

Calcium Caseinate Agar acc. to FRAZIER and RUPP, modified

A modification of the selective agar proposed by FRAZIER and RUPP (1928) for the detection and enumeration of proteolytic microorganisms (proteolytes) in foodstuffs and other materials.

Mode of Action

This medium contains casein which is degraded by the proteolytes to form clearer zones surrounding the colonies in the otherwise turbid medium.

Typical Composition (g/litre)

Peptone from meat 4.0; meat extract 2.0; peptone from casein 2.0; calcium caseinate 3.5; calcium chloride dihydrate 0.2; tri-potassium citrate monohydrate 0.35; di-sodium hydrogen phosphate anhydrous 0.105; potassium dihydrogen phosphate 0.035; sodium chloride 5.0; agar-agar 13.0.

Preparation

Suspend 30.2 g/litre completely (if necessary use a mixer), place in a cold water bath and while frequently shaking heat slowly until the suspension boils, boil for about 10 minutes, autoclave (15 min at 121 °C). Mix thoroughly while pouring to suspend the precipitate. 5-10 g skim milk powder/litre can be added before heating to increase turbidity.

pH: 7.0 ± 0.2 at 25 °C.

The plates are turbid and yellowish-brown.

Experimental Procedure and Evaluation

Inoculate by the pour-plate method or by spreading the sample on the surface of the medium.

Incubation: 2-3 days at 35 °C aerobically.

Count the proteolyte colonies (surrounded by clear zones). The plates can be flooded with 5 to 10 % acetic acid to facilitate recognition of the zones.

Literature

FRAZIER, W.C., a. RUPP, P.: Studies on the proteolytic bacteria of milk. I. A medium for the direct isolation of caseolytic milk bacteria. - *J. Bact.* **16**; 57-63 (1928).

Ordering Information

Product	Merck Cat. No.	Pack size
Calcium Caseinate Agar acc. to FRAZIER and RUPP, modified	1.05409.0500	500 g
Acetic acid min. 96 %	1.00062.1000	1 l
Skim milk powder	1.15363.0500	500 g

Quality control

Test strains	Growth	Clear zone
<i>Bacillus cereus</i> ATCC 11778	good / very good	+
<i>Pseudomonas aeruginosa</i> ATCC 27853	good / very good	+
<i>Proteus vulgaris</i> ATCC 13315	good / very good	-
<i>Escherichia coli</i> ATCC 25922	good / very good	-
<i>Enterobacter cloacae</i> ATCC 13047	good / very good	-



Enterobacter cloacae
ATCC 13047



Proteus vulgaris
ATCC 13315