

## **Combination of TLC and HPLC-MS/MS methods. Approach to a rational quality control of Chinese star anise.**

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In this study, a methodological approach for an effective and reliable quality control of Chinese star anise (*Illicium verum* Hook. F.) is developed and validated. A combined method of TLC and HPLC-MS/MS was used for differentiation of various *Illicium* species, especially Chinese and Japanese star anise. Species can be distinguished by their TLC flavonoid pattern. A sensitive and selective HPLC/ESI-MS/MS method was developed for the detection and quantification of lower admixtures of *I. anisatum* and of further toxic *Illicium* species at a low concentration range using the sesquiterpene lactone anisatin as a marker. The proposed assay includes a solid-phase extraction cleanup procedure with a high recovery (>90%). Chromatographic separation of anisatin was carried out on a C18 column, followed by MS detection using ESI in negative mode. The precursor/product ion transitions  $m/z$  327  $\rightarrow$  127 (quantifier) and  $m/z$  327  $\rightarrow$  297 (qualifier) were monitored. Statistical evaluation of this multireaction-monitoring procedure reveals good linearity and intra- and interday precision. The limits of detection and quantification are 1.2 and 3.9 microg/kg, respectively.