Problems with *Salmonella* in Dry Pet Food?

Actero™ Salmonella Enrichment Media is the SOLUTION!

To purchase our products, contact FoodChek™ distributor

1.800.932.5000
vwr.com
Because dry pet foods and treats often contain raw materials derived from animal original and each ingredient may be processed under different conditions, these items are at risk for contamination by various pathogens, especially *Salmonella*.

**Actero™ Salmonella Enrichment Media is the Solution for You**

Due to sub-lethally injured *Salmonella* cells surviving the processing treatment of dry pet foods, an optimized method of recovery and enrichment of the bacterium is needed. The Actero™ Salmonella Enrichment Media provides for effective recovery of injured an/or dormant *Salmonella* cells from different low-moisture food samples after a single-step enrichment.

**The Advantages of Actero™ Salmonella Enrichment Media**

- Protect your brand, your customers, your pets, your family
- Results in an amazing 18 hours of enrichment time
- Uses one-third less enrichment media per volume compared to standard enrichment media
- Release your products in less than 24 hours
- AOAC validated for 375 g composite sample sizes, the new industry-standard test portion size for dry pet food
- Detect using a Real-Time PCR System or by the Actero™ Salmonella culture method

**Protect Your Pets and Family From Infection**

About 80 million households in the United States own a dog or a cat, representing 65% of the US households. Many pet owners feed their companion animals with dry pet food because of the ease of use and nutritional benefit. Dry pet foods and treats often contain raw materials derived from animal origin and each ingredient may be processed under different conditions. These items are at risk for contamination by various pathogens, especially *Salmonella*.

**Reduce the Risk of *Salmonella* Contamination in Dry Pet Food**

Contaminated dry pet food that is not handled properly can also cause serious illness in people, especially children. Regardless, pet owners should always wash their hands after handling dry food and treats to manage the risk of contamination.

Visit us online at foodcheksystems.com
Actero™ Salmonella Enrichment Media *is the ONLY solution* for You

Protect your brand, your customers, your pets and your family, especially your children

Results in an amazing 18 hours of enrichment time

Achieve real cost reduction by converting to Actero™ Salmonella Enrichment Media

Actero™ Salmonella Enrichment Media *is the proven solution* for problem matrices!

FoodChek’s Actero™ Salmonella Enrichment Media has received AOAC PTM CERTIFICATION on a Real-Time PCR Assay
THE PROBLEM WITH SALMONELLA IN DRY PET FOOD

There is growing interest among pet owners to feed their companion animals processed dry pet food because of the ease of use and its nutritional benefits. As a result, the consumer market has put increasing pressure on many manufacturers to raise production volumes and expand their product assortment while also ensuring the safety for consumption and handling.

Dry pet foods and treats are often made with animal-origin products that could be a host for Salmonella or other organisms. In general, these products are cooked to temperatures that will kill these organisms. However, if a contaminated additive (a flavoring, for example) is added to the food after cooking, or if the food comes in contact with contaminated materials, the food will consequently become contaminated.

An emerging concern with respect to Salmonella carriage in pets is the role of natural pet treats and raw food diets, which are produced with little to no regulatory oversight in the United States and Canada. There is a lack of information on how natural pet treats and raw food diets can affect the health of pets and their owners, both in general and with respect to Salmonella contamination.

Over the past number of years, there have been reports of dry pet food contaminated with Salmonella that caused sickness in pets and also humans, including infants with yet to be fully developed immune systems, who handled the food and treats. As a result, in 2013 the U.S. FDA adopted zero tolerance for Salmonella in dry pet food. This enforcement has pushed the dry pet food industry to routinely test for Salmonella in dry pet food and treats.

For all these reasons, FoodChek has developed Actero™ Salmonella Enrichment Media to selectively enrich Salmonella in dry pet foods and treats for its further detection. FoodChek understands the challenging regulatory and business demands on dry pet food producers along with the importance of volume testing and inventory release that protects your bottom line, without compromising product safety or the integrity of your brand.

The method to enrich and detect Salmonella using Actero™ Salmonella Enrichment Media was developed with input from the dry pet food industry to offer the best practical solution for a monitoring and surveillance program for Salmonella.

Despite the inhibitory challenges associated with this sample matrix, our AOAC-RI CERTIFICATION approved dry pet food and enviromental testing solutions are designed to accurately screen for Salmonella with exceptional specificity and speed, helping to reduce costly false positives and inventory holds.

