Wesley Broth Base

M1152

Wesley Broth is recommended as a selective enrichment medium for isolation of *Campylobacter jejuni* from poultry products as per APHA.

Composition**

Ingredients	Gms / Litre
Tryptose	20.000
Yeast extract	2.500
Sodium chloride	5.000
Ferrous sulphate	0.250
Sodium metabisulphite	0.250
Sodium pyruvate	0.250
Bicine	10.000
Agar	1.000

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 39.25 grams in 1000 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 50°C and aseptically add rehydrated contents of 1 vial of Campylobacter Selective Supplement (FD077) and 6.25 ml of cooled alkaline hematin solution (Dissolve 32 mg of bovine hemin in 10 ml of 0.15 N NaOH). Sterilize by autoclaving at 5lbs pressur (108°C) for 30 minutes. Mix well before dispensing.

Principle And Interpretation

Campylobacter jejuni is a gram-negative, rod-shaped curved bacterium commonly found in the intestines of poultry, cattle, swine, rodents, wild birds, cats and dogs. *C. jejuni* is recognized as a leading cause of acute bacterial gastroenteritis in humans due to eating the food of animal origin. *C. jejuni* is often isolated from patients with diarrhea at greater isolation rates than reported for *Salmonella* species. This organism does not grow below 30°C and is sensitive to normal atmospheric concentration of oxygen. Due to this reason, only small numbers of *Campylobacters* may be present in foods. Hence selective enrichment is needed to detect the few culturable cells of *C. jejuni* that may be present. *C. jejuni* survives best in foods held at refrigeration temperature but is highly susceptible to freezing conditions (3, 4) and also sensitive to sodium chloride Wesley Broth is formulated as described by Wesley (1) and recommended by APHA (2) for selective enrichment of *C. jejuni* from poultry products.

Wesley medium is an ideal enrichment medium suitable for the isolation of *C. jejuni* . The medium contains tryptose and yeast extract, which provide nitrogenous nutrients, vitamin B complex and other growth nutrients to the organisms. Sodium metabisulphite and ferrous sulphate help in survival and easy recovery of the organism. Sodium pyruvate increases the oxygen tolerance of *C. jejuni* (5).

Agar in small quantity helps to create microaerophilic atmosphere. Bicine gives good buffering capacity to the medium.Wesley Broth (90 or 100 ml) is inoculated with 10 or 25 grams of food respectively and incubated with agitation under a microaerobic atmosphere at 42°C for 16-18 hours. The enriched culture is plated onto selective media and the plates are incubated at 42°C for upto 48 hours under microaerobic conditions.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Semisolid, comparable with 0.1% Agar gel.

Colour and Clarity of prepared medium

Amber coloured clear to slightly opalescent solution.

Cultural Response

M1152: Cultural characteristics observed after an incubation at 42°C for 16-24 hours with added Campylobacter Selective Supplement (FD077) and alkaline hematin solution, under microaerobic atmosphere.

Organism	Growth
Campylobacter jejuni ATCC 29428	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

1. Wesley R. D., Swaminathan B. and Stadelman W. J., 1983, Appl. Environ. Microbiol., 46:1097.
2. Vanderzant C. and Splittstoesser D. F., (Eds.), 1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed., APHA, Washington, D.C.
3. Christopher F. M., Smith G. C. and Vanderzant C., 1982, J. Food Prot., 45:260.
4. Gill C. O. and Harris L. M., 1984, J. Food Prot., 47:96.
5. George H. A., Hoffman P. S., Smibert R. M. and Krieg N. R., 1978, J. Clin. Microbiol., 8:36.

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