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Pomegranate (*Punica granatum L.*) Peel Extract Inhibits Internalization and Replication of the Influenza Virus: an *In Vitro* Study

Mohammad Rabiei-Faradonbeh[3*], Mohammad-Taghi Moradi[1] and Ali Karimi[2]
[1]Medical Plants Research Center, Basic Health Sciences Institute, Shahrekord University of Medical Sciences, Iran
[2]Cellular and Molecular Research Center, Basic Health Sciences Institute, Shahrekord University of Medical Sciences, Iran
[3]School of Animal and Veterinary Sciences, The University of Adelaide, Australia

Objectives: High level of morbidity and mortality due to the influenza virus is an emerging public health concern. Because there are few approaches to control and treat this infection, plant extracts including pomegranate extract can be a treatment of choice. So, the present study was conducted to investigate the mechanism of action of PPE against influenza virus A/Puerto Rico/8/34 (H1N1; PR8) in MDCK cells.

Materials and Methods: In this research, a crude ethyl alcohol extract of pomegranate peel was prepared, and the action mechanism of PPE in inhibiting influenza replication was studied by time of addition assays, virucidal activity, RNA replication, hemagglutination inhibition assay, viral mRNA expression, and western blot analysis.

Results: Results showed that PPE inhibited viral polymerase activity, viral RNA replication, and viral protein expression but failed to influence hemagglutination inhibition and virucidal activity. According to the time of addition assay, PPE inhibited the virus adsorption and early step of influenza replication.

Conclusion: This study demonstrated that in vitro antiviral effect of PPE on the influenza virus is very likely to be associated with inhibition of viral adsorption and viral RNA transcription.

Keywords: Antiviral activity, Influenza virus, pomegranate, Punica granatum L.

Biography:

Mohammad Rabiei-Faradonbeh first obtained an associate degree in Veterinary Medicine and then a Bachelor of Sciences degree in Veterinary Medical Laboratory Sciences. In 2013 he obtained a Master of Sciences degree in Medical Microbiology. More than 12 years working in laboratories has enabled me to develop and hone an excellent range of technical skills. Currently he funded by an Adelaide International Scholarship to obtain a PhD at the University of Adelaide. His project involves molecular pathology of newly emerged strains of Newcastle disease virus in Indonesia, which are a potential disease threat of great concern to Australia's poultry industry.