Polymorphous light eruption (PLE) is the most common chronic and idiopathic photodermatosis. PLE is assumed to represent an immunological hypersensitivity reaction to a radiation-induced cutaneous antigen involving reactive oxygen species (ROS) on the basis of a genetic predisposition. Among others, cellular protection against ROS is provided by glutathione S-transferases (GSTs). Different variants of the GST enzymes may influence the activity and efficiency of detoxification and biotransformation of unknown UV-induced skin-antigens and other factors that may play an important role in the pathogenesis of PLE. In this study the relationship between isoenzymes of the GST genes GSTM1, GSTT1 and GSTP1 and possible protective or predisposing effects on PLE was examined in 29 patients and 144 controls. Diagnosis of PLE was based on the presence of characteristic clinical features. No association between the functional polymorphisms of the GST gene family and PLE was found. Prevalence of certain GST isoenzymes or polymorphisms in patients with PLE did not differ from healthy controls. Our data do not support prevalence of GST isoenzymes or polymorphisms as a protective effect against PLE. Especially a higher carrier frequency of GSTP1 Val(105) as a protective factor against PLE which has been published before could not be proved. The GST genotypes GSTM1, GSTT1...
and GSTP1 (including SNPs) seem to have no relevant association with PLE.