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Product Insert

MM0179

XLD Agar

(Xylose Lysine Deoxycholate Agar)

Use and description:

For selective isolation and differentiation of enteric pathogens, especially *Shigella* and *Salmonella* species from fecal samples. During fermentation of xylose, lactose or sucrose, acids are produced changin colour of the medium from red to yellow. Xylose/lactose/sucrose non-fermenting bacteria appear as red colonies. Xylose-fermenting lysine-decarboxylating bacteria (*Salmonella)* appear as red colonies. Xylose-fermenting, lysine non-decarboxylating *Shigella* and *Providencia* strains appear as opaque yellow colonies. Lactose or sucrose-fermenting bacteria form yellow colonies. Sodium deoxycholate inhibits Gram-positive organisms but *Shigella* grows. *Salmonella* type members of *Enterobacteriaceae* do ferment xylose, but it is consumed quickly and then medium alkalinization, due to lysine decarboxylation, may hide the reaction. The difference between *Shigella* and *Salmonella* is that with the latter colonies become darker due to ferrous sulphite precipitates. The other types of enterobacteria, due to lactose and sucrose fermentation produce enough acid that it avoids pH reversion by decarboxylation. At near neutral pH *Salmonella* can produce H_2S from the reduction of thiosulphate producing black or black centered colonies. *Citrobacter* spp. can also decarboxylate lysine, however, the acid produced by fermentation of both lactose and sucrose will keep the pH too acid for H_2S to be produced.

Composition per liter:

Yeast extract……3.00 g
Lactose……7.50 g
Sucrose……7.50 g
L-lysine……5.00 g
Sodium chloride……...5.00 g
Xylose……..3.50 g
Sodium deoxycholate……..2.50 g
Ferric ammonium citrate……0.80 g
Phenol red……0.08 g
Sodium thiosulfate……...6.80 g
Agar……13.50 g

Final pH of the ready to use medium: 7.5 ± 0.2

Medium preparation:
Add 55 grams of dehydrated culture medium to 1 liter distilled water until evenly dispersed. Heat with repeated stirring and boil for one minute to dissolve completely. DO NOT AUTOCLAVE THIS MEDIUM. Pour into sterile Petri dishes in 20.0 ml volumes.

Quality specification:
Dehydrated medium: homogeneous, free flowing and light pinkish-beige fine powder.
Ready to use medium: bright red-reddish orange and clear to trace hazy.

Organism	Result
Escherichia coli ATCC 25922	Inhibited, yellow colonies
Salmonella typhimurium ATCC 14028	Red colonies with black centers
Shigella flexneri ATCC 12022	Red colonies
Enterococcus faecalis ATCC 29212	Growth inhibited

Microbiological response:

After 24-36 hours of incubation at 37°C are described:

Microorganism

Organism	Colony appearance
Serratia, Hafnia	Yellow, opaque and without halo
Most of *Proteus mirabilis, P.vulgaris*	Yellow, transparent and with black core
Klebsiella, Citrobacter intermedius if they grow	Yellow, opaque, mucose and with black core
Escherichia when grows, *Enterobacter*, *Aeromonas, Citrobacter*	Yellow and opaque
Pseudomonas, Proteus rettgeri	Red and translucent colonies, without halo
Salmonella typhi	Orange and slightly opaque colonies
Edwardsiella and most biotypes of salmonellae	Red colonies, transparent with black core
Shigella spp., *Proteus inconstans*, *Salmonella paratyphi* A., sometimes *S.choleraesuis* and *S. Pullorum*	Red colonies, transparent

Storage:
Dehydrated medium should be stored between 10 to 25°C. Once opened, place the container in a dark, dry place. The dehydrated medium should not be used if there is any lump or if the color has changed from the original.