

2. 項目簡介

(項目所屬科學技術領域、主要研究內容、發現點、科學價值、同行引用及評價等內容。)

本項目屬中藥資源學和中藥化學領域。歷時 15 年，主要研究內容和發現點：1) 對澳門大型真菌多樣性進行了調查和研究，瞭解其種類、生態分佈和習性，出版了專著《澳門蕈菌》(科學出版社)；2) 建立了真菌資源庫,收集真菌 152 種，167 個菌株，3950 份樣品；3) 研究了靈芝等蕈菌化學成分、質量控制和人工栽培，分離鑒定了 137 個化合物，其中新化合物 47 個，為菌物質量控制和物質基礎研究奠定了基礎；4) 優化建立了熱帶靈芝發酵和人工培植條件，實現了中藥藥渣(三芪、三七)培植熱帶靈芝的綜合利用。本項目出版專著 1 部；專著章節 2 篇；發表論文 17 篇，其中 SCI 13 篇，論文他引 292 次；博士學位論文 1 篇，碩士學位論文 4 篇；獲授權中國專利 1 項。

本項目填補了澳門大型真菌資源空白，有利於中國生態資源調查研究完整性，是澳門回歸 20 周年自主科研發展成績的一個縮影。為澳門大型真菌研究、馴化利用和環境保護提供了科學依據，為天然資源匱乏的澳門中醫藥產業提出白色資源發展之路，也為澳門特色(白色資源)健康產品開發奠定了基礎。

論文他引評價實例

1. Wu, D.T.; Xie, J.; Hu, D.J.; Zhao, J.*; Li, S.P.* Characterization of polysaccharides from *Ganoderma* spp. Using saccharide mapping. *Carbohydrate Polymers* 2013, 97, 398-405.

他引情況

1)W. Liu, et al. Fingerprinting profile of polysaccharides from *Lycium barbarum* using multiplex approaches and chemometrics. *International Journal of Biological Macromolecules* 2015, 78: 230-237. Ranking 9.2% (8/87) of Polymer Science

It is a trend that fingerprinting techniques combined with chemometric are used in quality control of polysaccharide products.

2.Ding-Tao Wu, Wen-Zhi Li, Jun Chen, Qian-Xia Zhong, Yao-Jun Ju, Jing Zhao*, Anton Bzhelyansky*, Shao-Ping Li*. An evaluation system for characterization of polysaccharides from the fruiting body of *Herichium erinaceus* and identification of its commercial product. *Carbohydrate Polymers* 2015, 97, 124: 201-207.

他引情況

1)M. Friedman. Chemistry, Nutrition, and Health-Promoting Properties of *Herichium erinaceus* (Lion's Mane) Mushroom Fruiting Bodies and Mycelia and Their Bioactive Compounds. *Journal of Agricultural and Food Chemistry* 2015, 63: 7108-7123. Ranking 5.3% (3/57) of AGRICULTURE, MULTIDISCIPLINARY

Wu et al. used colorimetry with iodine and KI, high-performance size exclusion chromatography coupled with multiangle laser light scattering and refractive index detection (HPSEC-MALLS-rid analysis), gas chromatography-mass spectrometry (GC-MS) analysis, and saccharide mapping based on carbohydrate gel electrophoresis (PACE) analysis to identify polysaccharides isolated from *H. erinaceus* fruiting bodies collected from different parts of China (25). The results show similarity in their profiles, including molecular

weights, the composition of monosaccharides, and the glycosidic linkages in the polysaccharides, suggesting that the described experimental approach could be used for quality control of polysaccharides in edible and medicinal mushrooms as well as in commercial mushroom products.

2)Carbohydrate Polymers 2016, 140: 6-12. Ranking 2.8% (2/71) of CHEMISTRY, APPLIED

GC-MS analysis has been widely employed for the qualitative and quantitative analysis of compositional monosaccharides in polysaccharides from medicinal plant and extended the application scope of GC analysis of polysaccharides in traditional Chinese medicine.

3)International Journal of Biological Macromolecules 2018, 118: 816-833. Ranking 9.2 (8/87) of Polymer Science

GC-MS analysis was carried out according to the reported method with modification.

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