

Xylose Lysine Deoxycholate Agar(XLD)

Catalog : HB4105-8-500

XLD Agar is a selective medium for the isolation of salmonella and shigella from clinical specimens and food samples.

Approximate Formula:

Ingredients	gm/liter
Yeast extract	3.0
L- Lysine HCl	5.0
Lactose	7.5
Sucrose	7.5
Xylose	3.75
Sodium chloride	5.0
Sodium thiosulfate	6.8
Ferric ammonium citrate	0.8
Sodium Deoxycholate	2.5
Phenol red	0.08
Agar	15.0
Final pH 7.4±0.2 at 25 °C	

*Adjusted and/or supplemented as required to meet performance criteria.

Directions:

Suspend 57g in one litre of distilled water. Heat with frequent agitation until the medium is dissolved completely. Immediately cool the medium to about 47~50°C in a waterbath set at this temperature. Agitate flask to cool rapidly, pour plates. DO NOT AUTOCLAVE.

Principle and Interpretation:

Deoxycholate, ferric ammonium citrate and sodium thiosulphate are selective agents that inhibit gram-positive microorganisms. Essential nutrients, growth factors for growth of microorganism are provided by yeast extract. Xylose, sucrose and lactose are the fermentable sugars in this medium. Xylose is fermented by almost all the enteric bacteria except Shigellae, which enable the differentiation of Shigellae from Salmonellae. Salmonellae metabolize the xylose and decarboxylate lysine and thus change the pH to alkaline and mimic Shigellae reaction. However to prevent this reaction by lysine positive coliforms, lactose and sucrose are added in excess to produce acid and hence nonpathogenic H₂S producers do not decarboxylate lysine. Sodium thiosulphate helps in reactivation of sulphur containing compounds and prevents the desiccation of these compounds during storage. It also forms the substrate for enzyme thiosulphate reductase, which breaks it to form H₂S. Thiosulphate and ferric ammonium citrate are the H₂S indicators in the medium. Sodium thiosulphate is also inactivator of halogens, mercurial and aldehyde and can minimize its toxicity in the testing sample, if any during microbial limit tests. Sodium chloride maintains the osmotic equilibrium in this medium. Phenol red is the pH indicator.

Appearance:

Dehydrated medium is a free-flowing light red powder. The prepared medium is a kind of red transparent gel.

Precautions:

This medium is for laboratory use only. Dried medium which is past shelf life, caking or color variation cannot be used.

Storage conditions and Shelf life:

XLD Agar must be stored tightly capped in the original container at 5-30°C. The dehydrated medium has a shelf life of 5 years from date of manufacturing. Prepared medium may be stored, out of direct light at 2-8°C.

Quality control:

Prepare the culture medium as per label directions. Inoculate and incubate at 36±1°C for 18-24 hours.

Microorganism	Strains Number	Inoculum (CFU)	Growth	Recovery	Remarks
<i>Salmonella enteritidis</i>	CMCC 50760	20-200	Luxuriant	≥50%	Black colonies
<i>Shigella flexneri</i>	ATCC 12022	20-200	Luxuriant	≥50%	Colorless colonies, no black center
<i>Salmonella typhimurium</i>	ATCC 14028	20-200	Luxuriant	≥50%	Black colonies
<i>Escherichia coli</i>	ATCC 25922	> 10 ³	Partial inhibited	/	Yellow colonies
<i>Staphylococcus Aureus</i>	ATCC 6538	> 10 ³	Inhibited	/	/

References:

1. United States Pharmacopeial Convention, Inc. 2008. The United States pharmacopeia 31/The nationalformulary 26, Supp. 1, 8-1-08, online. United States Pharmacopeial Convention, Inc., Rockville,Md.
2. European Directorate for the Quality of Medicines and Healthcare. 2008. The European pharmacopoeia, 6th ed., Supp. 1, 4-1-2008, online. European Directorate for the Quality of Medicines and Healthcare, Council of Europe, 226 Avenue de Colmar BP907-, F-67029 Strasbourg Cedex 1, France.