

Title : Inhibition of herpes simplex virus type 2 by green tea and oolong tea extracts

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Major : Microbiology

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ABSTRACT

Herpes simplex virus type 2 (HSV-2) is the primary cause of genital herpes. It is usually transmitted through contact with the secretions of an infected person during sexual intercourse. HSV-2 can be treated with antiviral drugs, but prolonged use in some patients may lead to viral drug resistance and side effects from medication. Therefore, this research studied the effect of green tea and oolong tea extracts on the inhibition of herpes simplex virus type 2. The aqueous and ethanolic extracts of green tea and oolong tea were determined for cytotoxicity on Vero cell cultures. The results showed that the ethanolic extract of oolong tea had the lowest cytotoxicity, with a 50% cytotoxic dose of $681.13 \pm 9.21 \mu\text{g/ml}$. From the study of antioxidant activity, it was found that the ethanolic extracts of green tea had the greatest antioxidant activity of $1002.65 \pm 9.83 \text{ mg trolox /g extract}$. Then, efficacy of the extracts in inhibiting HSV-2 after and during viral attachment was determined. It was found that the ethanolic and aqueous green tea extracts at concentrations of 20 and 40 $\mu\text{g/ml}$ had the highest inhibitory activity on HSV-2 after viral attachment by 76.82% and 76.26%, respectively. During viral attachment, ethanolic and aqueous extracts of green tea at

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concentrations of 20 and 40 µg/ml showed the highest inhibition of the virus by 92.10% and 92.95%, respectively. The ethanolic and aqueous extracts of oolong tea at concentrations of 40 µg/ml showed the inhibition of the virus by 85.96% and 89.84%, respectively. Therefore, the green tea and oolong tea extracts could inhibit HSV-2 and the green tea extracts demonstrated higher anti-HSV activity than the oolong tea extract.

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