

MAST® Culture Media and Supplements

Technical Information Sheet

Product Code DM 221



Thioglycollate Broth U.S.P.

For sterility testing as recommended by the United States Pharmacopoeia.

1. Description

Brewer¹ described the use of thioglycollate to create conditions for the growth of clostridia without anaerobic jars. The original formulation of the broth used meat products and was shown to be inadequate for certain clostridia by McClung².

Subsequent work by Brewer³ and Vera⁴ was utilised in the formulation of a more nutritious medium described by Pittman⁵. This medium was adopted by the National Institute of Health for sterility testing and is

described in the U.S. Pharmacopoeia (1970).⁶ Thioglycollate reduces the Eh potential of the broth and allows the growth of anaerobes and aerobes without the use of anaerobic apparatus. Resazurin is used to indicate the Eh potential of the medium in preference to methylene blue, as the latter is more inhibitory. Agar is present to minimise convection and absorption of oxygen. Thioglycollate also neutralises mercurial preservatives in test materials as shown by Nungester *et al.*⁷

2. Technical Formula*

Formula	grams per litre
Casein hydrolysate, enzymic	15.0
Sodium chloride	2.5
D-Glucose	5.5
Resazurin	0.001
Agar	0.75
Yeast extract	5.0
L-Cystine hydrochloride	0.5
Sodium thioglycollate	0.5
pH approx.7.1	

3. Directions

1. Suspend 29.8g of powder in 1 litre or the contents of the sachet in the stated volume of distilled or deionised water.
2. Boil at 100°C to dissolve the agar and distribute into test tubes.
3. Autoclave at 121°C (15 p.s.i.) for 15 minutes.
4. Reboil before use if more than one third of the column turns blue on storage. Do not reheat more than once.

4. References

1. Brewer JH. *J Am Med Ass.* 1940; **115**: 598- 600
2. McClung LS. *J Bacteriol.* 1940; **40**: 645-648
3. Brewer JH. *J Bacteriol.* 1943; **46**: 395-396
4. Vera Harriette D. *J Bacteriol.* 1944; **47**: 59-65
5. Pittman Margaret. *J Bacteriol.* 1946; **51**: 19-32
6. Pharmacopoeia 1970; XVIII: 852
7. Nungester WJ, Hood Mary N, Warren Mary K. *Proc Soc Exp Biol Med.* 1943; **52**: 287-289



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