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RESEARCH OF PERSONALITY TRAITS IN PSYCHOGENETICS: FACTS AND HYPOTHESES

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The problem of studying the genetic bases of individual differences of personality is considered. The concept of personality describes to those characteristics of the person that account the patterns of feeling, thinking, and behaving. Modern personality research focuses on personality traits that are relatively stable over time and predict behaviour in various domains; they are manifested in ontogeny early, and have a normal distribution in the population. Variation in personality traits is 30–60 % attributed to genetic influences. Results of the studies on the genetic influences at the molecular level are contradictory.

The article various directions are listed, which are used to identify molecular genetic markers of psychological traits. The possible candidate genes it is genes coding for enzymes, transporters or receptors of neurotransmitter systems the study because several personality theories postulate the biochemical basis for their traits. The two most extensively studied candidate genes are the serotonin transporter gene (5-HTT, SLC6A4) and the dopamine DRD4 receptor gene.

Technological advances have enabled genome-wide association (GWA) studies. Single nucleotide polymorphisms (SNPs) across the entire genome are tested for association with the trait. The approach is considered “hypothesis-free” since no prior knowledge of gene function is considered. However, the identified genetic variants have been of very small effect (<1 % of variance accounted for). It is assumed that personality traits may inherit according to different the mechanism in evolution: balancing selection, selective neutrality and mutation-selection balance.

Most of the studies from molecular genetics which are concerned with personality focus on single gene loci without considering gene interactions, although epistasis (i.e. gene – gene interactions) is thought to be important in behavioural phenotypes.

The concept of endophenotype is described, which comprises hereditary characteristics of human body and psyche, correlating with behavioral (psychological) displays of normal functioning and mental disorders. Endophenotypes are regarded as mediators between gene action and its display at the level of behavior. Requirements for psychodiagnostic instruments are given in article also.

Keywords: psychogenetics, personality traits, molecular genetics, genetic polymorphism, neurotransmitters, candidate genes, endophenotype, questionnaires.

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