



## Ala-9Val polymorphism of Mn-SOD gene in sickle cell anemia

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**ABSTRACT.** Oxidative stress may be contributory to the pathophysiology of the abnormalities that underlie the clinical course of sickle cell anemia. We looked for a possible genetic association between the functional polymorphism Ala-9Val in the human Mn-SOD gene and sickle cell anemia. One hundred and twenty-seven patients with sickle cell anemia and 127 healthy controls were recruited into the study. Alanine versus valine polymorphism in the signal peptide of

the Mn-SOD gene was evaluated using a primer pair to amplify a 107-bp fragment followed by digestion with the restriction enzyme *NgoMIV*. In the sickle cell anemia patients, the frequency of Val/Val genotype was approximately 1.4-fold lower and that of Ala/Val was 1.3-fold higher compared to the controls. No significant difference in genotype frequencies was found between patients and controls ( $\chi^2 = 4.561$ , d.f. = 2,  $P = 0.101$ ). The Val-9 was the most common allele in patient and healthy subjects. No significant difference in allele frequencies was found between patients and controls ( $\chi^2 = 1.496$ , d.f. = 1,  $P = 0.221$ ). We conclude that the Mn-SOD gene polymorphism is not associated with sickle cell anemia.

**Key words:** Sickle cell anemia; Superoxide dismutase; Polymorphism; Oxidative stress