

Setting up a 384 well qRT-PCR assay for the ViiA™ 7 using VIAFLO and VOYAGER electronic pipettes

Introduction

The qRT-PCR is set up by hand, using a VIAFLO 16 channel 125 µl electronic pipette to distribute master mixes of two genes of interest into a 384 well plate. All 64 samples are loaded directly from 1.5 ml microcentrifuge tubes into the 384 well plate in triplicate, using a VOYAGER 8 channel 12.5 µl adjustable tip spacing pipette. The whole process takes less than 10 minutes in real time!

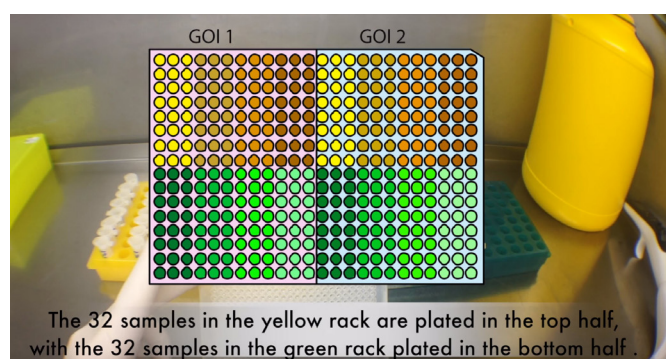
Key benefits:

- A 384 well plate can be filled with a master mix in less than one minute, using a VIAFLO 16 channel pipette and the Repeat Dispense mode.
- The VOYAGER adjustable tip spacing pipette enables simultaneous transfer of multiple samples from microcentrifuge tubes to a 384 well plate, saving many extra pipetting steps and time.
- Reducing the number of individual transfers minimizes the chance of pipetting errors.

Video description

The [video](#) (see right) shows how quickly and easily you can set up a 384 well qRT-PCR plate by pipetting 64 samples in triplicate for two genes of interest (GOI 1 and GOI 2).

Both master mixes are transferred from a microcentrifuge tube into a 10 ml polystyrene multichannel reagent reservoir using a single channel pipette. The GOI 1 master mix is then transferred to the left half of the 384 well plate, and the GOI 2 master mix to the right half, using the Repeat Dispense mode of the VIAFLO 16 channel 125 µl electronic pipette. Next, all 64 samples are transferred in triplicate into both the GOI 1 and GOI 2 master mixes using a VOYAGER 8 channel 12.5 µl pipette. The VOYAGER pipette's tip spacing can be adjusted on the fly for center-to-center spacing of the tubes and the plate, enabling simultaneous direct transfer of multiple samples.



[Video: Setting up a 384 well qRT-PCR assay using INTEGRA's electronic pipettes](#)

Step-by-step procedure:

1. Transfer GOI 1 and GOI 2 master mixes into a 384 well plate

STEP: Add GOI 1 master mix to the left half of a 384 well plate and GOI 2 master mix to the right half (see **Figure 1**).

HOW TO: Use a VIAFLO 16 channel 125 µl electronic pipette with 125 µl Sterile, Filter GripTips.

Select the Repeat Dispense mode and set it to dispense 12 x 7.5 µl. Depending on the viscosity of the master mix, a lower pipetting speed (e.g. speed 6) is recommended. A Pace option can be activated to minimize the need to press the pipette's run button during dispensing, and enable automatic sequential dispensing.

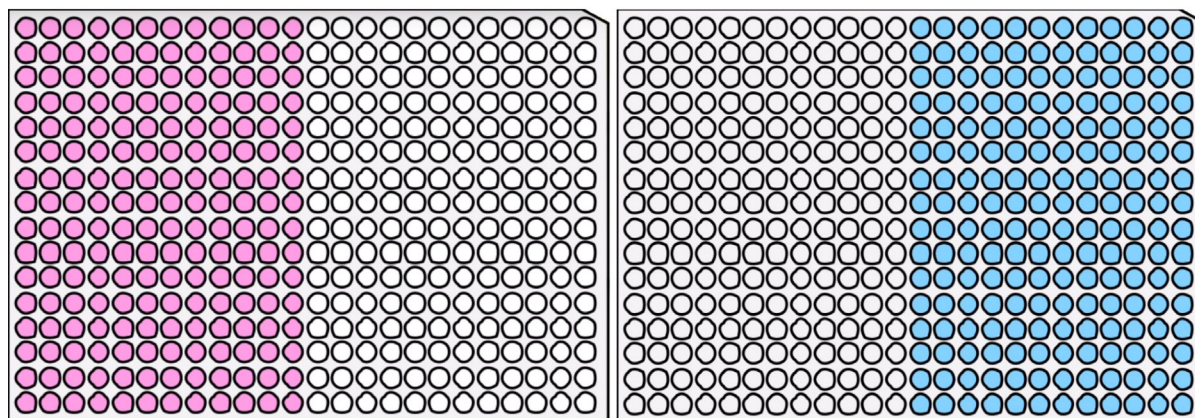


Figure 1: Pipetting scheme for GOI 1 and GOI 2 master mixes

2. Transferring 64 samples into a 384 well plate

STEP: Add 64 samples of GOI 1 and GOI 2 in triplicate to the master mix.

