

SOC Broth, Granulated

GM1379

SOC Broth, granulated is a medium used in molecular biology.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	20.000
Yeast extract	5.000
Sodium chloride	0.500
Magnesium sulphate	2.400
Potassium chloride	0.186
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 28.08 grams in 980 ml distilled water. Heat if necessary, to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and aseptically add 20 ml of filter sterilized 20% glucose solution. Mix well and dispense in sterile tubes or flasks as desired.

Principle And Interpretation

SOC Broth Base is a medium which is prepared by adding 20% glucose solution to SOB Medium (Hanahans Broth) (GM1252/M1252). This medium is a nutritionally rich growth medium used for growing bacterial cells, for preparing chemically competent cells and in the recovery step of competent cell transformations. *E. coli* is first grown in SOB Medium (Hanahans Broth) (GM1252/ M1252) to get the desired cell density. The cells are then harvested and subjected to chemical treatment or electoporation to develop competent cells. These competent cells are then transformed using suitable method. The transformants are then grown in SOC Medium. The use of SOC Broth maximizes the transformation efficiency of competent cells (1).

Casein enzymic hydrolysate and yeast extract serve as rich sources of nitrogen and growth factors which are readily available to the bacteria that are under stress due to transformation procedures. These sources of nutrients allow them to recover from stress and grow well. Potassium and sodium chloride maintain isotonic conditions. Magnesium sulphate is a source of magnesium ions required in a variety of enzymatic reactions including DNA replication.

Quality Control

Appearance

Cream to yellow coloured granular medium

Colour and Clarity of prepared medium

Light amber coloured clear solution without any precipitate

Reaction

Reaction of 2.8% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth
Cultural Response <i>Escherichia coli</i> DH5 alpha	50-100	luxuriant

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

Reference

1. Sambrook J., Fritsch E. E. and Maniatis T., 1989, Molecular Cloning : A Laboratory Manual, 2nd Ed., Cold Spring Harbor Lab., Cold Spring Harbor, N.Y.

Revision : 00 / 2014



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