

Xylose Lysine Deoxycholate Agar - Instructions for Use

Intended Use

BACGro™ Xylose Lysine Deoxycholate agar (XLD) is a selective and differential medium used in the isolation and differentiation of Gram-negative enteric pathogens, and is used for the isolation of *Shigella spp.* and *Salmonella spp.*¹ BACGro™ XLD conforms to ISO 11133:2014 for the isolation of *Salmonella*.

Product Summary

Xylose Lysine Deoxycholate agar utilizes yeast extract as a nutrient and vitamin source. Sodium deoxycholate acts as the selective agent that inhibits Gram-positive organisms. Xylose is used to differentiate *Shigella* species, as *Shigella* does not ferment xylose. *Salmonella* may be differentiated from non-pathogens with the use of lysine; without lysine, *Salmonella* will ferment the xylose and become indistinguishable from non-pathogens. After using xylose, *Salmonella* utilize lysine through the use of the enzyme lysine decarboxylase; this action reverts to an alkaline pH, similar to the *Shigella* reaction. Lactose and sucrose are provided to produce excess acid to prevent reversion by lysine-positive coliforms.^(1,2,3,4) Sodium thiosulfate and ferric ammonium citrate are included for the visualization of H₂S, which causes the formation of the black centers in *Salmonella spp.*

Formulation (per Liter)*

Xylose	3.8 g
L-Lysine	5.0 g
Lactose	7.5 g
Sucrose	7.5 g
Sodium Chloride	5.0 g
Yeast Extract	3.0 g
Phenol Red	0.08 g
Sodium Deoxycholate	2.5 g
Sodium Thiosulfate	6.8 g
Ferric Ammonium Citrate	0.80 g
<u>Agar</u>	<u>15.0 g</u>
Total	56.9 g/L

*Formula may be supplemented and/or adjusted as required to meet performance criteria

Directions

1. Add 56.9 g of XLD powder to 1 L of deionized water.
2. Stir while heating. Bring to a brief boil to dissolve completely.
3. **DO NOT AUTOCLAVE.**
4. Pour plates and allow to solidify.

Precautions

This product is for laboratory use only and should only be used by qualified, trained laboratory personnel. Personnel should always use proper aseptic technique and observe all biohazardous precautions. All microbiological cultures should be presumed to be infectious.

Avoid ingestion, inhalation, or contact with skin and mucous membranes. If contact occurs, flush the area with clean water.

Quality Control Specifications

Gold Standard Diagnostics tests each lot of manufactured BACGro™ culture media utilizing appropriate control organisms and specifications as documented on the Certificate of Analysis. End users should perform quality control testing in accordance with government regulatory requirements and accreditation guidelines. The following specifications are routinely used for testing:

Appearance (dehydrated): Pink-beige, free-flowing, homogenous. May contain dark particles.

Appearance (prepared): Red, slightly opalescent.

pH (prepared): 7.2 – 7.6 at 25°C

Organism Performance:

Strain ID	Inoculum	Incubation			Result
		Time	Temp.	Environment	
<i>Salmonella Typhimurium</i> (ATCC® 14028)	≤100 CFU	21 – 27 hr.	37° C	Aerobic	Black CFU w. reddish zone.
<i>Salmonella Enteritidis</i> (ATCC® 13076)	≤100 CFU	21 – 27 hr.	37° C	Aerobic	Black CFU w. reddish zone.
<i>Shigella flexneri</i> (ATCC® 12022)	≤100 CFU	21 – 27 hr.	37° C	Aerobic	Red CFU.

<i>Escherichia coli</i> (ATCC® 25922)	>1000 CFU	21 - 27 hr.	37° C	Aerobic	Partial/complete inhibition. Yellow CFU.
<i>E. faecalis</i> (ATCC® 29212)	>1000 CFU	21 - 27 hr.	37° C	Aerobic	No growth.

Limitations of the Procedure

This product is not labeled for use as a medical device, and is not intended to diagnose, treat, or prevent disease.

Due to variation in nutritional requirements, some species or strains may be encountered that grow poorly in this medium.

Further biochemical or serological testing is required for the identification of organisms grown in this medium.

Storage and Expiration

BACGro™ XLD should be stored at 2 – 30 degrees Celsius. Because of the hygroscopic nature of dehydrated culture media, it should be stored in a dry place and the lid should remain tightly sealed. Media should be discarded if it is not free flowing or shows discoloration.

The expiration date printed on the label is applicable to media stored as directed.

Catalog Numbers

DCM5001 – Xylose Lysine Deoxycholate Agar, 500g

DCM5010 – Xylose Lysine Deoxycholate Agar, 10kg

References

1. Taylor, W.I. 1965. Isolation of shigellae. I. Xylose lysine agars; new media for isolation of enteric pathogens. Am. J. Clin. Pathol., 44:471-475
2. Taylor, W.I., and B. Harris. 1965. Isolation of shigellae. II. Comparison of plating media and enrichment broths. Am. J. Clin. Pathol. 44:476-479.
3. Taylor, W.I., and B. Harris. 1967. Isolation of shigellae III. Comparison of new and traditional media with stool specimens. Am. J. Clin. Pathol. 48:350-355.
4. Taylor, W.I., and D. Schelhart. 1967. Isolation of shigellae. IV. Comparison of plating media with stools. Am. J. Clin. Pathol. 48:356-362.

Revision History:

Revision	Description	Effective Date
03	Updated prepared appearance from "red-purple" to "red" to match PWS.	13-MAR-2024
02	Created part number DCM5010	16-NOV-2021
01	Document creation	19-MAR-2021