Chaitanya Group Of Industries

ReadyMED®
Dehydrated Cell Culture Media

Technical Data Sheet

Fluid Thioglycollate medium (Thioglycollate medium Fluid) RDM-FTM-01

Principle

Fluid thioglycollate medium is used for detecting microorganisms in normally sterile materials. Media support the growth of a wide variety of fastidious microorganisms having a wide range of growth requirements. Media is composed of tryptone, yeast extract, dextrose, sodium chloride, L-cystine, sodium thioglycolate, resazurin and small amount of agar. Tryptone provide nitrogen, carbon, amino acids and vitamins. Yeast extract is source of essential carbon, vitamin, nitrogen and amino acids. Dextrose is serves as carban and energy source and included in the media for early and vigorous growth of many organisms. Sodium chloride is used to maintain the osmotic balance. L-cystine and sodium thioglycollate allows anaerobic organisms to grow in aerobic conditions. Sodium thioglycollate is also act as a reducing agent and neutralizes the toxic effects of mercurial preservatives and peroxides formed in the medium, thereby promoting anaerobiosis, and making the medium suitable to test materials containing heavy metals. Resazurin is a redox indicator and help to detect increase in the oxygen content by change in color to pink. The small amount of agar helps in maintaining low redox potential for stabilizing the medium. favors the growth of aerobes as well as anaerobes in the medium.

Aerobic and anaerobic bacteria can be identified by growing them in test tubes of thioglycolate broth:

- Obligate aerobes need oxygen because they cannot ferment or respire anaerobically. They gather at the top of the tube where the oxygen concentration is highest.
- Obligate anaerobes are inhibited by oxygen, so they gather at the bottom of the tube where the oxygen concentration is lowest.
- Facultative anaerobes can grow with or without oxygen because they can metabolize energy aerobically or anaerobically. They gather mostly at the top because aerobic respiration generates more ATP than either fermentation or anaerobic respiration.
- Microaerophilic need oxygen because they cannot ferment or respire anaerobically. However, they are partially inhibited by high concentrations of oxygen. They gather in the upper part of the test tube, but not the very top.
- Aerotolerant organisms do not require oxygen as they metabolize energy anaerobically. Unlike obligate anaerobes, though, they are not inhibited by oxygen. They can be found evenly spread throughout the test tube.

Use: Recommended for sterility testing of biologicals and for cultivation of anaerobes, aerobes and microaerophiles from pharmaceutical and clinical samples.

Contents*

Ingredients	**Gram/Litre**
Tryptone	15.000
Yeast Extract	5.000
Dextrose	5.500
Sodium Chloride	2.500
L-Cystine	0.500
Sodium Thioglycollate	0.500
Resazurin	0.001
Agar	0.750
pH at 25˚C	7.1 ±0.2

* Formula adjusted for optimum performance and parameters

Directions: Dissolve 29.75 grams in 1000 ml distilled water check. Boil to dissolve the medium completely and distribute aseptically in test tubes. Sterilize by autoclaving at 15 lbs pressure (121 °C) for 15 min, cool it

to 42-45 °C. If the color of medium is uneven or pink then heat the medium till pink color disappears completely. Cool it to 42-45 °C and inoculate test sample aseptically.

Specimens types analyzed
Pharmaceutical samples, clinical and non-clinical samples etc.

Precautions to be taken
These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation
The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	Light Beige colored free flowing, homogeneous powder
Reaction of 2.97% solution	7.1 ±0.2 at 25 ˚C
pH	6.90- 7.30
Gelling	Comparable with 0.75% agar gel
Color and clarity of ready medium	light amber, clear, after cooling to room temperature, light amber, slightly opalescent with pink upper layer
Growth Promotion properties	Best at ≤ 100 CFU at 32-37 ºC for 18-72 h
Indicative properties	Optimum at ≤ 100 CFU at 32-37 ºC for 18-48 h
Negative control	Performed using sterile distilled water

Different Microbial Response

Organism	ATCC	Growth	Incubation
Staphylococcus aureus	25923	Luxurious	30-37°C, 18-24 hours
Bacillus spizizenii	6633	Luxurious	30-37°C, 18-24 hours
Pseudomonas aeruginosa	27853	Luxurious	30-37°C, 18-24 hours
Salmonella typhi	6539	Luxurious	30-37°C, 18-24 hours
Escherichia coli	8739	Luxurious	30-37°C, 18-24 hours
Clostridium sporogenes	19404	Luxurious	30-37°C, 24-48 hours

Storage and Shelf Life
Hygroscopic; keep container tightly closed. Store in cool dry place.
Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.
Reference

1. Atlas, R. M. (2005). *Handbook of media for environmental microbiology*. CRC press.
2. *Difco Manual* (1998). 11th Edition. Difco Laboratories., Division of Becton Dickinson and Company, Sparks, Maryland, USA.