

**Z608 Effect of 2,4-dinitrophenol or Cycloheximide on Induction of Cross-Adaptive Response to EMS or UV**

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This study was performed by DNA-protein crosslink (DPC) and expression level of glutathione S-transferase (GST) on cross-adaptive response to ethyl methanesulfonate (EMS) or ultraviolet radiation-C (UV). To investigate induction of cross-adaptive response, 2,4-dinitrophenol (DNP) which deplete cellular ATP and inhibitor of protein synthesis such as cycloheximide (CHM) were used. Two assays were used in this study ;  $K^+$ -SDS precipitation for analysis of DPC and western blot method for assay of GST. The amount of DPC induced by pretreatment with 2 mM EMS and subsequent treatment with 5 J/m<sup>2</sup> UV after treatment with 50  $\mu$ M DNP for 4 hours incubation decreased the formation of DPC induced by pretreatment with EMS and subsequent treatment with UV. Treatment with DNP or CHM for 4 hours incubation affected the expression level of GST in the cross-adapted cells pretreated with low dose of EMS. Treatment with DNP for 4 hours incubation affected on the expression level of GST in the cross-adapted cells pretreated with low dose of UV.

**Z609 Y-Chromosome STRs Typing Systems and Its Potential for the DNA Profiling of Koreans**

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We have developed silver based four multiplex genotyping systems (GeneKin<sup>®</sup> Y-STR Systems) with allelic ladders of ten Y-chromosome STR markers (DYS19, DYS385, DYS388, DYS389I/II, DYS390, DYS391, DYS392, DYS393, and DXYS156Y), with a view towards the application of rapid and simple genotyping assay methods for the DNA profiling. The GeneKin<sup>®</sup> Y-STR Systems developed here have followed the published nomenclature and ISFG guidelines for STR analysis. Allele and haplotype frequencies at these Y-STRs loci were analyzed by PCR amplification using the GeneKin<sup>®</sup> Y-STR Systems, followed by denaturing polyacrylamide gel electrophoresis in 316 unrelated males in the Korean population. A total of 295 different haplotypes were found, 279 of them being unique. Although allele frequencies at ten Y-STR loci vary among geographical regions, the distribution pattern tend to be placed the Koreans with those from mainland southeast Asians. Gene diversity varied from 0.4026 at DYS391 to 0.9606 at DYS385. The haplotype diversity value (which is the same as the discrimination index) calculated from all ten loci combined was 0.9995, which is informative. Our results revealed that a set of ten Y-STRs can discriminate between most of the male individuals in the Korean population (discrimination capacity: 93.35%). The Y-STR systems thus provide useful information for forensic analysis and paternity tests, and can also be of great benefit for providing information not normally available from autosomes.

Key Words: Allelic ladders; DNA profiling; Koreans; STRs; Y-chromosome haplotypes