

Salmonella Enriched in mHEEC®

An additional 79 inoculated food items (alternative enrichment only, no PCR analysis) were evaluated after 12 and/or 18 hours of incubation by a direct streak from the primary enrichment onto the 3 different agars, see **Figure 3**. All test portions analyzed by the alternative method were also confirmed following ISO 6579:2017 reference method at 18 hours. Reference and alternative method results were in agreement; see **Table 2**.

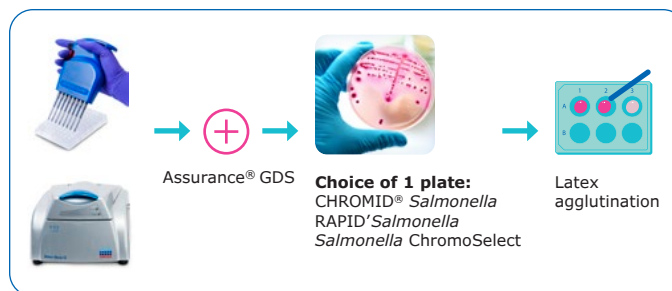


Figure 3. Assurance® GDS *Salmonella* Alternative Confirmation Workflow

Table 2. Salmonella Sample Results Between the Reference and Alternative Confirmation Methods, mHEEC®

Category	Type	PA	NA	PD	ND	PPND	PPNA
Ready-to-eat, ready-to-reheat poultry products	Cooked meat products	9	15	0	0	0	0
	Fermented or dried meat products	9	14	0	0	0	0
	Canned poultry products	10	10	0	0	0	0
	Total	28	39	0	0	0	0
Multi-component foods	Composite processed foods (cooked)	8	13	0	0	0	0
	Ready-to-reheat food; refrigerated, frozen and dry	8	12	0	0	0	0
	Composite foods with substantial raw ingredients	14	6	0	0	0	0
	Total	30	31	0	0	0	0
Raw poultry	Fresh poultry meat (un-processed)	12	8	0	0	0	0
	Ready-to-cook poultry products (processed)	9	11	0	0	0	0
	Total	21	19	0	0	0	0
All Categories		79	89	0	0	0	0

PA = Positive Agreement
 NA = Negative Agreement

PD = Positive Deviation
 ND = Negative Deviation

PPND = Presumptive Positive Negative Deviation
 PPNA = Presumptive Positive Negative Agreement

Salmonella Enriched in BPW

An additional 115 inoculated food items (alternative enrichment only, no PCR analysis) were evaluated after 22 hours of incubation by spread plating IMS beads onto the 3 different agars, see **Figure 4**. All test portions analyzed by the alternative method were also confirmed following ISO 6579:2017 reference method 24 hours. Reference and alternative method results were in agreement; see **Table 3**.

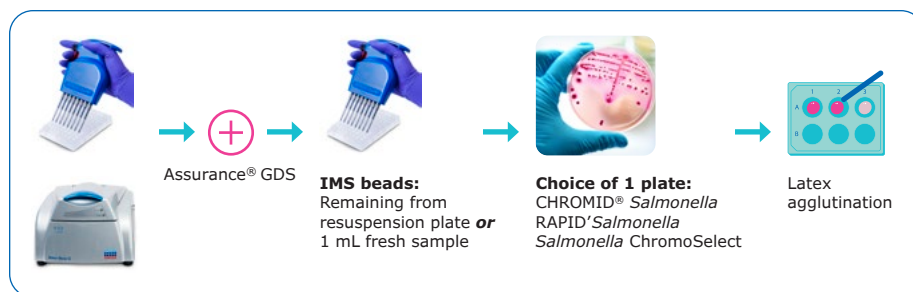


Figure 4. Assurance® GDS *Salmonella* Alternative Confirmation Workflow

Table 3. Salmonella Sample Results Between the Reference and Alternative Confirmation Methods, BPW

Interpretation	Selective Agar	PA	NA	PD	ND	Total confirmed positive samples (PA+PD)	% samples confirmed
IMS 1 mL vs. Reference Method	CHROMID® <i>Salmonella</i>	79	58	5	16	84	78
	RAPID® <i>Salmonella</i>	78	61	2	17	80	74
	<i>Salmonella</i> ChromoSelect	81	45	18	14	99	92
	All three plates	89	44	19	6	108	100
Resuspension IMS vs. Reference Method	CHROMID® <i>Salmonella</i>	76	60	3	19	79	77
	RAPID® <i>Salmonella</i>	77	60	3	18	80	78
	<i>Salmonella</i> ChromoSelect	82	49	14	13	96	94
	All three plates	86	44	16	9	102	100

PA = Positive Agreement
 NA = Negative Agreement

PD = Positive Deviation
 ND = Negative Deviation

Results: Specificity Study

E. coli O157:H7 (EHEC) Enriched in mEHEC®

	CHROMagar™ O157	CT-SMAC	EC O157:H7 ChromoSelect
Inclusivity	100/100	100/100	100/100
Exclusivity	0/100	0/100	0/100

A total of 100 strains were tested for inclusivity. All 100 of these strains showed the expected positive result. Zero (0) strains showed a negative result.

A total of 100 strains were tested for exclusivity. All 100 of these strains showed the expected negative result. Zero (0) strains showed a positive result.

Salmonella Enriched in mEHEC® and BPW

	CHROMID® Salmonella	RAPID® Salmonella	Salmonella ChromoSelect
Inclusivity	151/151	151/151	151/151
Exclusivity	0/100	0/100	0/100

A total of 151 strains were tested for inclusivity. All 151 of these strains showed the expected positive result. Zero (0) strains showed a negative result.

A total of 100 strains were tested for exclusivity. All 100 of these strains showed the expected negative result. Zero (0) strains showed a positive result.

Summary

For both EHEC and *Salmonella*, all contaminated samples were successfully confirmed using the alternative methods. In addition, all inclusivity strains were accurately detected, and all exclusivity strains were accurately excluded.

Significance

Fast isolation and confirmation of target pathogenic organisms is critical for the rapid release of food products. In these studies, the rapid alternative microbiological confirmation methods for *E. coli* O157:H7 and *Salmonella* utilizing chromogenic agars were selective and specific.



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