FAQs – RapidChek® *Listeria* NextDay™

What species does the RapidChek Listeria NextDay test detect?
It detects all species of Listeria including: L. monocytogenes (all 16 serotypes), L. ivanovii, L. innocua, L. welshimeri, L. grayi, L. seeligeri, L. marthii, and L. murrayi.

Why is it important to detect all species of *Listeria*; including L. grayi?
Although, only two species of Listeria *are known to be pathogenic, the ability to detect all species is critical for a complete monitoring solution. Missing a single species of* Listeria *in your monitoring plan is denying yourself the knowledge of potential growth niches and possible early warnings of contamination areas. If the conditions are right to grow one species of* Listeria*, the conditions are right to grow any species of* Listeria*; including the pathogenic ones.*

What are the sensitivity and specificity of the RapidChek NextDay system?
The RapidChek method was evaluated for the detection of 50 strains of Listeria *and 35 non-*Listeria *strains. All 50* Listeria *strains were detected by the method (100% sensitivity). None of the 35 non-*Listeria *strains were detected (100% specificity).*

How has the test been validated?
The test has been performance validated by AOAC Research Institute for various environmental surfaces (stainless steel, plastic, rubber, and painted concrete) and food matrices (including hot dogs, roast beef, frozen breaded chicken, frozen meatballs, whole milk, ice cream, ricotta cheese, shredded Mexican cheese and cheese powder). 25g and 125g sample sizes were tested in the validation study.

How does the RapidChek NextDay product compare to other 24 hour methods on the market in terms of time-to-result?
The RapidChek NextDay product is truly a next day test in terms of time-to-result from when a sample is received in the lab to when a result is reported. There is no 3.5 hour or 70 min assay following the enrichment scheme. RapidChek is a 24-27 hour enrichment (for environmental samples and most food matrices), 10 min boil step, and 10 min detection step.

What are the benefits of using the RapidChek NextDay proprietary media over less expensive, conventional media?
The RapidChek NextDay proprietary media was formulated to create an optimal environment for the growth of all species of Listeria*. The media was designed to provide strong resuscitation capabilities to stressed or injured cells, fast growth of the target organisms, and better selectivity against various competitive and cross reactive organisms. All of these factors lead to a faster time-to-result that maintains high sensitivity and accuracy.*

What enrichment media volumes do you recommend for environmental swabs/sponges and food matrices?
For swabs, it is recommended that you use 10-15 mL of RapidChek NextDay media and for sponges, it is recommended that you use 60 mL of RapidChek NextDay media. 25g food samples use 225mL media while 125g samples require 500mL RapidChek NextDay media.

Should the stomacher bag be closed tightly during enrichment?
Sample bags should be closed loosely to allow air exchange during sample enrichment and optimize pathogen growth and antigen expression.

Can I confirm a presumptive sample directly from the boiled portion?
Since the enriched Listeria *sample is boiled, the cells within this portion are not viable and therefore you cannot culture directly from the provided test tube. You can culture from the non-boiled enriched portion.*

What are the recommended selective agars for confirmation of presumptive positive results?
*Romer Labs recommends the use of MOX agar for confirmation of presumptive positive results. We have seen with the use of MOX, that some non-*Listeria *organisms portray* Listeria*-like colonies and unless the morphology is examined closely these negative samples may be mistaken for positive.*

For presumptive identification of Listeria monocytogenes, a chromogenic selective agar such as EZ-CHROM or an Agar Listeria Ottavani and Agosti formulation may be used to differentiate Listeria species from food samples.

What are some common protocol errors that may lead to inaccurate results?
Incubation Temperature: The incubation temperature for the RapidChek system is very critical. It must be set for 30 ± 2°C. This is optimal temperature for flagella expression, which is the target of the immunoassay.
Boil Step: This boil step increases the sensitivity of the assay by breaking up the flagella and making it more accessible to the antibodies on the strip. A boil step of 5-15 mins at 95-100°C is critical and may lead to false negative results if not performed according to specifications.
Cooling Step: After boiling, the samples must be cooled to room temperature before adding the strips. Adding a strip to a hot sample may cause the antibodies to denature and non-specifically bind causing a falsely positive result.
Read Time: Please do not read the test strip after the 20 min read time window. As the sample sits the antibodies may non-specifically bind and cause light line false positive results.
Sampling: Try to avoid sampling areas that still have sanitizer present. The highly basic or acidic nature of the sanitizer drastically drops the pH of the enrichment beyond the buffering capacity of the media and/or the buffer pad on the strip. This extreme pH may cause the antibodies to denature and non-specifically bind to the test line causing a false positive result. You do not need to re-sample to re-test. Simply bring the pH of the enrichment back to a neutral level and add another strip.

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