MIKROGEN
DIAGNOSTIK

The Mic qPCR Cycler- Questions & Answers

The Mic qPCR Cycler is manufactured by bms bio molecular systems *and can be purchased from Mikrogen (article no. 31154 or 31385).*

General questions

- **Is everything provided with the Mic to start a run immediately?**
  With the instrument provided is a USB stick containing the software. The *ampli*Cube and *alpha*Cube assays can be downloaded at https://www.mikrogen.de/downloads. Type in "assay templates for Mic" and download the respective assay(s) you want to use including additional documents, e.g. the instructions how to import the assay templates into the software. For the Mic IVD device (art.no. 31385), download the assays in the folder "Mic IVD".
  A number of 960 tubes and caps are provided with the Mic so that you can start your PCR runs directly. Not included in the delivery is a PC or a Windows® tablet to run the software, which is necessary to start the Mic and do the run analysis. Please register your instrument at https://biomolecularsystems.com/customer-registration/ to check for the latest software version and to get informed about software updates.

- **What is the difference between RUO and IVD assay templates?**
  RUO assay templates can only be used to operate Mic RUO cycler (art.no. 31154) and IVD assay templates are used with the Mic IVD cycler (art.no. 31385). This is due to software differences between RUO and IVD Mic's. Assay templates for *ampli*- and *alpha*Cube can be downloaded from the Mikrogen Homepage as described above.

- **How does the IVD label influence the user operation?**
  The IVD Mic allows the user to allocate different user levels and permissions: micIVD Administrator, micIVD Analyst and micIVD Technician.

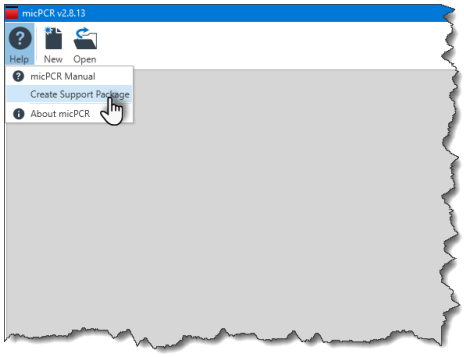
- **What are the system requirements for the PC/ Windows® tablet?**
  For running the Mic software you need at least an Intel i5 processor and 4 GB of RAM.
  For the PC, a Full HD Screen (1920 × 1080) enables you to use the software without scrolling. This is convenient, but not mandatory.
  The Windows® tablet can be connected to the Mic via Bluetooth.

- **What can I do to ensure a smooth operation of the Mic cycler?**
  If the PC is connected to the internet, it is recommended to run (automatic) windows updates only when the Mic software is not in use. Moreover, it is recommended to close the Mic software and restart the PC periodically.



❖ **What if the Mic is not operating smoothly?**

Please send a description of what occurred together with a support package to PCR.support@mikrogen.de. It is important to create the support package soon after the problem occurs, otherwise the log files do not contain the required information.



❖ **Does the Mic cyler require calibration?**

The cycler does not require calibration. Nevertheless, we recommend to verify the temperature control of the cycler using a TVS (Temperature Verification System) periodically. Please contact PCR.Support@mikrogen.de in case you need further information.

❖ **Where can I obtain a loading block for cooled pipetting?**

A loading block can be purchased e.g. from Qiagen. We recommend “Loading Block 72x 0.1 ml Tubes, Cat.no. 9018901” or “Loading Block 72x 0.1 ml Multi-channel, Cat.no. 9018902” when using a multi-channel pipette. The Mic PCR tubes are delivered in plastic racks for easy pipetting at room temperature.
For automated pipetting use MYRA Liquid Handling System purchased by Mikrogen, Art.no. 31269.

❖ **Can I use the two-channel Mic together with *ampli*Cube and *alpha*Cube assays?**

You can use the two-channel Mic with a few *alpha*Cube assays only, e.g. the tick-borne infection panels. For all *ampli*Cube assays you need the four-channel Mic. Please contact our PCR Support via PCR.Support@mikrogen.de if you need further information.

❖ **What do I do if I have less than 48 samples per run?**

Please ensure that the Mic rotor is balanced when filling up with tubes. We recommend to prepare “dummy tubes” that contain the same volume as the reaction tubes. It is important to fill these tubes with water only, tubes containing DNA/RNA (e.g. from an earlier PCR run) would lead to problems in the run analysis. Those tubes can be marked on the lid and used several times to equilibrate the rotor. Please keep in mind to exchange the dummy tubes every 4-6 weeks, depending on how frequently the cycler is used.

❖ **How do I analyse a run on the Mic cycler?**

Please find our detailed instruction “MiC_set-up_XXX” at https://www.mikrogen.de/downloads. Type in “assay templates for Mic”.



Using Mic with *ampli*Cube and *alpha*Cube

❖ **How do I import the *ampli*Cube and *alpha*Cube assays provided at the download menu at the Mikrogen Homepage?**

The import is very easy. Please look at the pdf instruction “import_assay_mic_XXX” provided at https://www.mikrogen.de/downloads. Type in “assay templates for Mic”.

