

Testing High-Fat Content Matrices with ZymoSnap ALP

Introduction

The Hygiena® ZymoSnap ALP Pasteurization Verification Test measures alkaline phosphatase activity in dairy products to verify pasteurization was completed successfully. Clear, definitive results avoid delays and additional costs of retesting as seen with other ALP test methods. ZymoSnap ALP has been AOAC-R1^{PTM} validated for various types of milk, flavored milk, creams and more, giving rapid results in five (5) minutes.

Difficulties with High-Fat Content Product Matrices

When testing high-fat content product matrices (>10% fat), the higher viscosity can make it difficult to accurately pipette samples into both the ZymoSnap ALP detection device and the ZymoSnap ALP positive control vials. This can prevent full reconstitution of the ZymoSnap ALP positive control pellet. The fat can also cause signal inhibition in the ZymoSnap ALP detection devices. To overcome these issues, a simple dilution in sterile water can improve pipetting accuracy, improve positive control reconstitution and help remove signal inhibition, leading to accurate results from creams and other high-fat or viscous product types.

Product Calibration

To effectively test any product matrix with ZymoSnap ALP on the EnSURE® TOUCH, it is important to test a negative and positive control sample to calibrate that particular product type. When testing high-fat content products, a dilution of the product sample should be performed with sterile water prior to running the calibration testing.

1. Dilute the product sample in sterile water.
 - a. For products with ~20% fat content, a 1:1 dilution with sterile water is required.
 - b. For products with ~40% fat or other factors that increase the viscosity (e.g., sour cream), a 1:5 dilution with sterile water is required.
2. Use the diluted product sample to prepare a negative control by heating at 72 °C for 10 minutes, then cooling rapidly on ice (as stated in the ZymoSnap Positive Control Kit product instructions, INS0166).
3. Use the heat-treated negative control sample to resuspend one positive control vial (ZS-ALP-PC).
 - a. For products diluted 1:1, add 2 ml of negative control sample to the vial.
 - b. For products diluted 1:5, add 5 ml of negative control sample to the vial.
4. Use the positive and negative samples as stated in section III of the ZymoSnap Positive Control Kit product instructions (INS0166) to calibrate the specific product type.

Product Testing

1. To test a product that has been successfully calibrated, simply dilute in sterile water:
 - a. For products with ~20% fat content, a 1:1 dilution with sterile water is required.
 - b. For products with ~40% fat or other factors that increase the viscosity (e.g., sour cream), a 1:5 dilution with sterile water is required.
2. After dilution, follow the testing procedure in the ZymoSnap ALP product instructions, INS0105.

The above outlined testing approach can also be helpful with products that produce signal inhibition for reasons other than fat content (e.g., colorings, flavorings, pH, setting agents, etc.).

Contact Information

If more information is required, please visit our [help page](#) or email us at techsupport@hygiena.com.