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Amylase Variation in a Korean *Drosophila melanogaster* : Genotype Polymorphism and Enzyme Activity

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Genotype distribution and enzyme activity of amylase(*Amy*) in a natural population of *Drosophila melanogaster* were analysed from 118 and 196 isofemale lines in 1994 and 1995. Six different patterns of *Amy* genotype have been found as Amy^{1}, $^{1\cdot2}$, $^{1\cdot3}$, $^{1\cdot6}$, $^{1\cdot2\cdot3}$, and $^{1\cdot3\cdot6}$. Among these genotypes, Amy^{1} seems to be the commonest and an ancestral allele, which frequencies observed as high as 72.04% and 75.00%. The protein concentration and enzyme activity of amylase variants were detected by BSA assay(A_{595}) and starch-iodine assay(A_{560}). The average of protein content was shown similarly as 13.0152 and 13.1226μgProtein. Specific amylase activity of the Amy^{1}(TN-329) was used standard enzyme activity. Each enzyme activities in adult single fly of *Amy* variants were revealed as similar as 1.9695μg Starch/μgProtein of Crude extract/min except only $Amy^{1\cdot6}$.

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Analysis of the Gene for Mouse 3β-Hydroxysteroid Dehydrogenase/ δ5-δ4 Isomerase

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3β-hydroxysteroid dehydrogenase/δ5-δ4 isomerase (3βHSD) is involved in the biosynthesis of steroid hormones including aldosterone, cortisol, testosterone, estrogen. Three types of 3βHSD cDNAs (Type I, II, III) have been identified from mouse liver and testis. Type II cDNA attracts most attention because it is expressed in the liver which is nonsteroidogenic tissue and its 5′ sequence has not been determined. It is prerequisite to isolate and to characterize its genomic structure to understand the gene regulation in a tissue specific manner. We have isolated a genomic clone that contains the gene for 3βHSD Type II. This gene spans over 7kb and consists of at least 3 exons and 2 introns. We here report the previously unidentified 5′ exonic sequence and putative promoter sequences. The result should facilitate the understanding of tissue specific expression of 3βHSD and contribute to the development of rapid diagnosis and treatment for congenital diseases due to the deficiency of 3βHSD. (This research was supported by a grant from Korea Yakult Institute).