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Qualitance v3.2

Biomagnetic Separation Monitoring & Management Software

Quick Guide

Rev 20200505

Qualitance

- The “Qualitnce” software monitors every single batch, allowing batch-tracing and the early detection of potential quality issues.
- It should be used in combination with the hardware is integrated in all Sepmag systems and its inserts

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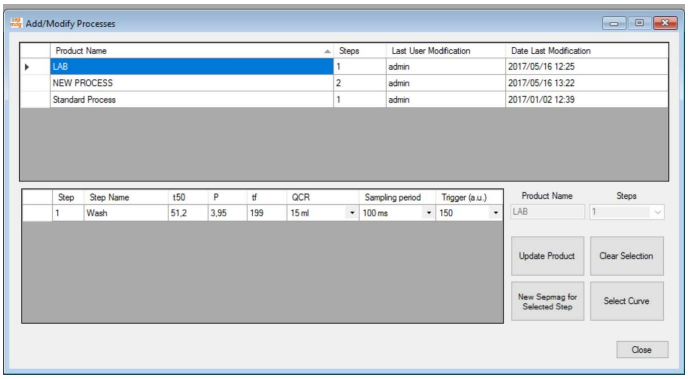
Qualitance software

- Allows definition of multiple step processes.
- Identifies each **Sepmag** individually.



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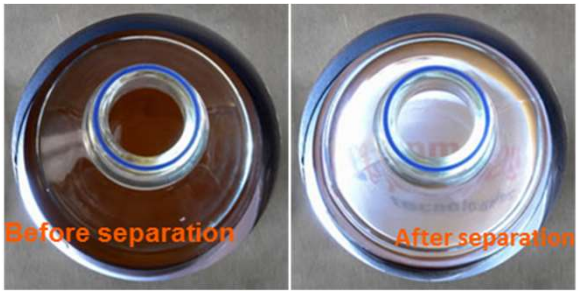
Introduction

- **Qualitance** measures the changes on transmitted light through the bottle.
- At the start of the process, when the suspension is homogenous, the opacity is maximal.
- When separation is complete, the remaining suspension is clear, the opacity is minimal.



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Processes while the vessel is inside a Sepmag

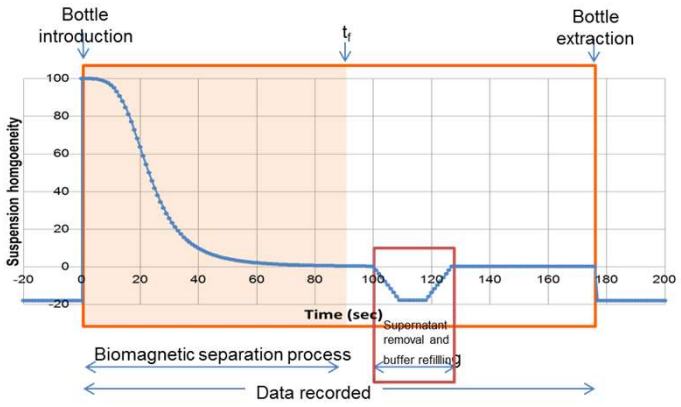
During the time the vessel is inside the Sepmag:

- Biomagnetic separation takes place.
- The supernatant is extracted.
- Clean buffer is added to the vessel.

Every step should be performed when the previous one is completed.

Qualitance records all the processes, but only displays Biomagnetic Separation.

The complete record is accessible when the data is 'exported'.



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Start/stop

- **Qualitance** measures and records the changes from the introduction of the bottle inside the **Sepmag** until the extraction.
- The **Qualitance** is triggered automatically when the bottle enters the **Sepmag** and it does automatically stop when the vessel is removed.
- The 'End' or 'Start' can also be 'forced' by pressing the screen keys.

