TM 306 – THIOGLYCOLLATE MEDIUM, LINDEN (BREWER THIOGLYCOLLATE MEDIUM, MODIFIED)

INTENDED USE

For sterility testing of biological products and isolation of aerobic and anaerobic organisms.

PRODUCT SUMMARY AND EXPLANATION

Brewer Thioglycollate Medium Modified is a modification of Linden Thioglycollate Medium. National Institute of Health specified the use of Brewers formula and Linden formula for sterility testing, which was later referred to as Modified Brewer Thioglycollate Medium.

Growth is observed as turbidity of the medium compared to an uninoculated control. Strict aerobes tend to grow in a thin layer at the surface of the broth; obligate anaerobes will grow below the upper oxidized layer. Sometimes anaerobes can be overgrown by the more rapidly growing facultative organisms. Some anaerobes may be inhibited by acids or metabolic products produced from more rapidly growing facultative anaerobes. If the medium is to be used as a sterility testing medium incubation should be carried out for minimum 7 days under appropriate atmospheric conditions.

COMPOSITION

Ingredients	Gms / Ltr
Tryptone	17.500
Soya peptone	2.500
Dextrose (Glucose)	10.000
Sodium chloride	5.000
Dipotassium hydrogen phosphate	2.000
Sodium thioglycollate	1.000
Methylene blue	0.002
Agar	0.500

PRINCIPLE

It contains highly nutritious tryptone and soya peptone that provides carbon, nitrogen substances, long chain amino acids, vitamins and minerals which support luxuriant growth of even fastidious bacteria. Sodium thioglycollate helps to create anaerobic condition as well as neutralizes toxicity of mercurial compounds if present in the inoculum of the test material. Sodium chloride maintains the osmotic equilibrium while dipotassium phosphate buffers the medium. Very small amount of agar present maintains anaerobic conditions at the bottom of the broth. Methylene blue indicates oxygen content of the medium by exhibiting bluish-green colour to the medium in presence of oxygen. The uninoculated medium shows bluish green colour at the top indicating presence of oxygen in that part. The medium contains more thioglycollate and is recommended for sterility testing procedures. Organisms that ferment dextrose and lower the pH to critical levels may not survive in this medium after growth has taken place.

INSTRUCTION FOR USE

- Dissolve 38.5 grams in 1000 ml purified / distilled water.
- Heat to boiling to dissolve the medium completely.
- Dispense in tubes or in suitable containers as desired and sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes and cool to 45-50°C.

Note: If more than the upper one third layer acquires bluish-green colour (absorbs oxygen), the dissolved oxygen can be removed by heating the medium in free flowing steam for 5-10 minutes or in a water bath until the green colour disappears, and the prepared medium should be stored in the dark till use.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow homogeneous free flowing powder.
Appearance of prepared medium : Yellow coloured clear to slightly opalescent fluid with upper 10% or less medium bluish green on standing.
pH (at 25°C) : 7.2±0.2

INTERPRETATION

Cultural characteristics observed after incubation. (Clostridium and Bacteroides species incubated anaerobically)

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Incubation Temperature	Incubation Period
Bacteroides melaninogenicus	25848	50-100	Good-luxuriant	35-37°C	18-48 Hours
Clostridium sporogenes	11437	50-100	Good-luxuriant	35-37°C	18-48 Hours
Streptococcus mitis	9895	50-100	Good-luxuriant	35-37°C	18-48 Hours
Streptococcus pyogenes	19615	50-100	Good-luxuriant	35-37°C	18-48 Hours
Bacteroides fragilis	25285	50-100	Good-luxuriant	35-37°C	18-48 Hours
Staphylococcus aureus subsp.aureus	25923	50-100	Good-luxuriant	35-37°C	18-48 Hours

PACKAGING:

In pack size of 100 gm and 500 gm bottles.

STORAGE

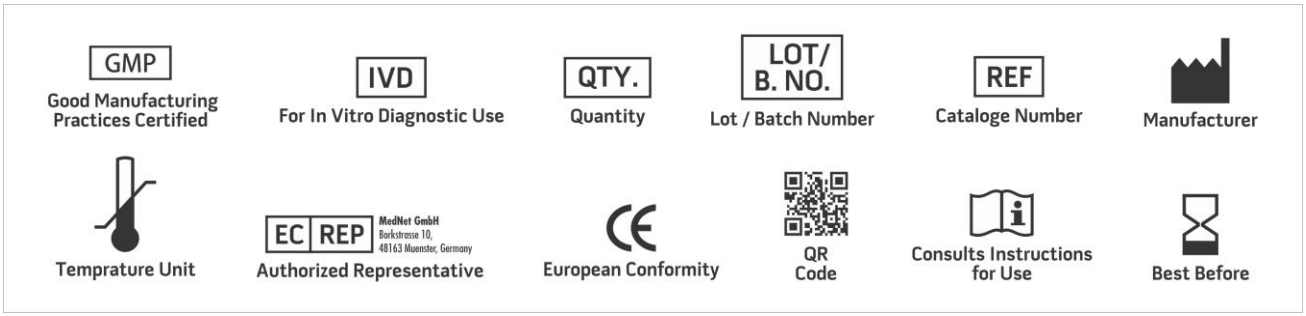
Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Linden. 1941, National Institute of Health
2. MacFaddin J. F., 2000, Biochemical Tests for Identification of Medical Bacteria, 3rd Ed., Williams and Wilkins, Baltimore.Md.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

Revision: 08 Nov., 2019