INVESTIGATOR QUANTIPLEX HYRES VALIDATION

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As technology advances, DNA is being obtained from a greater diversity of mediums and in lower concentrations, making accurate quantification increasingly important. An analyst needs to be able to detect the presence of PCR inhibitors so that steps can be taken to overcome them, and determine if enough DNA is present in the sample to proceed to PCR. This study was an internal validation of the Qiagen Investigator Quantiplex HYres Quantification kit on a BioRad CFX96 thermalcycler. Standard validation studies were performed including sensitivity, reproducibility, repeatability, and mixtures analysis. In addition to these studies hematin, tannic acid, and humic acid were used to demonstrate the effects of inhibitors that may commonly be present in forensic samples. Each sample analyzed included a total human target, a male target, and an internal positive control. Results show that the Quantiplex HYres Quantification kit is very sensitive, accurately indicates the presence of an inhibitor seen by a shift in the internal positive control curve, and can detect small amount of male DNA in the presence of a high concentration of female DNA. The results show that this quantification kit is fully validated within our lab, and provides the tools needed for deciding whether to proceed to PCR with difficult forensic samples.