

The Detection of HLA-B*27:12 in UK NEQAS for H&I's HLA-B27 Testing Scheme

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Introduction

HLA testing is performed as an aid to disease diagnosis and susceptibility. One of the most commonly tested associations is HLA-B27 for Ankylosing Spondylitis.

UK NEQAS for H&I's Scheme 1B assesses participants' ability to correctly determine the HLA-B27/B2708/B*27 status as positive or negative.

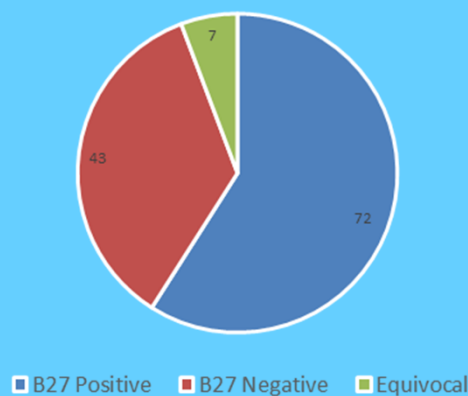
The scheme's performance assessment is based on 75% or more of participants' being in agreement.

In 2016, 10 selected blood samples were distributed to participants. Unusually, sample 1B09/16 did not reach the 75% consensus level and, therefore, was not assessed

Results

115 laboratories reported a result for sample 1B09/16. 72 labs (62.6%) reported the sample as 'B27 positive', 14 of which reported HLA-B*27:12. 43 labs (37.4%) reported the sample as 'B27 negative' and a further 7 laboratories reported the sample as equivocal (Figure 1).

Figure 1: HLA-B27 results



B*27:12

Sample 1B09/16 was subsequently confirmed, by SBT, as B*27:12. This allele is similar to B*27:08, as both allele products possess the SLRNLRG Bw6 motif at residues 77-83, rather than the usual HLA-B27's Bw4 motif. The B*27:12 specificity generally gives poor variable positive, or negative reactions, with HLA-B27 alloantisera and monoclonal antibodies.

40 laboratories tested sample 1B09/16 by flow cytometry (n=34) or cytotoxicity (n=6). 32 of these (80%) reported the sample as 'B27 negative' and 5 (12.5%) as 'equivocal'.

Only 3/34 laboratories using a serological technique reported the sample as 'B27' positive (Table 1).

These findings clearly reflect the poor reactivity of the B*27:12 product with B27 antibodies.

Table 1: Methods used to test the HLA-B*27:12 sample

Method		Number of labs		
		Positive	Negative	Equivocal
Serological	Cytotoxicity	0	6	0
	Flow Cytometry	3	26	5
Molecular	Cytotoxicity & SSP	1	0	0
	Flow Cytometry & Molecular Method	5	1	0
	Luminex/ SSO	5	1	0
	Microarray	2	0	0
	SSP	42	7	1
	RT-PCR	7	2	1
	Multiple Molecular Methods	7	0	0

Disappointingly, of the 82 laboratories testing the sample using a molecular method, 11 (13.4%) reported 'B*27 negative'.

Comment

This is the first time a Scheme 1B sample has been unassessed due to the 75% consensus level not being met. Importantly, this exercise has clearly shown that it is essential to be aware of an HLA-B27 assay's ability to detect different HLA-B*27 alleles/specificities, particularly when testing patients from diverse ethnic backgrounds.

Further Information

Full information on all UK NEQAS for H&I schemes is available at www.neqashandi.org.uk or contact the Scheme Manager at ukneqashandi@wales.nhs.uk