

Preface

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Preface

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Food safety is a critical issue plaguing human health worldwide. The contamination of foods by veterinary drugs, adulterants/additives, pesticides, mycotoxins, and heavy metals as well as the toxins generated during food processing such as heterocyclic amines, polycyclic aromatic hydrocarbons, cholesterol oxidation products and acrylamides has caused serious health concerns resulting in numerous human diseases. Consequently, several international agencies have imposed strict regulations on the level of food toxins, necessitating the need for development of high throughput analytical methods such as LC-MS/MS, GC-MS/MS, on-site and bioassays for highly sensitive detection of food-based toxins. More recently, the application of nanotechnology to analytical methods has enabled highly sensitive onsite detection of food toxins through development of portable and miniaturized sensing methods. However, the challenges do exist in attaining simultaneous analysis of multiple toxins, application to different food matrices without compromising sensitivity and accuracy, on-site capability, analysis speed, cost-effectiveness and simplicity. Eventually, a special issue collection on various analytical methods developed recently for analysis of different food toxins in the form of reviews and research articles can not only enhance the knowledge in this field, but also to identify existing challenges for future exploration.

This special issue on “Analysis of Food Toxins: Challenges & Future Trends” consists of a total of 10 articles, in which 5 are review articles dealing with an overview on recent advances in the development of analytical methods and fabrication of nanomaterial-based sensors for analysis of food-based toxins including pesticides, mycotoxins, polycyclic aromatic hydrocarbons and microbial toxins, and the other 5 research articles focus on the development of QuEChERS-HPLC method for PAH analysis in coffee, GC-MS/MS method for furan and its derivatives in canned foods, HPLC/ICP-MS method for arsenic analysis in food, Au/Ag nanoparticle-based analysis of mycotoxin aflatoxin B1 in food and veterinary drug ractopamine in pork. Most importantly, the review articles have also highlighted the pros and cons of different analytical methods, existing challenges and future perspectives.

It is my immense pleasure in presenting you this special issue commemorating the beginning of 30th year of publication of high-quality articles by Journal of Food and Drug Analysis. I also take this opportunity to thank all the authors and peer-reviewers for their significant contributions in this special issue. Also, a special thanks for Ms. Lily Chiu, the executive editor of JFDA for her efforts and time.

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