

Interleukin – 10 promoter polymorphisms at -1082, -819 and -592

Interleukin – 10 is an important immunoregulatory cytokine involved in **downregulation of inflammatory response, B lymphocyte maturation and regulation of Th1 / Th2 lymphocyte sets.**

The interleukin-10 gene possesses promoter polymorphisms G-1082A, C-819T and C-592A in partial linkage disequilibrium which affect the transcription of the interleukin-10 gene and the production of interleukin-10 protein, giving rise to the following genotype-phenotype correlations (from 1, 2) :

Most research has focused on the G-1082A polymorphism alone, with results as tabulated :

Genotype (-1082)	Phenotype	Frequency (%)
AA	Low IL-10 production	37.5
GA	Intermediate IL-10 production	41.2
GG	High IL-10 production	21.3

Refined analysis taking into account also the C-819T and C-592A polymorphisms yielded :

Genotype (-1082, -819, -592A)	Phenotype	Frequency (%)
ATA-ATA	Low IL-10 production	8.8
ACC-ACC	Low IL-10 production	9.2
ACC-ATA	Low IL-10 production	19.5
GCC-ACC	Intermediate IL-10 production	21.3
GCC-ATA	Intermediate IL-10 production	19.9
GCC-GCC	High IL-10 production	21.3

Clinically, associations have been described with immune response to **hepatitis B vaccination and cardiovascular events in dialysis patients (2, 3), survival in critically ill patients (4), severity of pneumonia (5), lactic acidosis after cardiac surgery (6), susceptibility to Epstein-Barr virus - infection (7) and Epstein-Barr virus-associated gastric carcinoma (8).**

References

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