

蜂膠原膠及市售產品之品質分析與抑菌活性

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摘要

蜂膠為一多源性物質，是經由蜜蜂採集利用樹脂、膠質、蜜蠟、花粉、精油等混合而成的動植物衍生物。早在西元前，蜂膠已被民間作為醫療上的用途，近期諸多研究報告已證實其具有抗細菌、抗真菌與病毒、局部麻醉、抑制潰瘍、激發免疫力及降血壓等功效，而此等具價值性的特質，係由其中之化學組成所賦予，包括脂肪族酸、酚酸及其衍生酯類、芳香族醛類、醇類等，以及已被證實存於蜂膠中的多種類黃酮化合物。本研究取6種不同來源的蜂膠原膠與16種市售蜂膠產品，進行各項物理特性、化學成分與活性成分之品質分析，進而測定其抗生能力。物理特性分析包括水活性、色澤及熔點的測定；化學成分分析包括灰分、蜂蠟、樹脂、不純物與95%乙醇萃出物含量的測定與濾紙擴散試驗；活性成分分析則包括蜂膠之總類黃酮和總酚類含量的測定，並以薄層色層分析(TLC)與高效能液相層析(HPLC)予以定性定量；抗生能力方面，包括最低抑菌濃度(MIC)的測定與不同蜂膠含膠量抑菌試驗等。研究結果顯示，蜂膠原膠之水活性AW值介於0.45~0.90，色澤分析顯示出其色彩差別感上有明顯差異，熔點介於63~94 間，原膠之蜂蠟平均含量為25.12%，市售產品含量介於0.24~64.19%，原膠之不純物及95%乙醇萃出物平均含量分別為15.24%與63.24%，蜂膠市售產品則分別介於0.87~32.98%與53.15~98.81%間，原膠之樹脂與膠質平均含量為26.1%，市售含量介於2.88~79.92%，原膠之灰分平均含量為7.00%，濾紙擴散試驗則無法推斷其有效成分之含量。原膠之總類黃酮平均含量為7.80%，市售產品介於0.79~14.88%，原膠之槲皮酮平均含量為1.38%，市售產品介於0.04~0.49%，原膠之總酚類平均含量為6.77%，市售產品介於0.46~6.27%，利用薄層色層分析可簡易定性部份蜂膠中之阿魏酸及槲皮酮等成分，在抗生特性上枯草桿菌對蜂膠的敏感性顯然優於金黃色葡萄球菌，抑菌作用非常明確，顯示蜂膠之抑菌性極佳。

關鍵詞：蜂膠、成分分析、活性成分、抗生能力

目錄

壹、前言--P1 貳、文獻回顧--P3 2.1蜂膠之來源與產銷--P3 2.1.1膠源植物與產膠蜂種--P3 2.1.2蜂膠之產銷--P4 2.2蜂膠之收集法--P5 2.2.1蓋布法--P5 2.2.2通風窗取膠法--P5 2.2.3集膠器法--P6 2.3蜂膠之物理性質--P6 2.3.1蜂膠之基本性質--P6 2.3.2蜂膠之萃取分析--P7 2.4蜂膠之化學組成--P8 2.4.1蜂膠之組成分--P8 2.4.2蜂膠中之蜂蠟--P9 2.4.3蜂膠之一般化學組成分--P9 2.4.4蜂膠之活性成分--P10 2.4.5蜂膠中之類黃酮成分--P12 2.4.6蜂膠中之槲皮酮--P13 2.5蜂膠之抗菌性質--P13 2.5.1蜂膠之抗細菌活性--P14 2.5.2蜂膠之抗黴菌與真菌活性--P16 2.5.3蜂膠之抗濾過性病毒活性--P16 2.6蜂膠之生物活性--P17 2.6.1蜂膠之抗發炎作用--P18 2.6.2蜂膠之癌細胞毒殺活性--P18 2.6.3蜂膠之其他活性--P19 2.7蜂膠之生理療效--P20 2.8蜂膠在農牧業、獸醫及食品上的應用--P21 2.9蜂膠之商業發展性與經濟價值--P22 2.9.1蜂膠之商業發展性--P22 2.9.2蜂膠之經濟價值--P23 2.10蜂膠之毒性--P23 參、材料與方法--P25 3.1實驗流程圖--P25 3.2材料與方法--P26 3.2.1樣品來源--P26 3.2.2蜂膠樣品粉末及乙醇萃取液之製備--P26 3.2.3分析方法--P28 肆、結果與討論--P39 4.1不同來源蜂膠及市售蜂膠藥錠、膠囊產品之物理特性分析--P43 4.1.1不同來源蜂膠原膠及市售蜂膠藥錠、膠囊產品之水活性測定--P43 4.1.2不同來源蜂膠原膠塊之色澤分析--P44 4.1.3不同來源蜂膠原膠粉末之熔點及熔點範圍測定--P45 4.2不同來源蜂膠原膠及市售蜂膠產品之化學成分分析--P45 4.2.1不同來源蜂膠原膠及市售蜂膠產品之含蠟量、不純物及95%乙醇萃出物含量的測定--P45 4.2.2不同來源蜂膠原膠及市售蜂膠產品之樹脂與膠質含量的測定--P52 4.2.3不同來源蜂膠原膠之灰分含量的測定--P54 4.3不同來源蜂膠及市售蜂膠產品之活性成分分析--P54 4.3.1不同來源蜂膠原膠及市售產品之濾紙擴散試驗的測定--P54 4.3.2不同來源蜂膠原膠及市售產品之總類黃酮含量測定--P55 4.3.3利用高效能液相層析(HPLC)分析總類黃酮中槲皮酮含量--P61 4.3.4不同來源蜂膠原膠及市售產品之總酚類含量測定--P62 4.3.5不同來源蜂膠及市售蜂膠產品之薄層色層分析--P64 4.4不同來源蜂膠及市售蜂膠產品之抑菌活性--P69 4.4.1不同來源蜂膠及市售蜂膠產品之最低抑菌濃度--P69 4.4.2利用抑菌環試驗測試巴西蜂膠原膠及市售商品之不同含膠量抗菌能力--P70 伍、結論--P79

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