The 16th International Conference on Accelerator Mass Spectrometry



Contribution ID: 300 Contribution code: PSB-18

Type: Poster

Methodological Research on ECR+AMS for Tracing the Authenticity of Medicinal Herbs

Wednesday, 23 October 2024 18:15 (20 minutes)

The authenticity of traditional Chinese medicinal herbs refers to the superior quality and significant efficacy of herbs from specific regions due to unique geographical and climatic factors. This concept holds an important place in traditional Chinese medicine. Scientific analysis and testing are crucial for ensuring the quality of medicinal herbs and enhancing clinical efficacy.

Conventional mass spectrometers cannot simultaneously measure ratios such as 13C/12C and 14C/12C, nor can they measure 2H/H, 3H/H, and 17O/16O, 18O/16O at the same time. Therefore, it is challenging to distinguish the true production areas of medicinal herbs that belong to the C3 plant category.

ECR+AMS (Accelerator Mass Spectrometry with a Electron cyclotron resonance ion source) is an advanced analytical technique with ultra-high sensitivity and detection limits ranging from femtograms to attograms (10⁻¹⁵ to 10⁻¹⁸ grams). It can be a primary method for detecting the authenticity of medicinal herbs. By using AMS to detect isotopic fingerprints and establish a corresponding spectral database, it can serve as a technical support for the identification, evaluation standards, and quality control system of authentic medicinal herbs, allowing nuclear-derived technology to benefit all of humanity.

Student Submission

No

Primary author: SONG, JIANPING (Southern Zhejiang Institute of Radiation Medicine and Nuclear Technology Applications)

Presenter: SONG, JIANPING (Southern Zhejiang Institute of Radiation Medicine and Nuclear Technology Applications)

Session Classification: Poster Session B

Track Classification: Applications in Biomedicine