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# Evaluation of strategies for DRB1 Sequence-Based Typing

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To establish Sequence-Based Typing (SBT) technology for our clinical
DRB1 high resolution typing,
we evaluated two different SBT strategies:

**Generic amplification SBT** and

**Group-specific SBT**.

20 external blind testing samples from a cord blood project were sequenced using the **generic amplification SBT**
where was one generic multiplex amplification
followed by
three sequencing reactions including a codon 86 GTG-specific reaction for each sample.

**Allele level typing results were obtained immediately in only 4 (20%) of these 20 samples.**

**5 (25%) samples with ambiguous typing results caused by the polymorphic motifs located between codon 10-14 where the primers bind at.**

In **11 (55%) samples the cis/trans combination of the polymorphic motifs within the sequencing region of two haplotypes mainly contributed to the ambiguities.**

All of these ambiguities could be resolved by performing **additional testing**
(e.g. SSOP, SSP, or group-specific SBT)

The group-specific amplification SBT we evaluated contains for each sample.
16 amplification reactions
including a positive and a negative control
followed by two sequencing reactions

**Study of the specificities of the group-specific intron primers indicated that this strategy enables us to obtain immediately allele level typing results in all 20 samples.**

This conclusion was confirmed by the allele level typing results obtained from group-specific amplification SBT of 5 selected samples previously typed by generic amplification SBT with ambiguous results.

In conclusion,
for allele level DRB1 typing performing the
**“one-shot”**
**group-specific amplification SBT** appears
to be more efficient
**than running generic amplification SBT**
**followed by additional testing.**