

Antiviral activity and possible mechanisms of action of *Aristolochia bracteolata* against influenza A virus

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We investigated the anti-influenza virus activity of *Aristolochia bracteolata* and possible mechanism(s) of action in vitro. We found that *Aristolochia bracteolata* has anti-influenza-virus activity, and both pre-incubation of virus prior to infection and post-exposure of infected cells with *Aristolochia bracteolata* extract significantly inhibited virus yields. Influenza-virus-induced hemagglutination of chicken red blood cells was inhibited by *Aristolochia bracteolata* extract treatment, suggesting that *Aristolochia bracteolata* can inhibit influenza A virus infection by interacting with the viral hemagglutinin. Furthermore, *Aristolochia bracteolata* extract significantly affect nuclear transport of viral nucleoprotein (NP). To best of our knowledge, this study revealed for the first time that *Aristolochia bracteolata* extract can inhibit both viral attachment and replication and offers new insights into its underlying mechanisms of antiviral action. The whole plant of *Aristolochia bracteolata* collected from Sudan and Extracted with 70% methanol. The crude extract was screened for its cytotoxicity against MDCK cell line by Presto- Blue assay and WST-1 assay. Antiviral properties of the plant extract were determined by cytopathic effect inhibition assay and virus yield reduction assay (plaque assay). Time of addition assay,

and nuclear export mechanism were also performed.

Biography

Mona Timan Idriss is a Lecturer of Microbiology in the Department of Pharmaceutical Microbiology, Faculty of Pharmacy, Sudan International University, in Sudan. She is currently pursuing PhD studies in Molecular Virology (development of novel antiviral drugs from Sudanese plants and possible mechanism of action). She also worked as a Visiting Scientist in the department of Bimolecular Sciences, University of Mahidol, Thailand. She participated in many projects with members of the Molecular virology laboratory in University of Nagasaki, Japan using molecular biology techniques. Most recently, she has written two papers in virology research. She is selected as an Editorial Board Member for Immunotherapy Research Journal and SciFed Journal of Mycology.

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