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# Antiviral Activities of Honey, Royal Jelly, and Acyclovir Against HSV-1

Authors

Maryam Alsadat Hashemipour, Zahra Tavakolineghad, Sayed Ali Mohammad Arabzadeh, Zahra Iranmanesh, Sayed Amir Hossein, Gandjalikhan Nassab

Author information

1 Kerman Social Determinants on Oral Health Research Center, Kerman University of Medical Sciences, Kerman,Iran; email: m_s_hashemipour@yahoo.com.

2 Kerman Social Determinants on Oral Health Research Center, Kerman University of Medical Sciences, Kerman, Iran.

3 Department of Medical Microbiology, Kerman University of Medical Sciences, Kerman, Iran.

4 Kerman Oral and Dental Diseases Research Center, School of Medicine, Kerman University of Medical Sciences, Kerman, Iran.

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## Abstract

*Introduction.* Herpes simplex virus type 1 (HSV-1) belongs to the Herpesviridae family and genus simplex virus. This virus is usually acquired during childhood and is transmitted through direct mucocutaneous contact or droplet infection from infected secretions. The aim of the present study was to compare antiviral effects of honey, royal jelly, and acyclovir on herpes simplex virus-1 in an extra-somatic environment.

*Materials and Methods.* Vero cells were cultured in the Dulbecco's Modified Eagle's Medium (DMEM) along with 10% fetal bovine serum (FBS) in 12-welled microplates. Various dilutions of honey, royal jelly, and acyclovir (5, 10, 50, 100, 2500, 500, and 800 µg/mL) were added to the Vero cells along with a 100-virus concentration of TCID50. The plaque assay technique was used to evaluate the antiviral activities.

*Results.* The results showed that honey, royal jelly, and acyclovir have the highest inhibitory effects on HSV-1 at concentrations of 500, 250, and 100 µg/mL, respectively. In addition, honey, royal jelly, and acyclovir decreased the viral load from 70 795 to 43.3, 30, and 0 PFU/mL at a concentration of 100 µg/mL, respectively.

*Conclusion.* The results of the present study showed that **honey** and **royal jelly**, which are natural products with no reports about their deleterious effect at least in laboratory conditions, **can be considered alternatives to acyclovir in the treatment of herpetic lesions**. However, it should be pointed out that further studies are necessary to substantiate their efficacy because hard evidence on their effectiveness is not available at present.