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A STUDY OF THE GENETIC ASSOCIATION BETWEEN THE MYO9B LOCUS AND SCHIZOPHRENIA IN A CHINESE POPULATION

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Objectives: An increasing number of studies have described the relationship between celiac disease and schizophrenia. Based on the reported correlations and the overlapping linkage regions on 19p13, the myosin IXB gene (MYO9B) can be considered a highly relevant positional and functional candidate gene for schizophrenia. The present work was undertaken to investigate the association of the MYO9B gene with schizophrenia in a Chinese population.

Methods: A total of 329 patients with schizophrenia and 350 healthy control subjects in a Chinese population were recruited. A PCR-based RFLP protocol was applied to genotype 7 single nucleotide polymorphisms (SNPs), including rs7249490, rs7256689, rs2279007, rs8113494, rs2305767, rs1545620 and rs2305764, in the MYO9B gene to investigate their association with schizophrenia.

Results: The χ^2 goodness-of-fit test showed that the genotypic distributions of all 7 SNPs were in Hardy-Weinberg equilibrium in both the patient group and the control group. Disease association was shown for rs8113494 ($\chi^2=12.77$, $P=0.0003$, OR=1.89, 95% CI 1.33-2.68) and rs1545620 ($\chi^2=15.44$, $P=8.379e-5$, OR=1.65, 95% CI 1.29-2.12), while rs2279007 was associated with schizophrenia in the female subjects ($\chi^2=4.637$, $P=0.031$, OR=0.69, 95% CI 0.49-0.97) but not in the male subjects ($\chi^2=1.082$, $P=0.299$, OR=0.85, 95% CI 0.63-1.15).

Conclusions: The present work shows that the polymorphisms of the MYO9B gene are likely to confer susceptibility to schizophrenia. Because the MYO9B gene has been found to be highly expressed in the tight junction gate, it could be considered as a meeting point for the interaction between environmental and genetic factors in the pathogenesis of schizophrenia.