GMR Genetics and Molecular Research
Online Journal
ISSN:1676-5680

TPH2 gene polymorphisms in the regulatory region are associated with paranoid schizophrenia in Northern Han Chinese

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Genet. Mol. Res. 13 (1): 1497-1507 (2014)
Received October 30, 2012
Accepted June 26, 2013
Published March 12, 2014
DOI http://dx.doi.org/10.4238/2014.March.12.1

ABSTRACT. In the last years, serotonin (5-HT) has been related with the pathophysiology of several psychiatric disorders, including schizophrenia. Thus, genes related to the serotonergic (5-HTergic) system are good candidate genes for schizophrenia. The rate-limiting enzyme of 5-HT synthesis is tryptophan hydroxylase 2 (TPH2). Single nucleotide polymorphisms (SNPs) in the regulatory regions of TPH2 gene may affect gene expression and biosynthesis of 5-HT triggering to various neuropsychiatric disorders related to 5-HT dysfunction. The present study explored the association of SNPs within the TPH2 gene with paranoid schizophrenia in Han Chinese. A total of 164 patients with schizophrenia and 244 healthy controls were genotyped for six TPH2 SNPs (rs4570625, rs11178997, rs11178998, rs41317118, rs17110747, and rs41317114). Significant group differences were observed in the allele and genotype frequencies of rs4570625 and in the frequencies of GTA and TTA haplotypes corresponding to rs4570625-rs11178997-rs11178998. Our findings suggest that common genetic variations of TPH2 are likely to contribute to genetic susceptibility to paranoid schizophrenia in Han Chinese. Further studies in larger samples are

needed to replicate this association.

Key words: TPH2; 5-HT; Paranoid schizophrenia; Haplotype; Serotonin; SNP

