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Determination of ephedrine alkaloids contents in Ephedra Plants grown in Mongolia

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[Objective] To evaluate medicinal quality of *Ephedra* plants grown in Mongolia, we determined the ephedrine alkaloids contents of them.

[Material and Method] The samples were collected from Mongolia，in August,2005, and were identified as *Ephedra sinica, E. przewalskii, E. intermedia, E. equisetina and E. monosperma.* An ion-pair reversed-phase HPLC method was established to determine the contents of ephedrine (E), pseudoephedrine (PE), norephedrine (NE), norpseudoephedrine (NPE) and methylephedrine (ME).The analysis can be accomplished within 35 minutes with the detector wavelength set at 210nm.The ODS column (4.6mm×150mm) was used for a isocratic elution in 0.7ml/min of $CH_3CN:H_2O:H_3PO_4:SDS$ (195ml:305ml:0.400ml:2.400g) as mobile phase.

[Result and Conclusion] The total ephedrine alkaloid contents of all samples ranged from 0.003% to 0.690% with the sum of E and PE accounting for 68% to 96%. In 29 samples, the content of PE was higher than that of E, and in 7 samples the content of NPE is higher than that of E. *E.equisetina* has a high content of more than 0.350% and the *E.przewalskii* has a very low content of alkaloid of less than 0.004%, *E.sinica* has a stable range from 0.39% to 0.45%. *E.intermedia* has a range from 0.14% to 0.69%. All the species of *Ephedra* plants have high content of ephedrine alkaloids except *E.przewalskii,* which is used in Mongolian traditional medicine. Mongolia is rather rich in *Ephedra* plant resources.