



## CAL Agar (Cellobiose Arginine Lysine Agar)

M893

### Intended Use

Recommended for selective isolation and biochemical characterization of *Yersinia enterocolitica*.

### Composition\*\*

Ingredients	g / L
Yeast extract	3.000
Sodium chloride	5.000
Cellobiose	3.500
L-Arginine	6.500
L-Lysine hydrochloride	6.500
Sodium deoxycholate	1.500
Neutral red	0.030
Agar	20.000
Final pH ( at 25°C)	7.1±0.2

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

Suspend 46.03 grams in 1000 ml purified/distilled water. Heat to boiling to dissolve the medium completely. **DO NOT OVERHEAT OR AUTOCLAVE.** Cool to 45-50°C. Mix well and pour into sterile Petri plates.

### Principle And Interpretation

*Yersinia enterocolitica* is a significant invasive enteric pathogen belonging to the family *Enterobacteriaceae*, which causes several well-recognized diseases especially in younger persons and several uncommon post-infection syndromes (1). Enterocolitis caused by *Y. enterocolitica* is characterized by diarrhoea, low fever and abdominal pain. CAL Agar used for selective isolation of *Y. enterocolitica* was originally formulated by Dudley and Shotts (2). CAL Agar is a differential medium as it differentiate *Yersinia* on the basis of cellobiose fermentation and lysine or arginine decarboxylation. CAL Agar is generally used for the isolation and characterization of *Y. enterocolitica* from faecal specimens (2) as the organism is biochemically similar to other *Enterobacteriaceae* (3). CAL Broth is used for the enumeration of *Y. enterocolitica* from water and other liquid specimens (3).

Yeast extract provides essential nutrients to the organisms. Cellobiose is the fermentable carbohydrate. Sodium chloride maintains the osmotic equilibrium. Sodium deoxycholate makes the medium selective by inhibiting the accompanying gram-positive bacteria, which may cause contamination during cultivation. L-arginine and L-lysine are the amino acids, decarboxylation of which makes the medium differential. Neutral red is the indicator, which turns red under acidic conditions.

### Type of specimen

Clinical samples - faeces; Food and dairy samples

### Specimen Collection and Handling:

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (4,5). For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (6,7,8). After use, contaminated materials must be sterilized by autoclaving before discarding.

### Warning and Precautions :

In Vitro diagnostic Use. For professional use only. Read the label before opening the container. Wear protective gloves/ protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

### Limitations :

1. Further biochemical and serological tests must be carried out for further identification.

## Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

## Quality Control

### Appearance

Light yellow to pink homogeneous free flowing powder

### Gelling

Firm, comparable with 2.0% Agar gel.

### Colour and Clarity of prepared medium

Red coloured, clear to slightly opalescent gel forms in Petri plates.

### Reaction

Reaction of 4.6% w/v aqueous solution at 25°C. pH : 7.1±0.2

### pH

6.90-7.30

### Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	Growth	Cellobiose	Arginine Decarboxylation	Lysine Decarboxylation
<i>Escherichia coli</i> ATCC 25922 (00013*)	good	negative reaction	variable reaction	variable reaction
<i>Proteus mirabilis</i> ATCC 25933	good	negative reaction	negative reaction	negative reaction
<i>Pseudomonas aeruginosa</i> ATCC 27853 (00025*)	good	negative reaction	negative reaction	positive reaction
<i>Yersinia enterocolitica</i> ATCC 27729	good-luxuriant	positive reaction	negative reaction	negative reaction

Key : (\*) Corresponding WDCM numbers.

## Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

## Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (4,5).

## Reference

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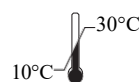
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