K15 Analysis of Amphetamines in Postmortem Matrices Using In-Matrix Alkylchloroformate Derivatization and Automated HS-SPME Followed by GC-MS

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The goal of this presentation was to evaluate the application Solid Phase Microextraction (SPME) and analysis for amphetamines in various postmortem matrices.

This presentation will impact the forensic community and/or humanity by demonstrating an automated extraction method for postmortem samples.

The extraction process of the sample for forensic toxicological analysis is necessary for the testing of analytes, such as drugs or poisons. A recent method of sample extraction known as SPME offers a number of advantages compared to previous extraction methods. SPME combines several phases of sample preparation (such as extraction, concentration, derivatization, and transfer to the analytical instrument) in one step. This can lead to a great reduction in sample preparation time, as well as solvent usage necessary to complete the sample preparation. Additionally, the application of autosampler provides a fully automated SPME sample preparation process.

Limited knowledge is available in the literature in terms of the application of SPME techniques for postmortem tissue samples (i.e., brain, liver, and kidney) and body fluids other than blood and urine (i.e., vitreous humor, bile, stomach, intestinal fluids, and saliva). These tissue and body fluids are important sources for forensic toxicological analysis; therefore, the development of SPME method for tissue samples is needed. In this study, the application of HS-SPME method for forensic toxicological analysis of postmortem samples was examined.

This study performed the analyses of amphetamines by automated HS-SPME-GC-MS. Amphetamines as a class are commonly abused, and therefore are frequently tested in postmortem toxicology

Amphetamines, Alkylchloroformate, Solid Phase Microextraction

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