*3508, B*350901, B*350902, B*3510, B*3511, B*3512, B*3513, B*351401, B*351402, B*3515, B*3518, B*3519, B*3520, B*3521, B*3523, B*3524, B*3525, B*3526, B*3527, B*3528, B*3529, B*3532, B*3533, B*3534, B*3535, B*3536, B*3538, B*3539, B*3540N, B*3541, B*3542, B*3543, B*3544, B*3545, B*3546, B*3547, B*3548, B*3549, B*3550, B*3701, B*3703N, B*3704, B*3705, B*3706, B*3801, B*380201, B*380202, B*3803, B*3804, B*3805, B*3806, B*3807, B*3808, B*3809, B*3810, B*390101, B*390103, B*390104, B*390201, B*390202, B*3904, B*3905, B*3907, B*3908, B*3909, B*3910, B*3911,

B*3912, B*3913, B*3915, B*3917, B*3918, B*3919, B*3920, B*3922, B*3923, B*3925N, B*3926, B*3927, B*3930, B*3931, B*3932, B*400101, B*400102, B*400103, B*400104, B*4004, B*4007, B*4010, B*4011, B*4012, B*401401, B*401402, B*401403, B*4020, B*4021, B*4022N, B*4023, B*4025, B*4026, B*4028, B*4033, B*4036, B*4038, B*4042, B*4043, B*4046, B*4047, B*4048, B*4049, B*4051, B*4103, B*44020101, B*44020102S, B*440202, B*440203, B*440301, B*440302, B*4404, B*4405, B*4406, B*4407, B*4408, B*4409, B*4410, B*4411, B*4412, B*4413, B*4414, B*4416, B*4417, B*4419N, B*4421, B*4422, B*4423N, B*4424, B*4425, B*4426, B*4427, B*4428, B*4429, B*4430, B*4431, B*4432, B*4433, B*4434, B*4435, B*4436, B*4437, B*4438, B*4439, B*4601, B*4602, B*47010101, B*47010102, B*4702, B*4703, B*4802, B*4803, B*5104, B*5106, B*5301, B*5302, B*5303, B*5304, B*5305, B*5306, B*5307, B*5308, B*5309, B*5508, B*5602, B*5603, B*5604, B*5609, B*5610, B*5611, B*5612, B*5705, B*5801, B*5804, B*5805, B*5809, B*670101, B*670102, B*6702, B*8201, B*8202, B*8301

Cw*0105, Cw*020201, Cw*020202, Cw*020203, Cw*020204, Cw*020205, Cw*0203, Cw*0204, Cw*0206, Cw*0207, Cw*0208, Cw*0209, Cw*030301, Cw*030302, Cw*030303, Cw*030401, Cw*030402, Cw*030403, Cw*0306, Cw*0307, Cw*0308, Cw*0309, Cw*0310, Cw*0311, Cw*0312, Cw*0313, Cw*0314, Cw*0315, Cw*0316, Cw*0318, Cw*04010101, Cw*04010102, Cw*040102, Cw*0403, Cw*040401, Cw*040402, Cw*0405, Cw*0406, Cw*0407, Cw*0408, Cw*0409N, Cw*0410, Cw*0411, Cw*0412, Cw*0413, Cw*0414, Cw*0415, Cw*0501, Cw*0502, Cw*0503, Cw*0504, Cw*0505, Cw*0506, Cw*0507N, Cw*0508, Cw*0509, Cw*0510, Cw*070101, Cw*070102, Cw*07020101, Cw*07020102, Cw*0703, Cw*070401, Cw*070402, Cw*0706, Cw*0707, Cw*0708, Cw*0709, Cw*0710, Cw*0711, Cw*0712, Cw*0713, Cw*0714, Cw*0715, Cw*0716, Cw*0717, Cw*0718, Cw*0719, Cw*0720, Cw*0721, Cw*0722, Cw*0723, Cw*0724, Cw*0725, Cw*0726, Cw*0727, Cw*080101, Cw*080102, Cw*0802, Cw*0803, Cw*0804, Cw*0805, Cw*0806, Cw*0807, Cw*0809, Cw*0810, Cw*0811, Cw*120201, Cw*120202, Cw*120203, Cw*1208, Cw*1210, Cw*1214, Cw*150201, Cw*150202, Cw*1503, Cw*1504, Cw*150501, Cw*150502, Cw*150503, Cw*1506, Cw*1507, Cw*1508, Cw*1509, Cw*1510, Cw*1511, Cw*1512, Cw*1606, Cw*1701, Cw*1702, Cw*1703, Cw*1801, Cw*1802

