Lifecodes and One Lambda Luminex-based HLA antibody kits compared - data from an external quality assessment exercise

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Introduction

UK NEQAS for H&I's Scheme 3 (HLA Antibody Specificity Analysis) assesses participants' ability to determine HLA antibody specificities.

We have examined the Class I specificities of the 10 sera provided in 2013 for specificity assignments by labs using LIFECODES (Immucor) or LABScreen (One Lambda) kits alone.

Analysis

13 labs used LIFECODES kits for both distributions and 40/45 labs, respectively, used LABScreen kits for our two 5 serum sample distributions.

If >1 LIFECODES labs and/or >3 LABScreen labs found a specificity then this specificity was considered to be present in the serum.

Results

Overall findings of HLA-A, -B, -C specificities

Across the 10 sera a total of 78 HLA-A specificities were identified.

Of these 78 HLA-A specificities:

- 70.5% were found by both kits
- 11.5% were found by LIFECODES kits alone
- 18.0% were found by LABScreen kits alone

Similarly, there were 171 HLA-B specificities.

- 63.2% were found by both kits
- 18.7% by LIFECODES kits alone
- 18.1% by LABScreen kits alone

Of the 30 HLA-C specificities found:

- 23.3% were found by both kits
- 66.7% by LIFECODES kits alone
- 10% by LABScreen kits alone

Variation in assigned specificities

The number of labs assigning a particular specificity using the same manufacturer's kits varied considerably.

Of the 55 HLA-A specificities detected by both kits 58.2% (n=32) were assigned by less than 50% of LIFECODES and LABScreen labs.

Similarly, for the 108 HLA-B specificities detected by both kits 77.8% (n=84) were found by <50% of labs.

Of the 41 HLA-A and -B specificities found by LIFECODES labs only, a mean of 2.4 labs defined each specificity (with a range of 2 to 5 labs).

Likewise, of the 45 HLA-A and -B specificities assigned by LABScreen labs only, a mean of 11.0 labs defined each specificity (with a range of 4-28 labs).

Detection of high frequency specificities

Antibodies directed towards some high frequency specificities (phenotype frequency of >10%) were poorly detected by one kit or another. For example:

- A HLA-A2 specificity was found by 2/13 (15.4%) of LIFECODES labs compared to 84.4% of LABScreen labs

- A HLA-Cw5 was detected by 11/19 (57.9%) of LIFECODES labs compared to none of the LABScreen labs

Comment

These findings clearly emphasize the importance of fully understanding the nature of kit differences and the necessity to standardise Luminex-based testing methodology.

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**