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A FUNCTIONAL POLYMORPHISM OF FK506-BINDING PROTEIN 51 (FKBP5) GENE AFFECTS PERSONALITY TRAITS OF HARM AVOIDANCE AND COOPERATIVENESS IN HEALTHY SUBJECTS

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Aims: Previous studies have shown that the function of hypothalamic-pituitary-adrenal (HPA) axis is involved in the characterization of personality traits. FK506-binding protein 51 (FKBP51 or FKBP5) is a co-chaperone of heat-shock protein 90, and plays an important role in the negative feedback regulation of HPA axis function. It has been reported that a C/T single nucleotide polymorphism in the intron 2 of FKBP5 gene (rs1360780) affects FKBP5 protein levels and cortisol response to dexamethasone and psychological stress tests. Therefore, it is hypothesized that the FKBP5 polymorphism affects personality traits. In the present study, we studied the association between this polymorphism and personality traits in healthy subjects.

Methods: Subjects were 826 Japanese healthy volunteers. Personality traits were assessed by the Temperament and Character Inventory (TCI), and the FKBP5 genotype was detected by a real-time PCR and cycling probe technology for SNP typing.

Results: In total subjects, the group with the T allele predictive of impaired negative feedback regulation of the HPA axis had higher scores of harm avoidance ($p=0.043$) and lower scores of cooperativeness ($p=0.019$) compared to that without the T allele. The T allele was associated with higher scores of harm avoidance in females ($p=0.020$) and lower scores of cooperativeness in males ($p=0.015$).

Conclusion: The present study thus suggests that the FKBP5 polymorphism affects harm avoidance and cooperativeness in healthy subjects, with gender specificity.

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