

# SEROLOGICAL CHARACTERISATION OF THE PRODUCTS OF NINE RARE HLA CLASS I ALLELES



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## Introduction

We have a program to continually improve our serological and DNA-based HLA typing and our knowledge of the nature and distribution of HLA genes and specificities in our local blood donor and patient populations.

Accordingly, we take every opportunity to identify and investigate apparent new and rare HLA alleles.

Here we present our findings on the serological characterisation of the products of nine low frequency HLA alleles: A\*0236, A\*0305, A\*1104, A\*3204, B\*1534, B\*1542, B\*4006, B\*4409 and B\*4804.

## Identification

All these rare alleles were identified, during routine 5-locus HLA typing [HLA-A, B, C, DRB1(3/4/5), DQB1] or subsequent 'high resolution' typing, by PCR-SSP, of blood donors registered on the Welsh Bone Marrow Donor Registry.

## Serology

All serological typing was done by our standard lymphocytotoxicity technique with well-characterised local antisera.

The serological reactivity of cells from donors possessing the rare alleles was:

**A\*0236** (2 donors tested)

'Normal' HLA-A2 specificity with 5 HLA-A2 antisera.

**A\*0305** (1)

Normal A3 with 6 A3 sera.

**A\*1104** (1)

Normal A11 with 4 A11 sera.

**A\*3204** (1)

Characteristics of A3 and A32 specificities; 5/6 A3 sera positive and 6/7 A32 sera positive (4 gave weak, but reproducible, positive reactions).

**B\*1534** (1)

Classic B62 pattern with 21 'B15' sera (13 with a B62 antibody component).

**B\*1542** (1)

Positive with 9/21 'B15' sera (1-strong, 8-weak but reproducible) - new pattern identified that was not B62, B63, B75, B76, B77, B71 or B72; weakly positive with 2/6 sera containing B55, but not B7 (donor was B7+).

**B\*4006** (1)

Classic B61 pattern with 13 'B40' sera (9 with a B61 antibody component and 4 B60 only).

**B\*4409** (2)

B45, rather than B44 pattern with 6/6 B12 sera positive, 2 B44 sera negative and 4/4 B45 sera positive.

**B\*4804** (1)

Classic B48 pattern with 26 'B40' sera (positive with 20/21 sera with a B48 component); also positive with one 'monospecific' B48 antiserum.

## Compliance with HLA Nomenclature Report and HLA Directory

The specificities in the latest full HLA Nomenclature Report and/or the HLA Directory accord with our findings for: A\*0236 (-/A2), A\*0305 (A3/-), A\*1104 (A11/A11short), B\*4006 (B61/B61) and B\*4804 (-/B48).

We have confirmed the B62 specificity of B\*1534 (B15/B62) and the B45 specificity of B\*4409 (B12/B45).

In addition, we show that the A\*3204 (-/A3) product has characteristics of both A32 and A3 and that B\*1542 (-/-) has a unique serological B15 specificity.

## Comment

The serological specificities of HLA-A and B gene products are particularly useful in guiding the selection of possible haematopoietic stem cell panel donors since the majority have been typed by serology alone.

Thus, every effort should be made by laboratories identifying new and rare alleles to characterise the serological nature of their products.