TM 1539 – FLUID SELENITE CYSTINE MEDIUM (DOUBLE PACK) (as per USP) (DOUBLE PACK)

INTENDED USE

For isolation of Salmonellae in foods, dairy products and materials of sanitary importance and 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. Fluid Selenite Cystine Medium is a modification of Leifsons formula with added cystine by North and Bartram. The formulation corresponds to that of recommended by the AOAC for the detection of Salmonellae in foodstuff particularly egg products. It is included by APHA, USP. Recently ISO Committee also recommends this medium for the detection of Salmonellae.

Selenite Cystine Broth is useful for detecting *Salmonella* in the non-acute stages of illness when organisms occur in low numbers in test samples and for epidemiological studies to enhance the detection of low numbers of organisms from asymptomatic or convalescent patients.

COMPOSITION

Ingredients	Gms / Ltr
Part I	
Pancreatic digest of casein	5.000
Lactose	4.000
Sodium phosphate	10.000
L-Cystine	0.010
Part II	
Sodium acid selenite	4.000

PRINCIPLE

The medium consists of Pancreatic digest of casein which provide nitrogenous substances. Lactose is the fermentable source of carbohydrate and also 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 that maintain a neutral pH counters this. Phosphate too maintains a stable pH and is a good buffering agent. L-cystine imparts ambient redox potential, which enhances and improves recovery of Salmonellae and few *Shigella* sp which may be in small numbers in products to be tested. This medium to some extent prevents the growth of coliforms.

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).
  Caution: Sodium acid selenite (Sodium bi-selenite) is very toxic, corrosive agent and causes teratogenicity. Handle with great care. Upon contact with skin, wash immediately with a lot of water.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to light yellow homogeneous free flowing powder Part II : Off-white - white homogeneous free flowing powder.

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

pH (at 25°C) : 7.0 ± 0.2

INTERPRETATION

Cultural characteristics observed after enrichment in TM 1539, and then sub cultured on Xylose Lysine Deoxycholate Agar and Brilliant Green, Phenol red, lactose monohydrate Sucrose Agar and then incubated.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Incubation Temperature	Incubation Period
Salmonella enterica subsp. enterica serovar Typhimurium	14028	50-100	Good	30-35°C	18-48 Hours
Salmonella enterica subsp. enterica serovar Choleraesuis	12011	50-100	Good	30-35°C	18-48 Hours
Escherichia coli	8739	50-100	Partial inhibition	30-35°C	18-48 Hours
Escherichia coli	25922	50-100	Partial inhibition	30-35°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.

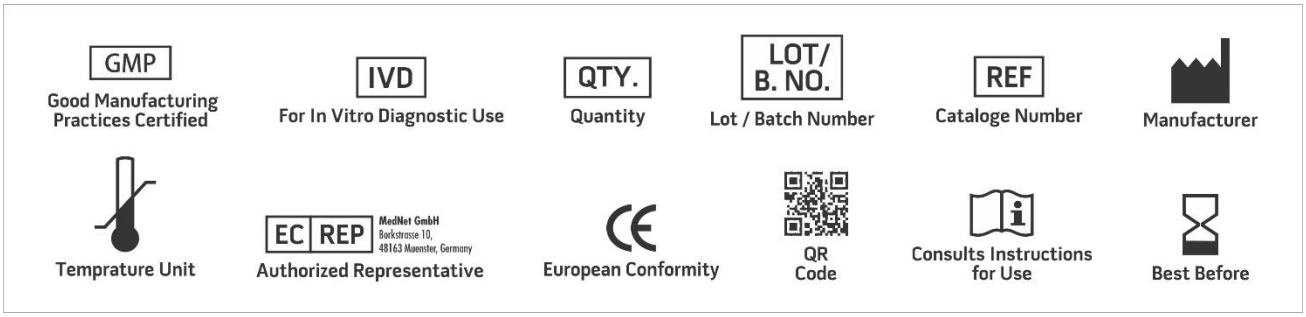
DISPOSAL

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

REFERENCES

1. Klett A., 1900, Zeitsch Fer Hyg. Und. Infekt, 33: 137.
2. Guth F., 1916, Zbl. Bakt. I. Orig., 77:487.
3. Leifson E., 1936, Am. J. Hyg., 24(2) : 423.

4. North W.R. and Bartram M.T., 1953, Appl. Microbiol., 1:130.
5. AOAC, 2005, Bacteriological Analytical Manual, 18th ed., AOAC, Washington, DC.
6. Downes F P and Ito K(Eds.), 2001, Compendium of Methods For The Microbiological Examination of Foods, 4th ed., APHA, Washington, D.C.
7. Wehr H M and Frank J H., 2004, Standard Methods for the Examination of Dairy Products, 17th ed., APHA Inc., Washington, D.C.
8. United States Pharmacopoeia, 2009 U.S. Pharmacopoeial Convention, Inc., Rockville, MD.
9. International Organization for Standardization (ISO), 1993, Draft ISO/DIS 6579
10. Murray PR, Baren EJ, Jorgensen JH, Pfaller MA, Yolken RH (editors) 2003, Manual of clinical Microbiology, 8th ed., ASM, Washington, D.C.
11. Chattopadhyay W. and Pilford J. N., 1976, Med. Lab. Sci., 33:191.



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

***For Lab Use Only**

Revision: 08 Nov., 2019