

TM 2082 – FLUID SELENITE CYSTINE MEDIUM (SELENITE CYSTINE MEDIUM) (DOUBLE PACK)

INTENDED USE

An enrichment medium for isolation of *Salmonella* species from food, dairy & clinical samples.

PRODUCT SUMMARY AND EXPLANATION

Selective inhibitory effects of selenite were first demonstrated by Klett. Guth used it to isolate *Salmonella Typhi*. Leifson studied selenite and formulated a medium using selenite. Fluid Selenite Cystine Medium is a modification of Leifson's formula with added cystine. The formulation corresponds to that recommended by AOAC for the detection of *Salmonella* in foodstuff, particularly egg products. It is also recommended by APHA and USP.

Selenite Cystine Broth is useful for detecting *Salmonella* in the non-acute stages of illness when organisms occur in the faeces in low numbers and for epidemiological studies to enhance the detection of low numbers of organisms from asymptomatic or convalescent patients. *Salmonella* are also injured during various food processing procedures, including exposure to low temperatures, sub-marginal heat, drying, radiation, preservatives or sanitizers. Recovery of *Salmonella* involves pre-enrichment, selective enrichment and selective plating since *Salmonella* may be present in low numbers in food sample in an injured condition.

Fluid Selenite Cystine Medium is used as selective enrichment medium for the cultivation of *Salmonella* species. This medium is formulated to allow the proliferation of *Salmonella* while inhibiting the growth of competing non-*Salmonella* organisms.

COMPOSITION

Ingredients	Gms / Ltr
Part I	
Tryptone	5.000
Lactose	4.000
Sodium phosphate	10.000
L-Cystine	0.010
pH (at 25°C)	7.0 ± 0.2
Part II	
Sodium hydrogen selenite	4.000

PRINCIPLE

The medium consists of Tryptone which provides nitrogenous substances. Lactose is the fermentable carbohydrate and maintains the pH in medium as selenite is reduced by bacterial growth and alkali is produced. An increase in pH lessens the toxicity of the selenite and results in overgrowth of other bacteria. The acid produced by bacteria due to lactose fermentation serves to maintain a neutral pH. Phosphate maintains a stable pH and also lessens the toxicity of selenite. L-cystine is the reducing agent, improving the recovery of *Salmonella*. Enriched broth is sub cultured on solid medium. Do not incubate the broth longer than 24 hours as inhibitory effect of selenite reduces after 6 - 12 hours of incubation.

INSTRUCTION FOR USE

- Dissolve 4.0 grams of Part II in 1000 ml purified/ distilled water.
- Add 19.01 grams of Part I. Mix well. Warm to dissolve the medium completely.



- Distribute in sterile test tubes. Sterilize in a boiling water bath or free flowing steam for 10 minutes. DO NOT AUTOCLAVE. Excessive heating is detrimental. Discard the prepared medium if large amount of selenite is reduced (indicated by red precipitate at the bottom of tube / bottle).
Note: Instead of Part II, Sodium Biselenite discs (1 disc per 10 ml of the medium) or Sodium Biselenite Bud (1 bud per 100ml of medium) can be added to the medium after boiling.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Part I: Cream to yellow homogeneous free flowing powder. Part II: White to cream homogeneous free flowing powder.

Appearance of prepared medium : Light yellow coloured, clear to slightly opalescent solution of complete medium.

INTERPRETATION

Cultural characteristics observed after incubation when sub cultured on XLD Agar.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Colour of colony	Incubation Temperature	Incubation Period
<i>Salmonella Choleraesuis</i>	12011	50-100	Luxuriant	Red w/black center	35-37°C	18-24 Hours
<i>Salmonella Typhimurium</i>	14028	50-100	Luxuriant	Red w/black center	35-37°C	18-24 Hours
<i>Salmonella Typhi</i>	6539	50-100	Luxuriant	Red w/black center	35-37°C	18-24 Hours
<i>Salmonella Enteritidis</i>	13076	50-100	Luxuriant	Red w/black center	35-37°C	18-24 Hours
<i>Pseudomonas aeruginosa</i>	27853	50-100	Luxuriant	Red	35-37°C	18-24 Hours
<i>Escherichia coli</i>	8739	50-100	Little-none (no increase in numbers)	Yellow	35-37°C	18-24 Hours
<i>Escherichia coli</i>	25922	50-100	Little-none (no increase in numbers)	Yellow	35-37°C	18-24 Hours

Cultural characteristics observed after incubation when sub cultured on Tryptone Soya Agar

<i>Escherichia coli</i>	8739	50-100	Little-none (no increase in numbers)	-	35-37°C	24 Hours
<i>Escherichia coli</i>	25922	50-100	Little-none (no increase in numbers)	-	35-37°C	24 Hours
<i>Enterococcus faecalis</i>	29212	>10 ⁴	Inhibited	-	35-37°C	24 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 10-25°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. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
2. Chattopadhyay W. and Pilford J. N., 1976, Med. Lab. Sci., 33:191.11. Hartman P. A. and S. A., Munich, 1981, J. Food Pract., 44: 385-386.
3. Klett A., 1900, Zeitsch Fer Hyg. Und. Infekt., 33: 137.
4. Guth F., 1916, Zbl. Bakt. I. Orig., 77:487.
5. Leifson E., 1936, Am. J. Hyg., 24(2): 423.
6. North W. R. and Bartram M. T., 1953, Appl. Microbiol., 1:130.
7. FDA Bacteriological Analytical Manual, 2005, 18th Ed., AOAC, Washington, DC.
8. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., APHA, Washington, D.C.
9. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
10. Murray P. R., Baron E. J., Jorgensen J. H., Pfaller M. A., Tenover F. C., Tenover F. C., (Eds.), 8th Ed., 2003, Manual of Clinical Microbiology, ASM, Washington, D.C.

 GMP Good Manufacturing Practices Certified	 IVD For In Vitro Diagnostic Use	 QTY. Quantity	 LOT/ B. NO. Lot / Batch Number	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 EC REP Authorized Representative <small>MedNet GmbH Borkstrasse 10, 49163 Moenster, Germany</small>	 European Conformity	 QR Code	 Consults Instructions for Use	 Best Before

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

***For Lab Use Only**
Revision: 29 May, 2023