

Title : Analysis of Microsatellite DNA on X-chromosome Locus DXS6809 in Thai males

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ABSTRACT

This study aims to analyse of the microsatellite on the X-chromosome locus DXS6809 in Thai males for forensic science application. To identify genetic traits including a specific locus on the X-chromosome by using the polymerase chain reaction technique (PCR). In this case, partially region on locus DXS6809 were investigated in 50 Thai males aged between 20 and 60 years old. Buccal cells were collected and genomic DNAs were extracted using the NucleoSpin® Tissue kit. The result shows that genomic DNAs contain high purity and the size were around 20 Kb. Then, PCR products were amplified from locus DXS6809 and it was revealed 300 Kb in length. The DXS6809 PCR products were purified using the PrimeWay PCR/Gel purification kit. DXS6809 PCR products were sequenced by Big Dye terminator method and were analyzed by BioEdit program version 7.7. The results revealed that the DXS6809 locus in Thai males population. Contained polymorphic region of three tetranucleotide repeat motifs, which were CTAT, ATCT and TACT. The pattern of $(CTAT)_n-(ATCT)_n-N_n-(TATC)_n-(ATCT)_n-N_n-(ATCT)_n$ repetition were found 18 patterns. The most highest allelic frequency is $(CTAT)_9-(ATCT)_3-N_9-(TATC)_3-(ATCT)_5-N_2-(TATC)_2-(ATCT)_{11}$, $(CTAT)_9-(ATCT)_3-N_9-(TATC)_3-(ATCT)_5-N_2-(TATC)_2-(ATCT)_{13}$ and $(CTAT)_9-(ATCT)_3-N_9-(TATC)_3-(ATCT)_5-N_2-(TATC)_2-(ATCT)_{14}$ (0.12). Power of discrimination (PD) of DXS6809 is 0.9224. According to the results, X-chromosome DXS6809 is one of a potential locus to apply in forensic science work.

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