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Abstract
In recent decades, mushrooms have been widely consumed for their favor and nutritive values. However, some of them also have medicinal values. Laetiporus sulphureus is an edible mushroom known to cause heart-rot disease in deciduous trees and conifers. This fungus is widespread and grow in large clusters on live and dead trunks of hard wood species, and is therefore easily cultivated. The optimum cultural medium and some bioactivities such as antitumor for L. sulphureus had been studied in our Lab. Therefore, the purpose of this study was aimed to examine the biological activities such as the extracts from L. sulphureus enhance Doxorubicin (DOX)-induced cytotoxicity in breast carcinoma cell lines.
The results showed that the growth of tumor cells, such as MCF-7 and MDA-MB231 cell, can be significantly inhibited by the extracts from L. sulphureus. The mechanism of the growth-inhibition was due to affect cell cycle evaluated by FASCAN. These extracts may change cell cycle in breast carcinoma cells by increasing the dose and time period. On the other hand, the results demonstrated that L. sulphureus significantly enhanced DOX or Tamoxifen (TMX)-induced cytotoxicity and also affected the cell cycle in breast carcinoma cell lines.
The antimetastasis was conducted by getalin zymograph assays, and the results showed that the secretion of protein expression in matrix metalloproteinase (MMP-9) were obviously suppressed while HT1080 cells were treated with the water extract of mycelium from L. sulphureus cultured in PM medium. In immunomodulatory assay, the data suggested that the expression of cytokines was increased while Raw264.7 cells were treated with L. sulphureus. The results showed that L. sulphureus can modulate the cytokines expression of IL-6 and TNF-α.
Finally, the antioxidant activity was assayed by FASCAN, and the result showed that the water extract of mycelium from L. sulphureus has a great antioxidative activity.
These results suggested L. sulphureus indeed possess some biology activities. Hopefully, these findings are useful to further studies on bioactivity of L. sulphureus.

Advisory Committee Jian-chyi Chen - advisor

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