With fast, reliable, and easily implemented testing workflows, FoodChek can help you:

- Minimize your risk
- Maximize your competitive edge
- Reduce your production costs
- Protect your brand, your customers and their pets
The FoodChek Team specializes in food microbiology that helps labs and processors to achieve optimum efficiency in controlling pathogens throughout the food processing chain.

The dedicated team of FoodChek professionals have the expertise in facilitating the adoption of Actero™ Salmonella Enrichment Media in your plant by providing you support in every step of the conversion process.

As your pet food safety partner, the FoodChek team assists you in implementing the best possible approach for the control and the monitoring of *Salmonella* in your dry pet food production.

FoodChek understands the importance of achieving rapid time-to-results without compromising accuracy and safety.

The FoodChek Team is well positioned to provide customized service solutions designed for your specific requirements.

**IT’S EASY TO CONVERT TO ACTERO™ SALMONELLA ENRICHMENT MEDIA**

- Consultative meeting / technology needs assessment
- In-house method verification:
  1. Meet analytical requirements
  2. Fit for use
- Monitoring and evaluation
- Method integration into the company quality management system/ regulatory requirements
- Technology transfer training
- Documentation
- Implementation completed
- Better prevention / faster response

Protecting your brand, your customers; the health of your pets, your family and, especially your children, depend on it.
METHOD COMPARISON STUDY REPORT
EASY & RAPID DETECTION OF SALMONELLA IN DRY PET FOOD

Abstract
FoodChek Systems Inc., in collaboration with a Real-Time PCR Assay manufacturer, has developed an effective method for easy and rapid detection of Salmonella in dry pet food samples. The method has been successfully granted AOAC PTM CERTIFICATION. The method protocol was developed and validated for two sizes of dry pet food samples including 25 g and 375 g (usually used for composite protocol). The results of the study demonstrated that performance of the candidate method is statistically equivalent to the reference culture method for detecting Salmonella in dry pet food. The time to detect Salmonella spp. has been reduced up to 20 hrs. including the enrichment and detection steps when the Actero™ Salmonella Enrichment Media was used. No false negative and false positive results were observed. The high accuracy and reliability of the method were confirmed in the independent laboratory validation study.

Materials

✔ Actero™ Salmonella Enrichment Media
✔ Dehydrated format:
  • FCM-009 (VWR 97068-832)
  • 500 g bottle and three supplement vials
✔ Ready to use liquid formats:
  • FCM-047 (VWR 89522-710) – 5 L MediaBox
  • FCM-048 (VWR 89522-712) – 10 L MediaBox (with supplements added)
✔ API 20 E kits for identification of enterobacteriaceae
✔ Brilliant Green dye 1% solution
✔ Real-Time PCR Assay Salmonella, Kit #D14306040*
✔ Hektoen Enteric (HE) agar
✔ Lactose broth
✔ Rappaport-Vassiliadis (RV) broth
✔ Salmonella serogroup E antiserum
✔ Tetrathionate broth (TT)
✔ Trypticase Soy agar plates with 5% of sheep blood agar
✔ Triton X-100
✔ Xylose Lysine Deoxycholate (XLD) agar

* Contact VWR for further details
METHOD COMPARISON STUDY REPORT
EASY & RAPID DETECTION OF SALMONELLA IN DRY PET FOOD

Method

Dry Pet Food Method Comparison Study for Salmonella

Alternative Method

Sampling

- 25 g Single sample
- 225 mL Actero™ Salmonella broth
- 18 hrs, 35°C
- RT-PCR Assay 2 hrs

Enrichment

- 375 g Composite sample
- 2625 mL Actero™ Salmonella broth

Salmonella Detection

Total Time = 20 hours

U.S. FDA BAM Chapter 5 Method

Sampling

- 25 g Single sample
- 225 mL lactose broth 22-26 hrs, 35°C

Enrichment

- TT broth 22-26 hrs, 35°C
- RV broth 22-26 hrs, 35°C
- Selective agar plates 24-48 hrs, 35°C
- Morphological, biochemical and serological identification 24-48 hrs

Total Time = 72 to 120 hours and more
Results

Probability of detection (POD) statistical model was used to evaluate the differences between presumptive and confirmed results as well as between the alternative and the reference methods.

