

FMM BROTH

CAT Nº: 1264

For the cultivation of *Flexibacter maritimus*

FORMULA IN g/l

Sodium Chloride	19.40	Potassium Bromide	0.08
Magnesium Chloride	5.90	Strontium Chloride	0.034
Casein Peptone	5.00	Boric Acid	0.022
Sodium Sulphate	3.24	Sodium Acetate	0.01
Calcium Chloride	1.80	Sodium Fluoride	0.0024
Potassium Chloride	0.55	Ammonium Nitrate	0.0016
Yeast Extract	0.50	Disodium Phosphate	0.008
Sodium Bicarbonate	0.16	Sodium Silicate	0.004

Final pH 7.4± 0.2 at 25°C

PREPARATION

Suspend 36.7 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 store at 2-8°C. The color is light amber.

The dehydrated medium should be homogeneous, free-flowing and whitish in color. If there are any physical changes, discard the medium.

USES

FMM Broth is a medium used for the cultivation of *Tenacibaculum maritimum* (formerly *Flexibacter maritimus*) which is responsible for Flexibacteriosis marina, one of the most important bacterial diseases affecting marine lives around the world. This has an important economic impact to aquaculture producers. The infection has a variety of clinical manifestations depending on the species and age of fish, the most significant symptom being the presence of gross lesions on the body surface. It is, currently, the main pathological problem in turbot and sole cultivation affecting all ages of fish.

Casein peptone provides nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is a source of vitamins, particularly of the B-group. The rest of the components provide the salinity requirements that make the medium similar to sea water.

The isolated bacteria are biochemically characterized by conventional methods in plates and tubes. They are Gram negative filamentous bacillus, oxidize and catalyze positive, nitrate reductors and incapable of producing sulphydric acid. They are negative for the test of indole and methyl red. To confirm the taxonomic position perform molecular and seriological tests (PCR).

Incubate at 25°C during 72 hours.

MICROBIOLOGICAL TEST

The following results were obtained in the performance of the medium from type cultures after incubation at a temperature of 25°C and observed after 72 hours.

Microorganisms	Growth
<i>Flexibacter maritimus</i> sp	Good

BIBLIOGRAPHY

- Dinis, M.T., Ribeiro, L., Soares, F. & Sarasquete, C. (1999) A review on the cultivation potential of *Solea senegalensis* in Spain and in Portugal. *Aquaculture* 176, 27-38.
- Dopazo, C.P. & Barja, J.L.. (2002) Diagnosis and identification of IPNV in salmonids by molecular methods. En: *Molecular Diagnosis of Salmonid Diseases*. pp. 23-48. C. Cunningham (ed). Kluwer Academic Publishers. Dordrecht, Holanda.
- Osorio, C. and Toranzo, A.E. 2002. DNA-based diagnostics in Sea Farming. In: R. Nagabhushanam and M. Fingerman (Editors), *Recent Advances in Marine Biotechnology Series Vol.7: Seafood safety and Human Health*. Science Publishers, Inc. Plymouth, UK. pp. 253-310.

STORAGE

Once opened keep powdered medium closed to avoid hydration.

