URN etd-0407109-183714-1149
Author Shou-Ying Hsueh
Author's Email Address No Public.
Statistics This thesis had been viewed 37 times. Download 41 times.
Department
Year 2005
Semester 2
Degree Master
Type of Document Master's Thesis
Language zh-TW.Big5 Chinese
Title Study on Solid State Fermentation and Biological Activities of Laetiporus sulphureus
Date of Defense 0000-00-00
Page Count 95
Keyword
Laetiporus sulphureus
antitumor
antioxidant
anti-inflammatory

Abstract
The Laetiporus sulphureus is a wood-decayed basidiomycete, which is distributed worldwide. It is found in the broad-leaved tree trunk of low elevation region in Taiwan. Generally, in traditional Chinese medicine it can be used as supplementary food in breast cancer and prostate cancer, but its mechanism is still under investigation. The results of this study showed that using seven different solid media separately for the culture of L. sulphureus have excellent efficiency on the mycelial growth.
According to the results of antibiotic activity, the extract solution has different extent of inhibition on the growth of Fusarium moniliforme, Penicillium citrinum, Escherichia coli and Pseudomonas aeruginosa.
The inhibition test on tumor cells showed that hot water extract from seven different solid media for the culture of L. sulphureus (10 mg/mL) has more than 30% inhibition against cervical cancer cell (HeLa). Furthermore, there is over 35% and 40% inhibition against human breast cancer cell (MCF-7) and prostate cancer (DU-145), respectively, and which are both highest in BN at 71% and 73%, respectively. The hot water extract of L. sulphureus mycelia fermented on SW and BN solid medium has the best inhibition against fibroma (HT-1080) up to 62% and 52%, respectively. In addition, the inhibition against tumor cells by the hot water extract (10 mg/mL) of fruit bodies is higher than 35% against cervical cancer cell (HeLa), fibrosarcoma cell (HT-1080), breast cancer cell (MCF-7) and prostate cancer cell (DU-145).
In anti-inflammation experiment, that hot water extract from seven solid formula media for the culture of L. sulphureus has significantly inhibited LPS-induced NO production in Raw 264.7 macrophages. In the hot water extract of fruit body from L. sulphureus artificial culture, inhibits NO activity increased with increasing concentration.
The antioxidant test showed that the hot water extract by L. sulphureus mycelia (10 mg/mL) ferment on SW, CJ and YM solid medium with artificial culture of fruit body have significantly protective effect with decreased hydrogen peroxide-induced cell damage.
Advisory Committee Jian-Chyi Chen - advisor

Chee-Jen Chen - advisor

Files etd-0407109-183714-1149-002.pdf

etd-0407109-183714-1149-001.pdf

indicate access worldwide
Date of Submission 2006-07-18