



Aug 09, 2022

Version 2

IB BIO SL IA M23 - A study on the conditions that affect yeast fermentation V.2

DOI

dx.doi.org/10.17504/protocols.io.261geny6jg47/v2



Mar Roca Cugat¹

¹Universitat de Girona



Mar Roca Cugat

Maastricht University

Create & collaborate more with a free account

Edit and publish protocols, collaborate in communities, share insights through comments, and track progress with run records.

Create free account

OPEN  ACCESS



DOI: <https://dx.doi.org/10.17504/protocols.io.261geny6jg47/v2>

Protocol Citation: Mar Roca Cugat 2022. IB BIO SL IA M23 - A study on the conditions that affect yeast fermentation .
protocols.io <https://dx.doi.org/10.17504/protocols.io.261geny6jg47/v2> Version created by **Mar Roca Cugat**

License: This is an open access protocol distributed under the terms of the **Creative Commons Attribution License**, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

Protocol status: Working

We use this protocol and it's working

Created: August 09, 2022

Last Modified: August 09, 2022

Protocol Integer ID: 68407

Keywords: biology, fermentation, yeast, ib, ia, ib bio sl ia m23, yeast fermentation, bio, study on the condition, study, research

Abstract

This protocol is designed to aid me in the research for my International Baccalaureate Biology Internal Assignment

Guidelines

None


Materials

- Flask (3 mouths)
- Thermometer
- Holed plugs x2
- Glass tube
- Rubber tube
- Gas recovery flask
- Basin

- Water
- Sugar
- Yeast

Troubleshooting

Safety warnings

 None




Preparation

5m 30s

- 1 Check that all reagents and materials are ready. 30s
- 2 Assemble the instrumentation 5m
 - 2.1 One end of the flask must be plugged with a holed stopper and a thermometer. The other end should be plugged with a holed stopper and a glass tube. The middle opening should be covered with plastic and secured with a rubber band.
 - 2.2 A long and shallow recipient must be filled with water as much as possible. The gas recovery flask should also be filled with water as much as possible. Then, the latter should be inverted and suspended inside the former.
 - 2.3 The tube should be connected from the glass tube to the gas recovery flask.
- 3 The block of compressed yeast must be cut in 4 parts

Processing

30m

- 4 Several factors must be checked and accounted for: pressure, temperature and initial weight of the full gas recovery flask (GRF). To check the ambiental conditions, we will use a thermometer and the Google Science Notebook (discontinued) phone application, which uses the phone's integrated barometer to tell the pressure. To measure the GRF weight we will use a scale.
- 5 One quarter of the yeast block must be dissolved in sugary water (concentration undetermined, volume undetermined, temperature undetermined). This should then be placed in the flask.
- 6 Wait for fermentation:  00:30:00 30m
- 7 Weigh the GRF. The difference from the first measurement is the gas generated. Convert it to moles of $\text{CO}_2 + \text{H}_2\text{O}$ for a universal measurement that is constant through different temperatures and pressures.



8

⇒ go to step #4 Repeat as many times as needed