

## **VALIDATION OF POWERPLEX® 16 HS AND POWERPLEX® ESX 16 ON THE APPLIED BIOSYSTEMS 3500XL**

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The ABI3500xL is a 24 capillary instrument for the analysis of DNA by either fragment analysis (STRs) or sequencing. The instrument makes use of long-standardized fluorescence detection of DNA during the electrophoretic process. Each sample being analyzed is applied automatically to the end of a glass capillary where the amplicons it contains are separated. The capillaries pass as a two dimensional array through a detection cell where the fluorescently tagged DNA fragments are subjected to excitation by a cool-running solid state laser. The different fluors on the DNA fragments emit specific wavelengths of light which, together with their general size distribution, allows them to be differentiated from one another on the basis of their locus of origin.

Besides the 24 capillary configuration, the 3500xL is distinguished from other ABI capillary electrophoresis instruments in that the various consumable reagents and the capillary array are provided with RFID “tags” that are read by the instrument. The reagent and array lifetimes on the instrument are thereby automatically monitored. A separate module is available to control system security, auditing and to allow electronic signatures on certain functions.

This presentation will show the results of the validation of both PowerPlex® 16HS and PowerPlex® ESX16 on the ABI2500. Sensitivity of the instrument will be compared with respect to a 16-capillary 3100 with regard to single-source samples and mixtures. Formats of outputs that can be uploaded into our LIMS will be compared as well as ease of operation. The user interface of this instrument is unique and its intuitiveness with regard to running non-ABI multiplexes will be discussed.