

Frequency of HLA-DQ2 and HLA-DQ8 Alleles in celiac patients with new simple method of Real-time PCR in Iranian population

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Abstract

Introduction: Presence of HLA-DQ2 and HLA-DQ8 alleles in the infected individuals is one of the important genetic factors in the development of celiac disease (CD). Many molecular techniques are available to determine these alleles, but these methods have many steps that make them difficult to use, therefore the aim of this study was to set up a simple and quick Real-time PCR based SYBR® Green method to determine the HLA-DQ alleles in patients with CD.

Methods: To determine the HLA-DQ alleles and evaluation Real-time PCR using SYBR® Green technique, DNA of those patients whose disease was confirmed using serology and pathology. Then, the specific primers use to examine HLA-DQ2 and HLA-DQ8 alleles and results compared with commercially kits.

Results: Using this method, the presence of HLA-DQ2 and HLA-DQ8 alleles were determined with sensitivity and specificity respectively 80 and 100 percentage and in comparison with low resolution commercially kits, the results of this method was more efficient. As well as, frequency of DQ2 and DQ8 were respectively in patients 77 and 29 percentage. 96 percentage of patients were also carries DQ2 and DQ8.

Conclusion: Real-time PCR using SYBR® Green method has good efficiency to identify the HLA-DQ2 and HLA-DQ8 alleles, and in compare with conventional HLA-typing techniques in Iran, is faster, easier and has high sensitivity and specificity to distinguish this alleles. The high prevalence of DQ2 allele, confirming the results of other studies in Iran.

Key words: Celiac disease, Real-time PCR technique, HLA-typing