

Roka Bioscience 2013 IAFP Poster Abstract #4464

Enrichment Media Comparison for Testing Whey Protein Powder Using the Atlas® Salmonella Detection Assay

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Introduction: The detection of *Salmonella* in whey protein powder is of interest to a wide variety of food production companies and microbiological reference laboratories. Identifying the correct enrichment protocol is critical in achieving an accurate and reliable result from this traditionally difficult matrix.

Purpose: To compare results using Universal Pre-enrichment Broth (UPB) and Lactose Broth (LB) enrichment media for testing whey protein powder with the Atlas Salmonella Detection Assay and confirmation by culture methods.

Methods: Whey protein powder samples were inoculated at 100 CFU/25 g and 200 CFU/25 g of *Salmonella* Typhimurium. The samples were stored for 2 weeks at room temperature followed by a 24-hr enrichment in UPB at 42°C or LB at 35°C. After enrichment, sample processing included purification via Target Capture, amplification by Transcription Mediated Amplification, and detection by Hybridization Protection Assay. Culture confirmation was performed by transferring 1000 µL of enrichment to 10 mL of Tetrathionate Broth for 24 hr at 35°C and streaking onto ChromAgar *Salmonella* and XLD.

Results: In a one-to-one comparison of UPB and LB used for sample enrichment, the UPB yielded better growth of *Salmonella* from whey protein powder samples. At the 200 CFU/25 g inoculation level, the testing showed 100% (10/10) correlation between the UPB enrichment protocol and culture results and an 80% (8/10) correlation between the LB enrichment protocol and culture results. At the 100 CFU/25 g inoculation level, the testing showed 100% (10/10) correlation between the UPB enrichment protocol and culture results and a 30% (3/10) correlation between the LB enrichment protocol and culture results.

Significance: This study demonstrates that at two inoculation levels in whey protein powder, enrichment with UPB at 42°C shows better growth of *Salmonella* compared to LB enrichment at 35°C after 24 hr of incubation.

For more information or to request the full poster of this abstract, please email: info@rokabio.com



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