BG11 Broth

M1541

BG11 Broth is a universal medium for the cultivation and maintenance of blue green algae (cyanobacteria).

Composition**

Ingredients	Gms / Litre
Sodium nitrate	1.500
Dipotassium hydrogen phosphate	0.0314
Magnesium sulphate	0.036
Calcium chloride dihydrate	0.0367
Sodium carbonate	0.020
Disodium magnesium EDTA	0.001
Citric acid	0.0056
Ferric ammonium citrate	0.006
Final pH after sterilization (at 25°C)	7.1

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 1.627 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium. It is recommended to adjust pH with 1 M NaOH or HCl if it does not achieve 7.1. Dispense in flasks or as desired. Sterilize by autoclaving at 121°C for 15 minutes. Cool the medium to room temperature.

For marine species make as solution of 10 g/L sodium chloride and 1 g/L Vitamin B12. Add 20 ml of this solution (sterile filtered) to 1000 ml D/W.

Principle And Interpretation

This medium supports growth of photoautotrophic blue green algae (1,2). They require light as source of energy. Synthetic nitrogen and carbon sources and other inorganic salts comprise this medium. Exposure to light intensity of 2,000 to 3,000 lux is optimal for cultivation of blue green algae. Neon light source is found to be sufficient to provide this illumination. For maintenance of blue green algae exposure for period of 24 hours a day is optimal .Often the flasks kept for incubation may be covered with grease proof paper. They grow optimally at room temperature between range of 20-25°C. Similar medium with added trace metals is cited in ATCC as Medium 616 for maintenance of *Synechocystis* species (3).

Quality Control

Appearance
Off white to cream homogeneous free flowing powder

Colour and Clarity of Prepared medium
Colourless clear to slightly opalescent solution forms in tubes (slight precipitate may occur)

Reaction
Reaction of 0.16% w/v aqueous solution after sterilization at 25°C. pH : 7.1

pH
7.1

Cultural Response
Cultural characteristics observed after an incubation at 20-25°C for 1 week.

Cultural Response

Organism	Inoculum (CFU)	*Growth
Cultural Response		
Synechcystis species PCC6803 ATCC 27184	50-100	good-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.Allen, M.M, Steiner,R.Y .J.Gen.Microbiol. 51 ,203 (1968).
2.R.Y. Stanier,R. Kunisawa,M. Mandel, & Cohen-Bazire,G. Bacteriol.Rev. 35: 171-205 (1971).
3.ATCC Catalogue of Bacteria & Bacteriophages 18th edition, 1992.

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