

Population Genetic Study of 9 STR Loci using AmpFISTR Profiler Kit and Capillary Electrophoresis: Distribution of Allelic and Genotypic Frequencies in Two Populations from Southern Italy (Reggio Calabria, Catanzaro and their Districts).

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The AmpFISTR (PE-Applied Biosystem) kit coamplifies the repeat regions of 9 STR repeat loci: (D3S1358, vWA, FGA, TH01, TPOX, CSF1PO, D5S818, D13S317, D7S820). A segment of the X-Y homologous gene Amelogenin is also amplified. By capillary electrophoresis it takes about 30 min to type one sample and up to 48 samples a day can be typed automatically. In the present study, we analyzed allelic and genotypic distribution of 9 STR loci in two Southern Italian populations, Reggio Calabria and Catanzaro and their districts (Calabria), using this typing system.

DNA was extracted from blood samples of unrelated healthy donors (200 for each district) by Chelex 100 (PE-Applied Biosystems) treatment. STR amplification was carried out according to the AmpFISTR STR kit protocol using GeneAmp 9600 and 2400 thermal cyclers (Perkin Elmer).

Amplified products were analyzed by capillary electrophoresis on the ABI PRISM 310 Genetic Analyzer (PE-Applied Biosystems) employing ABI software (DATA Collection, GeneScan Analysis, Genotyper Fragment Analysis). For fragment length determination of the products, the internal lane DNA standard GS250-ROX (PE-Applied Biosystems) was used for calibration. Significant statistical differences were found between the two Calabrian populations examined and other Caucasian populations. Our results underscore the importance of the generation of local databases for STRs when these markers are being currently used in forensic casework.