Xylose Lysine Deoxycholate Agar (i23250)

XLD Agar is used to isolate pathogenic *Enterobacteria*, especially *Shigella* and *Salmonella* from biological and food samples.

Industry: Food / Water

Principles & Uses

Xylose Lysine Deoxycholate Agar (XLD Agar) is a culture medium recommended for identifying *Salmonella* in food products after pre-enrichment in non-selective fluids such as Buffered Peptone Water. This medium is formulated according to the ISO 6579 norm and serves as a valuable tool in microbiological testing.

XLD Agar contains essential nutrients like yeast extract, and sodium chloride. It relies on the degradation of three fermentable carbohydrates xylose, lactose, and sucrose. This fermentation process results in the production of acid, indicated by a color change from red to yellow. Lysine is included for differentiation, preventing *salmonellae* from fermenting xylose too quickly, allowing distinction from non-pathogenic species. The medium uses phenol red as a pH indicator.

Additionally, XLD Agar features an indicator system using sodium thiosulfate and ferric ammonium citrate to reveal the formation of hydrogen sulfide under alkaline conditions. *Salmonella* typically produces colonies with a black center and a reddish zone, distinguishing them. Variants of *Salmonella* without hydrogen sulfide production appear pink, and lactose-positive *Salmonella* colonies are yellow, sometimes with blackening.

XLD Agar is both selective and differential, inhibiting the growth of unwanted microorganisms while allowing the differentiation of *Salmonella* based on their characteristic reactions.

Composition (gr/L)

Xylose 3.5, Lactose 7.5, L-Lysine 5, Saccharose 7.5, Yeast Extract 3, Sodium Thiosulphate 6.8, Sodium Chloride 5, Sodium Deoxycholate 2, Phenol Red 0.08, Ferric Ammonium Citrate 0.8, Agar 12.

Final pH at 25°C 7.4 ± 0.2

Preparation from dehydrated Powder

Suspend 53.18 g of the powder in 1 Liter of distilled water. Mix Thoroughly. Heat with frequent agitation until the medium boil. **DO NOT OVERHEAT. DO NOT AUTOCLAVE.** Cool to 45-50°C in a water bath and pour into plates as soon as the medium has cooled.

NOTE: It is important to avoid preparing large volumes which will cause prolonged heating. Overheating causes precipitation.

Quality Control

Dehydrated Appearance: Pink, free-flowing, homogeneous.

Prepared Appearance: Pale red, slightly opalescent.

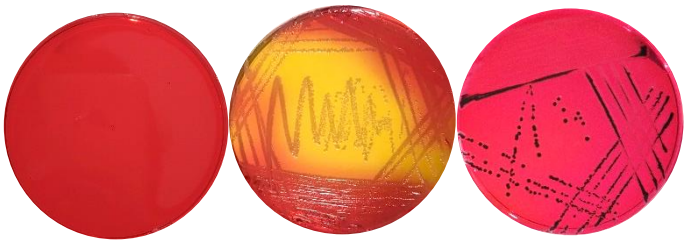
Reaction of 5.3% Solution at 25°C: pH 7.4 ± 0.2

Cultural Response

Inoculate and incubate at 35 ± 2°C for 18-24 hours. Incubate (**) cultures at 30-35°C for 18-48 hours and (***) culture at 35-37°C for 18-72 hours.

Organism (ATCC*)	Recovery	Colony color
Escherichia coli (25922)	Partial inhibition	Yellow
*Escherichia coli** (8739)*	Partial to complete inhibition (30-35°C)	Yellow
Enterococcus faecalis (29212)	Partial inhibition	-
*Salmonella enterica** (14028)*	Growth (30-35°C)	Red with black centers
*Salmonella enterica*** (14028)*	Growth (35-37°C)	Red with black centers

*ATCC is a registered trade mark of the American Type Culture Collection.



Prepared media with a red coloration (left). *E. coli* exhibiting yellow colonies (middle). *Salmonella* displaying red colonies with black centers (right).

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.