Product Specification

CulturaLab
Culturing Excellence in Microbiology

XLD Agar

Cat No: **111005**

Intended Use

Xylose Lysine Deoxycholate (XLD) Agar is a selective and differential medium used primarily for the isolation and differentiation of enteric pathogens, particularly *Salmonella* and *Shigella*, from clinical, food, and environmental samples. The medium contains xylose, lactose, and sucrose as fermentable carbohydrates, along with lysine and sodium thiosulfate to aid in the differentiation of organisms based on their biochemical properties. Phenol red serves as a pH indicator, allowing visualization of acid production, while ferric ammonium citrate helps detect hydrogen sulfide (H_2S) production. *Salmonella* typically produces red colonies with black centers due to H_2S production, while *Shigella* forms red or pink colonies without black centers, and most non-pathogenic coliforms produce yellow colonies. The selective agents, such as deoxycholate, inhibit the growth of Gram-positive organisms and many non-enteric Gram-negative bacteria. XLD Agar is widely used in public health, clinical, and food safety laboratories for the detection of enteric pathogens.

Principle

Phenol red functions as the pH indicator in the medium. Yeast extract provides essential vitamins, particularly those of the B-group, which support bacterial growth. Sodium chloride contributes essential electrolytes that aid in nutrient transport and help maintain osmotic balance. Sodium deoxycholate acts as the selective agent, effectively inhibiting the growth of Gram-positive bacteria. Bacteriological agar serves as the solidifying component of the medium.

Storage

Recommended storage conditions: 2 to 8 ℃. Store in cool dry place
Recommended shipping conditions: 2 to 8 ℃.

Production Standard

The formulation is prepared according to the recommendations of the current European, United States, and China Pharmacopoeia.

Precautions

1. The product may secrete water when exposed to temperature changes between low and room temperature, which is normal. Allow it to reach room temperature before use and, if possible, pre-dry it in a sterile drying oven.
2. Handle the plates with sterile gloves to prevent contamination during use.
3. Store the plates in a cool, dry place away from direct sunlight to maintain their integrity.
4. Avoid opening the plates until they are ready to be used in the sampling area to prevent airborne contamination.
5. Ensure the plates are used within their expiration date to guarantee accurate results.
6. Dispose of used plates according to biohazard waste protocols to prevent contamination and ensure safety.

Quality Control

The following were incubated at 30-350C for 18-48 hours. The results are as follows:

Test Strains	Expected Results	Characteristic Reaction
Salmonella typhimurium ATCC 14028	Good growth	Colonies with black centre and a lightly transparent zone of reddish colour due to the colour change of the medium
Escherichia coli ATCC 25922	Growth or partial inhibition	Yellow colonies
Staphylococcus aureus ATCC 6538	Total Inhibition	N/A

Product Content

Product Content	Cat No.	Size
XLD Agar	111005	10 plates/bag; 200 plates/case

Composition

Yeast extract	3.0 g
L-Lysine hydrochloride	5.0 g
Lactose	7.5 g
Sucrose	7.5 g
Xylose	3.75 g
Sodium chloride	5.0 g
Sodium thiosulfate	6.8 g
Ferric ammonium citrate	0.8 g
Sodium deoxycholate	2.5 g
Ox bile	1.5 g
Phenol red	0.08 g
Bacteriological agar	15.0 g
Final pH (at 25°C)	7.4 ± 0.2

Shelf Life

Shelf life: 3 months from date of manufacture

Packaging

90mm x 10 plates per bag; 200 plates/case

Each plate filled with 20mL ± 2mL

Disposal

Please adhere to the respective regulations for the disposal of used culture medium (e.g., autoclave for 30 minutes at 121 °C)

References

1. ISO Standard 6579-1 (2017) Microbiology of food chain - Horizontal method for the detection, enumeration and serotyping of *Salmonella* - Part 1 : Detection of *Salmonella spp.*
2. ISO 11133:2014/ Adm 1:2018. Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.
3. ISO 21567 Standard (2004) Microbiology of food and animal feeding stuffs.- Horizontal method for the detection of *Shigella spp.*

Specially manufactured for:

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