



## HiCombi™ Dual Performance Salmonella Medium

LQ073

For elective enrichment and isolation of *Salmonellae* from chicken legs, meat products or other food samples. Combination of solid (7 ml) and liquid (20 ml) media in single bottle.

### Directions

1. Mark the dual performance bottle for sample detail.
2. Bring the frozen chicken leg specimen or any other food sample to 25 - 30°C and cut into small pieces under hygienic conditions.
3. Aseptically add 1 gm of finely chopped chicken leg pieces to 9 ml of sterile saline or other suitable diluents. Mix thoroughly using vortex meter. Use this suspension as inoculum. If larger quantity of sample is to be analyzed, proportionate amount of sterile saline should be used as diluents.
4. Add 3–5 ml of sample suspension to the broth medium by opening bottle under aseptic conditions and after addition, replace the cap. Incubate at 37°C for 4- 5 hour.
5. After 4-5 hours of incubation remove the bottle from incubator. Tilt the bottle horizontally whereby solid medium is submerged with liquid phase. Keep it for 30–40 seconds and again bring bottle to standing position. Transfer bottle to incubator and incubate further at 37°C for 18 to 20 hours. After incubation read the results as indicated.

### Principle And Interpretation

*Salmonella* species are the leading cause of food-borne bacterial diseases in humans. The problem of human salmonellosis from consumption of contaminated foods generally remains on the increase worldwide (1)

The ubiquity of *Salmonellae* in the natural environment, compelled with the intensive husbandry practices used in the meat, fish and shellfish industries and the recycling of offal and inedible raw materials into animal feeds has favored the continued preeminence of this human bacterial pathogen in the global food chain (2, 3) of the many sectors within the meat industry, poultry products remain the principal reservoirs of *Salmonellae*.

*Salmonella* species causes many types of infections from mild self-limiting gastroenteritis to life-threatening typhoid fever. The most common form of *Salmonella* disease is self-limiting gastroenteritis with fever. Typhoid fever is characterized by fever, headache, diarrhea and abdominal pain. *Salmonella* Typhi and *Salmonella* Paratyphi A & B cause gastroenteritis, bacteremia and enteric fever, *Salmonella* Choleraesuis causes gastroenteritis and enteric fever.

Lab diagnosis depends on the isolation and identification of *Salmonella* from food samples.

Detection by Conventional methods – enrichment, isolation and confirmation requires 3-4 days. On the first day, the food sample is inoculated into enrichment media like Tetrathionate Broth or Selenite F Broth. On the second day the enrichment from broth is plated onto selective media like SS agar, XLD or DCA Agar. For confirmation colonies are then selected and inoculated into any confirmatory media such as Triple Sugar Iron Agar, Urea Broth and other biochemical media for biochemical tests.

The dual performance bottle allows faster confirmation of the causative organism, eliminating the waiting period of 3-4 days giving results in just 24 hours. The combination media ensure enrichment as well as isolation and colonies can be visualized in 24 hours and confirmed. Peptone special, lactose and sucrose provide necessary nitrogenous and carbonaceous compounds for growth of *Salmonella*. Bile salts along with indicator mixture inhibit other enteric bacteria present in food sample.

### Quality Control

#### Appearance

In a sterile glass bottle, combination of broth and one agar coated surface.

**Colour of agar medium**

Green coloured medium

**Colour of liquid medium**

Green coloured medium

**Quantity of medium**

7ml of agar medium and 20ml of broth medium in a glass bottle

**pH of agar medium**

7.30- 7.70

**pH of liquid medium**

7.30- 7.70

**Sterility test**

Passes release criteria

**Cultural response**

Cultural characteristics was observed after incubation at 35-37°C for 18-24 hours.

Organism	Growth on agar medium	Growth in liquid medium	Colour of colony
<b>Cultural response</b> <i>Escherichia coli</i> ATCC 25922	Fair	Luxuriant	Orange(may have bile ppt)
<i>Enterococcus faecalis</i> ATCC 29212	Inhibited	Inhibited	
<i>S. Typhimurium</i> ATCC 14028	Luxuriant	Luxuriant	Greenish blue colonies, may have black center(H <sub>2</sub> S production)
<i>S. Enteritidis</i> ATCC 13076	Luxuriant	Luxuriant	Greenish blue colonies, may have black center(H <sub>2</sub> S production)
<i>S. Typhi</i> ATCC 6539	Luxuriant	Luxuriant	Greenish blue

**Storage and Shelf Life**

Store between 2-8°C. Use before expiry date on the label.

**Reference**

- Jean-Yves D'Aoust, (1997), In: Salmonella species – Food Microbiology, Doyle MP, Benchat LR, Mantville TJ (eds) ASM Press, Washington DC Pg. 129-158.
- D'Aoust J.Y., (1977), J. Food Prot. 40:718-727.
- D'Aoust J.Y., (1994), Int. J. Food Microbiol. 13:207-216.

Revision : 1 / 2011

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