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Pre-Imaging Liquid Growth Medium - Yeast

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We use this protocol and it's working

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Abstract

This protocol describes the steps to prepare liquid culture medium for Saccharomyces cerevisiae. This liquid medium is used to optimize yeast cultures for fluorescence imaging by the reduction of auto-fluorescence through an abundance of Adenine [1].

Materials

SC-Ura Powder
Sunrise Science Products
Cat#: 1306-030
Lot#: 23K3083
Exp: 10/2027

Yeast Nitrogen Base Without Amino Acids
Sigma Life Science
Cat#: Y0626-250G
Lot#: SLBG0555V

Glucose
Sunrise Science Products
Cat#: 1907-1kg
Lot#: 3A0036

L-Adenine
Sigma Life Science
Cat#: A-9795
Lot#:33H12895

Deionized Water

Equipment:

500 ml laboratory bottle with screw cap
1ml pipette
50 ml pipette
stirring hot plate
magnetic stirring bar
micro scales
autoclave
thermometer

Before start

Have the following solutions premixed:

Glucose 20% 500 ml solution:
Concentration: 200 g/l
mix 100 g Glucose in 500 ml deionized water (ddH_2O)

Adenine 100x 100 ml solution:
Concentration 3 g/l
mix 0.3 g Adenine in 100 ml ddH_2O

Optional:
SC-xx 10x 100ml solution:
Concentration: 19.2 g/l
mix 1.92 g into 100 ml ddH_2O

YNB 20x 100ml solution:
Concentration: 134.4 g/l
mix 13.44 g into 100 ml ddH_2O

1 Compound medium for autoclave

STEP CASE

Medium preparation with pre-resolved components 7 steps

This version of the protocol shows the preparation of the medium from SC-XX 10x and YNB 20x solutions.

1.1 Fill a 500 ml flask with 320 mL ddH_2O.
Add a magnetic stirring bar and place the flask on a stirring hot plate.

1.2 Add 25 mL YNB 20x solution (Yeast Nitrogen Base with Ammonium Sulfate without Amino Acids).

1.3 Add 100 mL SC-XX 10x solution.

Note

In regard to cover all optional dropout media the amino acid base holds the notification -xx, where xx stand for the amino acid(s) that is as selection factor, missing in the medium.

1.4 Add 5 mL Adenine 100x solution.

Note

The additional Adenine is supposed to repress the Adenine synthesize to reduce a possible accumulation of red pigment [1].

2 Autoclave for 00:15:00 at 121 °C .

Note

Remove the stirring bar before going to autoclave.

3 When the medium cooled down to around 80 °C add 50 mL sterile Glucose 20%.

4

Note

The medium can be store at the bench for 2 to 3 months.

Protocol references

[1] Kokina, Agnese et al. "Adenine auxotrophy–be aware: some effects of adenine auxotrophy in Saccharomyces cerevisiae strain W303-1A." *FEMS yeast research* 14.5 (2014): 697-707. doi:10.1111/1567-1364.12154