

# Mutation detection using the TaqMan Liquid Biopsy dPCR Assays on the Bio-Rad QX100 and QX200 systems

## Introduction

Oncogenic mutations present in low abundance can be detected using Applied Biosystems™ TaqMan® Liquid Biopsy dPCR Assays combined with digital analysis. This quick reference protocol provides instructions for running wet lab–tested TaqMan Liquid Biopsy dPCR Assays on the Bio-Rad™ QX100™ and QX200™ Droplet Digital™ PCR (ddPCR) Systems.\*

The reaction setup shown below is recommended for rare-allele detection and accommodates running two technical replicates. For mutation rates lower than 1%, additional replicates may be required to achieve robust detection.



## Reaction mix preparation for dPCR

Material	Volume per reaction	Volume per 2 reactions*	Final concentration
2X ddPCR Supermix for Probes	10 µL	24 µL	1X
20X TaqMan dPCR Assay**	1 µL	2.4 µL	1X
DNA sample/water†	Variable	Variable	1 ng/µL
<b>Total volume</b>	<b>20 µL††</b>	<b>48 µL</b>	–

\* Volumes include 20% excess to compensate for volume loss during pipetting.

\*\* Dilute to 20X prior to reaction mix preparation.

† Depending on sample source, required input DNA amount may vary.

†† For the Bio-Rad™ Automated Droplet Generator, prepare 22 µL/reaction.

## Thermal cycling protocol

Temperature	Time	Ramp rate	Number of cycles
95°C	10 min	2°C/sec	1
94°C	30 sec		40
60°C*	1 min		1
98°C	10 min		1
4°C (optional)	∞	1°C/sec	1

Note: Use a heated lid set to 105°C and set the sample volume to 40 µL.

\* Annealing temperature may be optimized as needed.

## ddPCR settings

On the QX100 or QX200 system, after selecting **Run**, be sure to select the appropriate dye set—**FAM/VIC** under **Run Options**.

## Ordering information

Product	Quantity	Concentration	Cat. No.
TaqMan Liquid Biopsy dPCR Assay	450 reactions	40X	A44177

A complete list of assays is available at [thermofisher.com/dpcr-raremutation](http://thermofisher.com/dpcr-raremutation)

These assay probes are labeled with Applied Biosystems™ FAM™ and VIC™ dyes.

Find out more at [thermofisher.com/dpcr-raremutation](http://thermofisher.com/dpcr-raremutation)