

# MOLECULAR GENETIC STUDY OF ALCOHOLISM: ASSOCIATION STUDY BETWEEN DOPAMINE D2 RECEPTOR GENE POLYMORPHISM AND ALCOHOLISM

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*Alcoholism is a complex, multifactorial disease, with both environmental and biological origins. Family, twin and adoption studies have elucidated the importance of genetic components of alcoholism. In 1991, Blum et al. reported an allelic association between restriction fragment length polymorphism (RFLP) of dopamine D2 receptor gene (A1 of Taq 1) and alcoholism. They found higher frequency of A1 allele of DRD2 gene in alcoholics compared to non-alcoholic controls, which implied an molecular variant of DRD2 gene or a gene in linkage disequilibrium with A1 polymorphism which may increase susceptibility to alcoholism. Since central dopaminergic nervous system is involved in drug-mediated reinforcement behavior in animal study, many research groups have replicated the original study of Blum et. al. in different populations. Some groups were able to find the association, however, many groups were unable to replicate the same results. The reason for the controversial results may be due to different frequency of DRD2 A1 polymorphism in different ethnic groups, and population stratification due to sampling bias.*

*We studied the allelic association between DRD2 A1 allele and alcoholism in Atayal natives of Taiwan, who were relatively more homogeneous in ethnic background. The A1 allele frequencies in alcohol abuse, alcohol dependence and normal controls are 0.42, 0.39 and 0.39, respectively. No significant difference of A1 allele frequencies was found between patients with alcohol use disorders and normal controls. Our data do not support that A1 allele of DRD2 gene increases constitutional susceptibility to alcoholism in Atayals of Taiwan.*