洋蔥紅酒及螺旋藻紅酒降血脂活性之研究 = Studies on hypolipidemic activities of onion wines and spirulina wines

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摘 要

本研究共分為三部份。第一部份探討洋蔥紅酒、螺旋藻紅酒、梅洛紅酒及卡本內紅酒的機能性成分。第二部份探討洋蔥紅酒、螺旋藻紅酒、梅洛紅酒及卡本內紅酒的抗氧化能?。第三部份以動物試驗探討洋蔥紅酒、螺旋藻紅酒、梅洛紅酒及卡本內紅酒之?血脂功效。

研究結果顯示在有機酸組成上，四種實驗樣品均以酒石酸、檸檬酸及草酸含量為較高。在芸香?和槲皮酮含量方面，洋蔥紅酒有較高的芸香?及槲皮酮含量，分別為11.04及15.36mg /100ml。總酚成分則以卡本內紅酒及梅洛紅酒為較高，其次為螺旋藻紅酒和洋蔥紅酒。

在抗氧化能力方面，四種酒樣皆有相當高的DPPH自由基清除能力。亞鐵螯合力以卡本內紅酒和洋蔥紅酒最高達98.1和90.1%。四種酒樣之抗脂質過氧化力皆隨著時間增加而降低。四種酒樣皆有不錯的之還原能力(70.1%)。總抗氧化能力以卡本內紅酒和梅洛紅酒最好，分別為89.7及87.2%，其次為螺旋藻紅酒和洋蔥紅酒，分別為74.1及73.3%。本實驗發現四種酒中之總酚含量高低順序與其總抗氧化能力大小順序相同，證實酒樣中抗氧化能力亦隨酚類含量增加而增加。

在動物試驗方面，實驗組倉鼠給予高油脂肪高膽固醇飼料，再配合灌餵低劑量(0.1ml/day)、高劑量(0.4ml/day)之紅酒。結果顯示，在給予低劑量酒樣之各組別皆可降低血液中總膽固醇及低密度脂蛋白膽固醇(LDL-C)濃度，並可提升高密度脂蛋白膽固醇濃度($p<0.05$)，比高劑量組更有降低之趨勢，且可降低LDL-C/HDL-C及TC/HDL-C之比值，但在降低血液中三酸甘油脂的效果上，以低劑量之洋蔥紅酒、螺旋藻紅酒及卡本內組較具有明顯效果($p<0.05$)。

在降低肝臟中三酸甘油酯濃度上，以低劑量之卡本內紅酒及梅洛紅酒效果最佳，然而降低肝臟與體重之比值，看似有下降之勢，但經統計分析並無顯著性差異；在肝臟中超氧化歧化(SOD)酵素活性含?上，低劑量各組有明顯提高之勢。而麩胱甘?（GSH）酵素活性含?，以低劑量的梅洛紅酒及卡本內紅酒組最顯著($p>0.01$)，控制組H組和空白組C組則無顯著性差異。

綜合上述結果，將二種紅酒作調和，更具抗氧化性，每天給予適量之紅酒確實對倉鼠有降血脂之功效，其中又以螺旋藻紅酒、洋蔥紅酒及卡本內紅酒效果最為顯著。

關鍵詞 : 洋蔥、螺旋藻、紅酒、降血脂

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