

Anti-tumor effects of *Patrinia villosa* (an authenticated herb of Bai Jiang Cao) in colon cancer preclinical models

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Abstract:

In traditional Chinese medicine, Bai Jiang Cao (BJC, 敗醬草) has long been used for treating gastrointestinal disorders. It is also commonly prescribed alone or in complex prescriptions by Chinese medicine practitioners for colorectal cancer patients in Hong Kong SAR and in mainland China. Nevertheless, BJC can refer to various species, such as *Patrinia scabiosifolia* (敗醬), *Patrinia villosa* (白花敗醬), *Patrinia heterophylla* (異葉敗醬) and *Patrinia monandra* (少蕊敗醬), etc. The authentication of these *Patrinia* species poses challenge, particularly with the processed herbal materials.

Our studies have successfully authenticated the four aforementioned medicinal *Patrinia* species using morphological and chemical characterization, as well as DNA barcoding markers. The species identity by traditional morphological authentication was in good agreement with both chemical and molecular results^[1]. Besides, since *P. villosa* (PV) can be more commonly purchased in herbal markets in Hong Kong SAR than the other species, PV aqueous extract was prepared and then being evaluated for its anti-tumor effects in colon cancer cell-based and tumor-bearing mouse models.

PV aqueous extract was shown to exert potent anti-tumor and anti-metastatic efficacy in human HCT116 colon cancer metastasis mouse model and murine Colon-26 allograft mouse model [2]. Furthermore, the mechanistic studies revealed the regulation of TGF- β -smad2/3-E-cadherin, and FAK-cofilin pathways induced by PV aqueous extract in colon cancer cells^[2]. Lastly, an active

component of PV aqueous extract has also been identified for inhibiting colon cancer cells growth^[3].

In conclusion, our team has successfully established the comprehensive authentication methods for identifying four *Patrinia* species. The findings from our studies also provide scientific evidences to support the use of PV in colon cancer management.

References:

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