

Product Information

70156 Tetrathionate Broth, Base (TT Broth, Base)

Liquid medium for the selective enrichment of *Salmonella* from stool, food, water etc.

Composition:

Ingredients	Grams/Litre
Meat extract	0.9
Peptone	4.5
Yeast extract	1.8
Sodium chloride	4.5
Calcium carbonate	25.0
Sodium thiosulphate	40.7

Final pH 7.8 +/- 0.2 at 37°C

Store prepared media below 8°C, protected from direct light. Store dehydrated powder in a dry place in tightly-sealed containers at 2-25°C. The complete medium (with added iodine) should be used the same day it is prepared, but the sterilized medium base will keep for some weeks at 4°C.

Directions:

Add 77.4 g to 1 litre of distilled water and bring to a boil. Cool to below 45°C and add 20 ml of iodine solution (6 g iodine and 5 g potassium iodide in 20 ml distilled water). Mix well and aliquot in 10 ml quantities. The prepared base will keep for several weeks at 4 °C but should be used within a few hours if the iodine solution has been added. Inoculate the broth with about 2 grams of the specimen and carefully homogenize the mixture. Big particles on the bottom can be prevented by filtering with cotton-wool. Incubate for 12-24 hours at 35°C or 43°C^{4,5}. Then sub-culture on XLD Agar (95586), Bismuth Sulphite Agar (95388) or SS Agar (85640).

Principle and Interpretation:

Meat extract, peptone and yeast extract provide the nitrogen, vitamins and amino acids and are the carbon sources. Tetrathionate is produced from thiosulfate by adding iodine to the culture medium. Organisms which reduce tetrathionate, such as salmonellae, luxuriate in the medium while many faecal organisms are inhibited due to the tetrathionate¹. *Proteus* species are also able to reduce tetrathionate and may consequently impair the value of this medium for the isolation of salmonellae. This disadvantage of the medium is largely overcome by the addition of 40mg/l of novobiocin to each millilitre of the incomplete medium before the addition of iodine^{2,3}. Calcium carbonate buffers the sulphuric acid that is liberated when tetrathionate is reduced.

Cultural characteristics after 18-24 hours at 35°C.

Organisms (ATCC)	Recovery
<i>Salmonella typhimurium</i> (14028)	+++
<i>Salmonella arizonae</i> (13314)	+++
<i>Shigella dysenteriae</i> (13313)	+++
<i>Escherichia coli</i> (25922)	-/+

References:

1. R. Knox, F.G.H. Gell and M.R. Pollock, Selective media for organisms of the Salmonella group, J. Pathol. Bacteriol., 54, 469 (1942)
2. L. Jeffries, J. Clin. Path., 12, 568 (1959)
3. R. Buttiaux, M. Catsaras and M. Verdant, Ann. Inst. Pasteur de Lille, 12., 13 (1961)
4. J.R Bänffer, Comparison of the isolation of Salmonellae from human faeces by enrichment at 37°C and at 43°C, Zbl. Bakt. I. Orig., 217; 35 (1971)
5. W. Edel and E.H. Kampelmacher, Salmonella isolation in nine European laboratories using a standardized technique, Bull. Wld. Hlth. Org., 41, 297 (1969)