

## TM 492 – XLD AGAR

### INTENDED USE

For selective isolation and enumeration of *Salmonella* Typhi and other *Salmonella* species.

### PRODUCT SUMMARY AND EXPLANATION

XLD Agar has been recommended for the identification of *Enterobacteriaceae* and for the microbiological testing. XLD Agar was formulated by Taylor for the isolation and differentiation of enteric pathogens including *Salmonella* Typhi from other *Salmonella* species of foods, water and dairy products. XLD Agar exhibits increased selectivity and sensitivity as compared to other plating media e.g. SS Agar, EMB Agar and Bismuth Sulphite Agar. The media formulation does not allow the overgrowth of other organisms over *Salmonella* and Shigella. Samples suspected of containing enteric pathogens, along with other mixed flora, are initially enriched in Modified Semisolid RV Medium Base.

XLD Agar is both selective and differential medium. It utilizes sodium deoxycholate as the selective agent and therefore it is inhibitory to gram-positive microorganisms.

### COMPOSITION

Ingredients	Gms / Ltr
Yeast extract	3.000
L-Lysine	5.000
Lactose	7.500
Sucrose	7.500
Xylose	3.500
Sodium chloride	5.000
Sodium deoxycholate	2.500
Sodium thiosulphate	6.800
Ferric ammonium citrate	0.800
Phenol red	0.080
Agar	15.000

### PRINCIPLE

The medium consists of yeast extract, which provides nitrogen and vitamins required for growth. Though the sugars xylose, lactose and sucrose provide sources of fermentable carbohydrates, xylose is mainly incorporated into the medium since it is not fermented by Shigellae but practically by all enterics. This helps in the differentiation of *Shigella* species. Sodium chloride maintains the osmotic balance of the medium. Lysine is included to differentiate the *Salmonella* group from the non-pathogens.

*Salmonellae* rapidly ferment xylose and exhaust the supply. Subsequently lysine is decarboxylate by the enzyme lysine decarboxylase to form amines with reversion to an alkaline pH that mimics the Shigella reaction. However, to prevent this reaction by lysine-positive coliforms, lactose and sucrose are added to produce acid in excess. Degradation of xylose, lactose and sucrose to acid causes phenol red indicator to change its colour to yellow.

### INSTRUCTION FOR USE

- Dissolve 56.68 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	35-37°C	18-72 Hours
<i>Escherichia coli</i>	8739	50-100	Fair	20 -30 %	Yellow	35-37°C	18-72 Hours
<i>Escherichia coli</i>	25922	50-100	Fair	20 -30 %	Yellow	35-37°C	18-72 Hours
<i>Proteus vulgaris</i>	13315	50-100	Good-luxuriant	>=50%	Grey with black centers	35-37°C	18-72 Hours
<i>Salmonella Paratyphi A</i>	9150	50-100	Good-luxuriant	>=50%	Red	35-37°C	18-72 Hours
<i>Salmonella Paratyphi B</i>	8759	50-100	Good-luxuriant	>=50%	Red with black centers	35-37°C	18-72 Hours

<i>Salmonella</i> Enteritidis	13076	50-100	Good-luxuriant	>=50%	Red with black centers	35-37°C	18-72 Hours
<i>Salmonella</i> Typhi	6539	50-100	Good-luxuriant	>=50%	Red with black centers	35-37°C	18-72 Hours
<i>Shigella</i> <i>dysenteriae</i>	13313	50-100	Good-luxuriant	>=50%	Red	35-37°C	18-72 Hours
<i>Shigella flexneri</i>	12002	50-100	Fair-good	30 -40 %	Red	35-37°C	18-72 Hours
<i>Shigella sonnei</i>	25931	50-100	Fair-good	30 -40 %	Red	35-37°C	18-72 Hours
<i>Enterobacter</i> <i>aerogenes</i>	13048	50-100	Fair	20 -40 %	Yellow	35-37°C	18-72 Hours
<i>Enterobacter</i> <i>cloacae</i>	13047	50-100	Fair	20 -40 %	Yellow	35-37°C	18-72 Hours
<i>Staphylococcus</i> <i>aureus</i>	25923	>=10 <sup>4</sup>	Inhibited	0%	-	35-37°C	>=72 Hours
<i>Staphylococcus</i> <i>aureus</i> subsp. <i>aureus</i>	6538	>=10 <sup>4</sup>	Inhibited	0%	-	35-37°C	>=72 Hours
<i>Enterococcus</i> <i>faecalis</i>	29212	>=10 <sup>4</sup>	Inhibited	0%	-	35-37°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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 GMP Good Manufacturing Practices Certified	 IVD For In Vitro Diagnostic Use	 QTY. Quantity	 LOT/ B. NO. Lot / Batch Number	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 EC REP Authorized Representative <small>MedNet GmbH Barkstrasse 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**  
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