SBT RESOLVER™ HARPS

Technical Aid

Version: 3.1
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HARPs Principle:

SBT Resolver™ HARPS® are motif specific sequencing primers that resolve heterozygous ambiguities by determining the phase linking of HLA polymorphisms in locus specific sequencing based HLA typing (SBT).

HARPS® are usually included as part of SBT in the following manner:
1. The sequence data from SBT Resolver™ kits is analysed in Assign™ SBT sequence analysis software.
2. The software generates a HARPS® report, which lists the HARP, or HARPS, required to resolve the ambiguity.
3. The original SBT Resolver™ PCR product is re-sequenced with the HARPS® reported in the HARPS® report.
4. The resulting hemizygous sequence data is analysed with the original sequence data in Assign™ SBT to resolve the heterozygous ambiguity.

HARPS Report and HARPS Score:

Assign™ SBT v4.7 and v471 dynamically calculates the HARPS® required to resolve an ambiguity by determining the likelihood that the HARP will specifically generate sequence from one allele. The HARPS reporting algorithm calculates a score based on the number and location of sequence differences at the HARP's® annealing site and the HARP sequence. The higher the score, the higher the likelihood of producing hemizygous sequence.

Exceptions:

The HARPS® report algorithm is highly effective at predicting, reporting and ranking all potential HARPS® to resolve a given heterozygous ambiguity. Although the algorithm is highly successful, there are some exceptions where reported HARPS® are known not to function as predicted according to the HARPS® score. The following list details the known exceptions:

- HARP® C1-CG134-F should NOT be used to resolve heterozygous ambiguities when this HARP® is reported with a HARPS® score of 254.

- In the instances where both QB-CT173-F and QB-TA173-F are reported, the latter (QB-TA173-F) HARP® should be used to resolve the ambiguity. QB-CT173-F has been shown to produce some non-specific sequence when tested on heterozygous ambiguities for which QB-TA173-F is also recommended.

- HARP® C1-TA368-F should only be used to resolve heterozygous ambiguities involving HLA-A alleles: *29, *31, *32, *33, *68:01, *68:03 and *74.

- HARP® C1-TT368-F should NOT be used to resolve heterozygous ambiguities involving HLA-C*04:01 alleles.

- HARP® QB-CG353-R should NOT be used to resolve heterozygous ambiguities involving HLA-DQB1*05 alleles.

- HARP C1-GG362-AR should NOT be used to resolve HLA-A*23 + *25 heterozygous ambiguities.

For the complete list of available HARPS® please contact Conexio Genomics (support@conexio-genomics.com) or your Olerup SSP representative (http://www.olerup.com).

Version History

1.0: Initial issue.
2.0: Addition of comments relating to C1-TA368-F and QB-CG353-R.
3.0: Addition of comment relating to C1-GG362-AR.
3.1: Locus corrected for C1-GG362-AR (HLA-C to HLA-A).

END OF DOCUMENT