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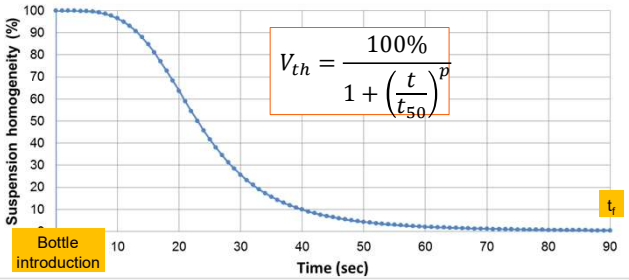
Biomagnetic Separation Process

- The Biomagnetic Separation process occurs between the introduction of the bottle and 't_f'.The software ONLY displays this process (but records data until the bottle extraction)
- **Qualitance** software fits the experimental values to a sigmoidal curve between *t=0* and $t=t_f$, determining t_{50} and the exponent *p*.
- 't_f' is determined by the user during the first measurement and can be edited through the Administrator menu.



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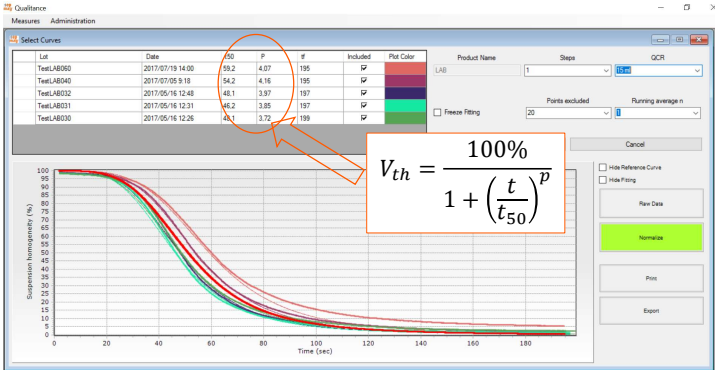
t_{50} and *p* data management

- The software fits the experimental results and determines the Biomagnetic Separation parameters (t_{50} and *p*).
- It also manages the historic data to generate reference curves for each Process



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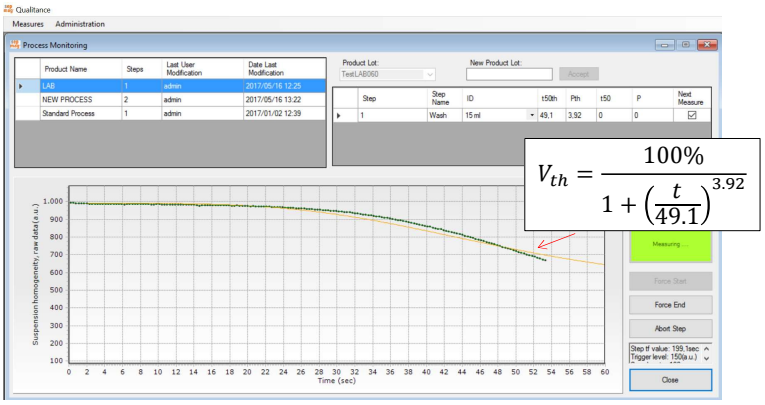
Predictive curve

- During measurement, once t_{50th} is reached, the software shows a predictive curve using the reference values (t_{50th}, p_{th})



$$V_{th} = \frac{100\%}{1 + \left(\frac{t}{49.1}\right)^{3.92}}$$

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Content:

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Installation:

- Download the installer
- Run the installer (*.exe)
- Click on the ‘Sepmag’ button that would appear on the Desktop
- The default **username** is admin
- The default **password** is admin

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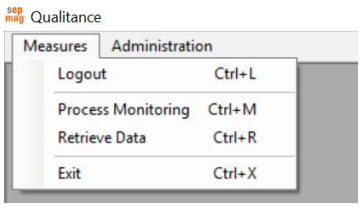
Quick Measurement (1/4)

- Make sure the **Sepmag** is connected to an USB port of the computer running the software.
- Log into the program.
- Click on Measures/‘Process Monitoring’



