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Mars release: New QPatch II software available

We are proud to launch the next software upgrade to QPatch II, named Mars. The new software suite includes a variety of new great functionalities and is the result of input from you and our in-house scientists. With the enhancements to QPatch II, you can increase the output of your ion channel research even more. In addition to adding functionality, we have improved the software in general with graphical updates in the user interface, and bug fixes.

I would like to highlight some of the new features. Also, to maximize your use of QPatch II, I encourage you to contact your Application Scientist for support and advice.

Adaptive current clamp - requires that current clamp is installed

Current clamp (CC) is nature's way of using ion channels to generate e.g. action potentials in neurons and cardio myocytes. To investigate such physiological responses on automated patch clamp, it is necessary to be able to handle each cell individually, and that is now possible. Each cell can be interrogated independently, analysed online, and automatically exposed to individual current injection. Such individual current injection can be used to obtain a proper resting membrane potential and to evoke action potentials, that are more uniform across the QPlate.

If you are familiar with the adaptive voltage protocols, " V_{xx} ", then this is the current clamp ditto, and it is named " I_{adapt} " in the user interface.

Sweep subtraction and sweep averaging

It has always been possible to subtract a sweep from other sweeps, but it used to be locked to the 3rd last in a liquid period. We now unlock this so any reference sweep that you find relevant, can be appointed as the sweep to be subtracted from any other sweep belonging to the same cell and recorded with the same protocol. This will increase the cleanliness of the effects that you investigate whether basic stimulation, compound effect or something else.

With the Mars software suite, you can also make an average of sweeps that somehow match, like the 1st, 2nd etc. in an IV-protocol or e.g. every 4th sweep in repeated liquid periods. This way, data can more easily gain the statistical power that is inherent to automated patch clamp.

Liquid period grouping

Have you ever run slightly different experiment protocols with the same compound and wanted to combine them? This can be done automatically now, based on IV, specific compound concentration, etc., and can even be dragged/dropped to be fine-tuned. This makes it easier to combine different experiment formats to utilize already obtained data, strengthening the data-based conclusions.

Group Hill fits without ties

It is now possible to assign any value to the baseline and the full response of group Hill fit. Previously it was restrained to 0 and 1. This freedom allows your knowledge of the ion channel behaviour and compound effects, to be applied to the analysis.

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XY plot of anything

Plot any property from your experiment, from the analysis of your experiment, against each other. It can be useful to visualize and detect, which property that show correlation to unwanted experiments and hence should be removed from the analysis. You can use this knowledge to filter on the property. This is much more user-friendly than guessing and turning filters on and off in the pursuit of the relevant one.

More new functionalities

- Live IT plot with compound info on the screening station based on online cursor set in the voltage protocol
- Automatic scale bare in sweep plots to generate publication grade graphics automatically
- More CC analysis methods and all CC-methods have been moved out to standard results for easier access
- Support for Oracle 19c, newest long-term support release, (also Oracle 12c, former long-term support)
- .xls export upgraded to .xlsx which gives > 1 million rows
- E-mail to notify if a back-up has failed
- Pipetting noise filter can be applied in the analysis to clean up sweep appearance
- Both front and back side, of the QPlate, pressure data, with 10x increased resolution
- Support for new generation pressure system, referred to as VTEP (the end-of-life component was called VEMA)

Optional additional training

Adaptive current clamp is a powerful functionality in the Mars software release. To make sure you learn the full potential of its capabilities, we are inviting you to a tutorial webinar in April. This webinar will explain adaptive current clamp in greater detail. We will send out direct mails to promote sign-up for the webinar. Also, make sure to follow us on our social media channels where we will promote the webinar as well.

Availability and how to install the Mars software release


We will offer* to install Mars at our next planned visit and it is also possible to install it yourself. The installation consists of four components and there is a thorough guide on how to do it. You find the guide together with the installation files. Depending on what QPatch instrument you have, different terms apply.

*The availability and cost for the Mars release is:

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| 1. If you have service and support contract Platinum | Available at no charge |
| 2. If you have service and support contract Gold | Available at no charge |
| 3. If you have service and support contract Silver | Available at no charge |
| 4. If you have service and support contract Academic | Available at no charge |
| 5. If you have a rental (=Gold) | Available at no charge |
| 6. If you don't have a service and support contract | Ask your sales manager for a quote |
| 7. If you have a QPatch with serial number <300 | Not available |

If you have a service and support contract, or rental, you will receive a download link and a password to download the Mars software suite, in another information letter.

Kind regards



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