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Abstract

Evaluation of antioxidant activity of natural product compounds from *Platycladus orientalis* leaves

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Background and objectives: Natural product compounds of plants have been used since ancient times and in folklore medicine for the treatment of many diseases and illnesses. Oxygen-centered free radicals and other reactive oxygen species, which are continuously, produced *in vivo*, result in cell death and tissue damage. Oxidative damage caused by free radicals may be related to aging and diseases, such as arteriosclerosis, diabetes, cancer, and cirrhosis. Although almost all organisms possess antioxidant defense and repair systems that have evolved to protect them against oxidative damage, these systems are insufficient to prevent the damage entirely. However, antioxidant supplements from plants may be used to help the human body reduce oxidative damage. *Platycladus orientalis* is an ornamental conifer of the cypress family. The leaves of *Platycladus orientalis* have been used in medicine for treatment of gout, rheumatism, diarrhea and chronic tracheitis. This study has aimed at evaluating the *in vitro* antioxidant activity of extracts of *Platycladus orientalis* leaves, in comparison with commercially available antioxidants. **Methods:** The antioxidant activity was assessed by reducing power, total phenolics content, DPPH radical scavenging activity and RBC hemolysis. **Results:** The results showed that both the water and the ethanol extracts exhibited strong total antioxidant activity. More statistical data analysis is in process. **Conclusion**: This result may be a major reason for introducing *Platycladus orientalis* as a good scavenger of hydrogen peroxide, superoxide, and free radicals. However, the components responsible for the antioxidative activity of *Platycladus orientalis* leaves are currently unclear. Therefore, it is suggested that further work could be performed on the isolation and structural identification of the antioxidant compounds from *Platycladus orientalis* leaves and to evaluate its *in vivo* effects.

Keywords: antioxidant activity, natural product, *Platycladus orientalis*

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