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Abstract
The ultraviolet can lead to cutaneous damage, for instance, sunburn, tanning, photoaging and photocarcinogenesis. Cell irradiated by UV can secrete cytokines and synthesize proteins to resist the damage by UV. The melanin, a pigment synthesized by tyrosinase in the melanocytes, can protect cell against UV but make skin dark. Therefore, the objective of this research is to estimate the tyrosinase inhibition and photoprotection effect by herbal fermentation products with Antrodia camphorata on B16-F10 cell irradiated with UV. Several sorts of herbs including Polygonum multiflorum, Scutellaria baicalensis, Glycyrrhiza uralensis and Camellia sinensis were fermented with Antrodia camphorata.Water and ethanol extracts of fermented products were used to test the cell viability and the capacity of tyrosinase on the cells and irradiated cells. It was found that all water extracts can not inhibit cell growth and tyrosinase capacity. But ethanol extracts of fermented products with herbs can cause different effect of cytotoxicity and inhibiting tyrosinase excluding that with Polygonum multiflorum. Both water and ethanol extracts of fermented product with Scutellaria baicalensis , adding into the cell while irradiation, can protect cell from UV damage and inhibit tyrosinase. Water extracts of fermented product with Scutellaria baicalensis, adding into the cell after irradiation, can increase cell viability, but the capacity of tyrosinase is twice in comparision with irradiated control. Ethanol extract, adding into the cell after irradiation, is also able to inhibit tyrosinase. In conclusion, both water and ethanol extracts of fermented product with Scutellaria baicalensis can protect cell from UV damage. However, ethanol extract have distinguished inhibition on tyrosinase in the cell after cell irradiation, but water extract does not. Therefore, it should be interesting to learn about the tyrosinase inhibition and photoprotection effect by herbal fermentation products with Antrodia camphorata treated on the animal model in the future.
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