

Ethanol Analysis Method Validated for Kombucha Tea

NaturPro Scientific LLC, a consulting firm offering scientific expertise and solutions for natural product quality and compliance, coordinated a Single Laboratory Validation (SLV) study to validate a method of alcohol analysis for kombucha tea beverages. The findings indicate that gas chromatography with flame ionization detection (GC-FID), a methodology widely accepted for measuring ethanol levels in wine, beer and spirits, is a reliable way to quantify ethanol content in kombucha.

In this study, measurements of precision from repeated testing of the same samples resulted in a variation of less than 4% among the samples. This precision met the standard method performance requirements established by AOAC International's working group on ethanol testing in kombucha. Among the sets of samples found to be tested with accuracy were lab-blinded Certified Reference Materials (CRM) from the National Institute of Standards and Technology (NIST). Further, analysis of kombucha spiked with known amounts of ethanol revealed that the test material did not interfere with method accuracy.

"The primary outcome of the study was that a method based on GC-FID, which is commonly used for testing alcohol in beverages, is also appropriate for testing ethanol in kombucha," said Blake Ebersole, President of NaturPro Scientific.

A multi-lab survey was also performed in addition to the SLV study. In the multi-lab study, four laboratories tested more than 80 commercial kombucha and CRM samples using various methods over a four month period. Data reported by multiple labs using GC-FID and other methods traditionally used for alcohol testing were generally accurate, precise and consistent over time. Data from one laboratory using GC-MS resulted in relatively lower levels of precision and accuracy. Overall, the results highlighted the importance of laboratory qualification and method validation.

The study was performed by drug development and food testing leader Covance Laboratories, as part of an industry-wide truth in labeling initiative. Led by industry and independent experts, this initiative aims to ensure kombucha products are accurately tested and labeled.

The study is in submission to standards-setting organization AOAC International for publication in the Journal of AOAC, and will be submitted for expert panel review as an AOAC Official Method of Analysis. A presentation titled "Variability of Ethanol in Commercial Kombucha Products Using Gas Chromatography" will be given at the Annual Meeting of the Institute of Food Technologists in July 2016.

To learn more about the study, please visit www.npscientific.com.

About NaturPro Scientific

NaturPro Scientific LLC is an independent scientific consulting agency focused on developing tools and standards supporting the testing, development and compliance of natural products used in the medical, dietary supplement and food industries. NaturPro supports the development of smart compliance tools and standards for natural products. NaturPro standards include risk-based good agricultural and manufacturing practices (GAP-GMP) for dietary ingredients, and qualification of materials and suppliers using programs such as ID Verified™.

Additional References:

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