

VALIDATION OF THE POWERPLEX® ESX 17 AND ESI 17 SYSTEMS AND SWISS POPULATION DATA

Gehrig Christian¹, Séverine Vuichard², Castella Vincent²

¹Unité de génétique forensique, Centre universitaire romand de médecine légale, rue Michel-Servet 1, 1211 Genève

²Unité de génétique forensique, Centre universitaire romand de médecine légale, rue du Bugnon 21, 1011 Lausanne

The Swiss national database was launched August 2000 based on the 10 SGM Plus loci. With the aim of addressing the needs of the next-generation European STR genotyping systems in Switzerland, we validated the PowerPlex® ESX 17 and ESI 17 kits.

These 2 commercial kits contain the SGM Plus loci, and therefore are compatible with the existing Swiss national database, the SE33 locus as well as the 5 new ENFSI/EDNAP loci D10S1248, D22S1045 D2S441, D12S391 and D1S1656.

In this study, we present the results of forensic validation studies including the following aspects: sensitivity, selectivity, discrepancies between the 2 kits, performance with simulated inhibition and degradation as well as Swiss population data (n=200).

Known samples and simulated case samples from the German DNA Profiling group—Stain Commission (GEDNAP) were tested using the PowerPlex® ESX 17 and ESI 17 kits. DNA profiles obtained from the known and questioned were compared with those already obtained for the SGM Plus kit. The typing results were consistent between the two kits and with those of the other participant laboratories.

The sensitivity, tolerance to inhibitors and use of mini STRs make these kits well-suited for challenging casework samples.