

## **A FORENSIC CASE REPORT OF ABNORMAL FEMALE-SPECIFIC Y-STR ALLELES IN DYS385**

Mu-Yeong Lee, Jin Myeong Lee, Jung Yoon Lee, Sun Hee Park, Na Yeon Kim, Oun Young Lee, Dong Ho Choi, Soon Hee Kim

Division of DNA Analysis, Seoul Institute, National Forensic Service

In forensic genetics, unexpected genotyping results caused by genetic disorders or other reasons lead to confusion. Herein, we present a rare case where female-specific Y-STR alleles (10 and 18) were detected in the DYS385 locus of female DNA using the PowerPlex Y23 System during a routine forensic casework analysis. Multiple alleles (9, 10, 18, and 19) were detected in DYS385, with complete Y-STR haplotypes from a mixture of female and male DNA; the alleles 10 and 18 were higher than the alleles 9 and 19, when the female DNA concentration was higher than that of the male DNA. The female-specific alleles 10 and 18 presented the most matches with Korean populations among the populations of different nations, when searched on the Y-STR Haplotype Reference Database. Generally, the detection of multiple alleles of Y-STR profile is interpreted as male-male mixture or locus duplication. However, in this case, multiple alleles in DYS385 were caused by a mixture of female DNA with DYS385/male DNA. Therefore, recognizing such abnormal cases may help prevent misinterpretation of the results of mixed sample analysis.