

X.L.D. Agar (Xylose Lysine Decarboxylase Agar)

An improved medium for the isolation of enteric pathogens. This medium gives excellent recovery of *Shigella* spp and also *Salmonella* spp.

Code: KM1128

Typical formula	(g/l)
Xylose	3.75
L-Lysine	5.00
Lactose	7.50
Sucrose	7.50
Sodium chloride	5.00
Yeast Extract	3.00
Phenol red	0.08
Agar	13.00
Sodium desoxycholate	1.00
Sodium thiosulphate	6.80
Ferric ammonium citrate	0.80

pH: 7.4 ± 0.2

Directions

Weigh 53.5 grams of powder, disperse in 1 litre of deionised water. Allow soaking for 10 minutes, swirling to mix. Bring rapidly to the boil with frequent stirring, and transfer immediately to a 47°C water bath. Pour into plates as soon as the medium has cooled. Protracted boiling or prolonged holding at elevated temperature induces precipitation.

Description

This medium was introduced by Taylor in 1965 to improve the recovery and recognition of *Shigella* spp, and has proved to be an excellent medium for *Salmonella* spp. The medium is low in nutrients and relies on a small amount of sodium desoxycholate for selectivity. The indicator system is novel and complex. Most enteric organisms except *Shigella*, will ferment xylose to produce acid. However the salmonellae will also decarboxylate the lysine to keep the pH neutral. At near neutral pH *Salmonella* can produce H₂S from the reduction of thiosulphate producing black or black centred colonies. *Citrobacter* spp. can also decarboxylate lysine, however, the acid produced by fermentation of both lactose and sucrose will keep the pH too acid for H₂S to be produced.

Q.C. organisms: *Salmonella* sp., *E. coli* (inhibition)

Storage: Plates up to 7 days at 2-8°C in the dark.

Inoculation: Surface, streaking out for single colonies.

Incubation: 37°C for 18-24 hours aerobically.

References

- Taylor, W. I. 1965. Isolation of shigellae. I. Xylose Lysine Agars: New media for the isolation of enteric pathogens. *Am. J. Clin. Pathol.*, 44: 471-475.
- Taylor, W. I., and Harris, B. 1967. Isolation of shigellae. III. Comparison of new and traditional media with stool specimens. *Am. J. Clin. Pathol.*, 48: 350-355.
- Taylor, W. I., and Schelhart, D. 1967. Isolation of shigellae. IV. Comparison of plating media with stools. *Am. J. Clin. Pathol.*, 48: 356-362.