Abstract

Influenza A Virus or IAV is a highly pathogenic virus that is transmitted through air. It has a high mutation rate due to lack of proofreading function during the RNA replication. Some resistance toward the antiviral are found due to the mutation of IAV. Thus, herbal treatment became the alternative for IAV antivirals. Methanolic extract of *L. decumana* was found to contain triterpenoid, terpenoid, and alkaloid content. Fractionation with column chromatography was performed to isolate compounds from the extracts and assess their role in *L. decumana*'s antiviral activity.. The fractionated samples underwent TLC and phytochemical screening for selecting the eligible samples. The isolated triterpenoid, terpenoid, and alkaloid of *L. decumana* extracts were found to downregulate the M gene expression of IAV. The triterpenoid-enriched fraction played a major role, exhibiting the lowest M gene fold change compared to the untreated sample. The terpenoid-enriched fraction does not show any significant effect towards IAV M gene expression. Great difference in triterpenoid and terpenoid' effect towards the gene expression could be explained by the possible targeted protein of the compounds. Triterpenoid targets NA and could be effective even after IAV infection. Thus, it is more effective than terpenoid, which targets HA and is primarily effective pre-infection.

Keywords: Influenza A Virus, *Laportea decumana*, fractionation, viral replication, gene expression