



PRESERVATION SOLUTION FOR YOUR WATER SAMPLES

- * **Long-term preservation** solution for water samples
- * **Reduces bio-security risks** during storage and transport
- * **Enhances quality** of flow cytometry analysis
- * **Small footprint** enables **rapid** and **frequent** sampling



The quality of water samples strongly affects the reliability of flow cytometry analyses. Ideally, samples are measured instantaneously, but in practice this is not always possible. Prolonged storage (i.e. > 24h), even at 4 °C, strongly changes the microbial load, and the microbial composition of water samples. Performant sample preservation during storage and transport to the laboratory is therefore of vital importance.

The KYTOvials offer a long-term sample preservation system fine-tuned for a wide range of freshwater and marine water samples. The vials contain a small amount of a bactericidal component that kills microbial cells and protects their membrane and internal components through a process called fixation. This process prepares the samples for direct analysis by flow cytometry by preserving the microbial load and enhancing the number of resolved microbial populations, thereby enabling detailed investigation of the microbial cells in the samples.

SPECIFICATIONS

Bactericidal action. Microbial cells are killed by the fixing agent, thereby protecting the user and preventing new microbes from contaminating the sample.

Convenience. KYTOvials are supplied in recyclable cardboard boxes.

Small footprint. The vials have a small footprint (i.e. 2 mL total volume) enabling large sampling campaigns and easy storage into the provided storage boxes.

Storage conditions. Unused vials should be stored between 4 - 10 °C for up to 1 year from date of manufacturing in a cool and dry place

Safety first. Durable materials with a screw-cap washer seal avoid undesirable entry/escape of sample and KytoVial preservation reagents.

Sample identification. Semi-permanent sample identifiers on each vial can resist chemicals, extreme temperatures and extended periods of storage.

PRODUCT PERFORMANCE

STORAGE PERFORMANCE

The storage performance of the KYTOvial solution was tested using two types of representative marine aquaculture water samples. These were stored at 4°C and analyzed repeatedly by flow cytometry for up to 1 month of storage. The microbial load in the two types of water samples is stable during storage in KYTOvials for up to one month. Sample storage at 4°C without preservation results in significant microbial growth within 4 days for both sample types.

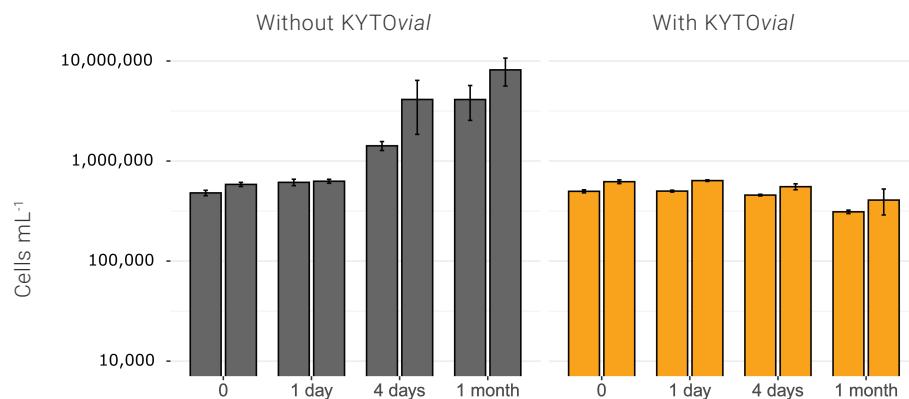


Figure 1: The cell concentration remained stable during one month of storage at 4°C with (orange) and without (grey) the KYTOvial. Traditional sample storage at 4°C results in significant microbial growth within 4 days.

DATA QUALITY

Storing water samples in KYTOvials increases the ability of flow cytometry analyses to resolve microbial populations. This is especially the case for microbial cells with a lower fluorescence intensity, which are usually more difficult to detect. This additional aspect enables a more detailed and complete view of the microbial composition in your water samples.