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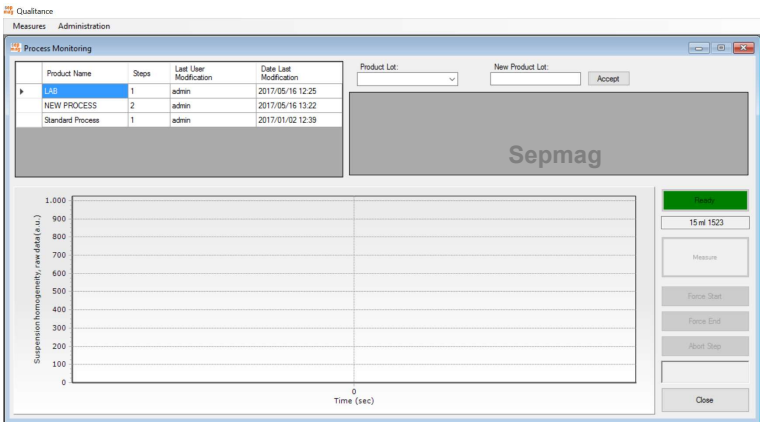
Quick Measurement (2/4)



- If the **Sepmag** is connected, **Ready** will be displayed on the screen.
- Select a process (a ‘ Standard Process’ is included by default).
- Write the name of the Lot

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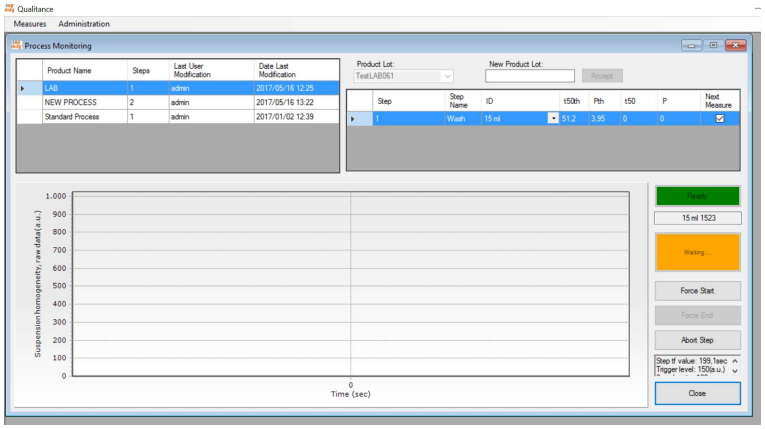
Quick Measurement (3/4)



- Select the Step and the associated **Sepmag**.
- **‘Waiting’,** will flash on the screen.
- The system is ready for inserting the bottle.

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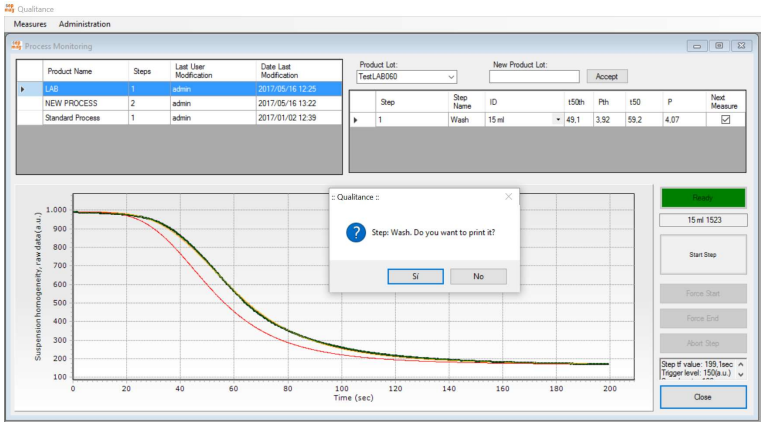
Quick Measurement (4/4)



- Put the bottle inside the **Sepmag** and the measurement will start automatically.
- When the measurement reaches the defined 'final time' a beep sound will play.

