Association analysis of GRK3 gene promoter variants in cocaine abuse.
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The G protein-coupled receptor kinase 3 gene (GRK3) is a candidate gene for cocaine addiction because it is involved in the regulation of several neurotransmitter receptors, including the response to dopaminergic agonists such as methamphetamine and cocaine. We hypothesized that genetic variants in the GRK3 gene might be associated with an increased risk of cocaine addiction. To test this, we genotyped three variants located in 5' untranslated and promoter regions of the gene in a sample of 711 cocaine users and 862 healthy control individuals from Sao Paulo, Brazil. Genotypic, allelic and haplotypic analyses provided no evidence for an association between alleles at these polymorphisms and cocaine abuse in this sample. Population stratification was tested for and its effect corrected for, but this did not affect the association test results. In conclusion, our results do not support a major role for GRK3 gene promoter variants in cocaine addiction.
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