

**ISOLATION OF ANTIMICROBIALY AND ANTIOXIDANT
COMPOUNDS FROM THE LEAVES OF *ENTADA SPRIRALIS* RIDL.
(SINTOK) USING CHROMATOGRAPHIC
TECHNIQUE**

ROHAZLIN BINTI MOHAMAD

**BACHELOR OF SCIENCE (Hons.) CHEMISTRY
FACULTY OF APPLIED SCIENCES
UNIVERSITI TEKNOLOGI MARA**

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ABSTRACT

ISOLATION OF ANTIMICROBIAL AND ANTIOXIDANT COMPOUNDS FROM THE LEAVES OF *ENTADA SPIRALIS* RIDL. (SINTOK) USING CHROMATOGRAPHIC TECHNIQUE.

In this study, subject to focus is on isolation of *Entada Spiralis* leaves extract. Different crude extract have been prepared for isolation according to different polarities of solvent, non-polar, medium polar and polar respectively. In each extraction, the best solvent system has been determined in order to obtain the best separated compounds by using thin layer chromatography. The solvent system in petroleum ether extraction is 5:5 (v/v); PE:DCM, while 0:10 (v/v); PE:DCM for extraction by dichloromethane and 10:0 (v/v); DCM:MeOH in methanol extraction. All the crude extract have been tested for preliminary phytochemical investigation of antimicrobially active compounds against bacteria, name as *Staphylococcus aureus* ATCC33591 SA and *Staphylococcus epidermis* ATCC 12228 (SE) using agar diffusion method, and results shows two separated compounds from methanol extract have been detected at retention factor of 0.050 and 0.890. In this study also, the separated compound were further analyzed for antioxidant screening by preparative-thin layer chromatography (p-TLC). Then, isolation has been done to preliminary structural elucidation of the separated compound by analysis using FTIR and NMR. Five compounds from different retention time are point up as antioxidant compounds in DCM extract five compounds also positively detected as antioxidant compounds in methanol extract. By the way, only two compounds have been selected in DCM extract for instrumentation used analysis since they show a single band after undergo isolation. The retention factor of isolated compounds is 0.124 and 0.959. Same detection goes to methanol extract and in addition, the antioxidant compounds also proven as antimicrobial compounds. Both are in retention factor of 0.050 and 0.890. Meanwhile, the petroleum ether extract demonstrate that most of its separated compounds are antioxidant but they are not being further isolated since the separations are not well separated. Study done by previous student also prove the of DCM and MeOH extract were terpenoid compound by vanillin/H₂SO₄ spraying test. Two compounds from DCM isolated compounds are preliminary structural elucidated and prove that they are the same compound. Moreover the FTIR and NMR spectrum of (¹H and ¹³C) from *Astragalus wiedemannianus* Fischer species are in agreement with FTIR and NMR spectrum of DCM isolated compounds; hence they are classified as triterpene saponin. The same compounds suggested for two isolated compounds from methanol extract, but they are in agreement with FTIR and NMR result (¹H and ¹³C) from *Ilex kudingcha* species.