

## **VALIDATION OF AND INVESTIGATION INTO PROMEGA'S POWERPLEX® Y23 MULTIPLEX KIT**

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Promega have released a new Y STR DNA profiling kit – PowerPlex® Y23 (PPY23). The Forensic Biology group at ESR undertook an in house validation project with the aim of implementing the new kit into their casework and databanking streams, replacing the Promega PowerPlex® Y kit currently used. This new multiplex includes an additional 11 loci – two of which are rapidly mutating. This offers an increase in discriminating power and also enables the possibility to differentiate between paternally related male family members, an important consideration for some case circumstance such as when a female complainant lives with the suspect and a paternally related male. In this presentation we describe a number of experiments that were undertaken to determine the suitability of the PPY23 kit, including in-house optimisation, concordance, sensitivity and mixture interpretation. The specificity studies included investigating the appearance of allelic-like artefacts in female only samples and assessing the potential impact on forensic DNA testing and interpretation.