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Anti-cancer activities of extracts from *Marasmius oreades*

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Marasmius oreades (MO) is an edible and medicinal mushroom. MO mushroom extract was separated by silica gel CC. Finally, six fractions (MOC-1, MOC-2, MOC-3, MOC-4, MOC-5 and MOC-6) were obtained. Using the methyl tetrazolium assay, we demonstrated that MO extracts MOC-3, MOC-4, MOC-5 and MOC-6 decreased the viability in triple negative breast cancer MDA-MB-231 cells. Cyclin B1, cyclin D1, cdk1 and cdk4 are the important regulatory proteins for cell cycle. The order of potency of these extracts on the inhibition of cdk1 and cdk4 protein expressions were in the order MOC-4>MOC-3>MOC-6>MOC5. MOC-1 and MOC-2 extracts had no significant effects in these protein expressions. MOC-4 extract caused apoptosis more than other extracts. Apoptotic cell death hallmarks, nuclear condensation and sub-G1 appearance, were found in MOC-4 extract-treated MDA-MB-231 cells. Procaspase-8, procaspase-9, procaspase-3, PARP expressions were reduced in MOC-4 induced apoptosis. This is the first report on the anticancer potential of *Marasmius oreades* mushroom in triple negative breast cancer. Taken together, our data suggest that *M. oreades* mushroom can be considered as a new source of bioactive substances able to affect the carcinogenic process of triple negative breast cancer.

Biography

Ya-Fan Liao has her expertise in the areas of Cancer Biology and Mycotoxin. In recent years, her laboratory has focused on the mechanisms of constituents derived from herbs such as *Anisomeles indica* and *Glycyrrhiza inflata* in cancer metastasis and apoptosis. Currently, her laboratory is selecting some candidates for mycotoxin removal. The ultimate goal is to improve cancer prevention and mycotoxin intoxication by natural products.

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