

High-resolution Melting to Identify Single Nucleotide Polymorphisms of IL-12 Receptor Gene (IL-12RB1) in the Tunisian Population

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ABSTRACT Currently, genetic variations, especially single nucleotide polymorphisms (SNPs), have been increasingly investigated to find a potential association between these mutations and diseases in populations with different ethnicity. Therefore, rapid and efficient genotyping technologies are needed to detect and confirm these variations. This work aims to apply a High-resolution melting method to identify two IL-12 Receptor B1 gene polymorphisms in healthy Tunisian population and compare their genotypic distribution with other populations. DNA was extracted from 141 healthy volunteers enrolled in this study and genotyped for rs401502 and rs11575934 using the HRM method. We were able to detect correctly all the genotypes of the SNPs of interest with similar accuracy than DNA sequencing, using the HRM method. Minor allele frequencies of rs401502 and rs11575934 polymorphisms in the Tunisian general population are 23.8 percent and 29.8 percent, respectively. Allelic and genotypic distributions of these SNPs were found to be different from other ethnic groups. This work has enabled the establishment of a rapid, sensitive and inexpensive genotyping technique qPCR-HRM to detect genetic variations in a large series of samples. A comparison of the genotyping results of these two polymorphisms in our cohort with other populations reflects the ethnic-specific distribution.