

Chlorophyll Extraction in Cyanobacteria Version 2

Nicolas Schmelling

Abstract

This protocol should be used for chlorophyll extraction in cyanobacteria. The equation for calculating the exact chlorophyll content can be found at the end of this document.

You might want to measure the optical density (OD) of your cyanobacteria culture at 750 nm. Use BG11 medium or water as the reference solution. You need the OD of your culture to normalize the chlorophyll concentration to the number of cyanobacteria.

Calculate chlorophyll content (adapted from [Lichtenthaler 1978](#))

$$\text{Chl } [\mu\text{g/ml}] = \text{OD}_{665\text{nm}} \times 13.9 [\mu\text{g/ml}] \times \text{dilution factor of culture}$$

You can take less than 1 ml, but note the dilution factor for the calculation later on, e.g. :

1 ml sample = dilution factor of 1

500 μl sample = dilution factor of 2

100 μl sample = dilution factor of 10

Citation: Nicolas Schmelling Chlorophyll Extraction in Cyanobacteria. **protocols.io**

dx.doi.org/10.17504/protocols.io.fuvbnw6

Published: 19 Sep 2016

Protocol

Step 1.

Take **1 ml sample** of your cyanobacteria culture and spin it down at **14,000 rpm** for **5 min**.

⌚ **DURATION**

00:05:00

Step 2.

Discard 0.9 ml of the **supernatant**. **Resuspend** the **pellet** in the **remaining 100 µl**.

Step 3.

Add 0.9 ml of **100% methanol** to the sample and **mix thoroughly** by vortexing.

Step 4.

Incubate the samples in the **dark** for **30 min** at **4 °C** in the fridge.

 **DURATION**

00:30:00

Step 5.

Spin down samples again at **14,000 rpm** for **5 min**.

 **DURATION**

00:05:00

Step 6.

Transfer supernatant into a cuvette and measure the **extinction** at **665 nm**. Use **90% methanol** as the **reference** solution.