



Application Note

Validation of SensiFAST™ Real-Time qPCR mix with MIC qPCR system on VERSA10

AIM

A collaboration between BMS and Bioline advances real-time qPCR solutions with utmost sensitivity, cost-efficacy and precision. Here we highlight successful deployment of a small-footprint, ultrafast, automatable solution for qPCR assays.

CAPABILITIES

The VERSA10 workstation is a compact, versatile, multi-channel automated liquid handler that offers speed, flexibility, ease-of-use and accurate pipetting performance. This platform can be configured for various molecular biology techniques such as; qPCR, RT-PCR, digital PCR, nucleic acid preparation (NAP), normalization etc. In the following validation, the VERSA10 was configured (Fig. 1) for the SensiFAST™ Real-Time PCR kit (*Bioline, England*) and MIC qPCR machine (*Bio Molecular Systems, Australia*). The protocol utilizes both a Reagent Cooler Block (position. 4) and a flat Plate Cooler (position. 6) to hold all reagents at 4°C. Performing an assay with the Real-Time PCR kit, the qPCR tubes were loaded into a 384 well PCR plate adaptor (Fig. 2) (position. 6), and single channel mode was used to transfer both the master mix and sample. In addition, serial dilution of the sample was also performed on the VERSA10.

VERSA ACCURACY THROUGH qPCR ERROR MEASUREMENTS

An initial validation of the SensiFAST positive control assay on the MIC was performed manually, then the VERSA10 was programmed for the same reagent dispensation. VERSA10 dispensation of a 100-fold dilution as part of a SensiFAST dilution series resulted in a 28% reduction in standard deviation for triplicate samples (Manual cT Average; 17.79 +/- 0.353 | VERSA10-mixed cT Average; 17.98 +/- 0.257). This demonstrates the VERSA10's accuracy, as the MIC is known for superior temperature uniformity compared to heating block qPCR machine, and furthers reliability of highly-sensitive SensiFAST qPCR assays on these platforms. In addition, the VERSA10 demonstrated a clear lack of cross-contamination when challenged with a "checkerboard" layout.

VERSA10's software is highly intuitive and user friendly, making it easy to set up and perform any protocol. There are different application tabs to cover most molecular biology protocols: PCR, NAP, serial dilution, normalization and any liquid transfers etc. (Fig.3 and Fig. 4). Customized methodologies are easy to create and load into the library of stored protocols using the import and export functions within the software. In conjunction with the tiny footprint and superior analysis software of the MIC qPCR system and the speed and accuracy of Bioline's SensiFAST qPCR chemistry, plus the VERSA10 makes an unbeatable trio for automated, rapid and reliable qPCR assays.

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ABOUT US

Aurora Biomed Inc. provides automated liquid handling workstations and laboratory automation technologies to the scientific community. To meet liquid handling protocol requirements, the VERSA series offer reliability, performance, and flexibility. Bio Molecular Systems is a high precision manufacturer of the first Magnetic Induction Cycler (MIC), which offers superior speed, accuracy and sensitivity. Bioline, Inc. is an ISO 13485 manufacturer of raw materials, complex chemistries and custom solution for PCR, qPCR and Next Generation Library preparation and quantification.

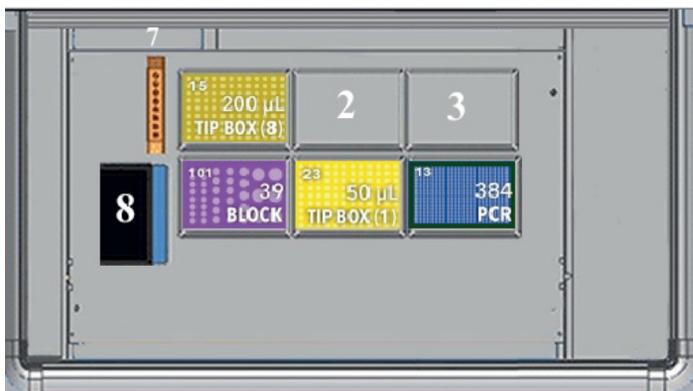


Fig. 1 VERSA10-Deck layout for Bioline qPCR kit



Fig. 2 VERSA 384 well PCR plate adaptor with Mic PCR tubes

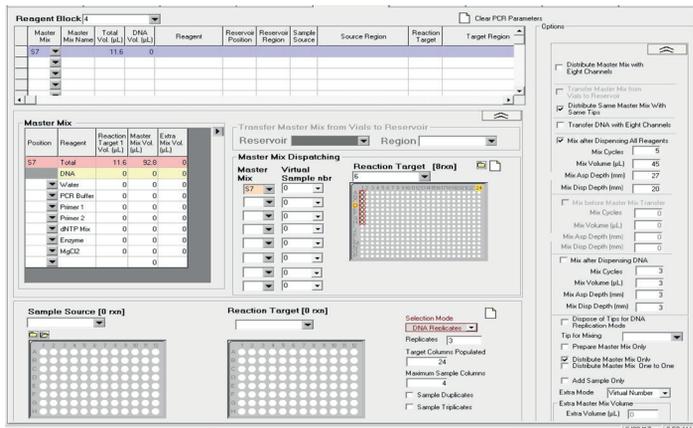


Fig. 3 VERSA10-PCR tab set up

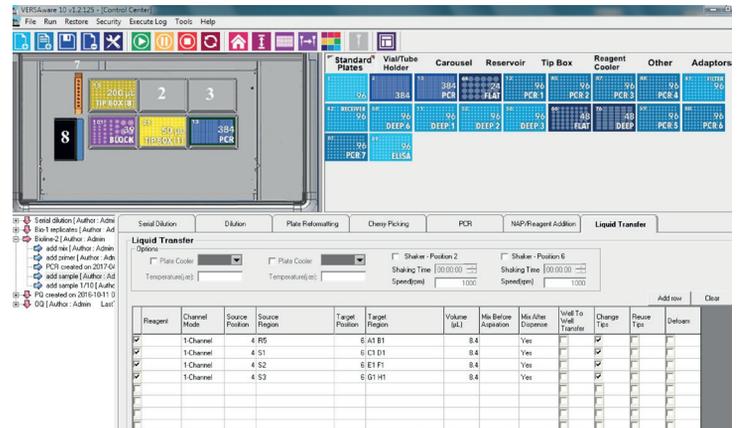


Fig. 4 VERSA10-Liquid Transfer Tab set up

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