

Strigolactone analogs are promising antiviral agents for the treatment of human cytomegalovirus infection

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The human cytomegalovirus (HCMV) is a widespread pathogen and is associated with severe diseases in immunocompromised individuals. Moreover, HCMV infection is the most frequent cause of congenital malformation in developed countries. Although nucleoside analogs have been successfully employed against HCMV, their use is hampered by the occurrence of serious side effects. There is thus an urgent clinical need for less toxic, but highly effective, antiviral drugs. Strigolactones (SLs) are a novel class of plant hormones with a multifaceted activity. While their role in plant-related fields has been extensively explored, their effects on human cells and their potential applications in medicine are far from being fully exploited. In particular, their antiviral activity has never been investigated. In the present study, a panel of SL analogs has been assessed for antiviral activity against HCMV. We demonstrate that TH-EGO and EDOT-EGO significantly inhibit HCMV replication *in vitro*, impairing late protein expression. Moreover, we show that the SL-dependent induction of apoptosis in HCMV-infected cells is a contributing mechanism to SL antiviral properties. Overall, our results indicate that SLs may be a promising alternative to nucleoside analogs for the treatment of HCMV infections.