F829

DNA typing of HLA-C gene using Polymerase Chain Reaction - Sequence Specific Primers

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HLA-C alleles have always been the least well characterized of the HLA class I genes. At present, 36 HLA-C alleles have obtained an official designation. The eight specificities Cw1 to Cw8 comprise a total of 19 alleles. In addition 17 alleles have no serological counterpart, they are typed as "blanks". Since only detailed analysis of HLA-C alleles will help to assess the influence of HLA-C on the allogeneic immune response, it seems essential to characterise HLA-C alleles at the nucleotide level. In order to identify serologically detectable and undetectable HLA-Cw antigens, we used a sequence-specific primer (PCR-SSP) system using twenty three PCR mixtures for assigning HLA-C alleles. This typing approach has been validated on 12 control cells and serologically typed unrelated Korean individuals. The results of 12 control cells correlated well with the data which were previously reported. The serologically undefined "blank" antigens were succesfully typed by DNA typing. The PCR-SSP method for HLA-C is a rapid technique, sensitive and reproducible and capable of distinguishing serologically undetectable HLA-C alleles.

F830

Genetic Polymorphism of HLA-DPB1 Gene Using Polymerase Chain Reaction-Restriction Fragment Length Polymorphism in Korean.

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The HLA-DP genes are situated at the centromeric end of the major histocompatibility complex (MHC) in humans. The DP α-β heterodimers, like other HLA class II antigens (DR and DQ) bind to foreign or self antigenic peptides and specify heterodimeric glycoproteins involved in the regulation of the immune response. In this study, an comprehensive HLA-DPB1 genotyping method using PCR-RFLP were developed. Second exon of DPB1 was selectively amplified from genomic DNAs of 18 homozygous B-cell lines and unrelated Koreans by PCR. Amplified DNA were digested with 7 allele specific restriction enzymes - *Eco*NI, *Rsa*I, *Fok*I, *Dde*I, *Sdu*I, *Bbv*I and *BssH*II. The results of 18 control cells correlated well with the data which were previously reported. In a total of 28 different DPB1 alleles, the most frequent allele was DPB1*0501 among Koreans. This study shows that this method is relatively simple, fast and practical tool for the HLA-DPB1 genotyping. Moreover the result of HLA-DPB1 genetic polymorphism might be useful for the database study before using for disease association, individual identification and transplantation immunity.