HOW TO: All 64 samples in microcentrifuge tubes are divided into 2 x 32 samples lined up in either a yellow or green rack and then transferred in triplicate to the GOI 1 and GOI 2 master mixes (see **Figure 2**), using a VOYAGER 8 channel 12.5 µl adjustable tip spacing pipette with 12.5 µl Sterile, Filter GripTips.

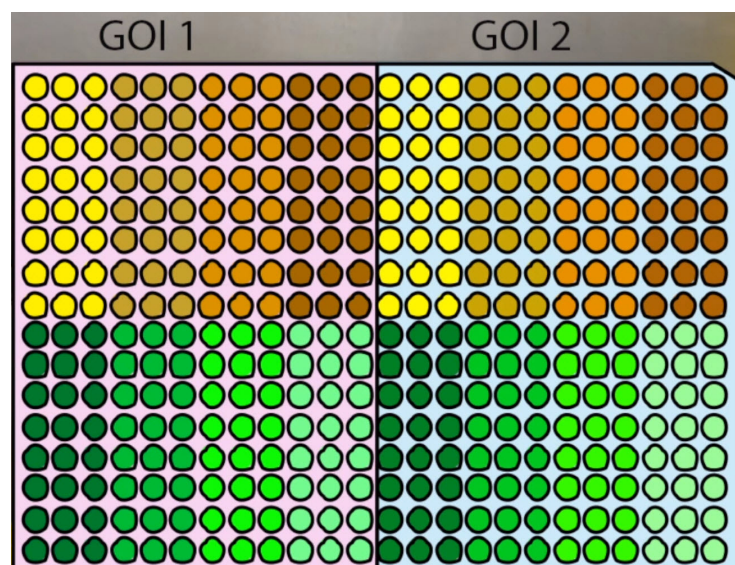


Figure 2: Pipetting scheme of the qRT-PCR assay

Choose the Repeat Dispense mode and set it to dispense 3 x 2.5 µl. A post-dispense of 1-2 µl is recommended for optimal dispensing performance. Two tip spacings are set: 13 mm (tubes in the tube rack) and 4.5 mm (center-to-center spacing of 384 well plates).

Customer's voice

In the customer's words

There are clear advantages of manual set-up using VIAFLO and VOYAGER pipettes. While liquid handling robots can be a good option for routine processing of large sample numbers, handheld pipettes like these give far greater control over changing sample numbers and layouts. You can pipette a 384 well plate by hand in the time it takes to set up the robot.

Materials

Manufacturer	Part Number	Description	Link
INTEGRA Biosciences	4721	VOYAGER 8 channel 12.5 µl electronic pipette	https://www.integra-biosciences.com/global/en/electronic-pipettes/voyager#parts-and-numbers
INTEGRA Biosciences	4642	VIAFLO 16 channel 125 µl electronic pipette	https://www.integra-biosciences.com/global/en/electronic-pipettes/viaflo#parts-and-numbers
INTEGRA Biosciences	4331 4332	10 ml multichannel reagent reservoir, polystyrene	https://www.integra-biosciences.com/global/en/reagent-reservoirs/multichannel-reagent-reservoirs#parts-and-numbers
INTEGRA Biosciences	4415	12.5 µl Sterile, Filter, GripTips	https://www.integra-biosciences.com/global/en/griptip-selector-guide
INTEGRA Biosciences	4425	125 µl Sterile, Filter, GripTips	https://www.integra-biosciences.com/global/en/griptip-selector-guide

INTEGRA Biosciences AG
7205 Zizers, Switzerland
T +41 81 286 95 30
F +41 81 286 95 33
info@integra-biosciences.com

INTEGRA Biosciences Corp.
Hudson, NH 03051, USA
T +1 603 578 5800
F +1 603 577 5529
info-us@integra-biosciences.com

INTEGRA Biosciences Deutschland GmbH
35444 Biebertal, Deutschland
T +49 6409 81 999 15
F +49 6409 81 999 68
info-de@integra-biosciences.com

INTEGRA Biosciences SAS
95062 Cergy-Pontoise Cedex 1, France
T +33 (0)1 34 30 76 76
F +33 (0)1 34 30 76 79
info-fr@integra-biosciences.com

INTEGRA Biosciences Ltd.
Egham, Surrey TW20 9EY, UK
info-uk@integra-biosciences.com