

Nitrate Motility Base Medium

Cat. 1565

For the confirmation of *Clostridium perfringens*.

Practical information

Applications	Categories
Confirmation	<i>Clostridium perfringens</i>

Industry: Clinical

Principles and uses

Nitrate Motility Base Medium is a confirmatory test medium for presumptive *Clostridium perfringens* colonies, that measures nitrate reduction and motility by various types of microorganisms. This test is specific for *Clostridium perfringens* in that it is non-motile and reduces nitrates to nitrites.

Nitrate reduction to nitrites, or some other nitrogenous compound such as Nitrogen (N₂), by the nitrate reductase enzyme is a valuable criterion for differentiating and identifying various types of bacteria. Motility is demonstrated by a diffused growth away from the stab line or inoculation spot. Non-motile organisms grow only amongst the stab line.

Casein peptone and beef extract provide the nitrogen, minerals and amino acids nutrients essential for bacterial growth. Galactose is the fermentable carbohydrate as an energy source. Disodium phosphate acts as a buffer system. Potassium nitrate provides additional nutrients. Bacteriological agar is the solidifying agent.

Formula in g/L

Bacteriological agar	3,5	Casein peptone	5
Disodium phosphate	2,5	Galactose	5
Beef extract	3	Potassium nitrate	1

Preparation

Suspend 20 grams of the medium in one liter of distilled water. Add 5 grams of glycerol. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 121 °C for 15 minutes. Cool to 45-50 °C and dispense into sterile tubes.

Instructions for use

Inoculate and incubate at a temperature of 35±2 °C for 24-48 hours.

Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Beige	Clear amber, slightly opalescent	7,3±0,2

Microbiological test

Incubation conditions: (35±2 °C / 24-48 h).

Microrganisms	Characteristic reaction
<i>Clostridium perfringens</i> ATCC 13124	Motility (+), Nitrate reduction (-)
<i>Proteus vulgaris</i> ATCC 6380	Motility (+), Nitrate reduction (-)

Storage

Temp. Min.:2 °C
Temp. Max.:25 °C

Bibliography

Titters R.R. and L.A. Sancholzer 1936. The use of semi-solid agar for the detection of bacterial motility, J. Bacteriol 31: 575-580. Snell and Wright; 1941. J. Biolog. Chem. 13: 675. Compendium of methods for the microbiological examination of foods. Am. Public. Health Association.

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