

探討綠藻多醣的純化及其生理活性

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一、前言

二、*Monostroma oxyspermum* 硫酸化多醣的純化和生物活性

三、來自 *Caulerpa lentillifera* 多醣的純化和免疫刺激活性

四、純化的石蓴多醣在高血脂症小鼠中的抗氧化活性

五、結論

摘要

海藻的細胞壁富含硫酸化多醣，具有抗氧化、抗凝血、抗癌和抗病毒等優異的生理活性。透過離子交換層析及凝膠過濾層析，可以有效的分離出高硫酸鹽含量和低分子量的多醣，並具備生理活性。結果顯示，從 *Monostroma oxyspermum* 純化出的硫酸化多醣在抗氧化活性測試中表現優異，尤其在 ABTS 清除自由基能力純化的多醣 (76.81%) 與對照組二丁基羥基甲苯 (Dibutyl Hydroxy-Toluene, BHT) 相當 (79.39%)。抗凝血活性測定中，促凝血酶原激酶時間 (Activated Partial Thromboplastin Time, APTT) 及凝血酶原時間 (Prothrombin Time, PT) 在 25 µg/mL 分別為 20.09 IU 和 1.79 IU。從 *Caulerpa lentillifera* 分離純化出的四種多醣，其中硫酸鹽含量最高的多醣在免疫刺激活性測試中最強，與脂多醣 (Lipopolysaccharide; LPS) 相當 (在 10 µg/mL 時為 1.72)。此組別對酸性磷酸酶活性的刺激也是最高的。從石蓴多醣分離純化出三個產物，其中硫酸鹽含量最高且分子量最低的多醣，在高血脂症小鼠中具有最強的抗高血脂及抗氧化活性。另外，硫酸鹽含量最高且分子量最低的多醣在抗高血脂活性測試中，與高脂血症組相比對總膽固醇和三酸甘油酯具有最佳療效，對高密度脂蛋白和低密度脂蛋白膽固醇有顯著影響。且在體內抗氧化活性測試中與高脂血症組相比，能顯著降低丙二醛 (29.2%)、過氧化氫酶 (43.6%) 和增加超氧化物歧化酶 (36.4%)。綜上所述，三種從綠藻中純化出的多醣具有高硫酸鹽含量和低分子量的特性，並具備抗凝血、免疫刺激和抗氧化活性。

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