臺灣柚子皮精油之抗氧化、抗菌及降血脂作用

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摘 要

本研究以不同品種之柚子皮為材料，經取皮、清洗、攪碎後以水蒸氣蒸餾及二氯甲烷直接 萃取兩種方式萃取精油，再以氣相層析質譜分析儀（GC/MS）鑑定其揮發性成分，並進行其抗氧化、抗菌及降血脂之研究。研究結果如下顯示水蒸氣蒸餾萃取精油的產率，台東文旦、麻豆文旦、斗六文旦、宜蘭文旦、西施柚、葡萄柚、紅柚、及白柚分別為5.70、9.13、7.54、10.61、6.67、6.94、5.12及3.80%。水蒸氣蒸餾萃取所得柚子皮精油經矽膠管柱區分之收率在正戊烷溶洗部分，台東文旦、麻豆文旦、斗六文旦、宜蘭文旦、西施柚、葡萄柚、紅柚、及白柚分別為4.18、6.12、5.40、7.49、3.05、4.15、2.65及2.29%；乙醚溶洗部分台東文旦、麻豆文旦、斗六文旦、宜蘭文旦、西施柚、葡萄柚、紅柚及白柚皮精油產率分別為0.63、1.02、0.66、1.22、1.33、1.74、1.07及0.69%。以二氯甲烷萃取精油產率部份台東文旦、麻豆文旦、斗六文旦、宜蘭文旦、西施柚、葡萄柚、紅柚、及白柚分別為6.14、7.77、12.25、10.12、5.05、4.13、4.37及4.09%。二氯甲烷萃取精油矽膠管柱區分正戊烷溶洗部分台東文旦、麻豆文旦、斗六文旦、宜蘭文旦、西施柚、葡萄柚、紅柚、及白柚皮精油產率分別為2.55、3.71、6.02、5.52、2.29、2.16、2.06及2.13%；乙醚溶洗部分台東文旦、麻豆文旦、斗六文旦、宜蘭文旦、西施柚、葡萄柚、紅柚、及白柚精油產率分別為2.15、2.15、4.46、4.09、2.06、1.69、1.61及1.63%。在不同品種柚子皮精油的揮發性成分中，發現皆以?烯類化合物為含量最高，其中更以limonene為主要成分。 而在抗氧化活性分析中，水蒸氣蒸餾所得柚子皮精油（10 mg/ml）之DPPH自由基清除能力（20~30%）低於二氯甲烷萃取柚子皮精油（30~40%）；且水蒸氣蒸餾所得的柚子皮精油（10 mg/ml）其亞鐵離子螯合能力（10~20%）低於二氯甲烷萃取柚子皮精油（20~30%）。評估不同品種柚子皮精油之抗細菌試驗得知，柚子皮精油對於大腸桿菌抑制效果（最低只可達到60~70%）較金黃色葡萄球菌及沙門氏桿菌（最低只可達到40~50%）為佳。以雄性倉鼠為實驗對象，探討攝取飼料添加0.01%及0.1%台東文旦柚皮精油組對其脂質型態之影響，結果顯示血液中三酸甘油酯、膽固醇、低密度膽固醇及肝臟中三酸甘油酯、總膽固醇濃度皆明顯較對照組低（p＜0.05）。

關鍵詞 : 柚子皮 ; 精油 ; ?烯類化合物 ; 倉鼠 ; 抗氧化 ; 抗菌 ; 降血脂

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