



## Norris Glucose Nitrogen Free Medium

M712

Norris Glucose Nitrogen Free Medium is used for the cultivation of chemoheterotrophic bacteria that can fix atmospheric nitrogen.

### Composition\*\*

Ingredients	Gms / Litre
Glucose	10.000
Dipotassium phosphate	1.000
Magnesium sulphate	0.200
Calcium carbonate	1.000
Sodium chloride	0.200
Sodium molybdate	0.005
Ferrous sulphate	0.100
Final pH ( at 25°C)	7.0±0.2

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

Suspend 12.5 grams in 1000 ml distilled water. Heat just to boiling. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense as desired.

Note: Due to the presence of calcium carbonate, the prepared medium forms opalescent solution with white precipitate.

### Principle And Interpretation

The survival of microorganisms in the laboratory as well as in nature depends on their ability to grow under certain chemical and physical conditions. An understanding of these conditions enables us to characterize isolates and differentiate between different types of bacteria. Such knowledge can also be applied to control the growth of microorganisms in practical situations. Organisms that are generally organotrophic, may also be termed chemoorganotrophs. These organisms may use a variety of organic compounds as both carbon and energy sources. A common sugar so used is glucose. ATP is generated by either substrate-level or oxidative phosphorylation.

The medium contains glucose, which serves as the carbon source. Sodium molybdate in the medium increases the fixation of nitrogen (1). Various salts in the medium serve as buffer as well as essential ions to the chemoheterotrophic bacteria.

### Quality Control

#### Appearance

Off-white to yellow homogeneous free flowing powder

#### Colour and Clarity of Prepared medium

Light yellow coloured clear to slightly opalescent solution with slight precipitate.

#### Reaction

Reaction of 1.25% w/v aqueous solution at 25°C. pH : 7.0±0.2

#### pH

6.80-7.20

#### Cultural Response

M712: Cultural characteristics observed after an incubation at 25-30°C for 48-72 hours.

Organism	Growth
<i>Alternaria solanii</i> ATCC 2101	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. Ranganayaki S., Mohan C., Effect of Sodium molybdate on microbial fixation of nitrogen, Z. Ally. Microbiol 1981; 21 (8): 607-10.

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