Using the Mic qPCR instrument and micPCR Software

Introduction

For detailed information about the Mic qPCR instrument, refer to the *Mic Real Time PCR Cycler User Manual* available from the micPCR Software Help menu.

Minimum computer requirements

- Windows* 7, 32- or 64-bit operating system (English version) or later
- .NET Framework 4.5 or higher. The .NET Framework can be downloaded at: dotnet.microsoft.com/download.
- Intel* i5 processor, 2.4 GHz, or greater
- 4 GB RAM
- 1 GB free hard-drive capacity
- Mouse
- USB drive
- Adobe* Reader* installed for report viewing

Setting up the micPCR Software and instrument

Install the software

The micPCR Software is located on a USB flash drive included with the instrument.

1. Insert the USB flash drive into a USB port on your computer.
2. In File Explorer, locate the USB drive, double-click the drive name, and then double-click the **IDEXX_micPCR.msi** file name to start the installation.
3. Follow the prompts to install the software.

An IDEXX micPCR icon appears on the desktop.

Set up a Mic qPCR instrument

1. Place the instrument on a flat surface no more than 2 meters (~6 feet) from the computer for a USB connection and no more than 7 meters (~22 feet) for a wireless connection.
2. Plug one end of the power adapter into the back of the instrument and the other end into a wall outlet.
3. Power on the instrument by pressing the power switch on the back.
4. Connect the instrument to the computer by USB cable.
   OR
   For wireless connectivity, screw the wireless antenna into the port on the back of the cycler.
5. Double-click the **IDEXX micPCR** icon on your desktop to start the software.

   The software recognizes the instrument and displays the Instrument icon ⊟ in the top right corner of the toolbar.

   Tip: If the instrument is not automatically recognized, click **Scan for Instruments** on the right side of the toolbar.
6. Name the instrument.

Enable Bluetooth

If you are connecting the instrument wirelessly, you must enable Bluetooth* on your computer.

Windows 7 computer:

1. Click the Windows* **Start** button.
2. Type *Bluetooth settings* in the Search box and press **Enter.**
3. Click **Change Bluetooth Settings**.
4. Click the **Options** tab, and then under Discovery, select the check box labeled **Allow Bluetooth Devices to Find This Computer**.

Windows* 10 computer:

1. Click the **Windows** button ⊞.
2. On the left, click **Settings** ⚙.
3. Click **Devices**.
4. Click the slider button under **Bluetooth** to slide it to the **On** position.

Downloading assay files

To run RealPCR* assays, you must download assay files for the tests you want to run. You need to do this only once.

1. In a web browser, go to https://www.idexx.com/en/livestock/testing-solutions/idexx-realpcr-modular-platform/realpcr-resources.
2. Click the assay file you want. The file is downloaded automatically to your Downloads folder as a .zip file.
3. Open the Downloads folder, right-click the assay file name, click **Copy**, and then navigate to:
   - (Windows 7) C:Documents > IDEXX > IDEXX micPCR
   - (Windows 10) This PC > Documents > IDEXX > IDEXX micPCR.

   Note: Your Documents folder may be located differently; for example, it may be under a user's folder.
4. Right-click and select **Paste** to paste the assay .zip file into the folder.
5. Extract the contents of the assay zip file into the **Assays** subfolder.

Running RealPCR assays

For sample preparation instructions, refer to the product insert that comes with each RealPCR assay.

Loading samples

1. Pipette samples and prepared PCR mix into tubes using the 4-well tubes and loading rack provided with the cycler.
2. Cap the tubes, using the caps and capping tool provided.
3. Remove the magnetic tube clamp from the top of the rotor, and place the tubes into the rotor, starting with position 1.

IMPORTANT: The first tube in each set of 4 tubes has a small plastic tab or protrusion on one side to help you recognize which side is which. Make sure the tab faces the **center** of the rotor.

4. Load any empty rotor positions with water-filled tubes (filled to the same volume as the other tubes).
5. Insert the tube clamp into the top of the rotor and close the lid.

**Selecting assays and starting the run**

1. Turn on the instrument.
2. Double-click the **IDEXX micPCR** icon on your computer desktop to start the software.
3. Click **New** in the toolbar, and then select **Run**.
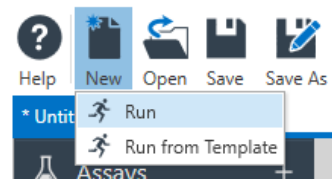
4. In the software, click **+** next to **Assays** and select an assay; repeat to add more assays if needed. Multiple assays can be used in the same run.
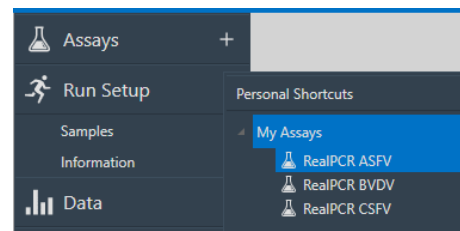
5. Identify the samples:
   a. Under Run Setup, click **Samples**. The Samples pane lists rotor wells 1–48.
   b. For each well, enter the sample name or ID, select the sample type (Unknown, Positive Control, or Negative Control), and select the assay name (if more than one assay is available).
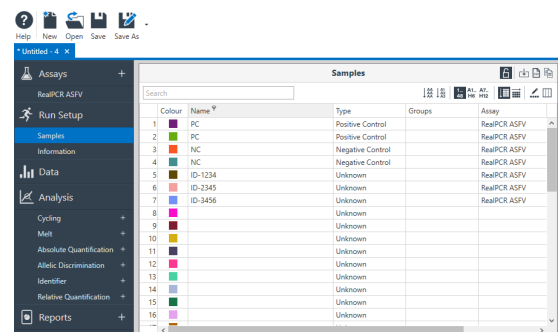
   **Note:** You can also enter the sample information during or after the run.

