Abstract

This diploma thesis examines the linkage between -141C Ins/Del polymorphism in dopamine receptor D2 gene and *novelty seeking behavior* (NSB). Novelty seeking is a personality trait characterized as a tendency to seek out various, complex and intense sensations and experiences at the cost of physical, social, legal, and financial risk. It also appears to be related to the onset of young drug use and aggressive behavior. It has been suggested that there is a relatively high occupancy of dopamine receptors in the brain of individuals with this characteristic feature. Generally, dopamine receptors are extensively studied in relation to many psychiatric diseases or personality disorders. Although there are studies focusing on personality traits such as novelty seeking, subjects of their research are mainly dopamine receptors D_1, D_3 or D_4. Very little is known about dopamine receptor D_2 and its relation to NSB despite the fact, that DRD_2 is the key negative regulator of dopamine action. Currently, determination of occupancy of dopamine D_2 receptors in the brain is possible with positron emission tomography (PET). However, using PET in neuropsychological research is not always financially viable. To date, only few studies associated with PET and NSB vs D_2 receptors occupancy have appeared in published trades. Therefore, the aim of this thesis is to verify the relation between the DRD_2 polymorphism and NSB by genetic analyses. Results would serve as the basis for a more precise selection of PET screening candidates, thereby limiting the cost of this investigation.

Key words: novelty seeking behavior, dopamine, DRD_2, polymorphism, personality, TCI-R