

# GC-MS Analysis and Antioxidant Activity of Leaves of *Aeglemarmelos* L. Correa (ဥချစ်)

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## Abstract

*Aeglemarmelos*(L.) Correa belongs to family Rutaceae and is abundantly available in Myanmar. It is popularly known as Beal tree, Ok-shit in Myanmar. The aim of current research was to analyze chemical compositions, acute toxicity study, total phenolic content and antioxidant activity of leaves of *Aeglemarmelos* L. Correa (Ok-shit). Phytochemical constituents present in Ok-shitleaves were carried out by Raman N. (2006). The chemical compositions were studied by Gas Chromatography-Mass Spectrometry (GC-MS) and Fourier transform infrared spectrophotometer (FTIR). Acute toxicity was done OECD 425 guideline (2008). The total phenolic content was measured by Folin method. The antioxidant activity was studied qualitatively by DPPH-TLC bioautography method and quantitatively by DPPH radical scavenging assay, using UV- Visible Spectrophotometer In phytochemical analysis, Ok-shit leaves contained alkaloids, carbohydrates, flavonoids, glycosides, phenols, protein, reducing sugar, saponins and tannins. According to GC-MS analysis, eight bioactive compounds were identified, which possess many medicinal properties. Among them, beta - ocimene, 1-ethenyl-1-methyl-2,4-bis (1-methylethenyl) -[1S-(1- $\alpha$ ., 2  $\beta$ ., 4  $\beta$ )]- cyclohexane, caryophyllene and germacrene were found as major compounds (24.79 %, 21.69 %, 15.5% and 18.93 %), which possessed antioxidant, antimicrobial and antifungal activities. The FTIR analysis revealed the presence of hydroxyl group,  $sp^2$  hydrocarbon,  $sp^3$  hydrocarbon, carbonyl group, C=C stretching vibration and C-C-O stretching vibration. According to acute toxicity study, there was no acute toxic and lethal effects with dose of 5000 mg/kg ( $LD_{50} > 5000$  mg/kg). Total phenolic content was 47 mg/g gallic acid equivalent. In TLC- bioautography, the bands with  $R_f$  value of 0.75 and 0.85 showed antioxidant activity. The antioxidant activity of Ok-shit leaves and standard ascorbic acid were ( $IC_{50} = 49.7$   $\mu$ g/mL) and ( $IC_{50} = 2.7$   $\mu$ g/mL) respectively. The results of current study indicated that, Ok-shit leaves contained various bioactive compounds and gave scientific support in traditional medicine. And also recommended as a plant of phytopharmaceutical importance and safe for consumption.

Key Words: GC-MS, FTIR, UV Visible Spectrophotometer, Antioxidant, *Aeglemarmelos*