Condalab

Reference: 6062 **Technical Data Sheet**

Product: **XLT4 SUPPLEMENT**

Specification

Selective supplement for the isolation of pathogenic Enterobacteria, especially Salmonella.

Presentation

	Packaging Details	Shelf Life	Storage
1 Prepared bottle Bottle 125 ml with: 100 ± 3 ml	1 box with 1 bottle 125 ml. Injectable cap: Plastic screw inner cap. The use of syringes needles with a diameter greater than 0.8 mm is not recommended.	16 months	8-25 ºC

Composition

Composition (%/vial):
Tergitol 4..... 26

Description /Technique

Description

XLT4 Agar Base (Cat. 1159) with Tergitol 4 supplement, was developed in 1990 by Miller and Tate. It is a highly selective medium for isolating *Salmonella* from competing bacteria such as *Proteus*. Tergitol 4 inhibits the growth of those non-Salmonella orgamisms.
They reported the isolation of non-typhi *Salmonella* from chicken and farm environmental drag-swab samples from heavily contaminated samples. XLT4 Agar can be used clinically to screen stool samples for non-typhoid Salmonella.
This medium allows the optimum growth of *Salmonella*. Differentiation of *Salmonella* from other organisms in this medium is based on the fermentation of carbohydrates (Lactose, Xylose, Sucrose) with the resulting production of hydrogen sulfide. H2S production is detected by the reaction of the iron salt, colonies appearing black or black-centered. Sodium thiosulfate and ferric ammonium citrate are the H2S indicators. The bacteria that decarboxylate the L-Lysine to cadaverine are identified by the presence of a purple-red color around the colonies due to the elevation of the pH. Phenol red is the pH indicator. Sodium thiosulfate is also added as a source of inorganic sulfur. Yeast extract and peptone are a nitrogen and amino acids source. Bacteriological agar is the solidifying agent.
Typical *Salmonella* colonies (H2S-positive) appear black or black-centered with a yellow halo after 18-48 hours of incubation at a temperature of 35±2 oC. Upon continued incubation, the colonies become entirely black or pink to red with black centers. Colonies of H2S-negative *Salmonella* strains appear pink-yellow.
Most *Citrobacter* colonies are yellow without evidence of blackening. The growth of *Enterobacter aerogenes* and *Escherichia coli* is markedly inhibited; colonies that grow in this medium appear yellow without evidence of blackening. The growth of *Proteus, Pseudomonas* and *Yersinia enterocolitica* is markedly to completely inhibited. *Shigella* species are partially inhibited and colonies appear red.

Technique:

Add 4,6 ml of XLT4 supplement to 1 L of XLT4 Agar Base (Cat. 1159). Mix well and heat with frequent agitation until completely dissolved. Boil for one minute. AVOID OVERHEATING. DO NOT AUTOCLAVE. Distribute into sterile containers.

Instructions for use:

- Inoculate the sample in a pre-enrichment medium, such as Tetrathionate Broth (Cat. 1114).
- Incubate at 35±2 ºC for 18-24 hours.
- Spread or streak the sample from the enrichment medium on the surface of the XLT4 Agar Base.
- Incubate aerobically at a temperature of 35±2 ºC for 18-48 hours.

Quality control

Physical/Chemical control

Color : Colorless - light yellow / transparent pH: at 25ºC

Microbiological control

Distribute the complete medium, cooled at 50ºC, in plates

Inoculate: Practical range 100 ± 20 CFU. min. 50 CFU (productivity)/ 10^4-10^6 (selectivity).

Analytical methodology according to ISO 11133:2014/A1:2018; A2:2020.

Aerobiosis. Incubation at 35 ± 2 ºC, reading at 18-48 h

Microorganism	Growth
Salmonella enterica ATCC® 13076, WDCM 00030	Good - Red colonies, black center and SH2 (+)
Salmonella typhimurium ATCC® 14028, WDCM 00031	Good - Red colonies, black center and SH2 (+)
Escherichia coli ATCC® 25922, WDCM 00013	Moderate growth - Yellow colonies
Enterobacter aerogenes ATCC® 13048, WDCM 00175	Moderate growth - Yellow colonies
Proteus mirabilis ATCC® 29906	Poor
Shigella flexneri ATCC® 12022, WDCM 00126	Dark pink to reddish colonies
Enterococcus faecalis ATCC® 29212, WDCM 00087	Inhibited

Sterility Control

Incubation 48 h at 30-35 ºC and 48 h at 20-25 ºC: NO GROWTH.
Check at 7 days after incubation in same conditions.

Bibliography

Miller, R. G., and C. R. Tate. 1990. XLT4: A highly selective plating medium for the isolation of Salmonella. The Maryland Poultryman, April:2-7.

Tate, C. R., R. G. Miller, and E. T. Mallinson. 1992. Evaluation of two isolation and two non-isolation methods for detecting naturally occurring salmonellae from broiler flock environmental drag-swab samples. J. Food Prot. 55:964-967.

Dusch, H., and M. Altwegg. 1995. Evaluation of five new plating media for the isolation of Salmonella species. J. Clin. Microbiol. 33:802-804.