Welshimer's Broth, Modified

M1740

Welshimer's Broth, Modified is a chemically defined minimal medium for the growth of *Listeria monocytogenes* .

Composition**

Ingredients	Gms / Litre
Monopotassium phosphate	6.560
Disodium phosphate. 7H20	30.960
Magnesium sulphate. 7H20	0.410
Ferric citrate	0.088
Glucose	10.000
L - Leucine	0.100
L - Isoleucine	0.100
L - Valine	0.100
L - Methionine	0.100
L - Arginine	0.100
L - Cysteine	0.100
L - Glutamine	0.600
Riboflavin	0.0005
Thiamine	0.001
Biotin	0.0005
Thioctic acid	0.000005

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 34.44 grams(equivalent weight of dehydrated medium per litre) in 1000 ml distilled water. Heat, if necessary, to dissolve the medium completely. Dispense as desired and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Welshimer's Broth, Modified is an improved medium developed by Premaratne et al,which supports good growth of *Listeria monocytogenes* (1).This medium is a modification of Welshimer's Broth (2), having additional amino acids L - Histidine and L - Tryptophan.

Listeria monocytogenes is widespread in the environment and continues to present a potential health risk in raw, minimally processed, and some fermented foods. This chemically defined medium allows the growth of *Listeria monocytogenes* in widely diverse environment. All the aminoacids and vitamins act as the growth factors required by *Listeria monocytogenes*. Ferric citrate stimulates the growth whereas the potassium and sodium phosphates provide buffering system. Glucose and glutamine are the primary sources of carbon and nitrogen.

Quality Control

Appearance
White to cream homogeneous free flowing powder

Colour and Clarity of prepared medium
Light amber clear having white precipitate.

Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Cultural Response

Organism	Inoculum (CFU)	Growth

Cultural Response

Listeria inocua ATCC 33090	50-100	luxuriant
Listeria monocytogenes ATCC 19111	50-100	luxuriant
Listeria monocytogenes ATCC 19112	50-100	luxuriant
Listeria monocytogenes ATCC 19117	50-100	luxuriant
Listeria monocytogenes ATCC 19118	50-100	luxuriant
Listeria ivanovii ATCC 19119	50-100	luxuriant

Storage and Shelf Life

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

Reference

1.Premaratne, R. J., W. Lin, and E. A. Johnson. 1991. Development of an improved chemical defined minimal medium for Listeria monocytogenes. Appl. Environ. Microbiol. 57: 3046-3048.

2.Welshimer,H.J. 1963. Vitamin requirements of Listeria monocytogenes J. Bacteriol. 85: 1156-1159.

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