XLD Agar

Catalog : HB4105-8-5K

XLD Agar is a selective medium for the isolation of salmonellae and shigellae from clinical specimens and foods.

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	1.0
Phenol red	0.08
Agar	12.5

Final pH 7.4±0.2 at 25 ℃

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

Directions:

Suspend 53g in 1 litre of distilled water.Heat with frequent agitation until the medium is dissolved completely.DO NOT OVERHEAT. Transfer immediately to a water bath at 50°C. Pour into sterile Petri dishes as soon as the medium has cooled.

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:

Cultural characteristics observed after an incubation at 35 - 37°C for 18 -24 hours.

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

Reference:

1.Collee J. G., Fraser A. G., Marmion B. P., Simmons A., (Eds.), Mackie and cCartney, Practical Medical Microbiology,1996, 14th Edition, Churchill Livingstone.
2.Merlino et al, 1995, Abstr. Austr. Microbiol. 16(4):17-3.
3.GB4789.28-2013 People's Republic of China food safety national standard food microbiology test medium and reagent quality requirements.

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