



BG11 Broth w/Minerals

M1958

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

Composition**

Ingredients	Gms / Litre
Sodium nitrate (NaNO ₃)	1.500
Dipotassium hydrogen phosphate (K ₂ HPO ₄)	0.040
Magnesium sulphate, heptahydrate (MgSO ₄)	0.075
Calcium chloride dihydrate	0.036
Citric acid	0.006
Ferric ammonium citrate	0.006
EDTA, disodium salt	0.001
Sodium carbonate	0.020
Trace metal mix	1.000 ml
Trace metal mix	Gms / Litre
Boric acid (H ₃ BO ₃)	2.860
Manganese chloride, tetrahydrate	1.810
Zinc sulphate, heptahydrate	0.222
Sodium molybdate, dihydrate	0.390
Copper sulphate, pentahydrate	0.079
Cobalt nitrate, hexahydrate	0.0494
Final pH (at 25°C)	7.10

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 1.642 grams (the equivalent weight of dehydrated medium per litre) 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). This medium with added trace metals is cited in ATCC as Medium 616 for maintenance of *Synechocystis* species (3).

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.

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 (with slight precipitate may occur.)

Reaction

Reaction of 0.164% w/v aqueous solution at 25°C. pH : 7.10

pH

7.10

Cultural Response

Please refer disclaimer Overleaf.

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

Cultural Response

Organism	Inoculum (CFU)	Growth
Cultural Response <i>Synechocystis species</i> <i>PCC6803 ATCC 27184</i>	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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