

NEW ALLELE ALERT

The novel *HLA-C*14:02:01:33* allele identified by Pacific Biosciences HiFi sequencing in a Chinese individual

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Funding information

Ministry of Science and Technology of the People's Republic of China; Science and Technology Department of Shaanxi Province; High-Level Talent Introduction Plan of Shaanxi (Youth Program), Grant/Award Number: KSJRC202202; National Key R&D Program of China, Grant/Award Number: 2022YFC3400302

*HLA-C*14:02:01:33* differs from *HLA-C*14:02:01:01* by one nucleotide substitution in intron 2.

KEYWORDS

*HLA-C*14:02:01:33*, novel allele, third-generation sequencing

We report here the identification of a novel *HLA-C*14* allele, now named *HLA-C*14:02:01:33*. This allele exhibits a single nucleotide substitution (C > A) in intron 2 at position 939 of *HLA-C* gene (Figure 1). This discovery was made during our investigation of a cohort of healthy Chinese individuals, with the specific variant being observed in a 32-year-old female participant. The complete HLA genotyping obtained for this individual was *HLA-A*24:02:01, 02:06:01; -B*51:01:01, 15:01:01; -C*14:02:01:33, 04:01:01; -DRB1*04:06:01, 09:01:02; -DRB5*01:03:01, 01:03:01; -DQA1*03:01:01, 03:02:01; -DQB1*03:02:01, 03:03:02; -DPA1*02:02:02, 02:02:02; and -DPB1*05:01:01, 05:01:01*.

High molecular weight (HMW) genomic DNA of peripheral blood mononuclear cells (PBMCs) was extracted using the Monarch HMW DNA Extraction Kit for Cell & Blood (NEB, T3050L) following the vendor's manual. For each subject, all 11 classical HLA genes

(*HLA-A, -B, -C, -DRB1, -DRB3, -DRB4, -DRB5, -DQA1, -DQB1, -DPA1, and -DPB1*) were amplified by multiplex PCR for HiFi library preparation. The libraries from different subjects were pooled and sequenced on the third-generation sequencing platform Pacific Biosciences Sequel II. The IPD-IMGT/HLA Database (version 3.50.0) and several software packages, including pbmm2, CCS, lima, and WhatsHap, were used to determine the genotypes of HLA genes.

The sequence data of the recipient have been submitted to the GenBank and the IPD-IMGT/HLA Database.¹ The accession numbers assigned to them were OR947208 and HWS10068669, respectively. The name *HLA-C*14:02:01:33* has been officially assigned by the WHO Nomenclature Committee for Factors of the HLA System in January 2024. This follows the agreed policy that, subject to the conditions stated in the most recent Nomenclature

