

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

### BC2032

A selective isolation medium for *Salmonellae* and *Shigellae*. Low in nutrients this medium relies on a small amount of Sodium desoxycholate for selectivity. The indicator system is 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 the salmonella can produce H<sub>2</sub>S 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 H<sub>2</sub>S to be produced.

#### Formula grams per litre

Xylose	3.75
L-lysine	5.0
Lactose	7.5
Sucrose	7.5
Sodium chloride	5.0
Yeast extract	3.0
Phenol red	0.08
Bacteriological agar	13.0
Sodium desoxycholate	1.0
Sodium thiosulphate	6.8
Ferric ammonium citrate	0.8

**pH** 7.3 +/- 0.2

**Appearance :** Light Rose, clear

#### Preparation

Suspend by swirling 53.5g of powder in 1 litre of distilled or deionised water.  
Allow to soak for 10 minutes, swirl to mix then bring to the boil with frequent mixing.  
DO NOT AUTOCLAVE. Do not subject to prolonged heating.  
Allow to cool to 47°C. Mix well and pour plates.

#### Storage of Prepared Medium:

Plates should be stored in the dark at 2-8<sup>0</sup>C. Plates should be used within 1 week.

#### Growth Characteristics

organism	Colony size (mm)	shape & surface	colour	other
<i>Salmonella</i> spp.	1.0-2.5	CV.E.G.	Trans. Black centre	(clearing of acid ppt of coliforms )
<i>Shig. sonnei</i>	1.5-2.5	CV.E.G.	Pink	
<i>Shig. flexneri</i>	1.0-2.0	CV.E.G.	Pink	
<i>Shig. dysenteriae</i>	0.5-1.5	CV.E.G.	Pink	
<i>Esch. coli</i>	0.5-1.5	CV.E.G.(D)	Yellow	inhibited (ppt around colony)
<i>Citrobacter</i> spp .	1.0-1.5	CV.E.G.(D)	Yellow	(black centre)
<i>Proteus</i> spp	1.0-2.5	CV.E.G.	Trans. Pink	fishy odour(black centre)

#### Abbreviation key for colonial descriptions:

CV = convex CR = crenated F = flat Rz = rhizoid E = entire G = glossy P.P. = pinpoint D = dull

( ) brackets are used to denote occasional variations

## **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.
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- 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.
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