Miltenyi Biotec



MACSQuant® Instrument short instructions

Setting up an acquisition

Before using the instrument for the first time, read the MACSQuant Instrument user manual and MACSQuantify™ Software user manual.

These short instructions are valid for the MACSQuantify Software 3.1 and later.

The MACSQuantify Software has got an interface to program various sample parameters for data acquisition. These short instructions guide the user on how to set up a basic experiment for acquisition in the single tube format.

Experiment tab

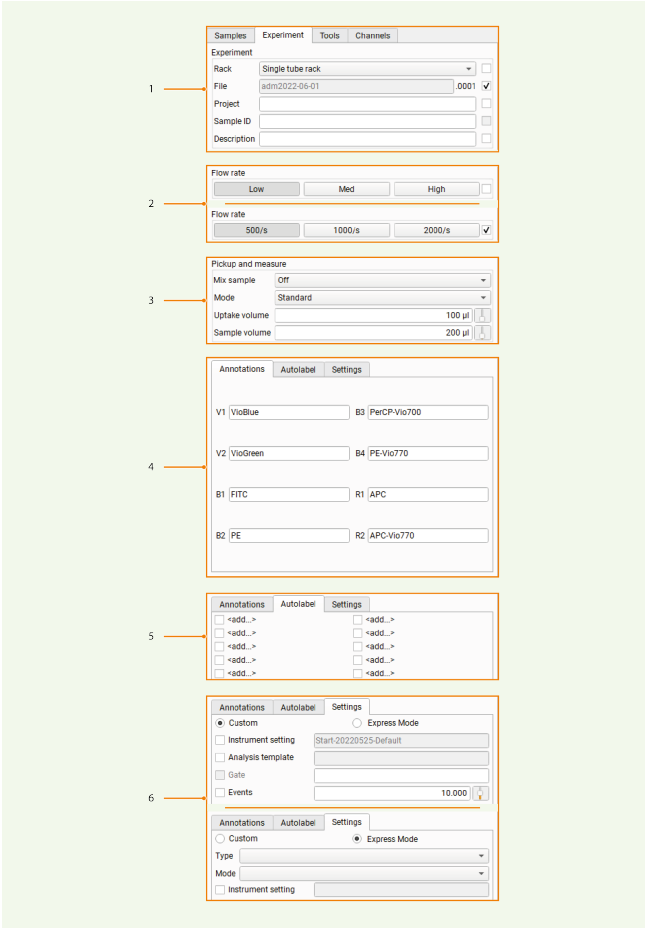


Figure 1: The **Experiment** tab options of a MACSQuant Analyzer 10

To program your sample acquisition, use the sections of the **Experiment** tab.

Experiment (1)

1. Under **Rack**, select **Single tube rack**.
2. Optional: Adjust the name of the file. To manually change the file naming, clear the box. Use alphanumeric text only. By default, a checkbox is selected indicating an automated file naming.
3. Optional: Enter a name for a project folder in the field **Project**. All data are saved in this folder. To see a dropdown list of all project folders of the signed in user, select the checkbox next to **Project**.
4. Optional: Enter alphanumeric text as sample ID and description.
5. To determine an automated pattern, select the checkbox on the right-hand side to **Description**. Refer to the **MACSQuantify Software user manual**.

Flow rate (2)

> Keep the event rate below 15,000 events per second for accurate measurements. 1000–5000 events/s is ideal.

The flow rate can be adjusted by doing one of the following:

- Select **Low**, **Medium**, or **High** depending on the cell concentration and research question. Select **Low** for high cell concentrations, for example, 10^7 cells/mL.
- To switch to events per second, select the checkbox on the right-hand side. The flow rate is automatically adjusted to low, medium, or high during acquisition to approximately reach the selected event rate.

Pickup and measure (3)

1. Select a mixing option from the **Mix sample** dropdown list. Available mixing options differ between the instrument types.
2. Select a mode from the **Mode** dropdown list. Available modes differ between the instrument types. The selected mode defines the washing steps between samples or during enrichment using the MACSQuant Column.
3. Enter an uptake volume and a sample volume. The maximum uptake volume is 450 µL on the MACSQuant Analyzer 10, VYB, and Analyzer 16, and 5 mL on the MACSQuant X.

> If mixing is selected on a MACSQuant Analyzer 10, VYB, or Analyzer 16, it is necessary to accurately define the sample volume to avoid the uptake of air bubbles.

Annotations tab (4)

The annotations of the fluorochrome channels can be changed in the **Annotations** tab. The entries are shown on the plot axes.

1 To change a channel annotation, enter a name in the corresponding field.



If using a saved instrument setting, the annotations are reset to the annotations of the saved instrument setting.

Autolabel tab (5)

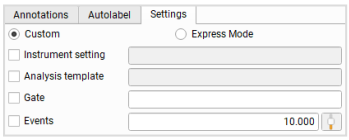
Automated sample labeling can be activated in the **Autolabel** tab. For single tube experiments, only automated dilution of samples is possible. For autolabeling of multiple samples, refer to the short instructions **Multisampling and autolabeling**.

Settings tab (6)

To set up a customized acquisition, use the **Settings** tab to select the **Custom** radio button, or select the **Express Mode** radio button to run an Express Mode.

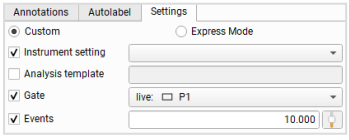
Custom

1 Select the **Custom** radio button.



2 Select the checkboxes next to **Instrument setting**, **Analysis template**, **Gate**, and **Events** to activate these features. When cleared, the instrument runs all samples with the current active instrument setting and analysis template.

The annotations in the instrument setting file override any annotations set in the experiment tab, including the **Fragment Description Dialog**.

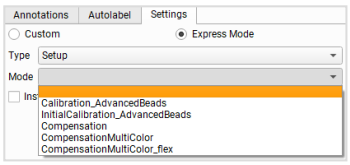


- **Instrument setting:** To use saved instrument settings, select this checkbox.
- **Analysis template:** To use saved analysis templates, select this checkbox.
- **Gate:** To activate gate settings, select this checkbox. A gate must be drawn in a plot to enable selection of the checkbox.
  Stop gate: Used in combination with a defined event limit. When the event limit is reached in the selected gate, the acquisition stops. Data are saved automatically including events outside the stop gate.
  Live gate: Only events within the selected gate are saved in the data file. This can optionally be used in combination with a defined event limit.
- **Events:** To stop data acquisition and save the data file after a defined number of total events were acquired, select this checkbox. This can also be used in combination with a **Stop gate** or **Live gate**.

Express Mode

1 Select the **Express Mode** radio button.

2 To use an Express Mode for calibration or compensation processes, select **Setup** from the **Type** dropdown list.



3 To use Express Modes for analysis of cells with Miltenyi reagents such as MACS Antibody Cocktails, select **Analysis** from the **Type** dropdown list. Experiment settings such as mixing, mode, uptake volume, and sample volume are loaded automatically.

4 Optional: Change the experiment settings.

5 Optional: Enter a **Sample ID** and **Description**.

6 For grouped Express Modes, select the sample ID from the **Sample ID** dropdown list.

7 Start the acquisition. The acquisition page of the Express Mode is shown automatically.

8 The Express Mode analysis is performed and automatically shown after the acquisition of the current sample.

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