

**DETERMINATION OF ANTIMICROBIALY ACTIVE
EXTRACTS FROM THE STEM OF *ENTADA SPIRALIS*
(SINTOK) AND ITS BIOAUTOGRAPHIC PROFILE**

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ABSTRACT

DETERMINATION OF ANTIMICROBIALY ACTIVE EXTRACTS FROM THE STEM OF *ENTADA SPIRALIS* (SINTOK) AND ITS BIOAUTOGRAPHIC PROFILE

The antimicrobially active extracts from the stem of *Entada spiralis* (Sintok) and its bioautographic profile were investigated. *E. spiralis* stem have been grinded and soaked in the ethanol for phytochemical test. The test was done to determine the phytochemical constituent that presence in the *E. spiralis* stem. Determination of each phytochemical constituent in stem extract was following the standard phytochemical test. The result was defined by observation of colour solution changes from the reaction between reagent and chemical solution with stem extract. Phytochemical constituent that obtain from the test were saponin, tannins and triterpenoids. The Thin Layer Chromatography (TLC) analysis was done to separate the compound present in each solvent extraction include petroleum ether (non polar solvent), dichloromethane (medium polar) and dichloromethane (polar). The confirmation of compound presence in stem extract was by using vapour and spraying reagent. Petroleum ether solvent extraction showed most compound present followed by dichloromethane and methanol. Most of the compound obtain from the solvent was terpenoids and phenolic compound. These two compounds were believed contain aromatic and carbon double bond linkage after showed positive observation in reagent test. These compound which have been linked to antimicrobial properties. The antimicrobial activity of dermatophytes includes *Staphylococcus aureus*, *Staphylococcus epidermidis* and *Tricophyton mentagrophytes* was determine by using solvent extract disc. All dermatophytes were susceptible towards stem extract. The dichloromethane was strongly inhibited the growth of *T. mentagrophytes*. Meanwhile methanol was strongly inhibited towards *S. epidermidis* and *S. aureus*. The result information from the antimicrobial activity was used in the TLC bioautographic agar overlay assay to define the most active compound presence in stem extract. Methanol stem extract was used in bioautographic agar overlay assay for *S. epidermidis* and *S. aureus*. Meanwhile, *T. mentagrophytes* was against dichloromethane stem extract. The bacteria and fungi are cultured in the broth to make overlay on the TLC. After applying iodine vapour on the agar overlay, the clear spot which active compound are appearing between the purple colours of iodinitrotetrazolium violet solution. The active compounds that inhibit *S. epidermidis* were at R_f 0.127, 0.636 and 0.691. Meanwhile, *S. aureus* was susceptible towards active compound at R_f 0.127 and 0.818. On the other hand, the active compound that inhibits *T. mentagrophytes* was at R_f 0.618, 0.691 and 0.745. All active compound of the stem extract contains terpenoids and phenolic that are responsible in inhibited the growth of dermatophytes.