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.

Introduction

The MACSQuantify Software provides the user a simple interface to program various sample parameters for data acquisition. Observe these short instructions to see how to easily set up a basic experiment for acquisition in the single tube format.

Experiment tab

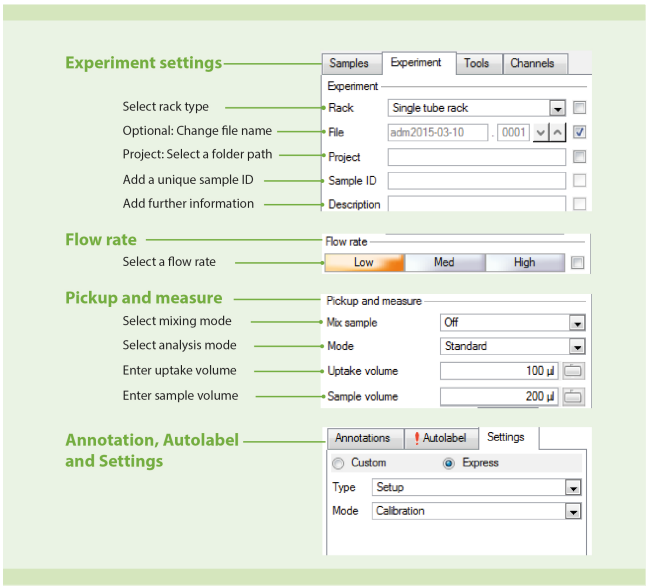


Figure 1: The **Experiment** tab options

Defining experiment parameters

Experiment parameters can be defined in the different tabs of the **Experiment** tab.

Experiment

1. Go to the **Experiment** tab.
2. Go to the **Rack** drop-down menu and select **Single tube rack**.
3. Optional: Change the file naming. The selected checkbox indicates automated file naming. Clear the checkbox to manually change the file naming. Use alphanumeric text only.
4. Optional: Enter a name for a project folder in the field **Project**.
5. Optional: Enter alphanumeric text as sample ID and description.

Flow rate

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. For example use low flow rate for high cell concentrations (e.g. 10^7/mL).
- Select the checkbox on the right-hand side to switch to events per second. The flow rate is then automatically adjusted during acquisition to approximately reach the selected event rate.

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

Pickup and measure

1. Go to the drop-down menu **Mix sample** to select a mixing option. Available mixing options differ between the instrument types.
2. Select a mode from the **Mode** drop-down menu: **Screen**, **Fast**, **Standard**, **Extended**, **Enrich**, **EnrichS**, or **EnrichS2**.

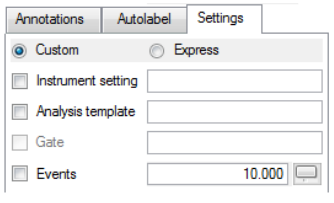
> Enrich programs are only available on MACSQuant Analyzer 10, VYB, or Analyzer 16.

3. Enter an uptake volume and a sample volume. The maximum uptake volume is 450 µl on the MACSQuant Analyzer 10/VYB/Analyzer 16 and 5 mL on the MACSQuant X.

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

Settings

1. Go to the **Experiment** tab.
2. Select the **Settings** tab.
3. Select the **Custom** radio button.

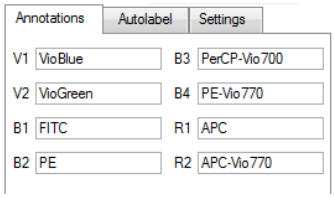


4 Select the checkboxes next to **Instrument setting**, **Analysis template**, **Gate**, and **Events** to activate these features. When deselected, the instrument will run all samples with the current active instrument setting and analysis template.

- **Instrument setting:** Select the checkbox to load and apply previously saved instrument settings.
- **Analysis template:** Select the checkbox to load and apply previously saved analysis templates.
- **Gate:** Select the checkbox to activate gate settings. 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 defined event limit is reached in the selected gate, the measurement stops. Data are saved automatically including events outside the stop gate. **Live gate**: Only events within the selectec gate will be saved in the data file. Can optionally be used in combination with a defined event limit.
- **Events:** Select the checkbox to stop data acquisition and save the data file after a defined number of total events has been acquired. Can also be used in combination with a **Stop gate** or **Live gate**.

Annotations

1 Select the **Annotations** tab.
2 Click into the field of a channel to change its annotation.



Annotations may not appear on the plot display window until acquisition starts.

Annotations are automatically set when using selected Miltenyi reagents in the **Settings** tab. Clearing the entries will set the annotations back to the default values.

Opening an analysis window

Analysis templates consist of a plot template and, if required, a gating strategy. Analysis templates can be created post-acquisition or prior to acquisition. The next steps are NOT necessary if an existing analysis template is selected in the **Settings** tab or opened via **File > Open**.

1 Click the **Add** button in the toolbar.
2 Select an analysis template from the **Create new plot** window.
3 If multiple analysis windows are open, use the **previous and next window** buttons to switch between analysis window pages.

Plot properties

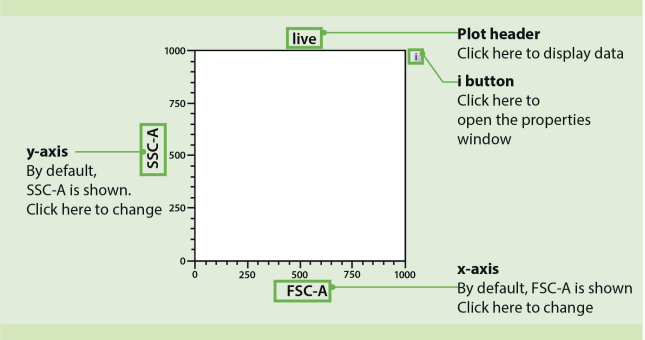


Figure 2: Features of a MACSQuantify plot. Click on the **'i'** button on the right-hand side of the plot to change its appearance.

Gating tools

Select a gating tool to create a region around a population. Display the created region in a hierarchical gating to display only events of interest.

1 Select a gating tool in the toolbar to draw a region.
2 If using ellipse, rectangle, quadrant, or interval, click and hold the mouse. Drag the cursor as desired. Release the mouse to finish drawing.
3 If drawing a polygon, click once to start drawing the first point. Move the cursor and click again to draw the next point. Continue as desired. Double-click to draw the last point and finish the gate.
4 To change the appearance of a gate, highlight the gate and select from the options below:

- Click on the size handle in the corners and drag to adjust the size of the gate.
- Click and hold to drag the gate and move it to a new position.
- Right-click and select **Region properties** to change the name and color of the gate.
- Right-click and select **Delete region**. to delete the selected gate.

Are you in need of additional assistance?

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