

UK NATIONAL EXTERNAL QUALITY ASSESSMENT SERVICE FOR HISTOCOMPATIBILITY AND IMMUNOGENETICS' (UK NEQAS for H&I) EDUCATIONAL SCHEME - THE FIRST 10 YEARS



Welsh Blood Service
Gwasanaeth Gwaed Cymru

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Educational Scheme

UK NEQAS for H&I established an 'Educational Scheme' in 2002. This was prompted by its participants who wanted to HLA type a small number of 'challenging' samples each year in addition to testing routine external quality assessment material.

The scheme, which is gratis to participants of its HLA Phenotyping and/or DNA HLA Typing schemes, is not assessed and caters for both serological and DNA-based typing.

Participants can compare their findings with those of about 20 laboratories reporting serologically-defined types and some 35 laboratories submitting types using DNA methods.

Scheme's material

Samples are derived from consenting donors on the Welsh Bone Marrow Donor Registry's panel of some 75,000 HLA typed, largely north-west European Caucasoid, blood donors. This panel has been the source of 33 new alleles and 60 confirmatory sequences over the last 20 years – many of which have subsequently featured in this scheme.

Over the last decade four whole blood samples (in three instances DNA extracts) were provided each year.

Samples have possessed:

- rare and recently described alleles, e.g. B*08:02 and B*40:92
- expression variants, e.g. A*03:01:01:02N and B*08:19N
- serologically 'difficult' specificities, e.g. those of B*44:09 and B*44:14
- unfamiliar allele/specificity combinations, e.g. A*24:17, B*15:02 and B*40:01 with C*01:02.

Novel alleles identified

The scheme has enabled the identification of two novel alleles, namely:

HLA-A*11:15 (*Tissue Antigens* 2006, **67**, 153-6)

HLA-DQB1*02:01:04 (*Tissue Antigens* 2011, **78**, 296)

Testing comparisons

Some notable alleles were provided twice in separate years. For example:

*B*27:23 – sent in 2003 and 2006*

For B*27:23 some 80% of laboratories failed to detect B27 using serology in both years' testing.

However, there was a significant increase in the successful detection of B*27 by DNA-based methods in the later send-out (77% to 94%, $p < 0.01$) with a similar improvement in the assignment of B*27:23 (67% to 74%).

*B*15:42 – sent in 2005 and 2010*

For B*15:42 some 45% of laboratories identified B15 by serology in both send-outs indicating that B*15:42 will be missed by many laboratories using serology alone.

Using DNA-based typing, 69% and 83% of laboratories identified B*15:42 in the different years, respectively, with only a minority of laboratories failing to assign B*15.

Further information

Detailed information on the findings for all 40 samples can be found in UK NEQAS for H&I's Annual Reports at www.neqashandi.org.uk/reports.asp. Further information on UK NEQAS for H&I schemes - and its Prospectus - is available at www.neqashandi.org.