Presence-Absence Broth, PA | AS-1334

Used for detecting *coliform* microorganisms in treated water.

Presence-Absence Broth is a selective enrichment medium, which was created especially for the presumptive detection of *coliform* bacteria in water samples.

Peptones and meat extract are among the nutrients included in the medium's composition, which promotes the growth of a variety of microorganisms. As the main carbon source, lactose is fermented by *coliforms* to create acid and frequently gas, which is an indication of a positive result. The selective agent sodium lauryl sulfate increases the medium's specificity for *coliforms* by preventing the growth of many Gram-positive bacteria and some Gram-negative non-*coliforms*. Because lactose fermentation produces acid, bromocresol purple functions as a pH indicator, visually indicating the presence of *coliforms* by changing color from purple to yellow. Gas production, often observed in Durham tubes, further *confirms* the presence of *coliforms*.

Presence-Absence Broth is regarded as a presumptive test even though it is a quick and effective way to find *coliforms*. To positively identify *coliform* species, positive results usually need to be confirmed by additional testing, like the Membrane Filter or Multiple Tube Fermentation procedure.

Composition (gr/L)

Peptones	5
Meat Extract	3
Tryptose	9.8
Lactose	7.46
Sodium Chloride	2.46
Dipotassium Hydrogen Phosphate	1.35
Potassium Dihydrogen Phosphate	1.35
Sodium Lauryl Sulfate	0.05
Bromocresol Purple	0.0085
Final pH at 25°C	6.8 ± 0.2

Preparation

For preparation of triple strength concentrated broth, dissolve 91.5 g of the powder into 1 liter distilled water. Mix well. Pour 50 ml amount into 250 ml milk dilution bottles. Autoclave at 121°C for 12 min.

Quality Control

Dehydrated Appearance: Beige, free-flowing, homogeneous.

Prepared Appearance: Purple, clear to very slightly opalescent, without significant precipitate.

Reaction of 3.05% Solution at 25°C: pH 6.8 ± 0.2

Microbial Test Results

After sterilization, allow the medium cool to room temperature. Add 100 ml of drinking water. Inoculate with test organisms. incubate at 35 ± 0.5 °C for 18 to 48 hours.

Organism (ATCC)	Recovery	Color Change
Escherichia coli (25922)	Good	Yellow with or without gas production
Escherichia coli (13762)	Good	Yellow with or without gas production
Enterococcus faecalis (29212)	None to poor	No change
Pseudomonas aeruginosa (27853)	Partial inhibition to fair	No change

Storage

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