

Technical Information

Standard Methods Caseinate Agar

Product Code: DM 1588

Application:- Standard Methods Caseinate Agar is recommended for detection of proteolytic microorganisms

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	5.000
Yeast extract	2.500
Dextrose	1.000
Sodium caseinate	10.000
Trisodium citrate	4.410
Calcium chloride	2.220
Agar	15.000

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Protein hydrolysis by microorganisms in foods may produce different type of odour and flavour defects. Some of the common psychrotrophic spoilage bacteria are strongly proteolytic and produce undesirable changes in dairy, meat, poultry and seafood products, particularly when high populations are reached after extended refrigerated storage. Standard Methods Caseinate Agar, recommended by APHA⁽¹⁾ is used for detection of proteolytic microorganisms. The medium is formulated according to Martley et al⁽²⁾ and shows greater sensitivity in the detection of the early stages of casein breakdown by the formation of zone of precipitation (insoluble paracaseins) in the transparent medium. Standard Methods Caseinate Agar is well buffered, and this reduces the occurrence of the false positive zones due to acid production. This medium can be used for the simultaneous detection of total and proteolytic counts of microorganism⁽¹⁾

Sodium caseinate is the major protein source for the proteolytic organisms. Casein enzymic hydrolysate and yeast extract provide nitrogenous nutrients to the proteolytic organisms. Dextrose is the carbohydrate source. Proteolytic organisms form white or off-white precipitate around the colony. Organisms that are strongly proteolytic can breakdown the precipitate formed around the colonies to soluble components with the formation of an inner transparent zone. For the enumeration of proteolytic psychrotrophic bacteria, inoculated plates should be incubated for 10 days at 7°C.

Methodology

Suspend 40.13 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.

Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Yellow coloured clear to slightly opalescent gel forms in Petri plates

Cultural Response/Characteristics

DM 1588: Cultural characteristics observed after an incubation at 35-37°C for 18- 24 hours.

Organism	Inoculum (CFU)	Growth	Proteolytic activity
<i>Bacillus cereus</i> ATCC 11778	50-100	luxuriant	positive, opaque or clear zones around colonies
<i>Pseudomonas aeruginosa</i> ATCC 7853	50-100	luxuriant	positive, opaque or clear zones around colonies
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	negative, no opaque or clear zones around colonies



Dehydrated Culture Media
Bases / Media Supplements

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8^o in sealable plastic bags for 2-5 days.

Further Reading

1. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.

2. Martley F. G., Jayashankar S. R. and Lawrence R. C., 1970, J. Appl. Bacteriol., 3:363.

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