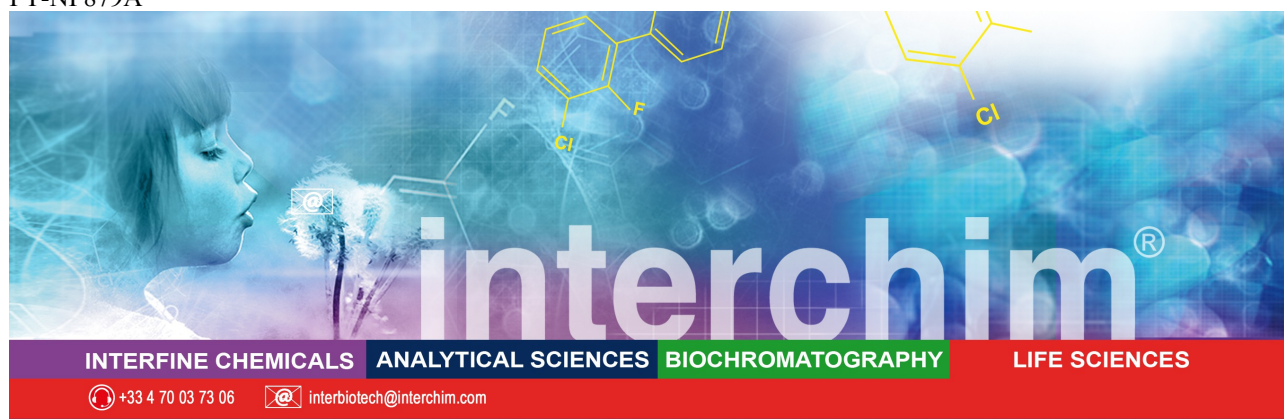


FT-NP879A



## XLD Agar

For the isolation of enteropathogenic bacteria, especially from the genus of *Shigella* and *Salmonella*

### Product Description

|                         |  |       |
|-------------------------|--|-------|
| <b>Name :</b>           | <b>XLD Agar (Xylose Lysine Desoxycholate Agar)</b> |       |
| <b>Catalog Number :</b> | NP879A, 20U<br>NP879B, 5x20U                       |       |
| <b>Formula in g/l</b>   | Lactose Monohydrate                                | 7.50  |
|                         | Sucrose  | 7.50  |
|                         | Sodium Thiosulfate                                 | 6.80  |
|                         | Sodium Chloride                                    | 5.00  |
|                         | L-Lysine   | 5.00  |
|                         | Xylose   | 3.50  |
|                         | Yeast Extract                                      | 3.00  |
|                         | Sodium Desoxycholate                               | 2.50  |
|                         | Ferric Ammonium Citrate                            | 0.80  |
|                         | Phenol Red   | 0.08  |
|                         | Bacteriological Agar                               | 13.50 |
|                         | <b>Final pH 7.4 ± 0.2 at 25°C</b>                  |       |



*Salmobella typhimurium*  
ATCC 14028

**Storage:** Room temperature 

### Preparation

Suspend 55.2 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. AVOID OVERHEATING. DO NOT AUTOCLAVE. Dispense into appropriate containers. The prepared medium should be stored at 8-15°C. The color is reddish-orange.

The dehydrated medium should be homogeneous, free-flowing and pink in color. If there are any physical changes, discard the medium.

### Uses

XLD AGAR was developed principally for isolating and differentiating Gram-negative enteric bacilli, particularly *Shigella* and *Salmonella*. It has been shown to be more effective than other enteric differential media.

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The reactions that take place are the degradation of the three fermentable carbohydrates: xylose, lactose and sucrose, with the production of acid, manifested in the color change from red to yellow. Sodium thiosulfate serves as a reactive substance, with Ferric ammonium citrate as an indicator of the formation of hydrogen sulfide under alkaline conditions. Lysine allows the *Salmonella* group to be differentiated from the non-pathogens since, without it, salmonellae would quickly ferment the xylose and be indistinguishable from non-pathogenic species. Once the salmonellae consume the xylose, lysine is attacked via the enzyme, lysine decarboxylase, with a reversion to an alkaline pH which is similar to the *Shigella* reaction. The bacteria that decarboxylate the L-Lysine to cadaverine are identified by the presence of a purple-red color around the colonies due to the elevation of the pH. Phenol red is the pH indicator. Yeast extract is the source of vitamins, particularly of the B-group essential for bacterial growth. Sodium chloride supplies essential electrolytes for transport and osmotic balance. Sodium desoxycholate is the selective agent inhibiting Gram-positive microorganisms.

Bacteriological Agar is the solidifying agent.

The European Pharmacopoeia recommends to inoculate and incubate *Escherichia coli* (indicative) as well as *Salmonella* at 30-35°C during 18-48 hours.

It also recommends in Paragraph 2.6.13 “Microbiological examination of non-Sterile products: test for specified microorganisms” to subculture in this medium after incubation in Rappaport Vassiliadis *Salmonella* Enrichment Broth, at 30-35°C for 18-24 hours and incubate this medium at 30-35°C for 18-48 hours.

Interpretation: The possible presence of *Salmonella* is indicated by the growth of well-developed red colonies, with or without black centers. This is confirmed by identification tests.

The product complies with the test if colonies of the types described are not present or if the confirmatory identification tests are negative.

## Characteristics of colonies

### ORGANISMS

*Arizona*

*Citrobacter*

*E. Coli, Enterobacter, Serratia*

*Edwardsiella*

*Klebsiella*

*Proteus mirabilis* and *P. vulgaris*

*Proteus morganii* and *P. rettgeri*

*Salmonella*

*Providencia* and *Shigella*

### COLONY CHARACTERISTICS

Red and transparent with a black center

Yellow and opaque. Can present a black center and clear edges

Yellow and opaque. Zone of yellow precipitation around the colonies

Red with a black center and clear edges

Large, yellow, pale, mucoid and opaque.

Zone of yellow precipitation around the colonies

Yellow, transparent, with clear edges. Black center especially *P. Mirabilis*

Red and transparent

Red, transparent with black centers and, if H<sub>2</sub>S is produced, yellow edges

Red and transparent

## Microbiological Test

The following results were obtained in the performance of the medium from type cultures after incubation at a temperature of 30-35°C and observed after 18-48 hours.

### Microorganisms

*Escherichia coli* ATCC 25922

*Escherichia coli* ATCC 8739

\* *Salmonella typhimurium* ATCC 14028

*Shigella flexneri* ATCC 12022

*Staphylococcus aureus* ATCC 25923

*Staphylococcus aureus* ATCC 6538

### Growth

Partially inhibited

Partially inhibited

Good

Good

Inhibited

Inhibited

### Color Colony

Yellow (precipitate)

Yellow (precipitate)

Clear Red (black center)

Red

\*According to European Pharmacopoeia Incubate at 30-35 °C for 18-48 h

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## Bibliography

Taylor, A. J. Clin. Path. 44:471. 1965. Taylor and Harris, A.J. Clin. Path. 44:476. 1965.

Rollender, W. U. *et al.* (1969) Comparison of Xylose Lysine desoxycholate agar and MacConkey agar for the isolation of Salmonella and Shigella from clinical specimens (tech. Bull. Reg. Med. Tech, 39 (1) 8-p)

## Ordering information

Catalog size quantities and prices may be found at <http://www.interchim.com>.  
Please inquire for higher quantities (availability, shipment conditions).

For any information, please ask : Uptima / Interchim; Hotline : +33(0)4 70 03 73 06

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