

## Interleukin-10 gene polymorphism and its blood level as biochemical markers among Egyptian atopic patients

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**Background:** Interleukin 10 (IL-10) is known to play various roles in immune regulating and anti inflammatory responses. Several polymorphic sites within the promoter region of the IL10 gene have been described and have been linked to the expression of allergies and asthma.

**Objective:** Evaluation the role of IL-10 polymorphism at position -592 C/A in allergic diseases as a biomarker molecule in the pathogenesis of atopy in Egyptian population.

**Methods:** The allele frequency for one single base pair substitution at position -592C/A in the IL-10 gene promoter was determined in 100 volunteers; of these, 25 had atopic dermatitis, 25 had allergic rhinitis, 25 had atopic asthma, and 25 were normal controls using PCR and restriction fragment length polymorphism (RFLP). Serum IL-10 level, total IgE and allergen specific IgE were measured in every individual.

**Results:** IL-10 allele frequencies at position -592 C/A were different between control and all the atopic groups studied (asthma, dermatitis, and rhinitis) ( $p < 0.001$ ,  $< 0.001$ , and  $< 0.001$  respectively). However, the IL-10 values were not different among the control and all the studied groups ( $F = 2.522$ ,  $P = 0.062$ ).

**Conclusion:** IL-10 SNP at -592C/A is a candidate genetic marker to screen for the atopic group studied. However, the IL-10 level in the blood can't be used as an indicator for any group of atopy because its level in the blood is not affected only by its gene promoter polymorphisms which have been found to be associated with the IL-10 production. No significant correlation was found between IL-10 level in blood and IgE in any of the atopy groups studied; although IgE was found to be phenotypic marker for all the atopy studied groups. This can be attributed to several factors affecting the IL-10 level in blood

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