

Marine Broth

For the isolation and enumeration of heterotrophic marine bacteria

Practical information

Applications	Categories
Selective enumeration	Heterotrophic marine bacteria

Principles and uses

Marine Broth is similar to Marine Agar (Cat. 1059), lacking the agar, but containing all the nutrients necessary to cultivate the majority of marine bacteria.

Since the marine environment has environmental conditions completely different to those of other environments, its microflora is also very different. Marine Microorganisms are capable of surviving at very low temperatures and in high salinity levels.

Both Marine Agar and Marine Broth (Cat. 1217) are prepared according to ZoBell, containing almost double the mineral content of sea water. The high salt content helps to simulate sea water. Bacteriological peptone provides nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is a source of vitamins, particularly of the B-group. Bacteriological agar is the solidifying agent.

Formula in g/L

Ammonium nitrate	0,0016	Bacteriological peptone	5
Boric acid	0,022	Calcium chloride	1,8
Disodium phosphate	0,008	Magnesium chloride anhydrous	8,8
Potassium bromide	0,08	Potassium chloride	0,55
Sodium bicarbonate	0,16	Sodium chloride	19,4
Sodium fluoride	0,0024	Sodium silicate	0,004
Sodium sulfate	3,24	Strontium chloride	0,034
Yeast extract	1	Ferric citrate	0,1

Preparation

Suspend 40,20 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense into appropriate containers and sterilize in autoclave at 121°C for 15 minutes. The prepared medium should be stored at 2-8°C.

Instructions for use

Dispense 50 ml of the broth in 250 ml Erlenmeyer flasks. Inoculate and incubate at 20-25°C for 24-72 hours.

Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
May present a light precipitation	Fine powder	Beige	Amber, slightly opalescent	7,6 ± 0,2

Microbiological test

Incubation conditions: (20-25 °C / 24-72 h)

Microrganisms	Specification
Vibrio harveyi ATCC 14126	Good growth

Storage

Temp. Min.:2 °C
Temp. Max.:25 °C

Bibliography

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