Tumor necrosis factor-α and interleukin-6 gene polymorphism association with susceptibility to celiac disease in Italian patients

R.M. de Albuquerque Maranhão¹, F.A. Martins Esteves², ⁴, S. Crovella², ⁴, ⁵, L. Segat⁵ and P.R. Eleutério Souza³

¹Instituto de Ciências Biológicas, Universidade de Pernambuco, Recife, PE, Brasil
²Departamento de Genética, Universidade Federal de Pernambuco, Recife, PE, Brasil
³Departamento de Biologia, Universidade Federal Rural de Pernambuco, Recife, PE, Brasil
⁴Laboratório de Imunopatologia Keizo Asami, Universidade Federal de Pernambuco, Recife, PE, Brasil
⁵Istituto di Ricovero e Cura a Carattere Scientifico Materno Infantile Burlo Garofolo, Trieste, Italy

Corresponding author: F.A. Martins Esteves
E-mail: andrade.fab@gmail.com

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ABSTRACT. The aim of this research was to study polymorphisms in the genes encoding cytokines interleukin-6 (IL-6) and tumor necrosis factor-alpha (TNF-α) in patients with celiac disease (CD) antigens DQ2 (DQ2-positive) or DQ8 (DQ8-positive). We compared the results with healthy controls to determine whether any of the polymorphisms have a role in susceptibility to CD. A case-control of 192 patients with CD (96 DQ2-positive and 96 DQ8-positive) and 96 healthy controls from northeast Italy were
included in the study. Analysis of single nucleotide polymorphisms (SNPs) was carried out using the polymerase chain reaction-restriction fragment length polymorphism method. Significant differences for the TNF-α (-308 G>A) polymorphism were observed when we compared the flowing groups: DQ2-positive with controls [odds ratio (OR) = 0.45, P = 0.0002]; DQ8-positive with controls (OR = 3.55, P < 0.0001); and DQ2-positive with DQ8-positive (OR = 0.12, P < 0.0001). We did not observe a statistically significant association between IL-6 (-174 G>C) polymorphism and CD (P > 0.05). Our results suggest that TNF-α (-308 G>A) polymorphism may play a role in susceptibility to CD in Italian patients.

**Key words:** Celiac disease; IL-6; TNF-α; HLA-DQ