

Chlorophyll Extraction in Cyanobacteria

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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 might need the OD of your culture to normalize the chlorophyll concentration to the number of cyanobacteria.

Calculate chlorophyll content

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

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

[dx.doi.org/10.17504/protocols.io.futbnwn](https://doi.org/10.17504/protocols.io.futbnwn)

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Protocol

Step 1.

Take **1 ml sample** of your cyanobacteria culture and spin it down at **14,000 rpm** for **5 min**. You can take less than 1 ml, but note the dilution factor for the calculation later on, e.g. 500 μl will result in a dilution factor of 0.5.

 **DURATION**

00:05:00

Step 2.

Discard 0.9 ml of the **supernatant**.

Step 3.

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

Step 4.

Incubate the samples 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.