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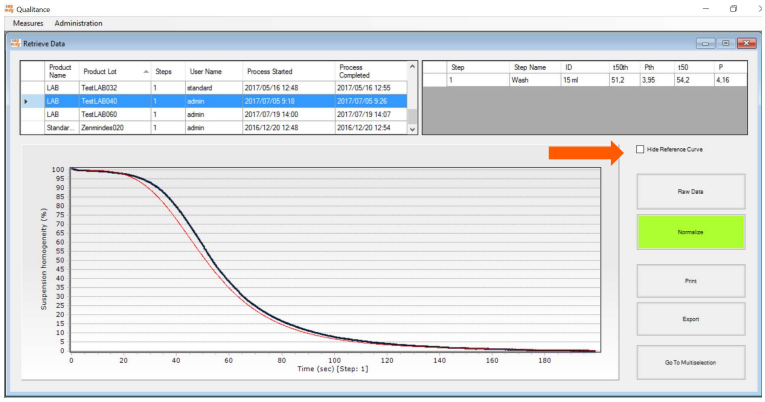
Printing a Report

- Go to Measure/Retrieve Data
- Select a Lot, then 'View Lot'
- The graph will show the experimental data and the reference curve. This last, can be hidden



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Comparing different steps (1/2)

- When developing new process, it can be interesting compare the current step with the previous one, or with other similar process.
- Multi selection curve option, allows to compare several 'steps'.
- Go to 'Retrieve Data' screen.

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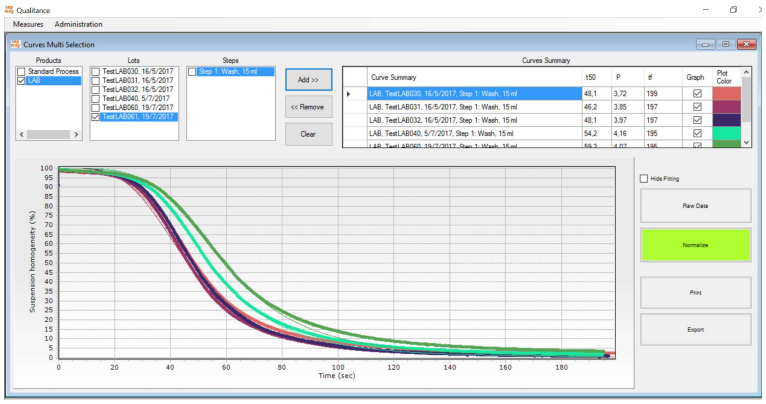
Comparing different steps (2/2)

- Select the Product, Lot and Step, and click 'Add'.
- Click 'View' to 'show' the graphs (can be 'selected'/'unselected' at the table)
- Steps can be removed, selecting the row and clicking 'Remove'
- Print would generate a 'printer friendly report'



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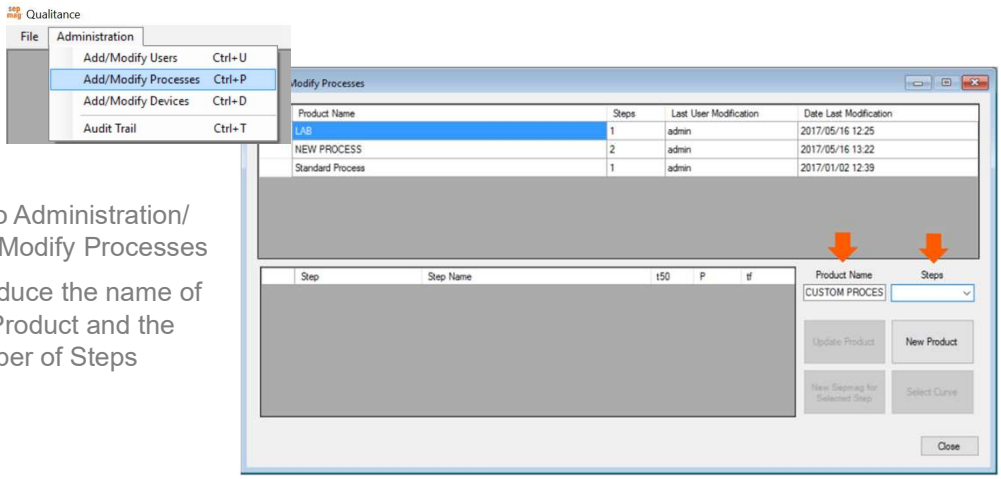
Generating a new Process Macro (1/2)



- Go to Administration/ Add/Modify Processes
- Introduce the name of the Product and the number of Steps

