UK National External Quality Assessment Service for Histocompatibility and Immunogenetics educational HLA typing scheme findings in 2013

Susan Corbin, Jane Street, Deborah Singleton & Chris Darke

Welsh Blood Service
Gwasanaeth Gwaed Cymru

UKNEQAS for HISTOCOMPATIBILITY and IMMUNOGENETICS
UNITED KINGDOM EXTERNAL QUALITY ASSESSMENT SERVICE

WELSH TRANSPLANTATION AND IMMUNOGENETICS LABORATORY

Introduction

The UK National External Quality Assessment Service for Histocompatibility and Immunogenetics (UK NEQAS for H&I) has operated an 'Educational Scheme' for 10 years.

In this Scheme undisclosed whole blood or DNA samples with interesting HLA alleles/specificities are sent to its HLA Phenotyping and/or DNA HLA Typing scheme participants.

The scheme is gratis and involvement is at the discretion of each laboratory.

Findings are not assessed but participants can compare their results with some 30 other laboratories.

In 2013 four DNA extracts were provided with an HLA-A, -B, -C or -DRB1 allele(s) of interest. Here we present participants' findings.

A*01:01:38L

This allele differs from A*01:01:01:01 by a single silent change (705G>A) in exon 4 which causes a splice site and intron 3 and part of exon 4 are spliced out resulting in low expression (*Hum Immunol* 2011, **72**, 717).

- 12 out of 30 labs (40.0%) assigned A*01:01:38L or A*01:01/01:01:38L
- There were 12 reports of A*01
- 6 labs reported A*01:01 or A*01:01:01:01

B*49:03

B*49:03 differs from B*49:01 by 8 bases in exon 2 causing 4 amino acid substitutions (*Tissue Antigens* 200, **57,** 478).

- 23 out of 29 labs (79.3%) assigned B*49:03
- 6 labs reported B*49 only

C*02:22

C*02:22 differs from C*02:02:02 by 3 bases in exon 3 causing 2 amino acid substitutions (*Tissue Antigens* 2009, **73,** 76).

- 22 out of 25 labs (88.0%) assigned C*02:22
- 3 reported C*02 only

A*33:44 and DRB1*08:09 from a Chinese donor

A*33:44 differs from A*33:01:01:01 by 3 bases in exons 3 and 4 causing 3 amino acid substitutions.

DRB1*08:09 differs from DRB1*08:01:01 by 7 bases in exons 1 and 2 causing 3 amino acid substitutions (*Tissue Antigens* 2011, **78**, 267).

- Just 2 out of 26 labs (7.7%) assigned A*33:44
- 22 labs reported A*33
- 2 reported A*33 allele groups, of up to 25 alleles, importantly both groups lacked A*33:44

- 20 out of 29 labs (69.0%) assigned DRB1*08:09
- 8 labs reported DRB1*08
- 1 lab reported DRB1*08:09/42

Comments

Thus, while overall, a mean of 79% of participants identified the HLA-B, -C and -DRB1 alleles of interest, assignment of the two rare HLA-A alleles was disappointing.

This scheme has been operating for 12 years and a recent satisfaction questionnaire showed that 70% of participants considered that the scheme was worthwhile.

Further information

Full information on all UK NEQAS for H&I schemes is available at **www.neqashandi.org** or contact the Scheme Manager - Deborah Singleton
E-mail: **ukneqashandi@wbs.wales.nhs.uk**