

Comparison of DNA and RNA Assays Using Agilent Automated Electrophoresis Systems

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Accurate qualification and quantification of samples for next-generation sequencing (NGS) applications is essential for reliable results. Established quality control (QC) procedures involve automated electrophoresis systems, such as the Agilent 2100 Bioanalyzer, TapeStation and Fragment Analyzer systems, all providing comparable data. To compare the performance of the Agilent 2100 Bioanalyzer, TapeStation and Fragment Analyzer systems, equivalent assays for the respective systems were used for quantitative and qualitative analysis of DNA smears and total RNA samples. The comparison of Data obtained from sheared DNA samples analyzed with the High Sensitivity DNA kit (Bioanalyzer), the High Sensitivity D1000 (TapeStation) and the High Sensitivity NGS kit (Fragment Analyzer) showed similar smear size and concentration on each system. Furthermore, the analysis of total RNA samples with the RNA 6000 Nano assay (Bioanalyzer) and the RNA ScreenTape assay (TapeStation) showed comparable concentrations and quality metrics on both systems. Analysis of total RNA from *Drosophila*, Corn, and *E. coli* using the RNA 6000 Nano or RNA 6000 Pico kit (Bioanalyzer) and the RNA kit (15 nt) or HS RNA kit (15 nt) (Fragment Analyzer) yielded comparable RIN and RQN results, as well as similar concentration values for both systems. The quantification, and electropherogram results, as well as the RNA quality scores obtained from the Bioanalyzer showed comparable results to the TapeStation or the Fragment Analyzer systems, demonstrating the equivalency of the Agilent automated electrophoresis systems.