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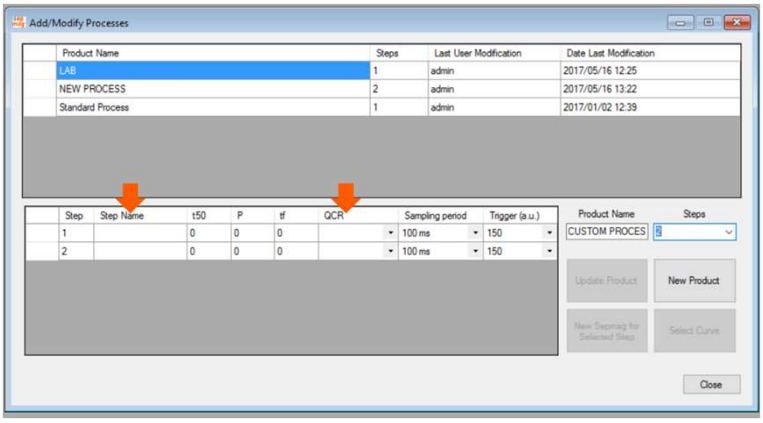
Generating a new Process Macro (2/2)



- In the table, assign a name to the steps, and associate a SEPMAG device to each.
- Click on ‘New Product

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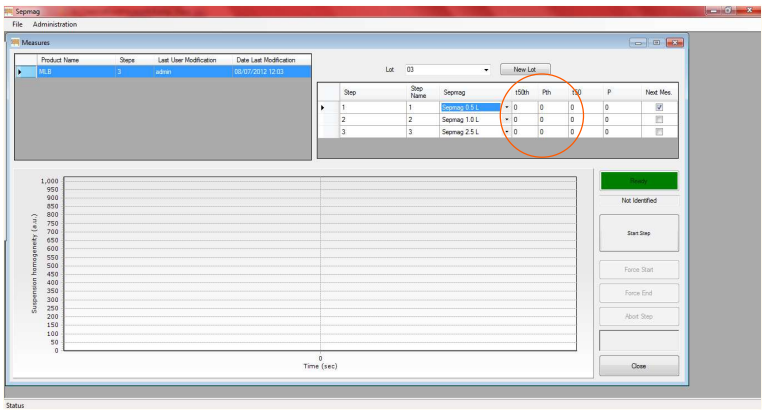
First measurement of a new defined Process (1/3)

- When a new process is defined, the first measurement doesn't have the parameters defined.



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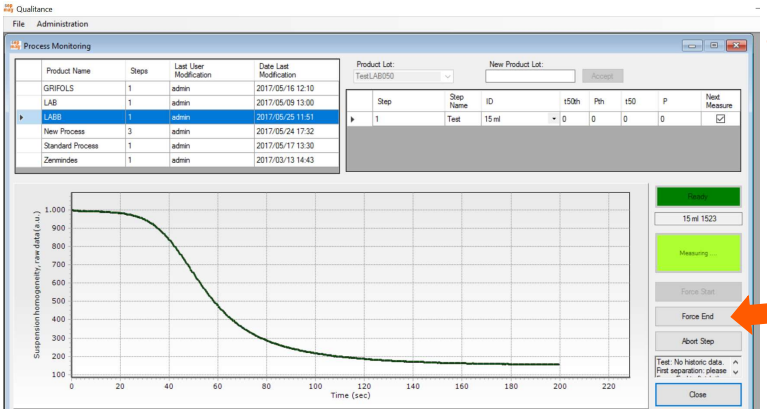
First measurement of a new defined Process (2/3)



- It is important to click 'Force End' when the separation is complete. This will define the final time 't_f' to calculate the process parameters.

