

**EVALUATION OF ANTIOXIDANT AND ANTIMICROBIAL
POTENCY OF STEM OF *ENTADA SPIRALIS***

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ABSTRACT

EVALUATION OF ANTIOXIDANT AND ANTIMICROBIAL POTENCY OF STEM OF *ENTADA SPIRALIS*

Entada spiralis known as 'Beluru' or 'Sintok' which is from *Leguminosae* family was used in this research to determine the antioxidant and antimicrobial properties. This plant was known to contain chemical substances which are phytochemical or also known as secondary metabolites and have been used to treat disease and as health care. In determining antioxidant and antimicrobial properties, several methods were conducted. The stem of *E.spiralis* was extracted using four different polarities of solvents such as petroleum ether, dichloromethane, ethyl acetate and methanol. Phytochemical screening on TLC using certain spraying reagent, FTIR analysis, dot blot assay, radical scavenging activity and disc diffusion method was conducted to evaluate antioxidant and antimicrobial potency of *E.spiralis*. From the phytochemical screening test, it has been screened that stem of *E.spiralis* contained terpenoids, saponins and leucoanthocyanins. From the antimicrobial study of disc diffusion method, EA extract are the most active extract with the largest inhibition zone of 19 mm towards *Erwinia sp.* From the result of dot blot assay, EA extract is the most antioxidative extract which showed the highest intensity of white colour compared to the other extract. In the radical scavenging activity, standard ascorbic acid (IC_{50} 9 $\mu\text{g/mL}$), exhibited the strongest scavenging activity compared with other extracts followed with methanol extract (IC_{50} 11 $\mu\text{g/mL}$), ethyl acetate (IC_{50} 13 $\mu\text{g/mL}$) and petroleum ether (IC_{50} 42 $\mu\text{g/mL}$) extracts. While the DCM extract has high IC_{50} values of more than 100 $\mu\text{g/mL}$. This study has finally achieved its objectives by focusing on screening phytochemicals, evaluating antioxidant and antimicrobial properties from stem of *E.spiralis*.

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