

## Technical Information

### Calcium M Pretein Agar

**Product Code: DM 2309**

**Application:** - Calcium Caseinate Agar is used for the detection and enumeration of proteolytic microorganisms in foodstuffs and other materials.

### Composition\*\*

Ingredients	Gms / Litre
Peptic digest of animal tissue	4.000
Meat extract	2.000
Casein enzymic hydrolysate	2.000
Calcium caseinate	3.500
Calcium chloride.2H <sub>2</sub> O	0.200
Tri-potassium citrate, H <sub>2</sub> O	0.350
Disodium hydrogen phosphate	0.105
Potassium dihydrogen phosphate	0.035
Sodium chloride	5.000
Agar	13.000
Final pH ( at 25°C)	7.0±0.2

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

### Principle & Interpretation

Protein hydrolysis by microorganisms in foods may produce a variety of odour and flavour defects. On the other hand, microbial proteolytic activity may be desirable in certain foods such as in the ripening of cheese, where it contributes to the development of flavour, body and texture. In some foods the level of proteolytic microorganisms may be of value to predict refrigerated storage life and to assess processing methods (1, 2). Calcium Caseinate Agar is a modification of the original formulation of Frazier and Rupp (3) and is used for the detection and enumeration of proteolytic microorganisms in foodstuffs and other materials. Casein enzymic hydrolysate supplies nitrogenous, carbonaceous nutrients along with vitamins and amino acids. Phosphates are added to buffer the medium. Sodium chloride helps to maintain the osmotic equilibrium. Casein in the medium is degraded by the proteolytic organisms. This results in formation of clear zones around the proteolytic colonies, in the otherwise opaque medium.

The test sample can be directly surface inoculated or the inoculation can be carried out by the pour plate technique. After an incubation for 24-48 hours, proteolytic organisms, if present will form clear zones on the medium. For better visualization of the zones, the plates can be flooded with 5-10% acetic acid.

### Methodology

Suspend 30.19 grams of dehydrated media in 1000 ml distilled water. Mix thoroughly & heat gently while frequently shaking until the suspension boils. Boil for 10 minutes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix thoroughly & while pouring into sterile Petri plates to suspend the precipitate. If desired, to increase turbidity, add 5-10 grams of skim milk powder before heating.

### Quality Control

#### Appearance

Cream to yellow homogeneous free flowing powder

#### Gelling

Firm, comparable with 1.3% Agar gel.

### Colour and Clarity

Whitish coloured, turbid gel forms in Petri plates

### Reaction

Reaction of 3.02 % w/v aqueous solution at 25°C. pH : 7.0±0.2

### Ph Range

6.80-7.20

### Cultural Response

DM 2309: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Proteolytic activity
<i>Bacillus cereus</i> ATCC 14579	50-100	good-luxuriant	≥70%	positive, clear zone surrounding colonies
<i>Escherichia coli</i> ATCC 25922	50-100	good-luxuriant	≥70%	negative, no clear zone surrounding colonies
<i>Proteus vulgaris</i> ATCC 13315		good-luxuriant	≥70%	negative, no clear zone surrounding colonies
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	good-luxuriant	≥70%	positive, clear zone surrounding colonies

## Storage and Shelf Life

**Dried Media:** Store below 30°C in tightly container and prepared medium at 2-8°C. Use before expiry period on the label.

**Prepared Media:** 2-8° in sealable plastic bags for 2-5 days.

## Further Reading

1. Chai T., Chen C., Rosen A. and Levin R. E., 1968, Appl. Microbiol., 16: 1738.
2. Martely F. G., Jayashankar S. R. and Lawrence, R. C., 1970, J. Appl. Bacteriol., 33: 363.
3. Frazier W. C. and Rupp P., 1928, J. Bacteriol., 16, 57-63

## Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at CDH is true and accurate
- Central Drug House Pvt. Ltd. reserves the right to make changes to specifications and information related to the products at any time.
- Products are not intended for human or animal diagnostic or therapeutic use but for laboratory, research or further manufacturing of diagnostic reagents extra.
- Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents. Do not use the products if it fails to meet specifications for identity and performance parameters.