

Antiviral activity of n-hexane, ethyl acetate, water and butanol fraction of *Cosmos caudatus* leaf extract against dengue virus serotype-2 *in vitro*

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The incidence rate of dengue fever is still high and tends to increase year by year. On the contrary, there is still no available antiviral agents against DENV. Therefore, treatment of dengue virus infection is only limited to supportive therapy. It has been concluded that antiviral agents will decrease morbidity and mortality rate of DENV infection. Also, the previous study showed that crude extract of *Cosmos caudatus* inhibits dengue virus serotype-2 with SI of 15. Hence, this experimental study used four fractions of *Cosmos caudatus* extract (n-hexane, ethyl acetate, water and butanol) to find out its antiviral activity against dengue virus serotype 2 using Huh7it-1 cell. Toxicity level of the extract was obtained from the viability test of Huh7it-1 with MTT assay method. From this test, we obtained the half-cytotoxic concentration (CC_{50}). The ability of the extract to inhibit dengue virus serotype 2 replication is depicted from half-inhibitory concentration (IC_{50}) which was performed with the focus assay method. Antiviral activity is depicted from the value of selectivity index (SI) which is a ratio between CC_{50} and IC_{50} . The CC_{50} and IC_{50} of n-hexane, ethyl acetate, water and butanol fraction are 33.247 μ g/ml, 1.497 μ g/ml; 198,581 μ g/ml, 23,045 μ g/ml; 9,376 μ g/ml, 156,336 μ g/ml; and 20,871 μ g/ml, <5 μ g/ml, respectively. The SI of n-hexane, ethyl acetate, water and butanol fraction are 22.209, 8.617, 16.674 and >4.17, respectively. Thus, fractions of *Cosmos caudatus* extract exhibited satisfactory antiviral activity dengue virus serotype 2 *in vitro*.

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