

Almond Skin Extracts Abrogate HSV-1 Replication by Blocking Virus Binding to the Cell.

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Viruses

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Abstract:

The aim of the present research was to determine the effect of almond skin extracts on herpes simplex virus 1 (HSV-1) replication. Drug-resistant strains of HSV frequently develop following therapeutic treatment. Therefore, the discovery of novel anti-HSV drugs deserves great effort. Here, we tested both natural (NS) and blanched (BS) polyphenols-rich almond skin extracts against HSV-1. HPLC analysis showed that the prevalent compounds in NS and BS extracts contributing to their antioxidant activity were quercetin, epicatechin and catechin. Results of cell viability indicated that NS and BS extracts were not toxic to cultured Vero cells. Furthermore, NS extracts were more potent inhibitors of HSV-1 than BS extracts, and this trend was in agreement with different concentrations of flavonoids. The plaque forming assay, Western blot and real-time PCR were used to demonstrate that NS extracts were able to block the production of infectious HSV-1 particles. In addition, the viral binding assay demonstrated that NS extracts inhibited HSV-1 adsorption to Vero cells. Our conclusion is that natural products from almond skin extracts are an extraordinary source of antiviral agents and provide a novel treatment against HSV-1 infections.

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