

Distribution of Alleles at DQCAR Microsatellite Locus in the Croatian Population

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Aim. To investigate the polymorphism of DQCAR alleles and their association with HLA-DRB1, -DQA1, -DQB1 haplotypic associations in the Croatian population.

Methods. Blood samples were collected from 135 healthy unrelated donors from Zagreb area previously typed for HLA class II alleles (DRB1, DQA1, DQB1). The DQCAR samples were run on a standard denaturing sequencing gel in a DNA sequencer and the sequences were analyzed and compared.

Results. Among 10 different DQCAR alleles found in the population of Croatia, the most frequent were DQCAR 103 bp (41.5%), 121 bp (13.7%), 111 bp (11.9%), and 99 bp (10.7%). DQCAR alleles 101 bp, 115 bp, 123 bp, and 125 bp were not observed. Comparison of DQCAR allele frequencies between Croatians and other populations did not reveal any significant difference. The study proved a little diversity in DQ1 haplotypic associations. Among 141 examined DQ1 associations, 120 were DQCAR 103 bp, whereas the remaining 21 were DQCAR 107 bp. The DRB1*07 haplotypic association showed the highest diversity of DQCAR alleles (111 bp, 113 bp, 117 bp, 119 bp, and 121 bp). Three unusual haplotypic combinations were found: HLA-DRB1*0401, -DQA1*0301, -DQB1*0302, -DQCAR119bp; HLA-DRB1*0408, -DQA1*0301, -DQB1*0304, -DQCAR117bp; and HLA-DRB1*0701, -DQA1*0201, -DQB1*02, -DQCAR 105bp.

Conclusion. Specific DQCAR alleles observed in association with common Caucasoid haplotypes are also found in the Croatian population, but in new and unusual associations. These associations have not been reported in other populations, which suggests that they might be characteristic for Croatians.

Key words: Croatia; evolution; haplotypes; HLA-DQ antigens; linkage disequilibrium; microsatellite markers; polymorphism

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