- W = weakly targeted

HLA-A Probe A362T

Product Name	Size	Product Number
HaploPrep HLA-A A362T	25 Separations	H111.PA362T

Probe target sequence (unique sequence element, center nucleotide position & exon):

USE	center nt pos	exon
GATAA	362	3

HLA-A Alleles Targeted:

A*010101, A*010102, A*0102, A*0104N, A*0106, A*0107, A*0108, A*0109, A*0110, A*03010101, A*03010102N, A*030102, A*030103, A*0302, A*0303N, A*0304, A*0305, A*0306, A*0307, A*0308, A*0309, A*0310, A*0311N, A*0312, A*0313, A*0314, A*110101, A*110102, A*1102, A*1103, A*1104, A*1105, A*1106, A*1107, A*1108, A*1109, A*1110, A*1111, A*1112, A*1113, A*1114, A*1115, A*1116, A*1117, A*3001, A*3002, A*3003, A*3004, A*3006, A*3007, A*3008, A*3009, A*3010, A*3011, A*3012, A*3103, A*3104, A*3204, A*3402, A*3403, A*3404, A*3601, A*3602, A*3604, A*8001

- W = weakly targeted

HLA-A Probe A414C

Product Name	Size	Product Number
HaploPrep HLA-A A414C	25 Separations	H1111.PA414C

Probe target sequence (unique sequence element, center nucleotide position & exon):

USE	center nt pos	exon
CCACCAGT	414	3

HLA-A Alleles Targeted:

A*02010101, A*02010102L, A*020102, A*020103, A*020104, A*020105, A*020106, A*020107, A*020108, A*020109, A*0202, A*0203, A*0204, A*0205, A*0206, A*0207, A*0208, A*0209, A*0210, A*0211, A*0212, A*0213, A*0214, A*0215N, A*0216, A*021701, A*021702, A*0218, A*0219, A*022001, A*022002, A*0221, A*0222, A*0224, A*0225, A*0226, A*0227, A*0228, A*0229, A*0230, A*0231, A*0232N, A*0233, A*0234, A*0235, A*0236, A*0237, A*0238, A*0239, A*0240, A*0241-W, A*0242, A*0243N, A*0244, A*0245, A*0246, A*0247, A*0248, A*0249, A*0250, A*0251, A*0253N, A*0254, A*0255, A*0256, A*0257, A*0258, A*0259, A*0261, A*0262, A*0263, A*0266, A*0267, A*0268, A*0269, A*0270, A*0271, A*0272, A*2301, A*2302, A*2303, A*2304, A*2305, A*2306, A*2307N, A*2308N, A*2309, A*2310, A*2311N, A*2312, A*24020101, A*24020102L, A*240202, A*240203, A*240204, A*240205, A*240301, A*240302, A*2404, A*2405, A*2406, A*2407, A*2408, A*2409N, A*2410, A*2411N, A*2413, A*2414, A*2415, A*2418, A*2419, A*2420, A*2421, A*2422, A*2423, A*2424, A*2425, A*2426, A*2427, A*2428, A*2429, A*2430, A*2431, A*2432, A*2433, A*2434, A*2435, A*2436N, A*2437, A*2438, A*2439, A*2440N, A*2442, A*6802, A*6815, A*6818N, A*6827, A*6901

