

TM 1448 – XLD AGAR (XYLOSE LYSINE DEOXYCHOLATE AGAR MEDIUM) (as per IP)

INTENDED USE

For isolation of *S. typhi* and other *Salmonella* species.

PRODUCT SUMMARY AND EXPLANATION

Xylose Lysine Deoxycholate Agar is a selective as well as differential medium formulated by Taylor for the isolation and identification of enteric pathogens especially Shigellae from stool samples. It is also used for pharmaceutical testing and nonsterile product testing for the detection (or absence) of *Salmonella* after enrichment in Rappaport Vassiliadis Salmonella Enrichment Broth in accordance with IP.

The Salmonellae are the most complex of all the *Enterobacteriaceae*. Human *Salmonella* infections are most commonly caused by ingestion of food, water or milk, contaminated by human or animal excreta. A large number of media have been developed for the selective isolation and identification of enteric bacilli including *Salmonella*.

This medium is an ideal medium for screening samples containing mixed flora of enteric pathogens as recovery of Salmonellae and Shigellae is not conspicuous by even profuse growth of other species.

COMPOSITION

Ingredients	Gms / Ltr
Xylose	3.500
L-Lysine	5.000
Lactose monohydrate	7.500
Sucrose	7.500
Sodium chloride	5.000
Yeast extract	3.000
Sodium deoxycholate	2.500
Sodium thiosulphate	6.800
Ferric ammonium citrate	0.800
Phenol red	0.080
Agar	13.500

PRINCIPLE

The medium consists of Deoxycholate, ferric ammonium citrate and sodium thiosulphate that are selective agents that inhibit gram-positive microorganisms. Essential nutrients, growth factors for growth of microorganism are provided by yeast extract. Xylose, sucrose and lactose are the fermentable sugars in this medium. Xylose is fermented by almost all the enteric bacteria except Shigellae, which enable the differentiation of Shigellae from Salmonellae. Salmonellae metabolize the xylose and decarboxylate lysine and thus change the pH to alkaline and mimic Shigellae reaction. However, to prevent this reaction by lysine positive coliforms, lactose and sucrose are added in excess to produce acid and hence nonpathogenic H₂S producers do not decarboxylate lysine.

Sodium thiosulphate helps in reactivation of sulphur containing compounds and prevents the desiccation of these compounds during storage. It also forms the substrate for enzyme thiosulphate reductase, which breaks it to form H₂S. Thiosulphate and ferric ammonium citrate are the H₂S indicators in the medium. Sodium thiosulphate is also inactivator of halogens, mercurial and aldehyde and can minimize its toxicity in the testing sample, if any during microbial limit tests. Sodium chloride maintains the osmotic equilibrium in this medium. Phenol red is the pH indicator.

INSTRUCTION FOR USE

- Dissolve 54.8 grams in 1000 ml purified/distilled water.
- Heat with frequent agitation until the medium boils. DO NOT HEAT IN AN AUTOCLAVE.
- Transfer immediately to a water bath at 50°C. After cooling, pour into sterile Petri plates.
- It is advisable not to prepare large volumes, which will require prolonged heating and may produce precipitate.

Note: Slight precipitation in the medium may occur, which is inheritant property of the medium, and does not affect the performance of the medium.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: Light yellow to light pink homogeneous free flowing powder.
Appearance of prepared medium	: Red coloured clear to very slightly opalescent gel forms in Petri plates.
pH (at 25°C)	: 7.4 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation. Recovery rate is considered as 100% for bacteria growth on Soyabean Casein Digest Agar.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of colony	Incubation Temperature	Incubation Period
<i>Salmonella Typhimurium</i>	14028	50-100	Luxuriant	≥70%	Red with black centers	30-35°C	18-72 Hours
<i>Escherichia coli</i>	8739	50-100	Fair	20 -30 %	Yellow	30-35°C	18-72 Hours
<i>Escherichia coli</i>	25922	50-100	Fair	20 -30 %	Yellow	30-35°C	18-72 Hours
<i>Proteus vulgaris</i>	13315	50-100	Good-luxuriant	≥50%	Grey with black centers	30-35°C	18-72 Hours
<i>Salmonella Paratyphi A</i>	9150	50-100	Good-luxuriant	≥50%	Red	30-35°C	18-72 Hours

<i>Salmonella Paratyphi B</i>	8759	50-100	Good-luxuriant	$\geq 50\%$	Red with black centres	30-35°C	18-72 Hours
<i>Salmonella Enteritidis</i>	13076	50-100	Good-luxuriant	$\geq 50\%$	Red with black centers	30-35°C	18-72 Hours
<i>Salmonella Typhi</i>	6539	50-100	Good-luxuriant	$\geq 50\%$	Red with black centers	30-35°C	18-72 Hours
<i>Shigella dysenteriae</i>	13313	50-100	Good-luxuriant	$\geq 50\%$	Red	30-35°C	18-72 Hours
<i>Shigella flexneri</i>	12002	50-100	Fair-good	20 -40 %	Red	30-35°C	18-72 Hours
<i>Shigella sonnei</i>	25931	50-100	Fair-good	20 -40 %	Red	30-35°C	18-72 Hours
<i>Enterobacter aerogenes</i>	13048	50-100	Fair	20 -30 %	Yellow	30-35°C	18-72 Hours
<i>Enterobacter cloacae</i>	13047	50-100	Fair	20 -30 %	Yellow	30-35°C	18-72 Hours
<i>Staphylococcus aureus</i>	25923	$\geq 10^3$	Inhibited	0%	-	30-35°C	≥ 72 Hours
<i>Staphylococcus aureus</i>	6538	$\geq 10^3$	Inhibited	0%	-	30-35°C	≥ 72 Hours
<i>Enterococcus faecalis</i>	29212	$\geq 10^3$	Inhibited	0%	-	30-35°C	≥ 72 Hours

PACKAGING:

In pack size of 100 gm and 500 gm bottles.

STORAGE


Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.













Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

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 Good Manufacturing Practices Certified	 For In Vitro Diagnostic Use	 Quantity	 Lot / Batch Number	 Catalogue Number	 Manufacturer
 Temperature Unit	 Authorized Representative <small>MedNet GmbH Buckstrasse 10, 49163 Moenster, Germany</small>	 European Conformity	 QR Code	 Consults Instructions for Use	 Best Before

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**
Revision: 08 Nov., 2019