

Thermo Scientific Salmonella Food Fact Sheet–U.S.

Key Words

Salmonella spp.

Goal

Provide an overview of the *Salmonella* organism, including incidence, infective dose and foods affected.

Description:

Salmonella are Gram-negative, facultative anaerobe, rod-shaped bacteria; most with peritrichous flagella. *Salmonella* spp. belong to the family Enterobacteriaceae. Salmonellae are chemoorganotropic, with an ability to metabolize nutrients by both respiratory and fermentative pathways. The bacteria are oxidase and catalase negative, grow optimally at 37°C, and catabolize D-glucose and other carbohydrates with the production of acid and gas (hydrogen sulfide). However, they readily adapt to extreme environmental conditions and can grow at both elevated and refrigerator temperatures.

Incidence:

Salmonellosis is the most frequently reported cause of foodborne illness. An estimated 1.2 million cases occur annually in the United States; of these, approximately 42,000 are laboratory-confirmed cases reported to Centers for Disease Control and Prevention.

Infective Dose:

The ingestion of 1-10 cells can constitute a human infectious dose. Low cell numbers can be highly infectious, especially in high fat foods where the microorganism can escape the gastric acidity and be released in the intestine through bile mediated dispersion of the lipids.



Foods Affected:

Despite the general perception that chicken and egg products are the primary source of *Salmonella* infections, many outbreaks in recent years have been associated with tomatoes, peanut butter, and vegetable sprouts.

Other affected foods include: raw meat, milk and dairy products, fish, shrimp, salad dressing, cake mixes and chocolate.


References:

1. United States Food and Drug Administration. Bad Bug Book: Foodborne pathogenic microorganisms and natural toxins handbook: Salmonella. Available at: <http://www.fda.gov/Food/FoodSafety/FoodborneIllnessFoodbornellnessFoodbornePathogensNaturalToxins/BadBugBook/ucm069966.htm>
2. Centers for Disease Control and Prevention. Salmonella. Available at: <http://www.cdc.gov/salmonella/general/technical.html>
3. Food Microbiology, Fundamentals and Frontiers, 2nd edition, Eds. M. P. Doyle, L. R. Beuchat, and T. J. Montville, 2001, ASM Press, Washington D.C.

Thermo Scientific Salmonella testing products

See www.thermoscientific.com/remel or the Thermo Scientific Remel and Oxoid microbiology product catalog for a complete listing.

	Description	Format	REF
Enrichment	Buffered Peptone Water	500g	R452672
	Buffered Peptone Water, Dry-Bag with filter	10/pk, 20L bag	DB0509M
	Buffered Peptone Water (ISO)	500g	CM1049B
	GN Broth	500g	R453512
	Lactose Broth	500g	R453652
	Lactose Broth, Dry-Bag w/o filter	10/pk, 20L bag	DB0137W
	ONE Broth-Salmonella + ONE Broth-Salmonella Supplement	500g, 10/pk	CM1091B, SR0242E
	Rappaport-Vassiliadis Broth	100/pk, 10mL	R117660
	Rappaport-Vassiliadis Salmonella Enrichment Broth	500g	R454532
	Selenite Broth	500g	R454582
	Selenite Cystine Broth	500g	R454592
	TT Broth Base, Hajna	500g	R454832
	Tetrathionate Broth	20/pk, 10mL, 500g	R07162, R454822
Isolation/ Detection	Thermo Scientific SureTect™ Salmonella Species PCR Assay	96 tests/kit	PT0100A
	Bismuth Sulfite Agar	500g	R452402
	Brilliance™ Salmonella Agar	10/pk	R110374
	Brilliance Salmonella Agar Base + Salmonella Selective Supplement	500g, 10/pk	CM1092B, SR0194E
	Brilliant Green Agar	500g, 10/pk monoplate	R452552, R01246
	Brilliant Green Agar w/ Sulfa	10/pk monoplate	R110112
	Hektoen Enteric Agar	500g	R453572
	Salmonella Shigella Agar	500g, 10/pk monoplate	R454502, R01840
	Salmonella Shigella Agar // XLD Agar	10/pk biplate	R02140
		XLD Agar	500g, 10/pk monoplate
	XLT4 Agar	500g, 10/pk monoplate	R459802, R110463
Identification	O.B.I.S. Salmonella	60 tests/kit	ID0570M
	Salmonella Latex Test	30 tests/kit	FT0203A
	Salmonella Rapid Test	50 tests/kit	FT0201A
	Wellcolex® Colour Salmonella	50 tests/kit	R30858301
	Microbact GNB 24E	40 tests	MB1131A
QC Organisms	<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Enteritidis ATCC® 13076™*	Culti-Loops™	R4608200
	<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Typhimurium ATCC® 14028™*	Culti-Loops	R4606000

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