

October 06-08, 2014 Hilton San Antonio Airport, TX, USA

## Evaluation of antiviral properties of edible bird nest (EBN) extracts on Influenza A virus (IAV) attenuation

Parvaneh Mehrbod<sup>1,2</sup>, Amin Haghani<sup>1</sup>, Nikoo Safi<sup>1</sup>, Nur Ain Aminuddin<sup>1</sup>, Abdul Rahman Omar<sup>1,2</sup> and Aini Ideris<sup>1,2</sup> <sup>1</sup>Institute of Bioscience <sup>2</sup>Faculty of Veterinary Medicine; Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia

Virology

Influenza infection is still a high risk disease affecting human and different species of animals by causative agent influenza A L virus (IAV). Currently there is neither effective vaccine nor efficient drug to dominate this infection. Edible Bird Nest (EBN) as a popular traditional Chinese medicine (TCM) is believed to have health enhancing effects such as anti-tumor activity, anti-viral and immunoenhancing effects. The aim of this study was to highlight inhibitory effects of EBN extract on IAV infection. Firstly, two types of EBN samples were collected from two different parts of Malaysia and prepared in the forms of filtrate and substrate extracts with 2 different enzymes treatments based on the established methods with modification. Then, the cells were treated with effective concentration (EC50) of EBN extracts in combined treatments with influenza A viruses in different exposure types (co-, pre- & post-penetration treatments). Using MTT assay and Heamgglutination assay (HA), the cell viability and the viral titers were examined, respectively. The effects of combined treatments on the cytoskeleton structure of the cells were also illustrated using rhodamine staining. The results demonstrated that EBN extracts in combined treatments with influenza A viruses significantly reduced the virus titer and increased the cell viability especially in post-penetration treatments ( $p \le 0.05$ ) as compared to the virus inoculation without EBN treatment. In addition, the interaction amongst different types of EBNs, exposure types and strains of the viruses showed significant main effect on cell viability variance (P<0.05). EBN treatments showed a moderating effect on the actin filaments polymerization affected by the virus inoculation. In conclusion, EBN has the capacity to be introduced as an alternative or supplementary medicine to other chemical drugs in upcoming pandemics.

Keywords: edible bird nest (EBN) extract, influenza virus, antiviral potential, MTT assay, HA, cytoskeleton structure

## **Biography**

Parvaneh Mehrbod started her postgraduate study in 2008 in University of Tehran, Iran, in the field of Cellular and Molecular Biology followed by PhD study in Molecular Biotechnology in Universiti Putra Malaysia (UPM) in 2013 and currently she is doing her postdoctoral study in UPM. During her study, she actively involved and participated in national and international conferences, workshops and seminars. She has published some of her research findings in peer reviewed journals and conference proceedings, and has many more under writing and revising.

mehrbode@yahoo.com