

Chemostat Conditions

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Abstract

This document describes the agreed chemostat conditions.

Content

Wherever possible chemostat runs will be terminated 2 days after reaching pseudo-steady state (e.g. as assessed by dry weight or OD measurements). This prevents problems due to accumulating mutants.

carbon source	glucose (20 mM)
Dilution rate	D = 0.2 1/h
Temperature	T = 37° C
pH ⁽¹⁾	pH = 6.9
carbon source concentration	20 mM; 4 g/l
biomass concentration	ca. 1 g/l
working volume ⁽²⁾	1 L
stirring rate ⁽³⁾	400 rpm
gas flow	1 volume per volume of medium per minute, i.e. approx 1 l/min, mixture of oxygen and nitrogen (without carbon dioxide), anaerobic lower gas flow (0,2 vvm)
aerobiosis values ⁽⁴⁾	0%, 20%, 50%, 80%, 100%

(1) At a pH = 6.9, formate hydrogen lyase is inactive and thus no formate is split to CO₂ and H₂. This is of advantage since then only formate has to be measured.

(2) not critical, in Magdeburg: 0,36 L

(3) typically, depending on outcome of acetate validation, in Magdeburg: 550 rpm

Acceptable Variations

- The working volume (default: 1 l) should not be critical
- The stirring rate may have to be higher, if 400 rpm do not allow to reach full aerobiosis

Parts List

id	item	description	source
1

Changes to Previous Versions

version	link
...	...

no previous versions exist

Discussion and Comments

[LIMS/SOPs/ExperimentalConditions/fermenter/conditions/discussion?](#)