

## Current methods for analysis of mycotoxins in herbal medicines

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### *Abstract (600 word limit)*

The presence of mycotoxins in herbal medicines is an established problem throughout the entire world. The sensitive and accurate analysis of mycotoxin in complicated matrices (e.g., herbs) typically involves challenging sample pretreatment procedures and an efficient detection instrument. However, although numerous reviews have been published regarding the occurrence of mycotoxins in herbal medicines, few of them provided a detailed summary of related analytical methods for mycotoxin determination. This review focuses on analytical techniques including sampling, extraction, cleanup, and detection for mycotoxin determination in herbal medicines established within the past ten years. Dedicated sections of this article address the significant developments in sample preparation, and highlight the importance of this procedure in the analytical technology. This review also summarizes conventional chromatographic techniques for mycotoxin qualification or quantitation, as well as recent studies regarding the development and application of screening assays such as enzyme-linked immunosorbent assays, lateral flow immunoassays, aptamer-based lateral flow assays, and cytometric bead arrays. The present work provides a good insight regarding the advanced research that has been done and closes with an indication of future demand for the emerging technologies (600 word limit).

### *Importance of Research (200 word limit)*

Herbal medicines, which are also referred to as phytomedicines or botanical medicines, have played a critical role in world health for thousands of years. According to the World Health Organization (WHO), "herbal medicines include herbs, herbal materials, herbal preparations and finished herbal products, that contain as active ingredients parts of plants, or other plant materials, or combinations". Over the last decade, the use of herbal medicines has expanded across the globe and gained considerable popularity. As a result of cultural and historical influences, herbal medicines remain an important part of the healthcare system in China, India, and Africa. In recent years, the utilization of herbal medicines as complementary therapy has become more common in developed countries that have a typically well-established health care system structure. According to the WHO, over 100 million Europeans currently use Traditional and Complementary Medicine (T&CM), and one-fifth among them regularly using T&CM for health care. It has been shown that there are many more T&CM users in Africa, Asia, Australia, and North America (200 word limit)

### *References (15-20)*

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***Biography (200 word limit)***

Catherine Poala has her expertise in evaluation and passion in improving the health and wellbeing. Her open and contextual evaluation model based on responsive constructivists creates new pathways for improving healthcare. She has built this model after years of experience in research, evaluation, teaching and administration both in hospital and education institutions. Catherine pursued in the Chinese Academy of Medical Sciences, China (200 word limit)



***Info of Institute/Lab (200 word limit)***

Peking Union Medical College (PUMC), founded in 1917, was the first medical school in China to offer an eight-year curriculum leading to an M.D. degree. It was merged with the Chinese Academy of Medical Sciences (CAMS) in 1957, a leading medical research facility. Now operating as a single institution, CAMS and PUMC have been at the forefront of medical research innovation in China for over a century, providing world-class research facilities, opportunities and expertise. CAMS and PUMC also play a pivotal role in advising the government on health policy research and medical education reforms, as well as in safeguarding public health. (200 word limit).