The results of the method comparison validation study for both 25 and 375 g samples of dry pet food are summarized in the table below. POD analysis didn’t show any significant differences (the 95% confidence interval of the dPODs contains zero) in the method performance between the Real-Time PCR Assay and the reference methods.

No false positive or false negative results were observed.

<table>
<thead>
<tr>
<th>Matrix</th>
<th>CFU/Test Portion</th>
<th>N</th>
<th>Real-Time PCR Method</th>
<th>US FDA BAM Chapter 5 Method</th>
<th>dPODc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Confirmed</td>
<td>POD</td>
<td>Confirmed</td>
</tr>
<tr>
<td>Dry Pet Food (25 g)</td>
<td>&lt;0.075</td>
<td>5</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1.1</td>
<td>20</td>
<td>13</td>
<td>0.65</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>3.7</td>
<td>5</td>
<td>5</td>
<td>1.00</td>
<td>5</td>
</tr>
<tr>
<td>Dry Pet Food (375 g)</td>
<td>&lt;0.075</td>
<td>5</td>
<td>0</td>
<td>0.00</td>
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<tr>
<td></td>
<td>1.5</td>
<td>20</td>
<td>14</td>
<td>0.70</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>8.7</td>
<td>5</td>
<td>5</td>
<td>1.00</td>
<td>5</td>
</tr>
</tbody>
</table>

Conclusions

The results of the study demonstrated that performance of the Real-Time PCR Assay method to detect *Salmonella* in dry pet food samples enriched with Actero™ Salmonella Enrichment Media is equivalent to the reference method. It has been proven that Actero™ Salmonella Enrichment Media is able to selectively enrich *Salmonella* for its further detection in the shortest possible time.
ACCELERATE YOUR REAL-TIME PCR ASSAY RESULTS WITH ACTERO™ SALMONELLA ENRICHMENT MEDIA

Enrichment of different food matrixes of *Salmonella* spp. in Actero™ Salmonella vs other media prior to Real-Time PCR Assay.

<table>
<thead>
<tr>
<th>Matrix</th>
<th>Actero™ Salmonella Method</th>
<th>Media A Method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type</td>
<td>Size</td>
</tr>
<tr>
<td>Food samples</td>
<td>Dry pet food</td>
<td>25g</td>
</tr>
<tr>
<td></td>
<td>Dry pet food</td>
<td>375 g</td>
</tr>
<tr>
<td>Environmental samples</td>
<td>Stainless steel</td>
<td>100 cm²</td>
</tr>
<tr>
<td></td>
<td>Plastic</td>
<td>100 cm²</td>
</tr>
</tbody>
</table>

**Actero™ Salmonella Enrichment Media Highlights**

- Actero™ Salmonella will reduce sample enrichment time by approximately 20% when combined with the Real-Time PCR Assay
- Enrichment time of 14 to 30 hrs depending the matrixes hours when combined with Real-Time PCR Assay
- Achieve real cost reduction by converting to Actero™ Salmonella Enrichment Media
- Actero™ Salmonella Enrichment Media is a standalone media system and compatible with the Real-Time PCR Assay or others systems

**Actero™ Salmonella Enrichment Media**

Actero™ Salmonella Enrichment Media is a selective media optimized for a rapid single step enrichment of Salmonella from food and environmental samples

<table>
<thead>
<tr>
<th>FoodChek PN</th>
<th>VWR PN</th>
<th>Package Size</th>
<th>Product Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCM-009</td>
<td>97068-836</td>
<td>500g</td>
<td>Dehydrated powders and three supplement vials</td>
</tr>
<tr>
<td>FCM-047</td>
<td>89522-710</td>
<td>MediaBox™ 5L</td>
<td>MediaBox™ Ready to use liquid</td>
</tr>
<tr>
<td>FCM-048</td>
<td>89522-712</td>
<td>MediaBox™ 10L</td>
<td></td>
</tr>
</tbody>
</table>

To request a sample, please visit [vwr.com](http://vwr.com) or call **1.800.932.5000**
Actero™ Salmonella Enrichment Media delivers what matters most to you.

- **Speed**: fastest time-to-results
- **Control**: operational efficiencies
- **Accuracy**: reliable results
- **Specificity**: specific for the target organism
- **Cost-effective**: minimize media use

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Visit us online at foodcheksystems.com
FoodChek-Tested Program

Food Safety Best Practice: The solution to consumer concern

With food recalls and plant closures continuing to make headlines, consumers are demanding that food processors increase their vigilance. Devastating human food poisoning illness causing disability or worse, death, can be avoided by following world class standards and best practices in food safety. The FoodChek-Tested program meets our consumers’ demand.

