

# Nitrate Motility Medium Base

For the confirmation of Clostridium perfringens.

## Practical information

Aplications	Categories		
Confirmation	Clostridium perfringens		
Industry: Clinical / Food		Ce	
Regulations: ISO 7937		IVD	

#### Principles and uses

Nitrate Motility Medium Base 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

Typical formula g/L \* Adjusted and/or supplemented as required to meet performance criteria.

#### 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

» For clinical diagnosis, the type of sample depends on the clinical picture, it can be feces, aspirates from wounds, abscesses or blisters, and blood. - Stab-inoculate each selected colony into the Nitrate Motility Medium.

- Incubate under anaerobic conditions at 37 °C for 24 hours.
- Reading and interpretation of the results.

» For the confirmation of C. perfringens according to ISO 7937:

- Obtain well-isolated characteristic colonies by inoculating TSC Agar Base (Triptone Sulfite Cycloserine) (Cat. 1029) plates.

- Stab-inoculate each selected colony into the freshly deaerated Nitrate Motility Medium.

- Incubate under anaerobic conditions at 37 °C for 24 hours.

- Examine the type of growth along the stab line. Motility is evidenced as a diffuse growth into de medium away from the stab line.

- Detect the presence of nitrite by adding 0,2-0,5 ml of reagent for nitrite detection. The appearance of a red color confirms the reduction of nitrate to nitrite. If no red color appears, add a small amount of zinc dust. Let stand 10 min, and if the red color appears then, it will mean that there was no nitrate reduction.

# Quality control

Cat. 1565

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25⁰C)	
w/o rests	Fine powder	Beige	Clear amber, slightly opalescent	7,3±0,2	
Microbiol	ogical test				
Incubation co	nditions: (35±2 °C / 24-4	lð h).			
Microorganisr	ns		Characteristic reaction		
Clostridium perfringens ATCC 13124			Motility (-), Nitrate reduction (+)		
Proteus vulgaris ATCC 13315			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. ISO 7937:2005. Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of clostridium perfringens - Colony-count technique.