- W = weakly targeted

HLA-A Probe A414G

Product Name	Size	Product Number
HaploPrep HLA-A A414G	25 Separations	H111.PA414G

Probe target sequence (unique sequence element, center nucleotide position & exon):

USE	center nt pos	exon
CCGGCAGG	414	3

HLA-A Alleles Targeted:

A*010101, A*010102, A*0102, A*0103, A*0104N, A*0106, A*0107, A*0108, A*0109, A*0110, A*0265-W, A*03010101, A*03010102N, A*030102, A*030103, A*0302, A*0303N, A*0304, A*0305, A*0306, A*0307, A*0308, A*0309, A*0310, A*0311N, A*0312, A*0313, A*0314, A*110101, A*110102, A*1102, A*1103, A*1104, A*1105, A*1106, A*1107, A*1108, A*1109, A*1110, A*1111, A*1112, A*1113, A*1114, A*1115, A*1116, A*1117, A*2417, A*2441, A*250101-W, A*250102-W, A*2502-W, A*2503-W, A*2504-W, A*2601-W, A*2603-W, A*2604-W, A*2605-W, A*260701-W, A*260702-W, A*2608-W, A*2609-W, A*2610-W, A*2611N-W, A*2612-W, A*2613-W, A*2614-W, A*2615-W, A*2616-W, A*2617-W, A*2618-W, A*2619-W, A*2620-W, A*2621-W, A*2622-W, A*29010101, A*29010102N, A*290201, A*290202, A*290203, A*2903, A*2904, A*2905, A*2906, A*2907, A*2908N, A*2909, A*2910, A*2911, A*310102-W, A*3102-W, A*3103, A*3104, A*3105-W, A*3106, A*3107-W, A*3108-W, A*3109-W, A*3201-W, A*3202-W, A*3203-W, A*3204, A*3205-W, A*3206-W, A*3207-W, A*3208-W, A*3208, A*3301-W, A*330301-W, A*330302-W, A*3304-W, A*3305-W, A*3306-W, A*3307-W, A*3401-W, A*3402, A*3403, A*3404, A*3405-W, A*3406-W, A*3601, A*3602, A*3603, A*3604, A*4301-W, A*6601-W, A*6602-W, A*6603-W, A*6604-W, A*680101, A*680102, A*680103, A*680301, A*680302, A*6804, A*6805, A*6808, A*6809, A*6810, A*6811N, A*6812, A*6813, A*6814, A*6816, A*6817, A*6819, A*6820, A*6821, A*6822, A*6823, A*6824, A*6825, A*6826, A*7401-W, A*7402-W, A*7403-W, A*7404-W, A*7405-W, A*7406-W, A*7407-W, A*7408-W, A*7409-W, A*7410-W, A*8001

- W = weakly targeted

HLA-A Probe A538C

Product Name	Size	Product Number
HaploPrep HLA-A A538C	25 Separations	H1111.PA538C

Probe target sequence (unique sequence element, center nucleotide position & exon):

USE	center nt pos	exon
AGCAG	538	3

HLA-A Alleles Targeted:

A*0110, A*0212, A*0213, A*0219, A*0227, A*0237, A*0238, A*0244, A*0254, A*0302, A*0310, A*110101, A*110102, A*1102, A*1104, A*1105, A*1106, A*1107, A*1109, A*1110, A*1111, A*1112, A*1113, A*1114, A*1115, A*1116, A*1117, A*24020101, A*24020102L, A*240202, A*240203, A*240204, A*240205, A*240301, A*240302, A*2404, A*2405, A*2407, A*2408, A*2409N, A*2410, A*2411N, A*2414, A*2415, A*2417, A*2419, A*2420, A*2421, A*2423, A*2425, A*2426, A*2427, A*2428, A*2429, A*2430, A*2431, A*2432, A*2433, A*2434, A*2435, A*2436N, A*2437, A*2438, A*2439, A*2440N, A*2441, A*2442, A*2443, A*2504, A*2608, A*2905, A*3202, A*6809, A*6826

