

KYMAchip storage and re-use

Introduction

The KYMAchip is designed to enable storage and subsequent re-use so you can switch between experiments and users. If you intend to perform further experiments after using a chip, ensure to follow the suggested procedures. Note that the activity and functionality of previously immobilized ligands cannot be guaranteed after storage.

Prepare KYMAchip for storage after use

Preparing the chip for storage is important to remove buffer components that could damage the chip surface. Therefore, exchanging the solution with water is essential to remove all salts from the chip channels. The outside of the chip must stay dry, as water stains and dust can interfere with signal detection when the chip is reused.

Procedure:

- Record which channel surfaces remain available for re-use. For regenerable surfaces it is also helpful to track the number of times a channel has been used and whether any issues were observed.
- Perform a buffer exchange to water to prevent salt deposits inside microfluidic channels.
- Remove the chip from the system.
- Store the chip immediately, dry, in a closed 50 mL conical tube to protect the chip from dust and particles.

Note: Do NOT rinse the chip after removal from the instrument, even if some liquid is visible on the chip. Rinsing can leave marks that can impact the chip performance. If there is liquid visible, you can gently pat dry with a fiber-free tissue.

Note: Do NOT store the whole chip in buffer or water. The outside of the chip should be dry.

Storage conditions

The storage conditions depend on the chip type:

- Maintenance chips: Store at room temperature.
- Functionalized chips: Store at 4°C (refrigerated). Once wetted, chips must NOT be re-frozen (including those originally supplied frozen).

Note: Because water exchange is required before storage, the activity and functionality of previously immobilized ligands cannot be guaranteed after storage.

Re-use of KYMAchips

The re-use procedure depends on the storage duration. Chips stored for up to one day can generally be re-used without a conditioning step. After longer storage periods, the chip should be treated as a dry chip and conditioned before use.

Process:

- Equilibrate the chip to room temperature and insert it into the instrument.
- Perform three chip primes.
- When the chip has been stored for more than one day, condition the chip. Otherwise, this step can be skipped.

Note: A maintenance chip does not require conditioning. However, additional priming may be required to remove all air from the chip.

Note: Re-use recommendations apply to the physical integrity of the chip. The performance of the surface functionalisation will depend on the buffers in the assay performed and subsequent storage duration. The stability and activity of immobilized ligands depend on the ligand type and storage history and are not guaranteed.

Optional chip performance test

Run a short test with buffer injections to confirm baseline stability and the reproducibility of injections. Following chip alignment, signal amplitudes should exceed 50 a.u. (arbitrary units). If the amplitudes are lower, the software will inform you with a warning in the bottom right corner. For waveRAPID assays, several DMSO calibration cycles can be performed to visually confirm expected rise and fall profiles and peak uniformity. It is also possible to run an SFT (system function test) to ensure good performance.



1Additional information

Please ensure that the correct WAVEcontrol software version is used. KYMAchip operation requires WAVEcontrol version 4.9.3 or higher:
<https://www.malvernpanalytical.com/en/products/product-range/wave#manualsandsoftware>

For more details, please visit our *Knowledge Center*
(<https://www.malvernpanalytical.com/en/learn/knowledge-center>)

Table 1: Ordering information

Consumable	Product number
KYMAchip PCP	10081626
KYMAchip PCP-STA	10081596
KYMAchip PCP-NTA	10081628
KYMAchip PCP-LIP	10081620
KYMAchip PCP-PAG	10081595
KYMAchip PCH	10081623
KYMAchip PCH-STA	10081621
KYMAchip PCH-NTA	10081624
KYMAchip PCL	10081592
KYMAchip PCZ	10081599
KYMAchip DXH	10081593
KYMAchip DXH-STA	10081627
KYMAchip DXP	10081625
PCP-RST KYMA kit for 50 cycles	10087543
PCH-RST KYMA kit for 50 cycles	10087768