

[Authentication of Schisandra chinensis and Schisandra sphenantherae in Chinese patent medicines by pyrolysis-gas chromatography/mass spectrometry and fingerprint analysis](#)

Y. Huang, Z. Huang, C. Watanabe, L. Wang

J. Anal. Appl. Pyrol. 137 (2019) 70-76

**Abstract:**

Authentication of *Schisandra chinensis* fruits (*S. chinensis* fruits) and *Schisandra sphenantherae* fruits (*S. sphenantherae* fruits) used in Chinese patent medicines (CPMs) was investigated by pyrolysis-gas chromatography coupled with fingerprint analysis on the basis of the lignan components. 0.3 mg powder of CPM sample was pyrolyzed in a vertical microfurnace pyrolyzer at 400 °C, and the products were directly introduced into a gas chromatograph equipped with a flame ionization detector or a mass spectrometer. Then, each sample was analyzed by the relative peak area of 12 lignan components in thus obtained pyrogram. The pyrogram fingerprints of 16 CPM samples containing *S. chinensis* fruits or *S. sphenantherae* fruits showed good reproducibility with the relative standard deviations (RSDs) of the retention time less than 0.15 % ( $n=5$ ) and the RSDs of the relative percent of peak areas less than 5.29 % ( $n=5$ ). Furthermore, the discrimination of different *Schisandra* fruits in CPM samples was achieved by principle component analysis (PCA) and hierarchical cluster analysis (HCA) via recognizing the  $18 \times 12$  data matrix. The results revealed the Py-GC fingerprint combined with chemometric approach is a simple, rapid and selective method for the differentiation of *Schisandra* fruits used in CPMs.

\* Excerpted from online journal website (Click the title)

**Frontier Labs Products used:**

Multi-Shot Pyrolyzer EGA/Py-3030D, UA<sup>+</sup>-5