

## Lababstract – March 2014

# Food Screening Methodology Change to RT-PCR Testing - *Salmonella*

To Public Health Unit:

Effective March 2014, the Public Health Ontario Laboratories (PHOL) will implement a real time polymerase chain reaction (RT-PCR) test for detecting *Salmonella* from food samples, replacing the current *Salmonella* culture method for screening food submissions. *Salmonella* culture will continue to be performed for all RT-PCR positive samples to determine the viability and serotype of the organism and to perform molecular typing for epidemiological purposes.

### Sensitivity and Specificity

The RT-PCR methodology is as sensitive as the routine culture method for screening. The RT-PCR detects all *Salmonella enterica* species, but does not detect *Salmonella bongori*. If *Salmonella bongori* is the confirmed etiological agent in the clinical case, please indicate this on the requisition, and culture will be performed concurrently.

### Specimen collection requirements and test ordering

There are no changes to specimen collection. RT-PCR will be performed on all ready to eat, cooked and prepared food samples. RT-PCR will not be performed on raw food samples requiring cooking or heating prior to consumption unless *Salmonella* is the confirmed etiological agent with associated clinical cases. Samples are to be collected in a sterile sample bag, or similar, and submitted using the [Food Bacteriology Requisition](#). Refer to the [Public Health Inspector's Guide to the Principles and Practices of Environmental Microbiology](#) for additional information.

### Turn-around-time

The new RT-PCR methodology allows a faster turn-around-time than culture for negative results. RT-PCR results are available within two working days and culture results, if required, are available within 4-6 days. Final reports will be provided once all required analyses are completed.

### Interpretation of results

The RT-PCR results will be reported as **Not Detected**, **Detected** or **Indeterminate** for *Salmonella* species. Routine culture will be set up for all detected and indeterminate RT-PCR results. Culture of all RT-PCR positive samples will be reported as **Not Detected** or **Refer to Confirmation Test**. A final serotype will be identified and reported for all *Salmonella* culture positive food samples.

**Interpretation Guide for *Salmonella* results**

Test	Result	Interpretation
<b><i>Salmonella</i> spp. RT-PCR</b>	Not Detected	No detectable <i>Salmonella</i> DNA
	Detected	<i>Salmonella</i> DNA detected*
	Indeterminate	Occasionally, samples may contain unknown background or interfering substances which inhibit the RT-PCR reaction resulting in an un-interpretable test result. *
<b><i>Salmonella</i> spp. Culture</b>	Not Detected	DNA from non-viable or non-culturable bacteria may be detected by RT-PCR. Resampling recommended.
	Refer to Confirmation Test	The sample is presumptive for <i>Salmonella</i> and additional testing is required to confirm that the sample is truly positive.
<b>Culture Confirmation</b>	Isolate identified as <i>Salmonella</i> serotype	<i>Salmonella</i> detected and the species has been identified.

\**Salmonella* culture testing will be performed on all RT-PCR positive and indeterminate samples.

**For further information:**

- Contact the PHOL Customer Service Centre at 416-235-6556 or 1-877-604-4567 (toll-free), or by email at [CustomerServiceCentre@oahpp.ca](mailto:CustomerServiceCentre@oahpp.ca)
- For PHOL specimen collection information and previous Lababstracts, refer to <http://www.publichealthontario.ca/Labs>
- The current version of the [Food Bacteriology Requisition](#), PHOL General Test Requisition and other forms are available at <http://www.publichealthontario.ca/Requisitions>
- To subscribe to future Lababstracts, email [lababstracts@oahpp.ca](mailto:lababstracts@oahpp.ca)
- To register for Autofax and receive laboratory reports by fax directly from our laboratory information system as soon as they are released, contact the PHOL Customer Service Centre
- [Public Health Inspector’s Guide to the Principles and Practices of Environmental Microbiology](#)