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160 - Discovery of adulterated alcoholic beverages in Kazakhstan using optimized method based on solid-phase microextraction and GC-MS

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Adulteration of alcoholic beverages in Kazakhstan and many developing countries around the world is a wide-spread problem causing health risks to population. For law enforcement agencies, forensic examination of actual products is generally the only tool to obtain proper evidences against responsible individuals and companies. Solid-phase microextraction (SPME) in combination with GC-MS was proven to be efficient and fast method for characterization of alcoholic beverages. In this research, SPME-GC-MS-based method was optimized for detection of a highest possible number of compounds present in cognacs, wines and vodkas. Synchronous SIM/Scan mode of MS detector was utilized for simultaneous detection of abundant constituents along with trace compounds. Optimized method was applied for examination of samples taken from various locations in Kazakhstan. Principal component analysis method was utilized to differentiate adulterated and non-adulterated samples. Research was conducted under ISTC (International Science and Technology Center) K-1983 project funded by US Department of State.

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