

XLT4/Agar

356-3654

DEFINITION

Medium used for the isolation of H₂S-positive *Salmonella* in food products.

PRINCIPLE

The differentiation of *Salmonella* is based on the fermentation of xylose, lactose and saccharose, the decarboxylation of lysine and the formation of iron sulfide after reduction of thiosulfate. Phenol red is a colored indicator revealing the reaction of fermentation and of decarboxylation.

The production of iron sulfide is demonstrated by the presence of ferric ions.

Due to the addition of Tergitol 4, XLT4 inhibits non-*Salmonella* flora, making this medium both extremely selective and sensitive.

PRESENTATION

Pre-poured

20 plates x 90 mm

code 356-3654

STORAGE

- Pre-poured: + 2°C to 8°C.
- Expiration date and batch number are shown on the package.

THEORETICAL FORMULA

Peptone	1.6 g
Yeast extract	3 g
L-Lysine	5 g
Xylose	3.75 g
Lactose	7.5 g
Saccharose	7.5 g
Ferric ammonium citrate	800 mg
Sodium thiosulfate	6.8 g
Sodium chloride	5 g
Phenol red	80 mg
Agar	18 g
Distilled water	1,000 ml

4.6 ml of Tergitol 4 is added for 1 liter of medium.

Final pH (25°C) = 7.4 ± 0.2

EQUIPMENT REQUIRED (NOT SUPPLIED) (non-exhaustive)

- Sterile pipettes (**355-0751**) or inoculating loop
- Thermostatically-controlled incubator or incubation room, precise to ± 1°C
- All usual laboratory equipment.

OTHER PRODUCTS REQUIRED (NOT SUPPLIED)

- Distilled water
- **Rappaport Vassiliadis Soy (RVS)/Broth**
10 ml x 25 tubes (code 355-5773)
500 g (code 356-4324)
- **Selenite-Cystine Broth**
20 ml x 25 tubes (code 355-5744)
500 g (code 356-4074)

PROTOCOL

Inoculation and incubation

After selective enrichment for the detection of *Salmonella* (RVS Broth: **codes 355-5773, 356-4324**), and Selenite-Cystine Broth: **codes 355-5744, 356-4074**), inoculate a plate of XLT 4 medium using an inoculating loop or a Pasteur pipette.

Incubate at 37°C ± 1°C for 18 to 48 hours.

READING AND INTERPRETATION

• Typical *Salmonella* (H₂S-positive) colonies are black or have a black center with a yellow halo after 18-24 hours incubation. If incubation is prolonged, the colonies become either completely black or pink to red with a black center.

• Other bacteria not inhibited by this medium appear yellow or pink without a black center.

• *Proteus*, *Pseudomonas*, and *Providencia* are significantly or completely inhibited by the medium.

PRECAUTIONS

- This medium contains Tergitol 4. Any contact with eyes, skin and clothes should be avoided.
- Comply with Good Laboratory Practice.

QUALITY CONTROL OF MANUFACTURER

Every product manufactured and marketed by Bio-Rad is subject to a quality-assurance procedure at all stages, from the reception of raw materials to the marketing of the end-product. Each batch of finished product undergoes quality control and is marketed only if it satisfies the acceptability criteria.

Documentation relative to the production and control of each batch is kept on file.

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PERFORMANCES / QUALITY CONTROL OF THE TEST

The growth performances of the media are verified with the following strains:

STRAINS	Results after 24h - 48h culture at 37°C
<i>Escherichia coli</i> ATCC 25922	Partial inhibition Atypical colonies
<i>Ps. aeruginosa</i> ATCC 25619	Partial inhibition Atypical colonies
<i>Staphylococcus aureus</i> ATCC 25923	Inhibition
<i>Proteus mirabilis</i> ATCC 25933	Inhibition
<i>Salmonella Typhimurium</i> ATCC 14028	Yellow to red colonies with a black center
<i>Salmonella Enteritidis</i> ATCC 13076	Yellow to red colonies with a black center
<i>Salmonella Panama</i> SDP 16.6.1.	Yellow to red colonies with a black center
<i>Salmonella Virchow</i> SDP 16.6.5	Yellow to red colonies with a black center

KEY WORDS

XLT4 / H₂S⁺ *Salmonella* / Food products / Fermentation / Tergitol 4 / Medium.

BIBLIOGRAPHY

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- **VANDERZANT C., and D.F. SPLITSTOESSER (ed.) (1992):** Compendium of Methods for the Microbiological Examination of Foods, 3rd ed. American Public Health Association, Washington D.C.
- **MILLER R.G., and TATE C.R. (April 2-7 1990) XLT 4:** A highly selective plating medium for the isolation of *Salmonella*. The Maryland Poultryman.