



Chopped Liver Broth

M606

Chopped Liver Broth is used for the cultivation and enrichment of anaerobic bacteria from food specimens.

Composition**

Ingredients	Gms / Litre
Fresh lean, beef liver	500.000
Peptic digest of animal tissue	10.000
Dipotassium phosphate	1.000
Starch, soluble	1.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 11.2 grams in 100 ml distilled water. Mix thoroughly to wet and allow the mixture to soak for 15 minutes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 20 minutes. Exhaust for 20 minutes in free flowing steam before use.

Principle And Interpretation

Clostridial species are one of the major causes of food poisoning and gastrointestinal illnesses. They are gram-positive, spore-forming rods that occur naturally in soil. Among the family are : *Clostridium botulinum* , which produces one of the most potent toxins in existence; *Clostridium tetani* , causative agent of tetanus; and *Clostridium perfringens* , commonly found in wound infections and diarrhoea cases. The use of toxins to damage host cells is a method deployed by many bacterial pathogens. The major virulence factor of *C. perfringens* is the CPE enterotoxin, which is secreted upon invasion of the host gut, and contributes to food poisoning and other gastrointestinal illnesses.

Chopped Liver Broth is formulated in accordance with APHA (1) and is recommended by FDA (2) for cultivation and enrichment of *Clostridium* species from foods.

Fresh lean, beef liver and peptic digest of animal tissue provide nitrogen and other nutrients necessary to support bacterial growth. Dipotassium phosphate provides buffering to the medium. Starch acts as a source of carbon.

Liquid foods are directly inoculated whereas solid foods are grinded first and then inoculated into this enrichment medium. 1 to 2 grams of solid or 1 to 2 ml of liquid food is added per 15 ml of enrichment broth and incubation is carried out at 26 to 28°C for upto 7 days. If no growth is observed after 7 days the culture medium is further incubated for 10 days to allow delayed germination of spores.

Quality Control

Appearance

Light yellow to light brown homogeneous free flowing powder

Colour and Clarity of prepared medium

Yellow coloured, clear solution without any precipitate

Reaction

Reaction of 11.2% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

M606: Cultural characteristics observed under anaerobic condition, after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Recovery
<i>Clostridium botulinum</i> ATCC 25763	50-100	good

<i>Clostridium</i> <i>perfringens</i> ATCC 12924	50-100	good
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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. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
2. FDA Bacteriological Analytical Manual, 2005, 18th Ed., AOAC, Washington, D.C.

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