DA

XLT4 Agar, Base

Medium for the isolation and identification of pathogenic Enterobacteriaceae, especially Salmonella spp, according to MILLER and TATE (1990).

Mode of Action

The selection of suitable nutrients and vitamins (peptones, yeast extract) allow optimal growth of salmonellae. At the same time the surfactant NIAPROOF-4 (formerly Tergitol-4/Sodiumtetradecylsulfate) largely inhibits the accompanying flora.

Salmonellae, due to H_2S-formation (thiosulfate and iron(III)-ions), can be easily detected as black colonies on a red-violet background and differentiated from the residual accompanying flora. E. coli, in contrast, will show yellow colonies on a yellow background due to acidification of the medium (pH-indicator: phenol-red). Other accompanying organisms, like Shigella, due to a missing H_2S-formation and acidification, will grow colourless on a red background.

Typical Composition (g/litre)

Proteose peptone No. 3 1,6; yeast extract 3.0; L-lysine 5.0; xylose 3.75; lactose 7.5; sucrose 7.5; ammonium-iron(III) citrate 0.8; sodium thiosulfate 6.8; sodium chloride 5.0; phenol-red 0.08; agar-agar 18.0.

Preparation

Suspend 59 g in 1 litre of demin. water, add 4.6 ml XLT4 Agar Supplement solution and heat the medium in a boiling water-batch (not on a heating-plate!). Cool to approx. 50 °C and pour plates.

■ **Do not overheat, do not autoclave.**

The medium should not be kept longer than 45 minutes at 50 °C to avoid possible precipitates.

pH: 7.4 ± 0.2 at 25 °C.

The plates are clear and red.

Experimental Procedure

Spread sample material from an enrichment on the surface of the culture medium.

Incubation: 18-24 hours at 35 °C aerobically. If this will neither result in black colonies nor in visible growth continue incubation up to 48 hours.

Evaluation

Black or black centred colonies on a red-violet background indicate the presence of H2S-positive salmonellae. Further tests should be performed in order to identify the colonies.

Literature

MILLER, R.G., C.R. TATE. 1990. XLT4: A highly selective plating medium for the isolation of Salmonella. **The Maryland Poultryman, April: 2-7 (1990).**

Ordering Information

Product	Merck Cat. No.	Pack size
XLT4 Agar, Base	1.13919.0500	500 g
XLT4 Agar Supplement (Sodium tetradecylsulfate solution 26-28 %)	1.08981.0100	100 ml

Quality control

Test strains	Growth	Colony color
Salmonella typhimurium ATCC 14028	good / very good	black center
Salmonella enteritidis ATCC 13076	good / very good	black center
Salmonella anatum ATCC 9270	good / very good	black center
Shigella sonnei ATCC 11060	good / very good	colourless
Shigella flexneri ATCC 12022	good / very good	colourless
Enterobacter aerogenes ATCC 13048	fair / good	yellow
Citrobacter freundii ATCC 8090	fair / good	yellow
Proteus mirabilis ATCC 14273	none / poor	-
Escherichia coli ATCC 25922	none / fair	yellow to colourless