Protocol of microalgae cultivation

1. Chlorella vulgaris

|  |  |
| --- | --- |
| Temperature | 28 Celsius  |
|  Light | 10000 lumen 12hr/day |
|  Shaking | 120 rpm |
|  Medium | BG 11 |
|  Container | 15ml Petri dish or 125 flask |

Note:

1. Temperature should not exceed 35 Celsius.
2. Theoretically, it will have a 7-day life cycle and reach stationary phase on day 4.
3. Temperature of BG11 medium should be the same as room temperature before added.

2. Synechococcus elongatus PCC 7942

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| --- | --- |
| Temperature | 25 Celsius  |
|  Light | 10000 lumen 12hr/day |
|  Shaking | 100 rpm |
|  Medium | BG 11 |
|  Container | 15ml Petri dish or 125 flask |

Note:

1. Temperature should not exceed 30 Celsius.

2. Temperature of BG11 medium should be the same as room

 temperature before added.

BG-11 medium

**Stock solutions for BG-11:**

|  |  |
| --- | --- |
| **Stock 1:** |  |
| Na2MG EDTA | 0.1g/liter |
| Ferric ammonium citrate | 0.6g/liter |
| Citric acid **.** 1H2O | 0.6g/liter |
| CaCl2 **.** 2H2O | 3.6g/liter |
| Filter sterilize into a sterile bottle or autoclave |
|  |  |
| **Stock 2:** |  |
| MgSO4**.**7H2O | 7.5g/liter |
| Filter sterilize into a sterile bottle or autoclave |
|  |  |
| **Stock 3:** |  |
| K2HPO4 **.** 3H2O | 4.0g/liter |
| or K2HPO4 | 3.05g/liter |
| Filter sterilize into a sterile bottle or autoclave |
|  |  |
| **Stock 5 (Microelements):** |  |
| H3BO3 | 2.86g/liter |
| MnCl2 **.** 4H2O | 1.81g/liter |
| ZnSO4 **.** 7H2O | 0.222g/liter |
| CuSO4**.**5H2O | 0.079g/liter |
| COCl2**.**6H2O | 0.050g/liter |
| NaMoO4**.** 2H2O | 0.391g/liter |
| or MoO4(85%) | 0.018g/liter |

**B) For basic BG11 medium combine the following stock solutions:**

|  |  |
| --- | --- |
| Stock Solution | Per Liter of medium |
| Stock 1 | 10 ml |
| Stock 2 | 10 ml |
| Stock 3 | 10 ml |
| Na2CO3 | 0.02g |
| Stock 5 | 1.0 ml |
| NaNO3 | 1.5g |

|  |
| --- |
| Combine stocks and adjust pH to 7.5 (use 1.0N HCl). Aliquot into flasks (50 ml/125 ml flask) with cotton stoppers on top and autoclave. After autoclaving and cooling the pH is about 7.1. For solid media add 1% noble agar. **For BG-11o don't add NaNO3.** |

Reference:

The BG11 medium content was from

http://microbiology.ucdavis.edu/meeks/BG11medium.html