

ABSTRACT

INHIBITION ACTIVITY of METHANOLIC EXTRACT of BITTER GOURD (*Momordica charantia* L.) SEED AGAINST INFLUENZA A VIRUS H5N1 and H1N1 PANDEMIC-2009

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Influenza viruses cause annually epidemic and pandemic in many countries that have claimed million lives. Recently, resistance of two class of antiviral drugs, Neuraminidase inhibitor and M2-ion channel protein inhibitor against Influenza viruses had been found, highlighted the need to develop a novel antiviral drug. Natural products like plant extract contains a wide variety of active phytochemicals, make it a potential source of novel antiviral drugs. This study was designed to evaluate an antiviral activity of methanolic extract of bitter gourd seed against Influenza A H5N1 and Pandemic H1N1-2009 virus. The extract and viruses inoculated to embryonated chicken egg and the allantoic fluid were conducted to Hemagglutination assay to measure virus titre. Neuraminidase assay also occupied in this study to identify Neuraminidase inhibiting activity of this extract.

It was found that all concentration of extract decreased H5N1 and Pandemic H1N1-2009 viruses titre. This study showed that 1000 µg/ml concentration of extract had the highest inhibition (60,63%) against H5N1 and 62,5 µg/ml extract had the highest inhibition (49,62%) against Pandemic H1N1-2009. Meanwhile, this extract showed a slight Neuraminidase inhibiting activity in both H5N1 (27,90% in 250 µg/ml extract concentration) and H1N1 (26,95% in 250 µg/ml extract concentration), means that Neuraminidase inhibition was not a major mechanism of its activity. From these results it can be concluded that methanolic extract of bitter gourd seed showed an antiviral activity against H5N1 and Pandemic H1N1-2009. However, further investigation is needed to find the inhibition mechanism and compounds that responsible to the inhibition activity.

Keywords: Influenza A virus, H5N1, Pandemic H1N1-2009, Hemagglutination assay, *Momordica charantia* L., Bitter gourd seed, methanolic extract.