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Abstract
In Russia, Fuscoporia obliqua has been used as a traditional medicinal mushroom for curing anti-inflammation, anti-nociceptive, anti-tumor and protection of damage from oxidative stress etc. According to the past research, many steroids and phenolic compounds isolated from F. obliqua, which have been identified as having various biological activities.

First of all, the species of F. obliqua was confirmed through rDNA sequencing and phylogenetic relationship by Neighbor-joining method. Then, the functional of F. obliqua CCJ FO-01 mycelia extracts was evaluated. The extracts of F. obliqua CCJ FO-01 were obtained following by hot water, ethanol, methanol, ethanol/water and methanol/water. The result has shown that five kinds of extraction have strong anti-cancer activity on SW480, MDA-MB213, A549 and HeLa cellines in 500 μg/mL, but a weak inhibition in HT-1080 cell under the same concentration. From the flow cytometric analysis has shown a significant increase in the sub-G1 peak treated with extracts after 48hrs which indicates the extract is able to induce apoptosis in SW480 cells.

Combination with Bleomycin is used in hemo-therapy. The result showed the extract of F. obliqua CCJ FO-01 mycelial water extract (FOW) has the best activity against A549 cells increasing inhibition effect up to 25 %. The antioxidant activity by chemical method showed that F. obliqua CCJ FO-01 mycelial 95 % ethanol extract (FOE) in 500 μg/mL had the highest scavenging free radicals activity (66.6%) and the strongest reducing ability (equal to 7.94 μg/mL vitamin c) than other extracts. In the same concentration, FOWE had the best ability to protect cells against oxidative stress. Additionally, all kinds of samples have strong capability of inhibiting NO production in imflammatory. According to the MMP-2 and MMP-9 proteins by gelatin zymography assay, MMP-2 had significantly reducing ability by FOE、FOWE、FOWME in 250 μg/mL .The results suggest that F. obliqua CCJ FO-01 may have the ability of suppressing cancer metastasis.

Moreover, the result of antibiotic activity showed that the F. obliqua CCJ FO-01 inhibited the sporulation of Fusarium moniliforme BCRC31745 obviously. The highest concentration of polysaccharides 60mg/L is extracted from F. obliqua CCJ FO-01 mycelia methanol/water (FOWME) and the highest total phenolic content 11.3μg/mg is the mthanol extract (FOME).
Advisory Committee Chee-Jen Chen - advisor

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