TM 491 – XYLOSE LYSINE AGAR BASE

INTENDED USE
For isolation, cultivation and identification of pathogenic enteric bacilli.

PRODUCT SUMMARY AND EXPLANATION
XL Agar Base is formulated as per the modifications of Taylor for the selective isolation, differentiation and enumeration of gram-negative enteric bacilli. The medium can be made selective for enteric bacilli by the addition of sodium deoxycholate with the resulting medium being XLD Agar. It can also be made selective for *Salmonella* by the addition of brilliant green dye.

COMPOSITION

Ingredients	Gms / Ltr
Yeast extract	3.000
L-Lysine	5.000
Lactose	7.500
Saccharose (Sucrose)	7.500
Xylose	3.500
Sodium chloride	5.000
Phenol red	0.080
Agar	13.500

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 *Shigella* 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. *Salmonella* rapidly ferment xylose and exhaust the supply.

Lysine is decarboxylated 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. Bacteria that decarboxylate lysine to cadaverine can be recognized by the appearance of a red colouration around the colonies due to an increase in pH. These reactions can proceed simultaneously or successively, and this may cause the pH indicator to exhibit various shades of colour or it may change its colour from yellow to red on prolonged incubation.

INSTRUCTION FOR USE
- Dissolve 45.08 grams in 980 ml purified/distilled water. Boil for 1 minute.
- Add brilliant green if desired. Sterilize by autoclaving at 118°C (14 psi pressure) for 10 minutes.
- Cool to 45-50°C and aseptically add 20 ml of sterile aqueous solution containing 34% sodium thiosulphate and 4% ferric ammonium citrate.
- Mix well and pour into sterile Petri plates.

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 with added sterile aqueous solution containing 34% sodium thiosulphate and 4%ferric ammonium citrate after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of colony	Incubation Temperature	Incubation Period
Enterobacter aerogenes	13048	50-100	Good-luxuriant	>=50%	Yellow	35-37°C	18-24 Hours
Escherichia coli	25922	50-100	Good-luxuriant	>=50%	Yellow	35-37°C	18-24 Hours
Proteus mirabilis	25933	50-100	Good-luxuriant	>=50%	Grey with black centers	35-37°C	18-24 Hours
Proteus vulgaris	13315	50-100	Good-luxuriant	>=50%	Grey with black centers	35-37°C	18-24 Hours
Salmonella Enteritidis	13076	50-100	Good-luxuriant	>=50%	Red with black centers	35-37°C	18-24 Hours
Salmonella Paratyphi A	9150	50-100	Good-luxuriant	>=50%	Red	35-37°C	18-24 Hours
Salmonella Paratyphi B	8759	50-100	Good-luxuriant	>=50%	Red with black centers	35-37°C	18-24 Hours
Salmonella Typhi	6539	50-100	Good-luxuriant	>=50%	Red with black centers	35-37°C	18-24 Hours

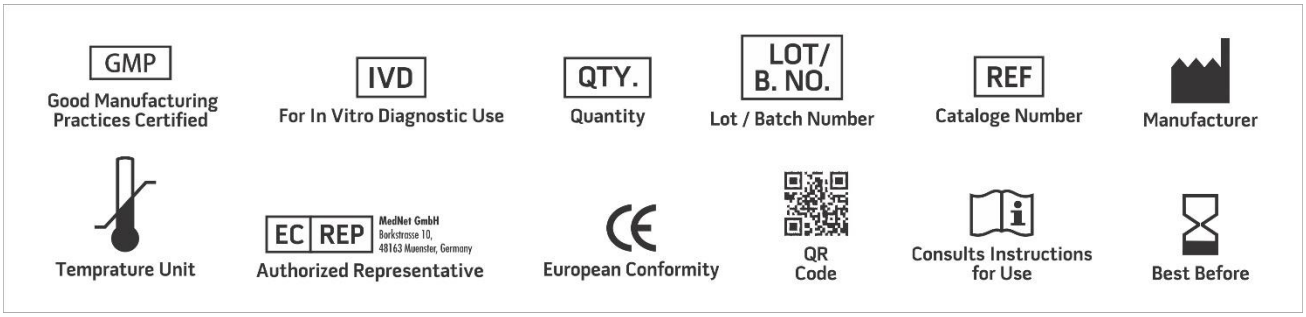
Salmonella Typhimurium	14028	50-100	Good-luxuriant	>=50%	Red with black centers	35-37°C	18-24 Hours
Shigella dysenteriae	13313	50-100	Good-luxuriant	>=50%	Red	35-37°C	18-24 Hours
Shigella sonnei	25931	50-100	Good-luxuriant	>=50%	Red	35-37°C	18-24 Hours
Shigella flexneri	12022	50-100	Good	>=30%	Red	35-37°C	18-24 Hours

PACKAGING:
In pack size of 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
1. Taylor W. L., 1965, Am. J. Clin. Pathol., 44:471-475.
2. Taylor W. L. and Harris B., 1965, Am. J. Clin. Pathol., 44:476.
3. Taylor W. L. and Harris B., 1967, Am. J. Clin. Pathol., 48:350.
4. Taylor W. L. and Schelhart B., 1967, Am. J. Clin. Pathol., 48:356.
5. Taylor W. L. and Schelhart B., 1968, Am. J. Clin. Pathol., 16:1387.
6. Taylor W. L. and Schelhart B., 1969, Appl. Microbiol., 18.393-395.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.
***For Lab Use Only**
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