

“more than just the sequence...”

Sampling of Activated Sludge for DNA analysis

Standard Operation Procedure

Version 1.2

Introduction

This protocol describes sampling of activated sludge from the aeration tanks of wastewater treatment plants for DNA extraction and subsequent microbial community analysis. Following a standardized sampling procedure is essential to ensure optimal results of the analysis. For sampling to a bio-bank we recommend sampling three replicates every 14th day. Sampling might need to be increased during perturbations or when the sludge age is short.

If you have any questions contact us at info@dnasense.com.

Materials

A complete sampling package is available through DNASense at a price of 995 DKK. Alternatively, we recommend the following items to ensure optimal storage and sampling.

Sampling and storage

- Sampling device (Similar to [link](#))
- Sample container, 1L (DELTALAB S.L., 444613, [link](#))
- Broad tipped Pasteur pipettes, 5 mL (DELTALAB S.L., 200006B, [link](#))
- Sample tubes, 2.0 mL (Cryotubes; DELTALAB S.L., 409002.1, [link](#))
- Sample tube storage container (DELTALAB S.L., M-510, [link](#))
- Permanent marker pen

Shipping

- Freezing elements or gel-packs
- Robust Styrofoam box, 5 L

Sampling and storage

Preparation

Label 3 sampling tubes [2.0 mL Cryotubes] with: Date, Location, and Replicate number (1, 2, 3).

Sampling

The sample must be taken during active mixing in the aeration tank, to ensure the activated sludge is completely mixed.

1. Submerge the sampling device at least 30 cm below the activated sludge surface, wait 20 seconds and sample at least 1 L of activated sludge.
2. Avoid sampling foam.
3. Transfer 800 mL of sample to the 1 L sampling container.
4. Shake the 1 L sampling container vigorously for 20 second to ensure that the sample is well mixed.
5. Transfer 1.8 mL activated sludge to each of the 3 labeled sampling tubes using a Pasteur pipet.

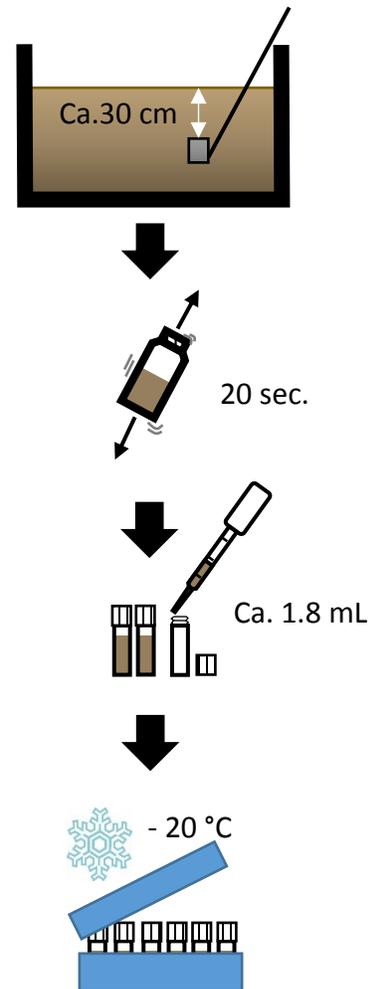
Storage (Bio-bank)

Store the 3 samples at minimum -18°C in a designated storage box. The samples can be stored for years and hence serve as a bio-bank.

NB: In case of prolonged processing time the samples can be stored on ice or in the fridge at 4°C . Samples should be processed within 4 hours of sampling.

Cleaning of equipment

Wash the 1 L sample container and sampling device with minimal amounts of soap and rinse with water to remove all soap residues and leave to dry.



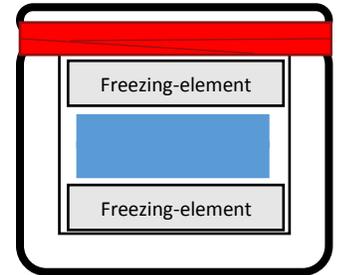
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Shipping samples for analysis

It is important that samples remain frozen during transport. Contact us at info@dnasense.com if you have any questions regarding shipment. Only ship 1 of the 3 replicates for each analysis unless otherwise agreed with DNASense. The replicates are your insurance in case anything goes wrong during shipment or subsequent analysis. For prolonged transport time we recommend shipment using dry-ice.

Shipping with freezing-elements

1. Fill a styrofoam box with at least 2 freezing-elements.
2. Place the frozen samples between the elements.
3. Close the styrofoam box and tape the lid closed.



Order pick-up

Choose your preferred courier or transport company. Make sure that the samples does not arrive in the weekend.

Ship the samples to:

Mads Albertsen / DNASense ApS
Aalborg University
Fredrik Bajers Vej 7H
9220 Aalborg, Denmark
Phone (+45) 22 93 21 91

Send an email to info@dnasense.com with updated time of arrival and tracking number if available.