

86352 TBG Broth (Tetrathionate-Brilliant-green Bile Enrichment Broth)

For the selective enrichment of *Salmonella* species from faeces, food and meat samples etc.

Composition:

Ingredients	Grams/Litre
Meat peptone	8.6
Ox-bile (dried)	8.0
Sodium chloride	6.4
Calcium carbonate	20.0
Potassium tetrathionate	20.0
Brilliant green	0.07
Final pH 7.0 +/- 0.2 at 25°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.

Directions:

Dissolve 63 g in 1 litre distilled water. Heat gently to max. 50°C if necessary. Pour into tubes making sure that any undissolved calcium carbonate is evenly distributed. Do NOT autoclave. Let stand for 2 - 3 days at room temperature to achieve an optimal enrichment effect.

Technique:

1. The sample is enriched in Lactose-Broth (pre-enrichment).
2. From the pre-enrichment inoculate an appropriate amount into TBG-Broth and incubate for 18-24 h at 35-37°C (selective enrichment).
3. Streak onto appropriate *Salmonella* media (e.g. Bismuth sulfite Agar; 95388/ SS-Agar; 85640/ XLT4 Agar; 76721/ XLD Agar; 95586/ Brilliant Green Phenol Red Lactose Sucrose Agar; 16026/ Leifson Agar; 61792/ Salmonella Chromogen Agar; 84369/ Salmonella *ChromoSelect* Agar, Improved; 05538/ Salmonella *ChromoSelect* Agar; 78419/ Hektoen Enteric Agar; 51490/ Mac Conkey Agar No 1; 70143).

Principle and Interpretation:

Tetrathionate-Brilliant-green Bile Enrichment Broth is described in the DAB, the European and Indian Pharmacopoeia [1,2,3] for the selective enrichment of *Salmonella* from foods, water and other samples.

Meat peptone serves as nitrogen, carbon and general amino acid source, while sodium chloride is responsible for the osmotic balance. Calcium carbonate buffers sulfuric acid produced on reduction of tetrathionate [5]. Ox-bile and brilliant green inhibit the the gram-positive accompanying flora as well as some selected gram negative species. Potassium tetrathionate inhibits normal flora of faecal specimens. *Proteus* species can be inhibited by adjusting the pH of the medium to approx. 6.5. An addition of 0.04 g/liter novobiocin is described as well to inhibit *Proteus* species [4].

Cultural characteristics observed after 18-24 hours at 35-37°C.

Organisms (ATCC)	Growth on Mac Conkey Agar
<i>Salmonella serotype typhimurium</i> (14028)	+++
<i>Salmonella enteritidis</i> (13076)	+++
<i>Escherichia coli</i> (25922)	+
<i>Staphylococcus aureus</i> (25923)	-



References:

1. European Pharmacopeia II, Kapitel VIII, 10
2. Deutsches Arzneibuch (DAB), 10. Auflage, Kapitel VIII, 10
3. Indian Pharmacopeia, Vol. II, Published by the Controller of Publications, New Dehli, Government of India, Ministry of Health and Family Welfare (1996)
4. L. Jeffries, Novobiocin-tetrathionate broth: A medium of improved selectivity for the isolation of *Salmonellae* from faeces, J. Clin. Path., 12, 568-571 (1959)
5. K.H. Nealson, Component of tetrathionate-containing and tetrathionate-producing culture media (TBG Broth) for buffering sulfuric acid produced on reduction of tetrathionate. Media component for luminous bacteria, Methods Enzymol. 57, 154, (1978)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

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