Abstract

Shisha (*tobacco)* flavors smoking prevalence is increasing around the globe despite current evidence that smoke emissions are toxic and contain carcinogenic compounds. The drugs of abuse is widespread all the world. The detection of drugs abuse in blood serum and analysis of different carcinogenic compounds in Shisha (*tobacco*) flavors is of growing interest in forensic and clinical toxicology. With the development of sensitive chromatographic methods, such as high-performance liquid chromatography (HPLC) and gas chromatography-mass spectrometry (GCMS), more and more substances can be determined in blood serum and different shisha (*tobacco*) flavors. In recent years Shisha (*tobacco*) flavors smoking has spread worldwide and emerged as global health issue. Yet only little is known on the composition of Shisha (*tobacco*) flavors. Here' we present a study on identification of carcinogenic compounds in different Shisha (*tobacco*) flavors and detection of drugs of abuse from blood serum samples of drugs addicts. We developed a fast simple and specific gas chromatography mass spectrometry (GCMS) approach to simultaneously detect different carcinogenic compounds in this Shisha flavors matrix. The method worked-out showed excellent sensitivity and specificity and thus, highly suited for the determination of drugs abuse and carcinogenic compounds.