

**ABSTRACT*****In Vitro* Antiviral Activity of *Acacia mangium* Willd. Leaves Extract Againsts Hepatitis C Virus**

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*Acacia mangium* Willd is a plant from *Mimosaceae* family that has several compounds including alkaloids, flavonoids, tannins, phenolics, glycosides. *A. mangium* Willd. was reported to contain with quercetin and procyanidin which possessed antihepatitis C virus (anti-HCV) activity with  $IC_{50}$  value of 1.5  $\mu\text{g/ml}$  and  $EC_{50}$  of 2.06  $\mu\text{M}$ . Crude drug of *A. mangium* Willd. leaves was extracted with 96% ethanol and successively extraction with *n*-hexane, dichloromethane, methanol. Anti-HCV activity was tested by inoculated the extract and fraction onto Huh7it cells-HCV infected at a concentration of 0.01; 0.1; 1; 10; 50; 100  $\mu\text{g/ml}$ . The result was showed that  $IC_{50}$  dichloromethane fraction, methanol fraction, *n*-hexane extract and ethanol extract 96%, were  $0.22 \pm 0.03 \mu\text{g/ml}$ ;  $2.68 \pm 0.09 \mu\text{g/ml}$ ;  $2.94 \pm 0.09 \mu\text{g/ml}$ ;  $4.45 \pm 0.06 \mu\text{g/ml}$ , respectively. The mode of action of extract *A. mangium* Willd. leaves was evaluated to determine the action of extract in the entry or post entry of hepatitis C life cycle. The ethanol extract of *A. mangium* Willd. leaves showed stronger inhibition in the post entry than entry step with percentage inhibition 56.25% at the concentration of 30  $\mu\text{g/mL}$ . Cytotoxicity test was also carried out in this study with the MTT-assay method and it was revealed that 96% ethanol extract of *A. mangium* Willd. leaves had not toxic effect with  $CC_{50}$  value higher than 400  $\mu\text{g/ml}$ . These results indicated that the extract and fractions of *A. mangium* Willd. leaves have anti-HCV activity and provide potential to be developed as a hepatitis C agents.

**Keywords:** Antihepatitis C virus, *Acacia mangium* Willd., extract, fraction