Technical Information

Buffered Tryptone Glucose Yeast Extract Broth

Product Code: DM 1951

Application: - Buffered Tryptone Glucose Yeast Extract Broth is recommended for isolation and enumeration of *Clostridium perfringens* from food specimens

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	50.000
Peptic digest of animal tissue	5.000
Yeast extract	20.000
Dextrose	4.000
Disodium phosphate	5.000
Sodium thioglycollate	1.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Food poisioning due to Clostridium perfringens is one of the most common types of foodborne illness reported in the literature[2]. A heat labile enterotoxin produced only by sporulating cells induces the major symptoms of diarrhoea in perfringens poisoning[3-4]. Generaly the enterotoxin is not preformed in the food, where as the foods in which conditions are favorable for sporulation may contain enterotoxin[5,6]. Buffered Tryptone Glucose Yeast Extract Broth as recommended by APHA[1] is prepaired for enrichment as well as for cultivation of *C. perfringens* from food samples and is also used to obtain pure cultures of *C. perfringens* before proceeding for confirmation. Endospores are not usually produced in this medium[1].

The medium contains casein enzymic hydrolysate, peptic digest of animal tissue and yeast extract, which provides carbon and nitrogen, vitamins and other essential nutrients. Dextrose is the fermentable sugar. Disodium phosphate buffers the medium well. Sodium thioglycollate present in the medium acts as a reducing agent and maintains a low oxygen tension in the medium.

For enrichment 2 grams of food sample is inoculated in 15-20 ml of sterile Buffered Tryptone Glucose Yeast Extract Broth (DM1951). After incubation of 20-24 hours at 35-37°C the culture from the tubes showing turbidity and gas production is streaked on TSC Agar Plates (DM1837) containing egg yolk to obtain presumptive *C. perfringens.*

Methodology

Suspend 8.5 grams of powder media in 100 ml distilled water. Shake it well & heat, if necessary to dissolve the medium completely and dispense 15 ml into 20x150 mm test tubes or 100 ml in 170 ml bottles. Sterilize by autoclaving at 15 lbs pressure (121°C) for 10 minutes (tubes) to 15 minutes (bottles).

Quality Control

Physical Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Light amber coloured clear solution without any precipitate

Reaction
Reaction of 8.5% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH range 7.10-7.50

Cultural Response/ characteristices
DM 1951: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Grouth
Clostridium botulinum ATCC 25763	50-100	good-luxuriant
Clostridium perfringens A TCC 12924	50-100	good-luxuriant
Clostridium sporogenes ATCC 11437	50-100	good-luxuriant

Storage and Shelf Life

Dried Media : Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media : 2-8^{o} in sealable plastic bags for 2-5 days.

Further Reading

1. Vanderzant C. and Splittstoesser D. F., (Eds.), 1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed., APHA, Washington, D.C.
2. Doyle M. P., (Ed.), 1989, Foodborne Bacterial Pathogens, Marcel Dekker, New York.
3. Duncan C. L., 1973, J. Bacteriol., 113:932.
4. Bartholomew et al, 1985, J. Clin. Pathol. 3 8:222.
5. Craven S. E., Blankenship L.C. and McDonel J. L., 1981, Appl. Microbiol. 41 : 1184.6. Naik M. S., and Duncan C. L., 1977, J. Food Safety, 1:7.

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