

Technical Information

Alternative Thioglycollate Medium (NIH Thioglycollate Broth) (Thioglycollate Broth, Alternative)

Product Code: DM 1010

Application: - Alternative Thioglycollate Medium is recommended for sterility testing of turbid or viscous biological products.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	15.000
Yeast extract	5.000
Dextrose	5.500
Sodium chloride	2.500
L-Cystine	0.500
Sodium thioglycollate	0.500
Final pH (at 25°C)	7.1±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Alternative Thioglycollate Medium described in the N.I.H. memorandum ⁽¹⁾ is used for the sterility testing of certain biological products which are turbid or viscous and can't be tested using Fluid Thioglycollate Medium (DM1009). Both the media have similar composition, except agar and resazurin are not added in Alternative Thioglycollate Medium. This deletion makes the medium suitable for sterility testing of viscous products.

Casein enzymic hydrolysate and yeast extract serve as source of essential nutrients to the contaminants, if present. Dextrose serves as the energy source. Sodium chloride maintains the osmotic equilibrium of the medium whereas L-cystine, an amino acid, also serves as source of essential growth factors. Sodium thioglycollate and L-cystine lower the oxidation-reduction potential of the medium by removing oxygen to maintain a low Eh. Sodium thioglycollate also helps to neutralize the toxic effects of mercurial preservatives ^(2, 3).

Methodology

Suspend 29 grams of powder media in 1000 ml distilled water. Shake well & heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense as desired.

Note: It is preferable to use freshly prepared medium, alternatively it should be boiled and cooled just once prior to use as on reheating, toxic oxygen radicles are formed.

Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Yellow coloured clear solution without any precipitate.

Reaction

Reaction of 2.9% w/v aqueous solution at 25°C. pH : 7.1±0.2

pH Range:- 6.90-7.30

Cultural Response/Characteristics

DM 1010: Complies DM1010: Cultural characteristics observed after an incubation at 30-35°C for not more than 3 days.



Dehydrated Culture Media
Bases / Media Supplements

Organism	Inoculum (CFU)	Growth
<i>Clostridium sporogenes</i> ATCC 19404	50-100	Luxuriant
<i>Clostridium sporogenes</i> ATCC 11437	50-100	Luxuriant
<i>Clostridium sporogenes</i> NBRC 14293	50-100	Luxuriant
<i>Clostridium perfringens</i> ATCC 13124	50-100	Luxuriant
<i>Bacteroides fragilis</i> ATCC 23745	50-100	Luxuriant
<i>Bacteroides vulgatus</i> ATCC 8482	50-100	Luxuriant
<i>Staphylococcus aureus</i> ATCC 25923	50-100	Luxuriant
<i>Staphylococcus aureus</i> ATCC 6538	50-100	Luxuriant
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	Luxuriant
<i>Pseudomonas aeruginosa</i> ATCC 9027	50-100	Luxuriant
<i>Escherichia coli</i> ATCC 25922	50-100	Luxuriant
<i>Escherichia coli</i> ATCC 8739	50-100	Luxuriant
<i>Escherichia coli</i> NCTC 9002	50-100	Luxuriant
<i>Salmonella A bony</i> NCTC 6017	50-100	Luxuriant
<i>Salmonella Typhimurium</i> ATCC 14028	50-100	Luxuriant

Storage and Shelf Life

Dried media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

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

Further Reading

1. N.I.H. Memorandum, 1955: Culture Media for Sterility Tests, 4th Revision.
2. Nungester, Hood and Warren, 1943, Proc. Soc. Exp. Biol. Med., 52: 287
3. Portwood, 1944, J. Bacteriol., 48: 255

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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