A Model Comparability Study between C1000 Touch Thermal Cyclers and PTC Tempo Thermal Cyclers

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Thermal cyclers are ubiquitous laboratory tools for the performance of polymerase chain reaction (PCR) functions across a wide range of applications, including sequencing, cloning, genotyping, mutation detection, protein melt assays, and many others. As a result, PCR is one of the most common molecular techniques today, second only to real-time or quantitative PCR. The PTC Tempo Thermal Cycler is designed to address more complex molecular techniques with a high level of performance, including precise temperature control, a flexible thermal gradient configuration, and models with different block formats for a range of throughput and volume capabilities.

A comparability study or bridging study is often required in laboratories following changes to a protocol and/or equipment in an existing process. This study outlines experiments to assess the comparability in thermal performance between the PTC Tempo 96 and PTC Tempo Deepwell Thermal Cyclers and the C1000 Touch 96 Fast and 96 Deep Well Thermal Cyclers. To evaluate thermal efficiency across a gradient, 5 different temperatures were selected and ramp rate, accuracy, and gradient performance assessed. The downstream amplification products were also compared. Results showed that the PTC Tempo 96 and PTC Tempo Deepwell Thermal Cyclers have comparable thermal performance to the C1000 Touch 96 Fast and 96-Deep Well Thermal Cyclers. The PTC Tempo also adds expanded capabilities with new automation-friendly features in its industrial design, such as an automatic lid for automated workflows or autosensing the required contact point with plates and tubes, LED light display and audible notifications for instrument status, along with expanded connectivity using the cloud BR.io interface, Wi-Fi, USB, and ethernet connection to the local network. The PTC Tempo Thermal Cycler maintains the same user access controls for user management with enhanced security and reporting features.