

Product Data Sheet

MANNITOL MOTILITY NITRATE MEDIUM

Product No. GB-DCM-00409-1A

INTENDED USE

For studying mannitol fermentation, nitrate reduction and motility of bacteria.

PRODUCT SUMMARY

Mannitol Motility Nitrate Medium is designed to differentiate bacteria on the basis of their motility, ability to ferment mannitol and reduce nitrate. The highly nutritious casein enzymic hydrolysate supports luxuriant growth of bacteria. Semisolid nature of the medium due to 0.35% agar helps to detect motility. Motile bacteria produce diffused growth throughout the medium while non motile bacteria grow only along the line of inoculation. Combination of mannitol and phenol red helps differentiation of mannitol fermenting bacteria which turns the medium yellow. Reduction of nitrate is generally an anaerobic respiration in which an organism derives its oxygen from nitrate. Members of Enterobacteriaceae characteristically reduce nitrate to nitrite which reacts with sulfanilic acid and dimethyl-1-naphthylamine to produce the red colour.

Product Specifications

Ingredients	Gms / Ltr
Casein enzymic hydrolysate	10.000
Potassium nitrate	1.000
Mannitol	7.500
Phenol red	0.040
Agar	3.500

PRINCIPLE

Casein enzymic hydrolysate contains tryptophan, which is acted upon by certain microorganisms, resulting in the production of indole. Potassium nitrate acts as the substrate for determining nitrate reduction by microorganisms.

INSTRUCTION FOR USE

- Dissolve 22.04 grams in 1000 ml distilled water.
- Heat to boiling to dissolve the medium completely.
- Dispense into test tubes. Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Cool the medium in an upright position.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Mannitol fermentation	Colour of colony	Motility	Nitrate reduction	Incubation Temperature	Incubation Period
Escherichia coli	35218	50-100	Luxuriant	$\geq 0\%$	Positive reaction, yellow colour	Positive, growth away from stabline causing turbidity	Positive reaction red colour developed within 1-2 minutes	35-37°C	18-24 Hours
Proteus vulgaris	13315	50-100	Luxuriant	$\geq 50\%$	Negative reaction, no colour change or red	Positive, growth away from stabline causing turbidity	Positive reaction red colour developed within 1-2 minutes	35-37°C	18-24 Hours
Salmonella Typhi	6539	50-100	Luxuriant	$\geq 50\%$	Positive reaction, yellow colour	Positive, growth away from stabline causing turbidity	Positive reaction red colour developed within 1-2 minutes	35-37°C	18-24 Hours
Shigella sonnei	25931	50-100	Luxuriant	$\geq 50\%$	Positive reaction, yellow colour	Negative, growth along the stabline, surrounding medium remains clear	Positive reaction red colour developed within 1-2 minutes	35-37°C	18-24 Hours
Staphylococcus aureus	25923	50-100	Luxuriant	$\leq 50\%$	Positive reaction, yellow colour	Negative, growth along the stabline, surrounding medium remains clear	Positive reaction red colour developed within 1-2 minutes	35-37°C	18-24 Hours
Staphylococcus epidermidis	12228	50-100	Luxuriant	0%	Negative reaction, no colour change or red	Negative, growth along the stabline, surrounding medium remains clear	Positive reaction red colour developed within 1-2 minutes	35-37°C	18-24 Hours



QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to pink homogeneous free flowing powder.
Appearance of prepared medium : Red coloured clear to slightly opalescent semisolid gel forms in tubes.
pH (at 25°C) : 7.6± 0.2

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

This product is for research use only.