

TM 443 – TETRATHIONATE BROTH BASE, HAJNA (TT BROTH BASE)

INTENDED USE

For enrichment and isolation of Salmonellae.

PRODUCT SUMMARY AND EXPLANATION

Tetrathionate Broth Base was first formulated by Mueller who showed that this medium favours the unrestricted growth of enteric pathogens by selectively inhibiting the coliforms. Muellers medium was subsequently modified by Kauffman and Knox in which they obtained more number of isolates. Tetrathionate Broth Base, Hajna is the modification formulated by Hajna and Damon. This medium is recommended by APHA for the selective enrichment of Salmonellae from foodstuffs. After enrichment of the sample, streak on the plates of Brilliant Green Agar, MacConkey Agar, Bismuth Sulphite Agar for further confirmation.

COMPOSITION

Ingredients	Gms / Ltr
Peptone, special	18.000
Yeast extract	2.000
Sodium chloride	5.000
D-Mannitol	2.500
Dextrose	0.500
Sodium deoxycholate	0.500
Sodium thiosulphate	38.000
Calcium carbonate	25.000
Brilliant green	0.010

PRINCIPLE

Peptone special and yeast extract are the sources of carbon, nitrogen, vitamins and minerals. The selectivity depends on the ability of thiosulphate and tetrathionate (formed by the addition of iodine-iodide) to suppress commensal coliform organisms. Sodium deoxycholate and brilliant green inhibit gram-positive organisms. Dextrose and Mannitol are the carbohydrates sources. Calcium carbonate neutralizes the acidic tetrathionate decomposition products. Sodium chloride maintains the osmotic balance of the medium.

INSTRUCTION FOR USE

- Suspend 91.51 grams in 1000 ml distilled water.
- Heat just to boiling or place in flowing steam for 30 minutes. DO NOT AUTOCLAVE.
- Cool to 45°C. Mix and add 40 ml of Iodine solution (8 g potassium iodide and 5 g iodine per 40 ml). Mix and dispense 10 ml amounts in tubes. Do not heat after addition of iodine.

Note: Due to the presence of calcium carbonate, the prepared medium forms opalescent solution with a white precipitate.

QUALITY CONTROL SPECIFICATIONS



Appearance of Powder : Cream to light green homogeneous free flowing powder.
Appearance of prepared medium : Light green coloured opalescent solution with white precipitate, on standing the precipitate settles down.
pH (at 25°C) : 7.6±0.2

INTERPRETATION

Cultural characteristics observed after incubation (Growth is done on MacConkey agar).

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Colour of colony	Incubation Temperature	Incubation Period
<i>Escherichia coli</i>	25922	50-100	Fair-good	Pink-red with bile precipitate	35-37°C	18-24 Hours
<i>Salmonella Arizonae</i>	13314	50-100	Good-luxuriant	Colourless	35-37°C	18-24 Hours
<i>Salmonella Enteritidis</i>	13076	50-100	Good-luxuriant	Colourless	35-37°C	18-24 Hours
<i>Salmonella Typhimurium</i>	14028	50-100	Good-luxuriant	Colourless	35-37°C	18-24 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 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

- Mueller L., 1923, C.R. Soc. Biol. (Paris), 89:434.
- Kauffman F., 1930, Zentralb. Bakteriologie Parasitenkd. Infektionskr.-Hyg. Abt. I. Orig., 113:148.
- Knox R., Gell P. and Pollack M., 1942, J. Pathol. Bacteriol., 54:469.
- Hajna A. A. and Damon S. R., 1956, Appl. Microbiol., 4:341.
- Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
- MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.
- Pollock M. R. and Knor R., 1943, Biochem J., 37:476.



 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 Buckstrasse 10, 49163 Muenster, 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: 25 July., 2023