

Thioglycollate broth

REF.	Pack size
1416 001	100 gm
1416 002	500 gm

Intended Use

Thioglycollate broth is used in the cultivation of anaerobes such as *Clostridium sporogenes*, aerobes and microaerophiles isolated from throat swab and visceral fluids.

Background

Quastel and Stephenson found that the presence of small amounts of a compound containing an -SH group (cysteine, thioglycolic acid and glutathione) permitted "aerobic" growth of *Clostridium sporogenes*. Thioglycollate broth was first described by Brewer, who demonstrated the value of a reducing substance in allowing good isolation of anaerobic organisms. Thioglycollate broth is intended for sterility testing of antibiotics, biologicals and foods.

Principle

Pancreatic Digest of Casein and Yeast Extract are sources of nitrogen, vitamin and carbon. Sodium Thioglycollate and L-Cystine lower the oxidation-reduction potential by removing molecular oxygen from the medium. Glucose is included in this formula to enhance organism growth. Sodium Chloride maintains the osmotic balance of the medium.

Components	gm/Liter
L-Cystine	0.5
Sodium chloride	2.5
Glucose	5.5
Yeast extract	5.0
Pancreatic digest of casein	15.0
Sodium thioglycollate	0.5










Final pH (at 25°C) 7.1 ± 0.2

Preparation, Storage and Stability

Store the dehydrated medium at 10-30°C and use before the expiry date on the label. Store the prepared medium at 2-8°C. After the desired amount of medium is taken out, replace the cap tightly to protect from hydration.

Procedure

1-Suspend 29 g of the powder in 1 L distilled water and mix well.
2-Boil with frequent agitation to dissolve the powder completely.
3-Sterilize by autoclaving at 121°C for 15 minutes.

SYMBOLS IN PRODUCT LABELLING			
	Authorised Representative		Temperature Limitation
	For in-vitro diagnostic use		Use by/Expiration Date
	Batch Code/Lot number		CAUTION. Consult instructions for use
	Catalogue Number		Manufactured by
	Consult instructions for use		

Quality Control

Appearance

1-Dehydrated Appearance : Straw coloured, free-flowing powder.

2-Prepared Appearance : Straw coloured solution

3-Cultural Response : Cultural characteristics after 18-48 hours at 35 ± 2°C for clinical specimens or 30-35 (as per pharmacopoeia)

Organisms (ATCC)

Candida albicans
Clostridium sporogenes
Peptostreptococcus anaerobius

Growth

Flocculent growth
Turbid growth and or colonies
Turbid growth and or colonies

Interpretation of the results

Examine tubes for turbidity which is an indication of growth:


- 1- Strict aerobes such as *Pseudomonas* species and yeast will only grow at the upper portion of the medium.
- 2- Microaerophiles grow below the surface, near the middle.
- 3- Anaerobes display growth at the lower portions of the medium. If desired the broth can then be sub-cultured
- 4- Facultative or aerotolerant anaerobes can grow throughout the medium but will primarily grow in the middle of the tube, between the oxygen-rich and oxygen-free zones.

Precautions

- 1- This medium lacks agar and reducing indicator, therefore it is essential that the medium is freshly prepared and used within four hours of preparation.
- 2- Thioglycollate media should not be reheated more than once because toxic oxygen radicals are formed on reheating.

Bibliography

1. N.I.H. (1955) Memorandum: 'Culture media for sterility tests' 4th Revision
2. US Pharmacopoeia XXI (1985) 'Sterility tests'.
3. Food and Drug Administration. 1995. Bacteriological analytical manual, 8th ed., AOAC International, Gaithersburg, MD.

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