

## Tryptone Peptone Glucose Yeast Extract (TPGY) Broth Base, w/o Trypsin (i23466)

TPGY Broth is used to test toxicity type of *Clostridium botulinum* cultures.

Industry: Food

### Principles & Uses

*Clostridium botulinum*, an anaerobic, spore-forming bacterium, produces potent neurotoxins, leading to conditions like botulism. Grouped by cultural and physiological traits, strains of *C. botulinum* display proteolytic abilities, such as the digestion of coagulated egg white or meat, distinguishing them into three types. Tryptone Peptone Glucose Yeast Extract (TPGY) Broth is recommended for assessing the toxicity of *C. botulinum* cultures in food. This medium includes components like casein hydrolysate, peptic digest of animal tissue, and yeast extract, providing essential nutrients. Dextrose acts as a fermentable carbohydrate, and sodium thioglycollate functions as a reducing agent.

Botulism arises from the ingestion of improperly preserved or home-canned low-acid foods contaminated by *C. botulinum* toxins. The spores of this bacterium are highly resilient, surviving even boiling temperatures. Cultures of *C. botulinum* are subjected to TPGY Broth for toxicity determination. Differentiating between proteolytic and non-proteolytic types is crucial, with the latter requiring trypsin activation for toxin manifestation. Optimal growth conditions vary, with proteolytic strains favoring around 35°C and non-proteolytic strains thriving at lower temperatures, even in refrigeration.

### Composition (gr/L)

Casein Hydrolysate 50 g, Peptic digest of Animal Tissues 5 g, Yeast Extract 20 g, Dextrose 4 g, Sodium Thioglycollate 1 g.

Final pH at 25°C 7.0 ± 0.2

### Preparation from dehydrated Powder

Suspend 80 g of the powder in 1 L of distilled water. Heat if necessary to dissolve the medium completely. Autoclave at 121°C for 15 minutes. Refrigerate the sterile medium until use. Before inoculation add 1.5% filter sterilized trypsin solution to a final concentration of 0.1% if desired.

### Quality Control

Dehydrated Appearance: Cream to yellow, free-flowing, homogeneous.

Prepared Appearance: Cream to yellow, without significant precipitation.

Reaction of 8.0% Solution at 25°C: pH 7.0 ± 0.2

### Cultural Response

Cultural response was observed after incubation at 26-28 °C up to 7 days.

Organism (ATCC*)	Recovery
<i>Clostridium botulinum</i> (25763)	Very good

\*ATCC is a registered trade mark of the American Type Culture Collection.

### Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.