



## Thioglycollate Medium w/ Hemin and Vitamin K

M979

Thioglycollate Medium w/Hemin and Vitamin K is used for routine cultivation of fastidious anaerobic microorganisms. Also used for blood culturing and studying fermentation reactions.

### Composition\*\*

Ingredients	Gms / Litre
Tryptose	15.000
Yeast extract	10.000
Sodium thioglycollate	0.500
Sodium chloride	2.500
L-Cystine hydrochloride	0.500
Sodium bicarbonate	0.400
Resazurin	0.001
Hemin	0.005
Vitamin K	0.0005
Agar	0.750
Final pH ( at 25°C)	7.2±0.2

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

Suspend 29.65 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Note : If more than the upper one third has acquired a pink colour, the medium may be restored once by heating in a water bath or in free flowing steam until the pink colour disappears.

### Principle And Interpretation

Certain anaerobes require addition of Vitamin K and hemin (1, 2) for their growth. Therefore, Thioglycollate Medium with hemin and Vitamin K is recommended for use in the isolation and cultivation of fastidious or slow-growing obligatory anaerobic microorganisms present in clinical materials. It is also recommended for the isolation and cultivation of wide variety of aerobic and facultatively anaerobic microorganisms.

Tryptose and yeast extract provide nitrogenous compounds, vitamin B complex and other essential growth nutrients for bacterial metabolism. Sodium thioglycollate and L-cysteine act as reducing agents and maintain a low oxygen tension in the medium. Vitamin K is a growth requirement for some strains of *Prevotella melaninogenica*. Pink ring at the top (oxidized medium) is due to resazurin indicator. Hemin is the source of the X factor which stimulates the growth of many microorganisms.

### Quality Control

#### Appearance

Cream to yellow homogeneous free flowing powder

#### Colour and Clarity of prepared medium

Amber coloured clear to very slightly opalescent fluid with upper 10% or less medium pink on standing.

#### Reaction

Reaction of 2.96% w/v aqueous solution at 25°C. pH : 7.2±0.2

#### pH

7.00-7.40

#### Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

#### Cultural Response

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Organism	Inoculum (CFU)	Growth
<b>Cultural Response</b>		
<i>Bacteroides levii</i> ATCC 9177	50-100	luxuriant
<i>Bacteroides vulgatus</i> ATCC 8482	50-100	fair
<i>Bacteroides melaninogenicus</i> ATCC 25611	50-100	luxuriant
<i>Clostridium perfringens</i> ATCC 12924	50-100	luxuriant
<i>Clostridium sporogenes</i> ATCC 11437	50-100	luxuriant
<i>Streptococcus pyogenes</i> ATCC 19615	50-100	luxuriant

### Storage and Shelf Life

Store dehydrated medium and the prepared medium at 2 - 8°C. Use before expiry date on the label.

### Reference

1. Gibbon R. J. and MacDonald J. B., 1960, J. Bacteriol., 80:164.
2. Wilkins T. D., Chalgren S. L., Jimenez Ulat G., Drace C. R. , Johnson J. L., 1976, J. Clin Microbiol., 3:359.

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