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## JOURNAL ARTICLE

# HLA-DR antigen and HLA-DRB1 genotyping with nonobstructive azoospermia in Japan

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We previously reported that the HLA-A33, -B13, and -B44 antigens, which are major histocompatibility complex class I molecules, are involved in the susceptibility of nonobstructive azoospermia in Japanese men. In this report, HLA-DR antigens, which are class II molecules, are investigated by advanced DNA typing in addition to classical serological typing to study a more complex genotype of HLA-DRB2. Genotyping was performed by the polymerase chain reaction-sequence-specific primer (PCR-SSP) method of analysis and/or by a commercial rapid assay based on the polymerase chain reaction (PCR), followed by reverse dot-blot hybridization of PCR products (the Inno-LiPA assay). The allele frequencies of the HLA-DR13 antigen and the -DRB1\*1302 allele were significantly higher in Japanese subjects with nonobstructive azoospermia compared with a control group of healthy Japanese men, and these alleles were associated with relative risks for nonobstructive azoospermia of 4.2 and 4.9, respectively. If we suppose this strong linkage to both HLA class I and II antigens is due to linkage disequilibrium, it may suggest the existence of a novel gene involved in spermatogenesis in the class III region, which is located between the class I and class II regions and contains several genes other than HLA.

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