- W = weakly targeted

HLA-A Probe A538T

Product Name	Size	Product Number
HaploPrep HLA-A A538T	25 Separations	H1111.PA538T

Probe target sequence (unique sequence element, center nucleotide position & exon):

USE	center nt pos	exon
AGTTG	538	3

HLA-A Alleles Targeted:

A*0106, A*02010101, A*02010102L, A*020102, A*020103, A*020104, A*020105, A*020106, A*020107, A*020108, A*020109, A*020110, A*0204, A*0206, A*0207, A*0209, A*0210, A*0211, A*0214, A*0215N, A*0216, A*021701, A*021702, A*0218, A*022001, A*022002, A*0221, A*0224, A*0225, A*0226, A*0228, A*0229, A*0230, A*0231, A*0232N, A*0233, A*0234, A*0235, A*0236, A*0239, A*0240, A*0241, A*0242, A*0243N, A*0245, A*0246, A*0248, A*0251, A*0252, A*0253N, A*0254, A*0255, A*0256, A*0257, A*0258, A*0259, A*0260, A*0261, A*0262, A*0264, A*0265, A*0266, A*0267, A*0268, A*0269, A*0270, A*0271, A*0272, A*03010101, A*03010102N, A*030103, A*0303N, A*0304, A*0305, A*0306, A*0307, A*0308, A*0309, A*0311N, A*0312, A*0313, A*0314, A*2301, A*2303, A*2304, A*2305, A*2306, A*2307N, A*2308N, A*2309, A*2310, A*2311N, A*2312, A*2413, A*2418, A*2424, A*29010101, A*29010102N, A*290201, A*290202, A*290203, A*2903, A*2904, A*2906, A*2907, A*2908N, A*2909, A*2910, A*2911, A*3001, A*3002, A*3003, A*3007, A*3008, A*3009, A*3010, A*3011, A*3012, A*310102, A*3102, A*3103, A*3104, A*3105, A*3106, A*3107, A*3108, A*3109, A*3201, A*3203, A*3204, A*3205, A*3206, A*3207, A*3208, A*3301, A*330301, A*330302, A*3304, A*3305, A*3306, A*3307, A*3402, A*3403, A*3404, A*3406, A*6901, A*7401, A*7402, A*7403, A*7404, A*7405, A*7406, A*7407, A*7408, A*7409, A*7410

- W = weakly targeted

HLA-A Probe A571G

Product Name	Size	Product Number
HaploPrep HLA-A A571G	25 Separations	H111.PA571G

Probe target sequence (unique sequence element, center nucleotide position & exon):

USE	center nt pos	exon
ACGGG (reversed)	571	3

HLA-A Alleles Targeted:

A*010101, A*010102, A*0102, A*0103, A*0104N, A*0106, A*0107, A*0108, A*0109, A*0110, A*0219, A*0236, A*0237, A*0254, A*2301, A*2302, A*2303, A*2305, A*2306, A*2307N, A*2308N, A*2309, A*2310, A*2311N, A*2312, A*24020101, A*24020102L, A*240202, A*240203, A*240204, A*240205, A*2404, A*2405, A*2406, A*2407, A*2408, A*2409N, A*2411N, A*2413, A*2414, A*2415, A*2417, A*2419, A*2420, A*2421, A*2424, A*2425, A*2426, A*2427, A*2428, A*2429, A*2430, A*2431, A*2432, A*2434, A*2435, A*2436N, A*2437, A*2438, A*2439, A*2440N, A*2441, A*2442, A*2443, A*2903, A*3105, A*6826, A*8001

Non HLA-A Alleles captured:

B*1512, B*1519

- W = weakly targeted