

Media Type - XLD agar

Xylose lysine deoxycholate (XLD) agar is a selective culture medium commonly used to isolate Salmonella and Shigella species. It contains multiple components such as xylose, lactose, sucrose, thiosulfate, iron (III) salt and sodium desoxycholate that selectively suppress the growth of Gram positive bacteria whilst differentiating growth characteristics which results in pH changes due to degradation of the components and potential formation of black particles (iron sulfide).

Primary use: A moderately selective medium recommended for isolation and differentiation of enteric pathogens, especially Shigella species.

Technical characteristics:

The typical medium composition:

Typical formulation:	g/ltr
Xylose	3.5
L-Lysine	5
Lactose	7.5
Saccharose	7.5
Sodium chloride	5
Yeast extract	3
Phenol red	0.08
Sodium Desoxycholate	2.5
Ferric ammonium citrate	0.8
Sodium Thiosulfate	6.8
Agar	15

Fresh pH 7.4 ± 0 .

Applications: XLD agar is a selective and differential medium for the isolation of enteric pathogens such as *Shigella* or *Salmonella* species from food, and environmental samples. It relies on xylose fermentation, lysine decarboxylation and production of hydrogen sulphide for the primary differentiation of shigellae and salmonellae from non-pathogenic bacteria. Desoxycholate is a selective agent which inhibits the growth of Gram-positive microorganisms.

Appearance: The prepared media should appear as clear with red or pinkish-red colouration.

Organisms and morphology:

Microorganism	Observational appearance
<i>Salmonella spp.</i>	Red with black center
<i>Shigella</i>	Red colonies
<i>Escherichia coli</i>	Yellow to yellow-red colonies

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Typical incubation parameters: XLD agar is incubated at 30 – 35 °C for 18 to 48 hours when culturing *Salmonella* as recommended in the Pharmacopoeia guidance for “Testing of products – Bile-Tolerant Gram Negative Bacteria – *Salmonella*”.

Regulatory reference: USP<62> Microbiological Examination of Nonsterile Products:
Test for Specified Microorganisms Table 1

Test for Salmonella		
Test/Medium	Property	Test Strains
Xylose Lysine Deoxycholate Agar	Growth promoting + indicative	<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Typhimurium or <i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Abony

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