

## Bolton Selective Enrichment Broth Base (i23468)

Used for the selective enrichment of *Campylobacter* from foods.

Industry: Food

### Principles & Uses

Bolton Broth is a selective enrichment medium designed for the recovery of *Campylobacter* species from foods, with unpasteurized milk being a common source of *Campylobacter jejuni* infections. Initially created to isolate *Campylobacter jejuni* from feces, it incorporates antibiotics like cefoperazone, vancomycin, trimethoprim, and amphotericin B to ensure selectivity. Microaerophilic incubation is unnecessary, and damaged cells of *Campylobacter* can recover efficiently due to the medium's nutrient content.

The components of the medium, such as peptone, yeast extract, lactalbumin hydrolysate, sodium chloride, sodium metabisulfite, and more, play specific roles. These include providing essential nutrients, quenching toxic compounds, maintaining osmotic balance, and ensuring aero-tolerance. Antibiotics in the supplement inhibit the growth of unwanted bacteria and fungi, contributing to the medium's selectivity. The incubation temperature further enhances this selectivity.

Bolton Broth Selective Enrichment Broth is recommended for pre-enrichment in food samples with low *Campylobacter* counts. It aids in the recovery of sublethally injured bacteria, crucial in the food industry due to various processing methods that may cause such injuries.

### Composition (gr/L)

Peptone from Meat 10 g, Lactalbumin hydrolysate 5 g, Yeast Extract 5 g, Sodium chloride 5 g,  $\alpha$ -ketoglutaric acid 1 g, Sodium pyruvate 0.5 g, Sodium metabisulphite 0,5 g, Sodium carbonate 0.6 g, Haemin 0.01 g.

Final pH at 25°C 7.4  $\pm$  0.2

### Preparation from dehydrated Powder

Dissolve 13.8 g in 500 ml of distilled water. Autoclave at 121°C for 15 minutes. Cool to 45 - 50°C. Aseptically add 25 ml lysed horse blood and the content of 1 vial of Bolton Broth Selective Supplement. Mix well and distribute the broth into sterile screw top containers. After the addition of the sample the space between screw top and broth should be approx. 2cm.

### Quality Control

Dehydrated Appearance: Powder is homogeneous, free flowing, and light beige.

Prepared Appearance: Prepared medium is trace to slightly hazy and amber.

Reaction of 2.76% Solution at 25°C: pH 7.4  $\pm$  0.2

### Cultural Response

Cultural characteristics after 4 - 6 hours at 37°C followed by 40 - 48 hours at 41.5°C. A loopful of this enriched culture is streaked on Karmali *Campylobacter* Agar Base.

Organism (ATCC*)	Growth after 48 hours
<i>Campylobacter jejuni</i> (29428)	>10 <sup>6</sup> CFU/ml
<i>Campylobacter jejuni</i> (33291)	>10 <sup>6</sup> CFU/ml
<i>Campylobacter coli</i> (33559)	>10 <sup>6</sup> CFU/ml
<i>Escherichia coli</i> (25922)	-
<i>Saccharomyces cerevisiae</i> (9763)	-

\*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.