



## Evaluation of glutathione peroxidase and superoxide dismutase enzyme polymorphisms in celiac disease patients

M. Katar, A.F. Ozugurlu, H. Ozyurt and I. Benli

Department of Clinical Biochemistry, Faculty of Medicine,  
University of Gaziosmanpasa, Tokat, Turkey

Corresponding author: M. Katar  
E-mail: drkatar@hotmail.com

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**ABSTRACT.** Celiac disease (CD) is a multifactorial, inflammatory small bowel disorder characterized by nutrient malabsorption resulting from mucosal damage, the latter induced by cereal products like barley, oat, and wheat. Oxidative stress has previously been reported to play an important role in the pathogenesis of CD. In the present study, we aimed to evaluate the frequency of polymorphisms that affects the structure of the enzymes superoxide dismutase (SOD) and glutathione peroxidase (GSH-Px), with levels being dependent on the amount of oxidative stress and whether or not there is an association with the mutations DQA1\*0501, DQB1\*0201, and DRB1\*04 that are frequently reported for CD. SOD and GSH-Px polymorphisms were investigated by real-time quantitative polymerase chain reaction in 265 cases. Of the 117 cases that had at least one of DQA1\*0501, DQB1\*0201, or DRB1\*04, 98 (83.75%) also had SOD enzyme polymorphisms and 68 (58.12%) also had GSH-Px polymorphisms. In conclusion, although the etiology of CD is not yet entirely clear, many mechanisms have been suggested. This study supports the notion that SOD and GSH-Px polymorphisms are involved in CD development, even though our findings were not

statistically significant, and, furthermore, are influenced at various levels. SOD polymorphisms and activities were more frequently identified than those of GSH-Px.

**Key words:** Antioxidant; Oxidative stress; Mutation; Small bowel; Inflammation; Polymorphism