Aristolochia spp. 21

21.1 Introduction

Some *Aristolochia* species have found wide use in traditional Chinese medicine and folk medicine. The Chinese Pharmacopoeia lists the following items:

- Madouling, Fructus Aristolochiae, is the dry ripe fruit of *Aristolochia contorta* Bge. or *A. debilis* Sieb. et Zucc. (Aristolochiaceae) collected in fall when the fruits have become yellow. It is used in the treatment of respiratory diseases as an antitussive and antiasthmatic.
- Tianxianteng, Herba Aristolochiae, is the dry aerial part of *A. contorta* or *A. debilis* harvested in fall and used as a diuretic against edema and as an antirheumatic.
- Guangfangji, Radix Aristolochiae fangchi, is the dry root of *A. fangchi* Y. C. Wu ex L. D. Chou et S. M. Hwang collected in fall and winter. It is used as an antirheumatic and diuretic.
- Guanmutong, Caulis Aristolochiae manshuriensis, is the dry vine of *A. manshuriensis* Kom. harvested in fall and winter. It is used as a diuretic and antiphlogistic for treatment of edema and rheumatic pain.

Besides the four official species, a number of other *Aristolochia* species used in traditional Chinese medicine and folk medicine have been investigated chemically and pharmacologically.

21.2 Chemical Constituents

The chemical constituents of *Aristolochia* species [1] can be divided into three chemical groups: aristolochic acid derivatives, alkaloids, and sesquiterpenes. The aristolochic acids are derived from the phenanthrene system and bear a carboxyl function and a nitro substituent. When the nitro group is replaced by an amino group, the carboxyl group forms a lactam ring, giving a number of aristololactams [2]. The structures of aristolochic acid I (aristolochic acid A, *21-1*) and aristololactam (aristololactam I, *21-2*) are given below. One of the alkaloids isolated from some *Aristolochia* species is magnoflorine (*21-3*), which is structurally and phylogenetically related to aristolochic acid derivatives. The sesquiterpenes are mainly constituents of the volatile oil.