



February 2026

Supplementary Protocol

QIAcuity® IDNAPTEX® Multiple Occupancy Analysis (MOA) Tool

This protocol provides guidance on the usage of the QIAcuity IDNAPTEX Multiple Occupancy Analysis (MOA) Tool. This tool is a Microsoft® Excel® macro for automated analysis of dPCR results generated with the IDNAPTEX assays (catalog numbers listed in Table 1) on the QIAcuity dPCR platform and exported from the QIAcuity Software Suite version 3.1.

The tool uses multiple occupancy values exported from the QIAcuity Software suite to automatically calculate mutation frequencies and copy number variation values for the individual assays.

Multiple occupancy takes into consideration that partitions can contain different mixtures of targets that produce the same signal (e.g., double-positives in the green and yellow channel). Multiple occupancy analysis uses statistical modeling of how molecules distribute across partitions to determine the absolute number of each target, even when:

- Partitions contain mixtures of linked and unlinked targets;
- Fluorescent channels overlap in various combinations; and
- Different molecule combinations result in identical signal patterns.

Equipment and reagents to be supplied by the user

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, consult the appropriate safety data sheets (SDSs), available from the product supplier.

- ID Solutions IDNAPTEX dPCR Assays (see for Table 1 catalog numbers)

Table 1. Summary of assays compatible with the tool and required labeling of the reaction mix

Assay	Catalog Number	Labeling of the Reaction Mix
IDNAPTEX BRAF	1141-011110-96	IDNAPTEX BRAF
IDNAPTEX BRAF-CNS	1141-011116-96	IDNAPTEX BRAF-CNS
IDNAPTEX EGFR RESIST	1141-011104-96	IDNAPTEX EGFR RESIST
IDNAPTEX EGFR SENSI	1141-011103-96	IDNAPTEX EGFR SENSI
IDNAPTEX ESR1	1141-011101-96	IDNAPTEX ESR1
IDNAPTEX FGFR1-CNS	1141-011117-96	IDNAPTEX FGFR1-CNS
IDNAPTEX H3F3A	1141-011114-96	IDNAPTEX H3F3A
IDNAPTEX IDH1-2	1141-011112-96	IDNAPTEX IDH1-2
IDNAPTEX KRAS 3X	1141-011107-96	IDNAPTEX KRAS 3X Ex23 IDNAPTEX KRAS 3X Ex4
IDNAPTEX KRAS G12C	1141-011108-96	IDNAPTEX KRAS G12C
IDNAPTEX NRAS	1141-011109-96	IDNAPTEX NRAS
IDNAPTEX PIK3CA	1141-011111-96	IDNAPTEX PIK3CA
IDNAPTEX TERT	1141-011115-96	IDNAPTEX TERT

Notes before starting

- The tool is compatible with QIAcuity Software Suite version 3.1.
- The tool is compatible with results obtained from the assays listed in Table 1.
- The tool requires Microsoft Excel files that have not been opened in Excel before. Otherwise, it will show Error 400.
- Macros must be enabled in Excel for the tool to function.

Procedure

Labeling

Ensure that the reaction mix of each well is labeled with the exact name corresponding to the assay used (see Table 1) when configuring the plate for the dPCR run in the QIAcuity Software Suite.

Important: Any deviation from the assay name will prevent the MOA tool from recognizing the assays, and from correctly assigning measured values to their assay-specific calculations.

Thresholding

After completing the dPCR run – but before exporting the multiple occupancy calculation table – verify and, if needed, manually adjust the thresholds in the 2D scatterplot view of the QIAcuity Software Suite.

1. Apply thresholds using the linear 2D threshold and the lasso function, following the assay-specific target definitions in the product manuals.

For general instructions on thresholding and using the lasso function, please consult the *QIAcuity User Manual* (www.qiagen.com/HB-2717).

2. Ensure that double-positive partitions are assigned as double-positives. This classification is required for the multiple occupancy statistical model to accurately determine the absolute quantities of each target.
3. After setting or adjusting thresholds, click **Recalculate** next to the 2D plot to update the copies/ μ L values and linked calculations based on the new threshold settings.

Multiple Occupancy Export

To analyze data using the MOA tool, export the multiple occupancy results from the QIAcuity Software Suite:

1. In the **Select** section, select all channels required for analysis. Click **Show Results**.
2. Switch to the **List** view.
3. Under the **Export to CSV** menu, select **Multiple occupancy**.
4. In the export dialog, click **Select all** then **Export**. This generates the excel file containing all multiple occupancy results needed for the MOA tool.

Processing of Multiple Occupancy Data with the MOA Tool

For automated analysis

1. Select the **Import** tab then **Import and Calculate**.

Note: The Import tab also includes a **Help** menu that links to the How to Use instructions, a list of Supported Assays, and a Troubleshooting guide. In the **Supported Assays** section, each assay name can be copied with a click, and pasted directly into the reaction-mix naming fields in the plate layout.

2. A file browser window will appear. Select the exported multiple occupancy export file for loading into the MOA tool.

1. Once the file is opened, two new tabs will appear:
 - **Imported Data:** displays all imported data. The Group column shows the signal pattern for each target, where a plus (+) indicates the presence of a signal in a given channel and a minus (–) indicates its absence. This plus–minus code corresponds to the information in the Categories column, which reflects the channels that were selected for multiple-occupancy export in the previous step.
 - **Results:** lists plate-specific parameters such as plate name, well ID, and the assay ID for each well – along with the calculated mutation frequencies (in %) and CNV values for each mutation in every analyzed well.

For downstream analysis

1. Select the **Import tab** then **Export results to CSV**, which allows the results to be exported in a . csv file format.
2. A file browser window will appear. Select the target directory, specify the file name, then select **Save**.

Document Revision History

Date	Changes
02/2026	Initial release.

For up-to-date licensing information and product-specific disclaimers, see the respective IDNAPTEX kit handbook, QIAGEN kit handbook, or QIAGEN user manual.

Trademarks: QIAGEN®, Sample to Insight®, QIAcuity® (QIAGEN Group); IDNAPTEX® (ID Solutions); Excel® (Microsoft Corporation). Registered names, trademarks, etc. used in this document, even when not specifically marked as such, are not to be considered unprotected by law.

02/2026 HB-3795-001 © 2026 QIAGEN, all rights reserved.