

## Medicinal Plants: An Antiviral Depository with Complex Mode of Action

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**Abstract :** Human herpes viruses (HHV) are ubiquitous pathogens with a pandemic spread across the globe. HHV type 1 is the main causative agent of cold sores and fever blisters around the mouth and on the face, whereas HHV type 2 is generally responsible for genital herpes outbreaks. The treatment of both viruses is more or less successful with antivirals from the nucleoside analogues group. Their wide application increasingly leads to the emergence of resistant mutants. In the past, medicinal plants have been used to treat a number of infectious and non-infectious diseases. Their diversity and ability to produce the vast variety of secondary metabolites according to the characteristics of the environment give them the potential to help us in our warfare with viral infections. The variable chemical characteristics and complex composition is an advantage in the treatment of herpes since the emergence of resistant mutants is significantly complicated. The screening process is difficult due to the lack of standardization. That is why it is especially important to follow the mechanism of antiviral action of plants. On the one hand, it may be expected to interact with its compounds, resulting in enhanced antiviral effects, and the most appropriate environmental conditions can be chosen to maximize the amount of active secondary metabolites. During our study, we followed the activity of various plant extracts on the viral replication cycle as well as their effect on the extracellular virion. We obtained our results following the logical sequence of the experimental settings - determining the cytotoxicity of the extracts, evaluating the overall effect on viral replication and extracellular virion. During our research, we have screened a variety of plant extracts for their antiviral activity against both virus replication and the virion itself. We investigated the effect of the extracts on the individual stages of the viral replication cycle - viral adsorption, penetration and the effect on replication depending on the time of addition. If there are positive results in the later experiments, we had studied the activity over viral adsorption, penetration and the effect of replication according to the time of addition. Our results indicate that some of the extracts from the *Lamium album* have several targets. The first stages of the viral life cycle are most affected. Several of our active antiviral agents have shown an effect on extracellular virion and adsorption and penetration processes. Our research over the last decade has shown several curative antiviral plants - some of which are from the *Lamiaceae* family. The rich set of active ingredients of the plants in this family makes them a good source of antiviral preparation.

**Keywords :** human herpes virus, antiviral activity, *Lamium album*, *Nepeta nuda*

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