

**THE UTILIZATION OF THE *AMPLIGRID* A60 SYSTEM™
IN FORENSICALLY RELEVANT LOW COPY NUMBER DNA SAMPLES**

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Trace evidence material or low copy number DNA samples have always been a challenge in the forensic community because they do not contain sufficient input material to allow for successful DNA testing using conventional short tandem repeat (STR) kits. The optimum efficiency of most STR kits is at 1ng of DNA analyzed and a low-end sensitivity of 250pg. To this end, Advalytix AG has developed a new amplification system called *AmpliGrid* A60™. This method allows for the amplification of low copy number DNA samples in minimal volumes and at minimal DNA input (30pg-1ng range). The *AmpliGrid* A60 Chip™ is a high quality glass substrate with a modified, hydrophobic surface that contains 60 hydrophilic reaction compartments of 1.6mm diameter (anchor spot). This chip facilitates the amplification of up to sixty samples in a scale up to 1µl volume. The decreased amplification volume enables DNA samples of low concentration to be tested, and thus maximizes success in generating STR profiles. Orchid Cellmark Inc. did a side-by-side comparison of conventional STR amplification methods and the *AmpliGrid* A60 Chip™ using forensically relevant low copy number DNA samples. STR data obtained from the comparison study will be presented, along with the possible use of the *AmpliGrid* A60 Chip™ in SNP testing on forensically relevant samples.