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Antitussive, expectorant and anti-inflammatory alkaloids from bulbus *Fritillariae cirrhosae*

Dongdong Wang
Sichuan University, P. R. China

Coughing is one of the common symptoms associated with many respiratory diseases. Most antitussive drugs such as codeine could bring inevitable or intolerable side effects. bulbus *Fritillariae cirrhosae* (BFC) has been widely used as the herb to treat cough and asthma in China for long time. The pharmacological studies demonstrate that the crude alkaloids of BFC have significant antitussive and expectorant activities. However, further pharmacological studies on alkaloids monomers *in vivo* were absent. We aimed to evaluate the of alkaloids monomers from BFC.

We used murine model of ammonia induced cough, mice's tracheal phenol red output, and murine model of xylene induced ear edema to evaluate antitussive, expectorant and anti-inflammatory activities, respectively.

All alkaloids imperialine (I), imperialine- β -N-oxide (II), isoverticine (III), isoverticine- β -N-oxide (IV), chuanbeinone (V), verticinone (VI) and verticine (VI) showed potent anti-tussive effects. Especially, compounds I, II, III, IV and V had equivalent antitussive effects in comparison with codeine. The compounds I, II, III, IV, V, VI and VII increased phenol red output by 45.35%, 41.89%, 27.19%, 22.34%, 93.24%, 46.67% and 57.17% respectively. Moreover, IV, VI and VII had continuously approaching expectorant effects in comparison with positive control. Besides, the compounds I, II, III, IV, V, VI and VII inhibited development of ear edema by 45.83%, 43.14%, 53.03%, 30.81%, 37.08%, 17.93% and 17.18% respectively and their effects exceeded that of the dexamethasone. All alkaloids exhibited pharmacological activities in a dose-dependent manner. The results would provide some convincing evidence for BFC to be used as one antitussive and expectorant medicine in the clinic.

Biography

Dongdong Wang is studying for a doctor's degree at Department of Pharmacognosy, West China School of Pharmacy, Sichuan University. He is interested in searching for the potential natural compounds by isolation and purification for treatment of cancer, angiogenesis, inflammation, and exploit their enormous potential by pharmacological tests. He has published more than 12 papers in reputed journals and served as Academic Editor of British Journal of Pharmaceutical Research and peer reviewer of more than 8 kinds of Journals.

wddong1988@hotmail.com