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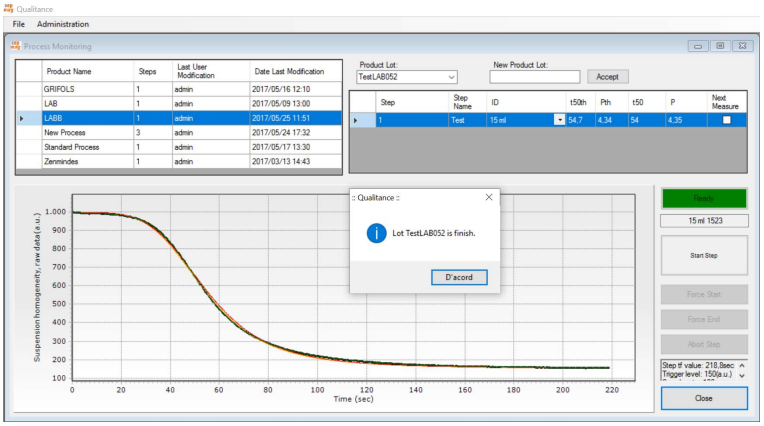
First measurement of a new defined Process (3/3)



- For the second measurement and the following, t_{50}, p and t_f are already defined and a predictive curve will be drawn during the process (once $t=t_{50}$).
- The system will be measuring until the vessel is removed from the **Sepmag.**

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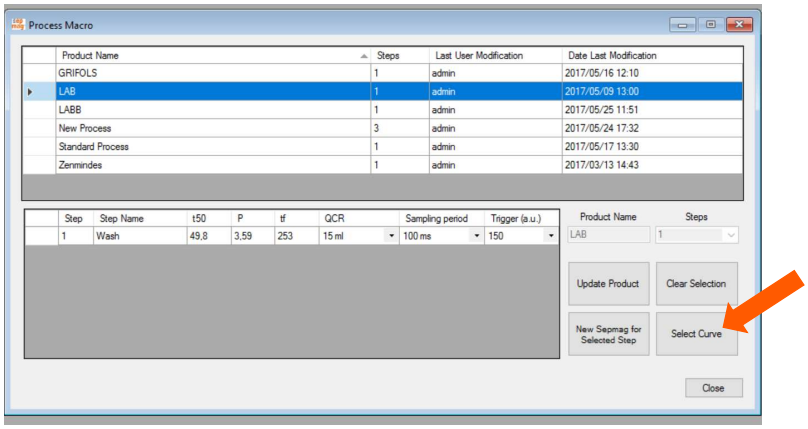
Selecting/Deselecting curves for generating the reference curve (1/2)

- By default, the software will calculate the 'theoretical' t_{50} and p for each process, taking the average of the values of all the experiments.
- The Administrator can remove curves (if some of the measurements were wrong) by clicking 'Select curves' at the Processes Macro screen.



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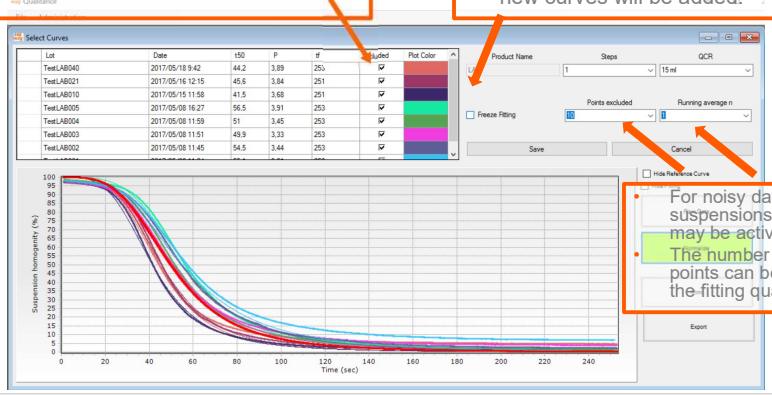
Selecting/Deselecting curves for generating the reference curve (2/2)

- Curves can be add/removed just by clicking.
- Any change will be recorded in the Log File

- Once the statistics are good enough, the results can be 'frost'. Then no data from new curves will be added.



- For noisy data (low concentration suspensions), a running average filter may be activated.
- The number of initial/final excluded points can be also modified to improve the fitting quality

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More information...

For additional information, questions and technical support, please contact your local sepmag® representative or email to **contact@sepmag.eu**

For additional resources on biomagnetic separation (free eBooks, technical Posts, etc.), visit our website www.sepmag.eu