

Isolation and Elimination of Latent and Productive Herpes Simplex Virus from the Sacral and Trigeminal Ganglions

Authors : Bernard L. Middleton, Susan P. Cosgrove

Abstract : There is an immediate need for alternative anti-herpetic treatment options effective for both primary infections and reoccurring reactivations of herpes simplex virus types 1 (HSV-1) and 2 (HSV-2). Alternatives currently approved for the purposes of clinical administration includes antivirals and a reduced set of nucleoside analogues. The present article tests a treatment based on a systemic understanding of how the herpes virus affects cell inhibition and breakdown and targets different phases of the viral cycle, including the entry stage, reproductive cross mutation, and cell-to-cell infection. The treatment consisted of five immunotherapeutic core compounds (5CC), which were hypothesized to be capable of neutralizing human monoclonal antibodies. The tested 5CC were noted as being functional in the application of eliminating the DNA synthesis of herpes viral interferon (IFN) - induced cellular antiviral response. They were here found to neutralize antiviral reproduction by blocking cell-to-cell infection. The activity of the 5CC was tested on RC-37 in vitro using an assay plaque reduction and in vivo against HSV-1 and HSV-2. The 50% inhibitory concentration (IC₅₀) of 5CC was 0.0009% for HSV-1 plaque formation and 0.0008% for HSV-2 plaque formation. Further tests were performed to evaluate the susceptibility of HSV-1 and HSV-2 to anti-herpetic drugs in Vero cells after virus entry. There were high-level markers of the 5CC virucidal activity in the viral suspension of HSV-1 and HSV-2. These concentrations of the 5CC are nontoxic and reduced plaque formation by 98.2% for HSV-1 and 93.0% for HSV-2. Virus HSV-1 and HSV-2 titers were reduced significantly by 5CC to the point of being negative, ranging 0.01-0.09 in 72%. The results concluded the 5CC as being an effective treatment option for the herpes simplex virus.

Keywords : synergy pharmaceuticals, herpes treatment, herpes cure, synergy pharmaceuticals treatment

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020