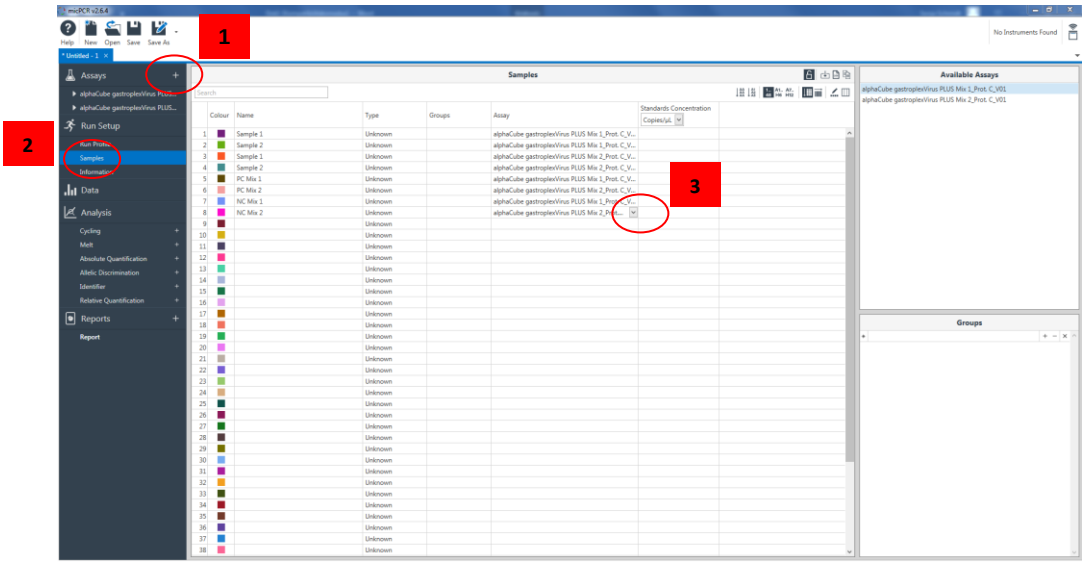
❖ **Which *alpha*Cube assays can I combine in one qPCR run?**

For *alpha*Cube assays different cycling protocol groups exist (A, B, C, D, E, or F) and the same protocol groups can be run together on the Mic cycler. You can identify those assays with the help of the assay name, e.g. alphaCube_XXXX_**Prot. A**_VXX.

Please find more information as well as a table overview of the different cycling protocols in the document “alphaCube_cycling protocols_VXX” provided at https://www.mikrogen.de/downloads.html (you need to be logged in).

❖ **How can I analyse the two mixes of one *alpha*Cube panel easily?**

The assays *alpha*Cube gastroplexVirus PLUS 2.0 and *alpha*Cube Tropical Fever contain two mixes for pathogen detection. To ease your analysis, you can load e.g. alphaCube gastroplexVirus PLUS 2.0 **Mix 1**_Prot. C_VXX and alphaCube gastroplexVirus PLUS 2.0 **Mix 2**_Prot. C_VXX into the Mic cycler software. Follow the instructions “insert_assay_MiC”, p.4. After loading the first assay, click on “+” to load the second one into the same run (1). Then go to “sample” (2) and define the correct assay (Mix 1 or Mix 2) for each sample in the assay field (3. After the run is finished, you can easily identify the pathogen detected for each of your samples.



❖ **Which assays should I use if I want to combine *alpha*Cube Babesia / Borrelia / Ehrlichia / Q-Fever with *alpha*Cube TBE?**

The DNA tick borne infection assays can be run with two protocols (see respective *alpha*Cube IFU, chapter 12.3 instrument settings). The second protocol includes a reverse transcription step, so that every DNA tick borne infection assay can be combined with *alpha*Cube TBE. For this reason, there are always two assays provided at

https://www.mikrogen.de/downloads.html for each *alpha*Cube Babesia / Borrelia / Ehrlichia / Q-Fever assay. The second protocol is named alphaCube_XXXX_Combi RNA_Prot. B_VXX and can be used with *alpha*Cube TBE.

❖ **Which reaction volume do I use if I want to run *ampli*Cube HEV 2.0 Quant?**

The IFU of *ampli*Cube HEV 2.0 Quant states a reaction volume of 50 µl. However, the reaction volume of the Mic qPCR cycler is restricted to 30 µl.
For this reason, please run the assay with a reaction volume of 30 µl and use the provided assay "ampliCube HEV 2.0 Quant_VXX".
Please use the following pipetting scheme for preparing the PCR reaction:

Table 1 Preparation of Master Mix

Components	**Master Mix for 1 reaction**
Primer & Probe mix	4.2 µl
Enzyme Mix	13.8 µl
Total Volume	18 µl

Table 2 Preparation of PCR reaction

Components	**1 reaction**
Master Mix Table 1	18 µl
Sample eluate or eluate of the NC or the PC	12 µl

For more information, e.g. regarding the LoD with reduced reaction volume, please have a look at our handout "Using *ampli*Cube HEV 2.0 Quant with Mic qPCR Cycler" provided with the folder "ampliCube Assay Templates for Mic" at https://www.mikrogen.de/downloads.html.

❖ **Can I run *ampli*Cube HEV 2.0 Quant with other *ampli*Cube assays?**

According to IFU, *ampli*Cube HEV 2.0 Quant has a reaction volume of 50 µl and other *ampli*Cube assays run with 25 µl volume. Nevertheless, all *ampli*Cube assays can be run together with a Mic reaction volume of 25 µl. For this purpose, please use the provided assay template "ampliCube HEV 2.0 Quant_Combi Multiplex_VXX" which contains a reaction volume setting of 25µl, but pipette a PCR reaction of 30 µl for *ampli*Cube HEV 2.0 Quant. The pipetting scheme is described underneath the previous question.

