The evolution of nucleic acid quantification one drop at a time -

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Digital PCR is a new technology that overcomes the pain points associated with qPCR including: 1) Standard Curve Reproducibility; 2) Variability in Detection and Quantification of Low Abundant Targets; 3) Interplate Variability and 4) Artifactual Data consequent to Differentially Contaminated Samples. These issues are particularly problematic and persistent with detection and quantification of circulating DNA or RNA biomarkers from biofluids, exosomes, micro RNA and long non coding RNA due to their low abundance. Furthermore, the residual contaminants in nucleic acid extracts from paraffin blocks and in reverse transcribed cDNA samples can partially inhibit the qPCR polymerase activity, giving misleading or false negative results. Particularly problematic for virology is the detection of residual disease post-treatment due to the combined effects of inter-assay variability and low target abundance. This seminar will compare and contrast the data generated from qPCR and Digital PCR technology from identical samples with varying levels of contaminants to highlight how and when to use these technologies for applied and basic research applications.