

DEVELOPMENTAL VALIDATION OF THE POWERPLEX® FUSION 6C SYSTEM

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The PowerPlex® Fusion 6C System is a 27-locus, 6-dye, multiplex that allows co-amplification and fluorescent detection of the 18 autosomal loci in the expanded CODIS core loci (CSF1PO, FGA, TH01, vWA, D1S1656, D2S1338, D2S441, D3S1358, D5S818, D7S820, D8S1179, D10S1248, D12S391, D13S317, D16S539, D18S51, D19S433 and D21S11) as well as Amelogenin and DYS391 for gender determination. The Penta D, Penta E, D22S1045, TPOX and SE33 loci are also included to increase both discrimination and overlap with databases that include profiles containing these loci. Finally, two rapidly mutating Y-STR loci, DYS570 and DYS576, are included in the multiplex. Eight Laboratories participated in the developmental validation effort following SWGDAM guidelines. Validation testing included both extracted DNA and direct amplification. Data was generated on both Applied Biosystems 3500 series and 6-dye capable 3130 series Genetic Analyzers. Results demonstrating the capabilities and limitations of the PowerPlex® Fusion 6C System are presented here and have also been submitted for NDIS review as well as for publication consideration in Forensic Science International: Genetics.