

# Salmonella LT Protocol

## Raw Ground Beef

TECHNICAL  
::: NOTE

### Background

The *Salmonella* LT test kit is a fast, specific, qualitative method for detecting *Salmonella* in food. The original AOAC approved protocol for raw chicken, cooked ham, and chocolate can also be used for isolating and detecting *Salmonella* in raw ground beef.

### Protocol for detecting *Salmonella* in raw ground beef

- Add 25g of raw ground beef to 225mL of Buffered Peptone Water (BPW)
- Enrich 16 hours at 37°C
- Remove 1mL of enriched sample
- Lyse 5µL of sample using the bead tubes provided with the kit
- Re-suspend the Freeze Dried Reagents using 10µL of the lysed sample and 10µL of supplied reconstitution buffer
- PCR and automatic result interpretation with the Idaho Technology R.A.P.I.D.<sup>®</sup> LT instrument and software
- The system can detect 1 colony forming unit (CFU) of *Salmonella* in 25g of raw ground beef

### Results

Results from an internal study show that using the AOAC approved *Salmonella* LT FSS method with raw ground beef is as sensitive as the USDA Microbiology Laboratory Guidebook (MLG) methods. The system is sensitive even with sample pooling. The *Salmonella* LT FSS has a specificity rate of 100% and a sensitivity rate of 92.9% when detecting *Salmonella* in raw ground beef, with no false positive and one false negative call.

Sample Type	Inoculating Organism	Level	MPN CFU/25g	No. Test Portions	Reference Method	<i>Salmonella</i> LT	
					Positive	Presup. Positive	Confirmed Positive
Individual	<i>S. tallahassee</i>	Low	0.9 / 25g	20	14	13	14
		Control	0	5	0	0	0
Pooled	<i>S. tallahassee</i>	Low	2.3 / 25g	10	10	10	10
		Control	0	40	0	-	-

The *Salmonella* LT FSS is significantly faster than the reference method, providing results in about 17 hours as opposed to 72 hours for the USDA MLG method.



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5111 Pegasus Court, Suite H  
Frederick, MD 21704  
800-EZMICRO (396-4276)  
www.800EZMICRO.com

