GILSON Pipetman Classic Single Channel Pipettes

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INTRODUCTION

Quantitative PCR (qPCR) is one, if not the most commonly used technique in the life science laboratory. It's used in many different applications, such as gene expression in response to a treatment or pathogen identification in diagnostics. qPCR is a versatile and sensitive method for DNA quantification. This very powerful method relies on efficient liquid handling to ensure quality results. However, in qPCR, plate preparation is tedious and time-consuming and relies on skilled technicians to ensure good reproducibility. One solution to answer these challenges is automation 1.

Efficiency and reproducibility have become the main challenges in every lab. To achieve good results in these areas, labs turn to automation, which offers many advantages. However, the number of different solutions makes it a challenge to choose the best one, depending on the lab's objectives and direction 2, 3.

In this study, seven housekeeping genes were quantified from genomic DNA from HeLa cells. We compared the qPCR results obtained using three different solutions: manual pipettes (Gilson PIPETMAN®), the semi-automated TRACKMAN® Connected pipetting solution, and the fully automated PIPETMAX® automated liquid handler. Here, we'll show that all solutions give precise and similar results with different degrees of

automation. Sample serial dilutions and master mix were all prepared manually, the different tools were then used for sample and master mix dispenses. Standard curves and efficiencies were determined for each of the different Gilson tools.

MATERIALS AND METHODS

Gilson materials used:

A complete set of PIPETMAN pipettes was used for the master mix preparation. These same pipettes were also used for manual pipetting qPCR experiments (PIPETMAN P20 single channel and PIPETMAN P10 single channel), and good pipetting practices were followed 4. For the TRACKMAN Connected qPCR experiments, a TRACKMAN Connected tablet, a PIPETMAN M Connected P300M, and a PIPETMAN M Connected P10M single channel pipettes were used. The automated qPCR pipetting was performed using PIPETMAX with the 8 x 20 pipetting head. All details and part numbers can be found in Table 1.

All experiments were performed using sterile filtered PIPETMAN® DIAMOND tips of the appropriate volume.

qPCR:

The qPCR experiments were performed on an Agilent AriaMX using a FAM filter. The qPCR Brilliant II Sybr master mix was used and prepared according to the manufacturer's instructions, except that the final reaction volumes were reduced to 20 µl (17 µl of master mix and 3 µl of DNA) instead of 25 µl. Primers were purchased from Merck Millipore Sigma already resuspended and desalted to a concentration of 100 µM. Sequences are given in Table 2. gDNA was obtained from HeLa cells using a QIAGEN blood and cell culture DNA kit. The initial concentration of DNA was quantified by UV-spectrophotometry at 260 nm. A standard curve was generated starting from 2 ng/L of DNA and serially diluted with a dilution factor of 4.

Table 1

Gilson material details with associated part number

Documents / Resources

	GILSON Pipetman Classic Single Channel Pipettes [pdf] Instruction Manual PIPETMAN P20, PIPETMAN P10, TRACKMAN CONNECTED EU, PIPETMAN M CONNECTED P300M, PIPETMAN M CONNECTED P10M, PIPETMAX 268 with Cover Cutouts, PIPETMAX MAX 8x20 Pipette Head, Pipetman Classic Single Channel Pipettes, Classic Single Channel Pipettes, Single Channel Pipettes, Channel Pipettes, Pipettes

References

- User Manual

Gilson

Channel Pipettes, Classic Single Channel Pipettes, Gilson, Pipetman Classic Single Channel Pipettes, PIPETMAN M CONNECTED P10M, PIPETMAN M CONNECTED P300M, PIPETMAN P10, PIPETMAN P20, PIPETMAX 268 with Cover Cutouts, PIPETMAX MAX 8x20 Pipette Head, Pipettes, Single Channel Pipettes, TRACKMAN CONNECTED EU

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