RTA.KK.166 Revision Date/Revision Number:-/0 Issue Date: 17.05.2016

# XLT4 AGAR

## INTENDED USE:

A highly selective medium for isolation and identification of Salmonellae from clinical, environmental and food samples.

## PRINCIPLE AND INTERPRETATION:

Principles of the Procedure XLT4 Agar Base contains peptone as a source of complex nitrogen compounds. Yeast extract is added as a source of vitamins and other cofactors. Differentiation of Salmonella from other organisms that also grow on this medium is based on fermentation of xylose, lactose and sucrose, decarboxylation of lysine and the production of hydrogen sulfide. Hydrogen sulfide production is detected by the addition of ferric ions. Sodium thiosulfate is added as a source of inorganic sulfur. Sodium chloride maintains the osmotic balance of the medium. Agar is the solidifying agent. Phenol red is added as an indicator of pH changes resulting from fermentation and decarboxylation reactions. XLT4 Agar Supplement is added to inhibit growth of non-Salmonella organisms.

## COMPOSITION:

| Ingredients | Gr/Liter |
|---|---|
| Proteose Peptone | 1,6 gr |
| Yeast extract | 3 gr |
| Lysine | 5 gr |
| Xylose | 3,75 gr |
| Lactose | 7,5 gr |
| Sucrose | 7,5 gr |
| Ferric ammonium citrate | 0,8 gr |
| Sodium thiosulphate | 6,8 gr |
| Sodium chloride | 5 gr |
| Phenol Red | 0,08 gr |
| Tergitol 4 | 4.6 ml |
| Agar | 18 gr |

***Formula adjusted, standardized to suit performance parameters
**pH**: 7,4 ± 0,2

## PRECAUTIONS:

For professional use only. Do not use plates if they show evidence of microbial contamination, discoloration, drying, cracking or other signs of deterioration.

## TEST PROCEDURE:

1. The sample to be tested should first be enriched using suitable media and incubation conditions.
2. Using a microbiological loop, subculture from the enrichment broth onto XLT-4 Agar.
3. Incubate plates aerobically at 35± 2 °C and examine for growth at 18-24 hours and 48 hours.

## QUALITY CONTROL:

### 1.Sterility Control:

Incubation 48 hours at 30-35°C and 72 hours at 20-25°C: NO GROWTH

### 2.Phsical/Chemical Control

**pH**: 7,4 ± 0,2
**Apperance:** Reddish-orange

**3.Microbiological Control:** Cultural response on XLT4 Agar at 35± 2 °C after 18 and 48 hours incubation.

| Microorganism | Inoculum (CFU) | Results | |
|---|---|---|---|
| | | Growth | Reaction |
| Salmonella typhimurium ATCC 14028 | 10-100 | Good | Black centered colonies |
| Shigella flexneri ATCC 12022 | 10-100 | Good | Colourless colonies |
| Enterococcus faecalis ATCC 29212 | 100-1000 | Inhibition | - |
| Escherichia coli ATCC 25922 | 100-1000 | Partial inhibition | Yellow colonies |

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| | | | |
|---|---|---|---|
| Staphylococcus aureus ATCC 25923 | 100-1000 | Inhibition | - |

## LIMITATIONS OF THE PROCEDURE:

1. Due to nutritional variation, some strains may grow poorly or fail to grow on this medium.
2. XLT4 Agar is intended for detecting Salmonella based on selectivity and colonial characteristics.
Presumed Salmonella colonies must be confirmed biochemically and/or immunologically.

## STORAGE CONDITIONS AND SHELF LIFE:

Store the prepared medium at 2 - 12°C. Use before expiry date on the label..Do not use beyond stated expiry date.

## DISPOSAL:

Incubated prepared medium may contain active bacteria and micro-organisms. Do not open infected medium. Infected plate should be autoclaved, incinerated or opened and soaked in a chlorine-based disinfectant (liquid bleach) for 20 minutes prior to disposal.

## PACKAGING:

**Katalog Number:** 02052
**Packaging:** Single wrap
**Content:** 10 plates/each package

## REFERENCES:

1. 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.
2. Miller, R. G., C. R. Tate, E. T. Mallinson, and J. A. Schemer. 1991. Xylose-Lysine-Tergitol 4: An improved selective agar medium for the isolation of Salmonella. Poultry Science. 70:2429-2432.
3. Miller, R. G., C. R. Tate, E. T. Mallinson, and J. A. Schemer. 1992. Erratum. Xylose-Lysine-Tergitol 4: An improved selective agar medium for the isolation of Salmonella. Poultry Science. 71:398.
4. 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.
5. Dusch, H., and M. Altwegg. 1995. Evaluation of five new plating media for the isolation of Salmonella species. J. Clin. Microbiol. 33: 802-804.