
ASSOCIATIONS BETWEEN GENETIC POLYMORPHISMS AND PERSONALITY TRAITS IN HEALTHY SUBJECTS

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BACKGROUND: A large number of studies investigated the genetic modulation of various personality traits with mixed results.

AIM: We examined the association between several previously investigated single nucleotide polymorphisms (SNPs) and personality traits, as a confirmatory analysis of literature data, in a sample of 158 healthy subjects (males: 83, 52.53%; mean age: 32.20±7.36 years). As a secondary aim we tested the potential modulation of personality traits by additional gene variants that have not been previously studied.

METHODS: The Temperament and Character Inventory (TCI) was administered to all subjects. A blood sample was also collected in order to perform studies on several neurotransmitter and regulatory gene variants. Multivariate analysis of covariance (MANCOVA), controlling for sex and age, was used to test influence of single SNPs on TCI scores.

RESULTS: Examination of previously studied gene variants showed an effect of adrenergic alpha-2B receptor (ADRA2B) on Cooperativeness and of HTR2A (rs6314) on Self Directedness. Examination of previously unstudied variants revealed that Sex Hormone binding protein (SHBG) was associated with Reward Dependence, and tryptophan deoxygenase (TDO2) was associated with Harm Avoidance. Moreover, several additional variants showed a tendency towards association with several TCI traits, confirming previous studies.

CONCLUSION: This study suggests that ADRA2B, HTR2A, SHBG and TDO2 genes may be involved in the modulation of personality in healthy subjects.

LIMITATIONS: The major limitation of this study was the small sample size.