The Elite Food Safety Club

FoodChek originated this program to create an elite food safety club among high level food processors, food safety testing manufacturers and retail sales outlets. The vision of FoodChek-Tested is to attract well known national retail chain leaders who share the same objectives to bring to consumers the highest quality and safest fresh food products produced and sold in the market place today. The FoodChek-Tested program gives the consumer easy access to important food safety information, such as proper food handling, storage and cooking directions to ensure their food is served to their families the safest way possible.

Doing the right thing in food safety is not testing to the minimum requirements. Increased food safety efforts are paying off with new customers. I sleep better because I know the testing we are doing is protecting our brand. Increased testing is cost effective when balanced against the savings on business interruption insurance.”

Chipp Zerr
Director of International Food Safety and Quality Assurance at Rastelli Foods Group

Rastelli Foods are FoodChek-Tested

Rastelli Foods Group of Swedesboro, New Jersey recognizes the value of being a FoodChek-Tested partner. And it’s paying off with new customers. Rastelli Foods Group is a fresh food processor that supplies hotels, restaurants, institutions and retail markets, as well as the United States Armed Forces. The FoodChek-Tested program demonstrates to consumers that Rastelli has embraced extremely high standards for its food safety testing program and that it is willing to take on the safe food challenge in exchange for being a market leader.

Seal of Confidence

Each FoodChek-Tested packaging product label includes the FoodChek-Tested logo and Quick Response (“QR”) code. When a customer scans the QR code with their smartphone, they are immediately connected to a site that offers a wealth of food safety information.

Scan the code to visit foodchek-tested.com

The first private food safety testing program of its kind.

The FoodChek-Tested logo signifies the following robust safety testing protocol:

- Use of industry-leading testing equipment (FoodChek)
- Producer’s commitment to proper testing (standards, frequency)
- Producer’s commitment to due diligence when positive results occur (e.g. pathogens are present)
- Producer’s acceptance of regular, unannounced facility and process audits
- Representative samples are tested at third party laboratory.

Introducing the FoodChek™ MICT® Nanotechnology to your E.coli testing choices provides ease-of-use, accuracy and cost effectiveness.

- FoodChek™ Actero™ Enrichment Media will reduce your sample enrichment time.
- The FoodChek E.coli Assay Cassette allows the quantitative and qualitative detection of E.coli in meat samples within 8 hours.
- Achieve peace of mind with the AOAC PTM approved pathogen testing process that virtually eliminates human error, protecting your brand and improving your bottom line.

Testing for E. coli with the FoodChek™ MICT® system ensures increased sensitivity and accuracy as well as reduced cost and timelines...it’s about time!

- The FoodChek E. coli O157 product line delivers the only complete AOAC approved test menu for detection of E. coli O157 in ground beef, beef trim and carcass swab.
- Fastest “Time-to-Results” in the industry, providing same-shift results for all E. coli O157 testing.
- Reduced enrichment growth phase timeline; up to 30% with the FoodChek™ Actero™ E. coli Enrichment Media.
- The most sensitive and accurate testing system on the market.
- Available result storage and print options to facilitate permanent records.

Including enrichment, the FoodChek E. coli product line delivers the fastest “Time-to-Results” in the pathogen testing industry today:

<table>
<thead>
<tr>
<th>Sample</th>
<th>Test Sensitivity</th>
<th>“Time-to-Results with FoodChek™”</th>
</tr>
</thead>
<tbody>
<tr>
<td>375 Ground Beef sample</td>
<td>1 cfu/375 gms</td>
<td>&lt;8 hrs</td>
</tr>
<tr>
<td>325 composited Ground Beef</td>
<td>1 cfu/375 gms</td>
<td>&lt;8 hrs</td>
</tr>
<tr>
<td>375 composited Beef Trim</td>
<td>1 cfu/ 375 gms</td>
<td>&lt;7 hrs</td>
</tr>
<tr>
<td>Carcass Swab</td>
<td>0.05 cfu/ 100CM (on post wash carcass)</td>
<td>&lt;7 hrs</td>
</tr>
</tbody>
</table>

FoodChek™ Actero™ Enrichment Media will reduce your sample enrichment time.

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