



The association of the Catechol-O-methyl transferase (*comt*) Val 158 Met gene polymorphism with violent criminal behavior in Iraq

Suhad R. Al-Tayie^{1*}, Mohammed A. Jebor¹, Mohammad J. Al-Jassani²

¹Department of Biology, College of Science- University of Babylon, Iraq

²Researcher. DNA research center- University of Babylon, Iraq

Abstract : Behavioral genetic studies had examined whether the genetic basis had an influence on antisocial behaviors, they revealed that the violent criminal behavior arising from the interaction between several genetics and environmental factors .The present study reflect the role of polymorphisms in Catechol- O- methyl transferase (*comt*) gene on violent criminal behavior in Iraqi prisoners.

Methods: blood samples were collected from 200 prisoners (case group) who convicted with terrorism (150 sample), murder(30 sample) and drug trading (20 sample) issues selected from Al -Hila prison reformist central for men and women / Babylon city and from position and deporting division /Karbala ,this sample include (160 male and 40 female).Additionally, 100 sample were collected as control groups included (54 male and 46 female).

DNA was extracted from the peripheral blood of all participants, and the above mentioned single-nucleotide polymorphisms (SNPs) were genotyped by RFLP -PCR(Restriction Fragment Length Polymorphism). The results were confirmed by using sequencing technique.

Results: The result of the RFLP PCR and DNA sequencing methods for *comt* (Val 158 Met) polymorphism revealed that the homo-mutant genotype A/A(Met/Met) have significant higher risk of criminal behavior ($p= 0.001$;OR= 3.98 ; 95% CI= 1.7-9.3) when compared with control and the A allele (Met allele) frequency was a significant associated with case group ($p=0.003$; OR= 1.68; 95%CI= 1.19-2.37).

Conclusion: the presence of the Met allele of the *comt* gene results in a significant increase in the risk of the susceptibility of individual to engage in to crimes in the presence of certain environment risk factors.

Key word: Catechol- O- methyl transferase (*comt*) gene, alleles, dopaminergic system ,violent criminal behavior.