Zobell Marine Broth 2216

M385

Zobell Marine Broth 2216 is recommended for cultivation, isolation and enumeration of heterotrophic marine bacteria.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	5.000
Yeast extract	1.000
Ferric citrate	0.100
Sodium chloride	19.450
Magnesium chloride	8.800
Sodium sulphate	3.240
Calcium chloride	1.800
Potassium chloride	0.550
Sodium bicarbonate	0.160
Potassium bromide	0.080
Strontium chloride	0.034
Boric acid	0.022
Sodium silicate	0.004
Ammonium nitrate	0.0016
Disodium phosphate	0.008
Sodium fluorate	0.0024
Final pH (at 25°C)	7.6±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 40.25 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense as desired.

Principle And Interpretation

Microorganisms in an aquatic environment may occur at all depths ranging from the surface region to the very bottom of the ocean trenches. The top layers and the bottom sediments harbour higher concentration of microorganisms (1). Marine microorganisms are vital to ecological cycles because they form the foundations of many food chains (2). Zobell Marine Broth formulated by Zobell (3), has a composition that mimics seawater (4) and thus helps the marine bacteria to grow abundantly. This medium has been used for the growth of marine bacteria (5, 6).

Zobell Marine Broth contains the nutrients, which are required for the growth of marine bacteria. These media have minerals as in seawater (7) and peptic digest of animal tissue and yeast extract as the sources of nutrients for the marine bacteria as reported by Jones (8). High amount of salt content is used to simulate seawater. Other minerals are used to mimic the mineral composition of seawater.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Yellow coloured opalescent solution in tubes.

Reaction
Reaction of 4.03% w/v aqueous solution at 25°C. pH : 7.6±0.2

pH
7.40-7.80

Cultural Response

M385: Cultural characteristics observed after an incubation at 20-25°C for 40-72 hours .

Organism	Inoculum (CFU)	Growth
Cultural Response		
Vibrio fischeri ATCC 7744	50-100	good-luxuriant
Vibrio harveyi ATCC 14126	50-100	good-luxuriant

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

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3.ZoBell C. E., 1941, J. Mar. Res., 4:42.
4.Lyman J. and Fleming R. H., 1940, J. Mar. Res. 3:134.
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6.Weiner R. M., Segall A. M. and Colwell R. R., 1985, Appl. Environ. Microbiol., 49:83.
7.Zobell C. E., 1940, J. Marine Research , 3:134
8.Jones, 1960, Bact. Proc. Pg. 36 (A29).

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