



Carnobacterium Selective Agar Base (CTAS Agar Base)

M1892

Recommended for the detection of carnobacterium species

Composition**

Ingredients	Gms / Litre
Peptone from casein	10.000
Yeast extract	10.000
Sucrose	20.000
Tween 80	1.000
Trisodium citrate,2H ₂ O	15.000
Manganese sulphate, 4H ₂ O	4.000
Dipotassium hydrogen orthophosphate	2.000
Thallium acetate	1.000
Nalidixic acid, sodium salt	0.040
Cresol red	0.004
Agar	15.000
Final pH (at 25°C)	9.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 74.91 grams(the equivalent weight of dehydrated medium per litre) in 990 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.Cool to 45-50°C and add 10ml of 10% 2, 3, 5-Triphenyl Tetrazolium Chloride (TTC)(FD057). Mix well and pour into sterile Petri plates.

Principle And Interpretation

Carnobacterium species are Gram-positive rods belonging to the family Lactobacillaceae and are not considered as human pathogens. It comprises of 11 species, of which only two of these, *Carnobacterium divergens* and *Carnobacterium maltaromaticum*, are isolated frequently from the environment and food (1). *Carnobacterium* species are commonly isolated from a variety of foods like meats stored under anaerobic atmospheres at refrigeration temperatures, but the role of these organisms in the spoilage of meat and meat products is yet to be determined.

Peptone from casein serves as a source of nitrogen and amino acids. Yeast extract is the vitamin source.Sucrose and citrate is the carbon source.Polysorbate 80 acts as an emulsifier. Dibasic potassium phosphate buffer the medium.Manganese sulfate helps to stimulate growth of carnobacteria whereas Thallium acetate and nalidixic acid are used as inhibitory substance for selective isolation of *Carnobacterium* spp.

Quality Control

Appearance

Light yellow to greenish yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium

Red to purple-red coloured clear to slightly opalescent gel with precipitate forms in Petri plates.

Reaction

Reaction of 7.5% w/v aqueous solution at 25°C. pH : 9.0±0.2

pH

8.80-9.20

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours or longer.(with 5% CO₂)

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery
Cultural Response <i>Carnobacterium maltaromaticum</i> ATCC 35586	50-100	luxuriant	>=50%
<i>Carnobacterium divergens</i> ATCC 35677	50-100	luxuriant	>=50%
<i>Lactobacillus sakei ssp.sakei</i> ATCC 15521	>=10 ³	inhibited	0%

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference

1. Leisner, J. J., Groth Laursen, B., Prevost, H., Drider, D. & Dalgaard, P. (2007). *Carnobacterium*: positive and negative effects in the environment and in foods. *FEMS Microbiol Rev* 31, 592–613
- Holzappel, W.H. and Gerber, E.S. (1983) *Lactobacillus divergens* sp. nov., a new heterofermentative *Lactobacillus* species producing L(+)-lactate. *Appl. Microbiol.* 52, 522-534

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