Comparison of two planar chromatographic methods: TLC and OPLC applied to the analytical study of *Atractylodes* essential oils

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Atractylodes is an essential oil plant from the Chinese pharmacopoeia containing a lot of compounds such as elemol, hinesol, eudesmol.
The drug is used as a stomachic and antirhumatic agent, as well as for the treatment of anorexia, indigestion, vomiting and diarrhea. GC/MS and TLC are the two techniques used to characterize volatile oil constituents in *atractylodes chinensis* (Cang Zhu). In TLC, the common separation method uses hexane, ethyl acetate 80-5 v/v as eluent on silica gel.
In OPLC, six species with eudesmol as a standard were tested with hexane methyl ethyl ketone 99-1 v/v as eluent. The resolution is better than with TLC and more compounds can be cleanly separated.
The comparative study of the chemical composition of Cang Zhu from different origins demonstrates the resolution power of OPLC versus TLC since it has been possible to identify major variations in the composition of the six different species. Further analysis of the chromatograms shows that the faster migration provided by OPLC contributes to limiting the diffusion effect, thereby making evaporation a significantly less important factor in OPLC than in TLC.