

Fluid Thioglycollate Medium (NCM0108)

Intended Use

Fluid Thioglycollate Medium is used for sterility testing. This medium conforms to Harmonized USP/EP/JP requirements and is not intended for use in the diagnosis of disease or other conditions in humans.

Description

Fluid Thioglycollate Medium is recommended by the Harmonized Pharmacopoeia for sterility testing and conforms to USP/EP/JP performance specification. In this formulation casein and yeast extract provide a source of nitrogen, essential vitamins and amino acids. The glucose provides a carbon source and sodium chloride maintains osmotic balance. L-Cystine and sodium thioglycollate act as reducing agents to create an anaerobic environment and maintain a low Eh. This is aided by the low level of agar which reduces the oxygen permeability through the medium. Resazurin is an oxidation indicator which turns from colorless to red/pink when oxidized. Sodium thioglycollate also serves to inactivate mercurial compounds. If after sterilization more than the upper one third of the medium has become red/pink it may be restored once by heating in a water bath or in free-flowing steam until the color disappears. Ensure the media is cooled quickly and prevent the introduction of non-sterile air into the containers.

Typical Formulation

Tryptone	15.0 g/L
L-Cystine	0.5 g/L
Glucose	5.5 g/L
Yeast Extract	5.0 g/L
Sodium Chloride	2.5 g/L
Sodium Thioglycollate	0.5 g/L
Resazurin	0.001 g/L
Agar	0.75 g/L

pH: 7.1 ± 0.2 at 25°C

Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precaution

Refer to SDS

Preparation

1. Suspend 29.75 grams of the medium in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
3. Autoclave at 121°C for 15 minutes.
4. Cool to room temperature.

Test Procedure

Refer to appropriate references for specific procedures using Fluid Thioglycollate Medium.

Quality Control Specifications

Dehydrated Appearance: Powder is homogeneous, free flowing, and beige.

Prepared Appearance: Prepared medium is clear to slightly hazy, yellow in color and upper 10% may be pink to red. If the light to medium red layer is greater than 10% of the tube, the medium may be restored once by heating in a steam bath until the light to medium red color disappears.

Expected Cultural Response: Cultural response on Fluid Thioglycollate Medium tested at Harmonized USP/EP/JP specified temperatures and incubation times.



Technical Specification Sheet



Microorganism	Approx. Inoculum (CFU)	Expected Results
<i>Aspergillus brasiliensis</i> ATCC® 16404	10-100	Growth
<i>Bacillus subtilis</i> ATCC® 6633	10-100	Growth
<i>Candida albicans</i> ATCC® 10231	10-100	Growth
<i>Clostridium perfringens</i> ATCC® 13124	10-100	Growth
<i>Clostridium sporogenes</i> ATCC® 19404	10-100	Growth
<i>Pseudomonas aeruginosa</i> ATCC® 9207	10-100	Growth
<i>Staphylococcus aureus</i> ATCC® 6538	10-100	Growth
<i>Streptococcus pyogenes</i> ATCC® 19615	10-100	Growth

The organisms listed are the minimum that should be used for quality control testing.

Results

Typical growth is visually observed in the medium. Gram-negative bacilli usually grow diffusely, Gram-positive cocci exhibit puff-ball type growth, and strict aerobes, such as pseudomonads and yeast, tend to grow in a thin layer on the surface of the broth.

Expiration

Refer to the expiration date. The dehydrated medium should be discarded if it is not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.

Storage

Store dehydrated culture media at 2 – 30°C away from direct sunlight. Once opened and recapped, place the container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

References

1. European Pharmacopoeia 10th Edition (2020)
2. United States Pharmacopeia National Formulary 2018: USP 41 NF 36
3. Japanese Pharmacopoeia 17th Edition (2017)

