URN etd-0407109-183714-1124
Author CHING-HUA Li
Author's Email Address No Public.
Statistics This thesis had been viewed 37 times. Download 0 times.
Department
Year 2003
Semester 1
Degree Master
Type of Document Master's Thesis
Language zh-TW.Big5 Chinese
Title Study on the hydrolysis of polysaccharides of Grifola frondosa
Date of Defense 0000-00-00
Page Count 102

Keyword
Grifola frondosa
polysaccharides
hydrolysis

Abstract
The aim of this project is to investigate the polysaccharides of Grifola frondosa. The polysaccharides from the mycelia and the fruit bodies were extracted by ethanol first, then followed in order by hot water, cold and hot alkaline solution containing 5% urea and 10% NaOH. The extracts thus obtained from mycelia were MCF-1 （ethanol extract）, MCF-2 （the precipitate of hot water extract）, MCF-3（the supernatant of hot water extract）, MCF-4（the precipitate of cold alkaline solution extract）, MCF-5（the supernatant of cold alkaline solution extract）, MCF-6（the precipitate of hot alkaline solution extract）, MCF-7（the supernatant of hot alkaline solution extract）. The polysaccharide contents for MCF-2, MCF-4, and MCF-6 were 90.30%, 70.30% and 5.98%, respectively, while those for MCF-3, MCF-5, and MCF-7 were 30.00%, 13.40%, and 33.67%, respectively. The gel filtration chromatograph showed wide range molecular weight distribution and were over 1,400 kDa, except MCF-1 and MCF-7. It was found that MCF-6 and MCF-2 contained higher amounts of uronic acid（9.87% and 9.36%, respectively）. And it was also found that glucose and mannose were the major components of the polysaccharide extracts from mycelia with the exception of MCF-4, which major polysaccharide extracts from fruit bodies were glucose. When MCF-2 was hydrolyzed with 7 M acetic acid and hydrolysis at 95 ℃ for 7 hrs, the molecular weight of hydrolyzed polysaccharides were around 11 kDa, which however showed no promising anti-tumor and anti-oxidation activity. The anti-tumor activity assay for extracted polysaccharides indicated that the original MCF-2 at a concentration of 10 mg/mL showed the best effects against Hela cells, MCF-7, Hep G2, AGS, and Du-145 with the inhibition range from 25-46%. For HT-1080 cells, the hydrolyzed MCF-2 at the concentration of 10 mg/mL showed a best cell growth inhibition of 43%.
Advisory Committee Hsu Ming-Ching - advisor

Files No Any Full Text File.
Date of Submission 2004-08-13