CHROMOGENIC
LIFE SCIENCES PVT LTD

TECHNICAL DATA SHEET

XYLOSE LYSINE DEOXYCHOLATE AGAR PLATES — P90/XLD - 20

INTENDED USE

Xylose Lysine Deoxycholate Agar is moderately selective medium used for isolation and differentiation of Salmonella and Shigella species.

TYPES OF SAMPLE

- Clinical
- Food

PRINCIPLE

XLD Agar is both, a selective and differential medium. Yeast extract provides nutrients while sodium deoxycholate inhibits Gram-positive organisms. Xylose is fermented practically by all enterics except Shigella, which enables the differentiation of Shigella species. Incorporation of lysine enables the Salmonella group to be differentiated from the non-pathogens since, without lysine, Salmonella would rapidly ferment xylose and be indistinguishable from non-pathogenic species. After Salmonella exhausts the supply of xylose, lysine is attacked, with reversion to an alkaline pH, which mimics the Shigella reaction. However, to prevent this reaction by lysine positive coliforms, lactose and sucrose are added in excess to produce acid and hence non-pathogenic H_2S producers do not decarboxylate lysine. The acid reaction produced by them prevents the blackening of the colonies. Sodium thiosulphate and ferric ammonium citrate are included for the visualization of hydrogen sulphide production, resulting in the formation of colonies with black centers. Sodium chloride maintains the osmotic balance.

INGREDIENTS

Approximate Formula Per Liter	
Sucrose	7.5 g
Lactose	7.5 g
Sodium Thiosulphate	6.8 g
L-Lysine	5.0 g
Sodium Chloride	5.0 g
Xylose	3.5 g

Yeast Extract	3.0 g
Sodium Deoxycholate	2.5 g
Ferric Ammonium Citrate	0.8 g
Phenol Red	0.08 g
Agar	15.0 g
Final pH 7.4 ± 0.2 at 25°C	

PHYSICAL PARAMETERS OF PREPARED PLATES

- Appearance: 90 mm petri plates with a smooth surface and absence of any particles, cracks, or bubbles.
- Colour: Light Red to Red
- Clarity: Slightly Opalescent
- Volume: 20-22 ml

STERILITY CHECK

Sterility of the plates is checked by incubating the plates at 35-37°C for 3 days.

MICROBIAL PERFORMANCE DATA

Culture characteristics observed after inoculating 50-100 CFU and incubate at 35-37 °C for 24-48 hours. Examine plates after 24 to 48 hours for amount of growth and colony size and colony colour. If material is being cultured directly from a swab, roll the swab over on the agar surface and streak for isolation.

Test Strains	ATCC No.	Inoculum	Observed CFU	Growth	Colour of the colony
Salmonella typhimurium	ATCC 14028	50-100 CFU	76	Good	Red-Yellow
Escherichia coli	ATCC 25922	>1000 CFU	Partial to complete inhibition	Partial to complete inhibition	-

LIMITATIONS & COMPLEMENTARY TESTS

- Longer incubation may result in false positive results.
- Some species of Salmonella like *S. paratyphi A, S. choleraesuis, S. gallinarum* and *S. pullorum* form red colonies without black centers, which resemble Shigella colonies.

- Also, a few species of Shigella that ferment lactose, and Salmonella that fail to decarboxylate lysine would not be detected on this medium.
- Red, false positive colonies may occur with some Proteus and Pseudomonas species. Some Proteus strains will give black centered colonies on XLD Agar.

PRECAUTIONS

- For in-Vitro diagnostic use. Read the label details and storage before opening the pack.
- Wear protective gloves / protective clothing / eye protection / face protection.
- Follow good microbiological lab practices while handling specimens and culture.

PACK SIZE AND PACKAGING

20 plates per kit packed with gamma irradiated packing material.

STORAGE & SHELF LIFE

- Store at 10 -15 ℃.
- Use before the expiry date mentioned on the label.
- Product is temperature sensitive; protect from direct sunlight, excessive heat, moisture, and freezing.

DISPOSAL

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Materials that have come in contact with infectious / clinical samples must be decontaminated and disposed of in accordance with current laboratory techniques and regulations.

REFERENCE

- Rakesh Kumar, Poothuvallil K Surendran, Nirmala Thampuran, Evaluation of Culture Media for Selective Enrichment and Isolation of Salmonella in Seafood, Journal of AOAC INTERNATIONAL, Volume 93, Issue 5, 1 September 2010, Pages 1468‑1471.