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ABSTRACT BOOK

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THE CRANBERRY (*VACCINIUM MACROCARPON*) EXTRACT BLOCKS EBOLA VIRUS AND CCHFV INFECTION BY INTERFERING WITH VIRAL ENTRY INTO TARGET CELLS.

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Emerging and reemerging viral infections represent a major concern for human and veterinary public health and there is an urgent need for the development of broad-spectrum antivirals. It has been reported that a cranberry (*Vaccinium macrocarpon*) extract, which contains high levels of A2-type proanthocyanidins (PAC-A2), inhibits influenza A and B viruses and herpes simplex virus type 1 and 2 in vitro by interfering with the adhesion/internalization of virions. In this work, we have evaluated the antiviral activity of the cranberry extract against two highly pathogenic viruses, such as Ebola Virus (EBOV) and CCHFV. To evaluate the antiviral activity of the cranberry extract, a recombinant Vesicular Stomatitis Virus (pVSV) vector expressing the luciferase reporter was adopted. The pVSV was pseudotyped either with the EBOV or CCHFV glycoproteins. Time-of-addition, viral attachment, and entry assays were performed on Vero CCL-81 in the presence of different concentrations of the cranberry extract. Finally, experiments with infectious EBOV and CCHFV were performed to validate the results obtained with pseudovirus. The cranberry extract showed an inhibitory activity against both the pVSV-EBOV and pVSV-CCHFV infection. Treating compound during the infection phase determined a significant reduction of viral infectivity. In contrast, no or only a modest inhibition was detected when cells were treated with the extract before or after virus internalization, respectively. The antiviral activity of the cranberry extract was confirmed against the live EBOV and CCHFV. In conclusions, the cranberry extract inhibits EBOV and CCHFV infection acting at the early stages of their replicative cycles. This broad-spectrum antiviral activity suggests this cranberry extract (or its components) as a promising antiviral candidate against emerging and re-emerging viral infections.

HUMAN DEISGYLATION ACTIVITY DISCOVERED WITHIN OTUS FROM NEWLY IDENTIFIED TAMDY NAIROVIRUSES OF HUMAN HEALTH CONCERN

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