

Technical Information

Milk Medium with a reducing agent

Product Code: DM 1816

Application: - Milk medium w/ reducing agent is recommended for determination of litmus reaction of *Clostridium* species.

Composition**

Ingredients	Gms / Litre
Skim milk	100.000
Peptic digest of animal tissue	10.000
Sodium thioglycollate	0.500
Litmus	5.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Milk is a complex nutritional source that contains proteins (mainly casein) in an aqueous solution of lactose and minerals. Bacterial enzymes alter the media and may bring about various changes. Litmus is added to the medium to detect pH changes that may occur as a result of these enzymatic reactions. Above pH 8.3, litmus is blue, while below pH 4.5 litmus is red. Fermentation of lactose results in the production of acid, which causes milk to curdle or form a clot at the bottom of the tube. Litmus may also act as an electron acceptor thus becoming reduced by bacterial metabolism. This reaction is observed as a white color in the medium. Milk medium with reducing agent is used for determination of litmus reaction of *Clostridium* species.

Peptic digest of animal tissue and skim milk provide nitrogen, sulphur, vitamins and other growth nutrients. Sodium thioglycollate is a reducing agent, which absorbs oxygen and creates a reduced environment required by anaerobes. This medium has been found satisfactory for the cultivation of *Clostridium* species and allows observation of their reactions in litmus milk. In anaerobically grown Litmus Milk cultures, enzymes of *Clostridium perfringens* attack the proteins and carbohydrates of the milk producing a stormy fermentation with clotting and gas formation (1).

Methodology

Suspend 115.5 grams of dehydrated powder media in 1000 ml distilled water agitating continuously. Mix thoroughly & sterilize by autoclaving at 15 lbs pressure (121°C) for 5 min. Shake well and dispense as desired.

Quality Control

Appearance

Light pink to purple homogeneous free flowing powder

Colour and Clarity

Purple coloured opalescent solution

Reaction

Reaction of 11.55% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH Range

6.80-7.20

Cultural Response

DM1816: Cultural characteristics observed after an incubation at 35-37°C for up to 5 days.



Dehydrated Culture Media
Bases / Media Supplements

Organism	Observation	Cause
<i>Clostridium perfringens</i> ATCC 12924	stormy fermentation	gas trapped in acid coagulated casein peptonization
<i>Clostridium sporogenes</i> ATCC 11437	acid with gas proteolysis	-

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Gainor C. and Wegemer D. E., Appl. Microbiol., 1954 March; 2(2): 9597.

Disclaimer :

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