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6. When ready to start the run, click the name of the cycler in the toolbar, and then click **Start Run** from the drop-down list. A confirmation box is displayed.

7. Click **Start**. You are prompted to save the assay run file.

8. Navigate to a location where you want to save the run results, give the file a new name, if desired, and click **Save**.

The LED on the front of the instrument turns green. When the run is complete, the green LED flashes. The lid will unlock when the instrument has cooled down.

## Viewing and analyzing assay results

Viewing results after a run

1. Under Analysis, click the small arrow next to **Cycling** and then select the target.
Note: Cycling is the only analysis method available for RealPCR assays.
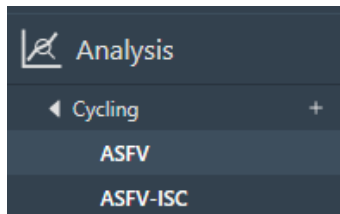
OR

To open previously saved results, click **Open** in the toolbar, find and select the saved result file (result files have an .idexxrun extension), and click **Open**.

A quantification cycle (Cq) value is displayed for each positive well. This is the cycle number at which the sample fluorescence rises above the threshold (the red horizontal line near the bottom of the amplification curve chart).
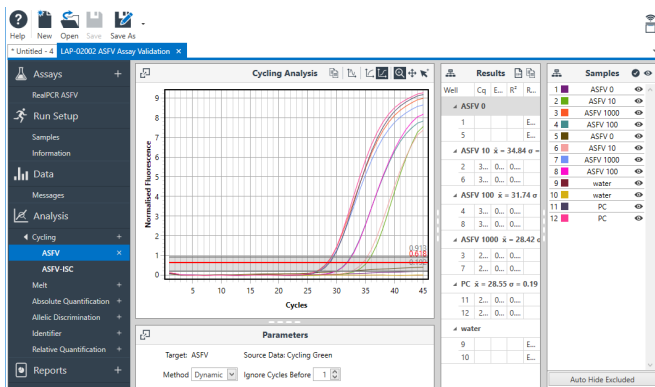
2. In the Samples pane on the right, click sample names to hide or display the associated amplification curves and result data.

Tips:

- Drag the small dividing bars to expand or contract each pane in the results window.

- If amplification curves are oddly shaped or dip below the threshold, or if negative sample lines rise above the threshold, try increasing the **Ignore Cycles Before** option (located under Parameters) by 1 or 2. This setting helps to eliminate excessive background fluorescence.
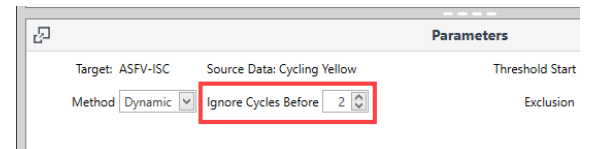
- Use the buttons in the top right corner of the result table to save or copy the data table.

3. To close the results, click the **X** to the right of the assay name under Cycling.

4. When asked to confirm deletion, click **OK**.

The analysis is deleted from the window, but the assay results file is still available and can be reopened and analyzed as needed.
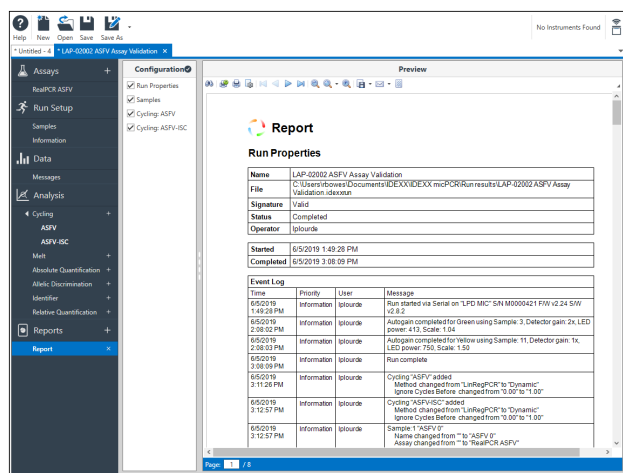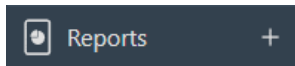
Saving result data to Excel*

1. With the assay results open in the software, click the **down arrow** to the right of **Save As** in the toolbar, and select **Excel Workbook**.

2. Navigate to a location to save the workbook, update the file name if desired, and click **Save As.**

Generating a report:

1. With the assay results open in the software, click **+** next to **Reports**. A report preview opens.

2. Select or deselect the options in the Configuration pane to add or remove report contents.

3. Use the toolbar at the top of the report to print, export, email, or otherwise work with the report; hover the mouse pointer over each tool to see a description.

4. To export the data contents to a comma-separated-value (CSV) format for further analysis, click the down-arrow next to **Export** and select **CSV**.

The **export** option offers a variety of other export formats.
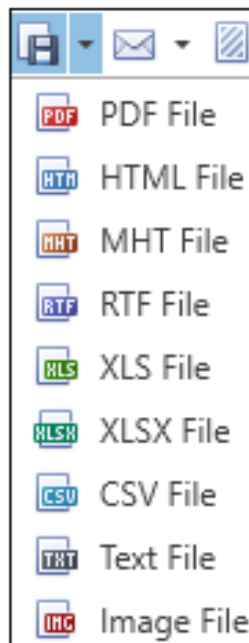
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