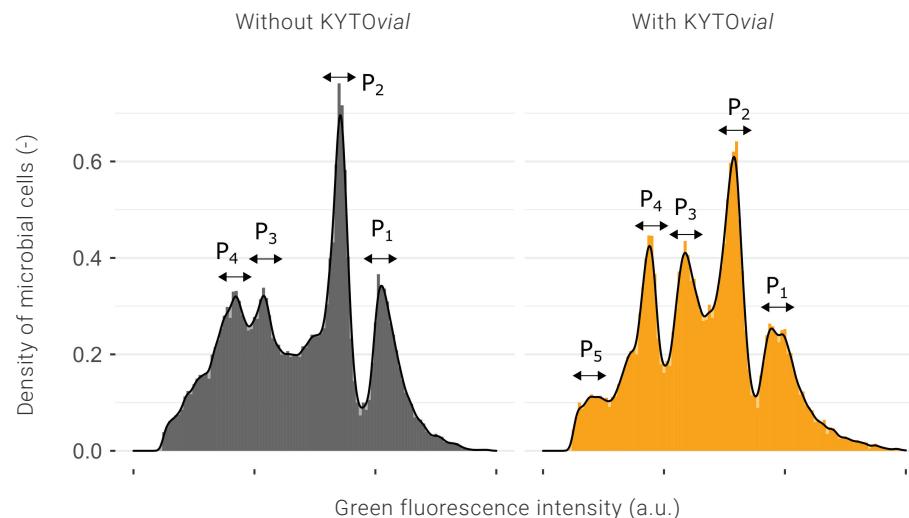
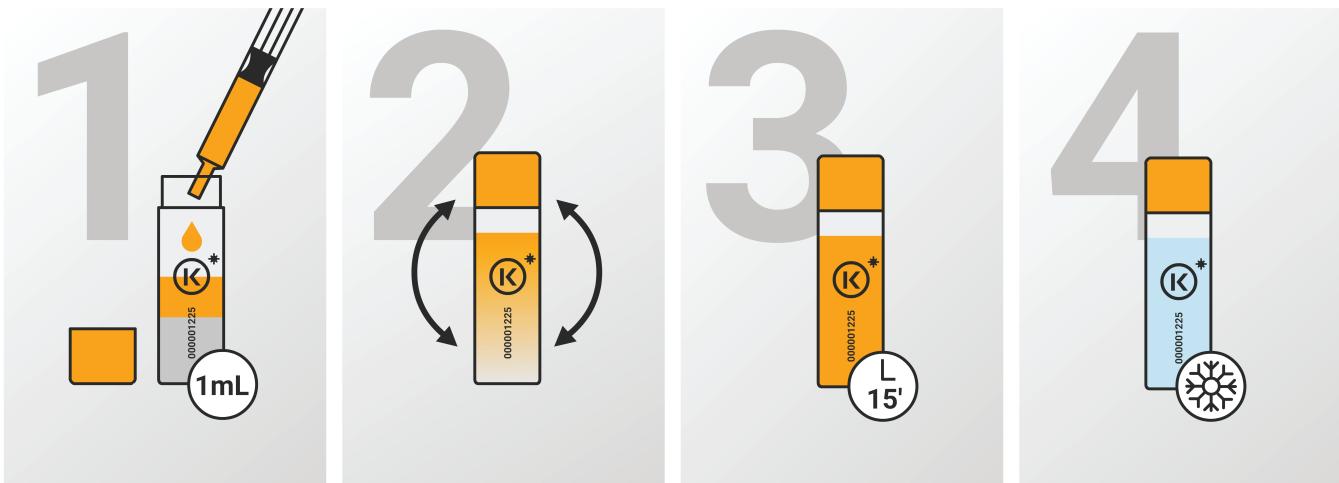


Figure 2: The number of microbial populations resolved by flow cytometry is higher with the Kytovial (orange) compared to without (grey). Additional populations are detected (P5) and other microbial populations are more clearly separated from each other (P4, P3).

INSTRUCTIONS FOR USE



Sampling is executed using the 1 mL syringe provided with the sampling kit.

- 1 **No more than 1mL of sample** is transferred into the vial.
- 2 Close and **gently shake** the vial.
- 3 Let the vial rest at room temperature for approx. **15 minutes**.
- 4 Samples can be stored cooled (4°C - 10°C) or frozen (-20°C) for up to **3 months** until analysis.

Conduct flow cytometry analysis or send samples to a KYTOS lab.

NOTES

Thawing samples from -20°C storage requires same-day analysis.

There is only a small volume of bactericidal solution in each vial - do not be alarmed if the vials appear empty.

IMPORTANT: the sampling vials contain small amounts of chemical agents that may present health hazards.

Read the provided safety data sheet (SDS) carefully prior to use. Contact your provider if you did not receive the SDS

To the best of our knowledge, the technical data in this technical sheet is accurate and reliable as of the date of publication. UGent/KYTOS does not assume any liability for the accuracy and completeness of this information. The performance of the products on your samples should be tested and evaluated according to your standards.