

**ISOLATION AND STRUCTURE ELUCIDATION OF  
NATURAL ORGANIC COMPOUNDS OF SOME  
INDIGENOUS MEDICINAL PLANTS**

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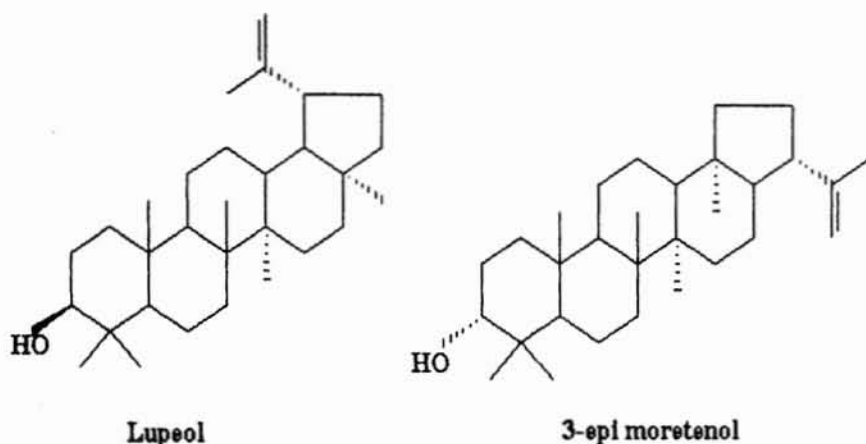
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## ABSTRACT

The antibacterial and antifungal activities of eight traditional indigenous medicinal plant extracts were determined. The bacteria used were *Bacillus cereus* (IFO 3466), *Bacillus subtilis* (IFO 3134), *Streptococcus aureus* (NCTC 6571) and the fungus used was Yeast (ATCC 7754). The activity of plant extracts on these bacteria and fungus were examined both qualitatively and quantitatively by employing agar well diffusion method, utilizing antibiotic tetracycline as the standard reference compound.

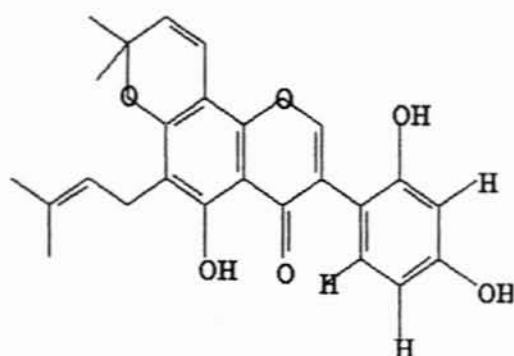
*Mesua ferrea* is widely distributed in Myanmar. Its pollen and anther is used as antidysenteric, astringent, cardiogenic, neurotonic, expectorant, emmenagogue, etc. The pollen and anther was extracted with methanol and the first and second fractions, out of five fractions, were separated by column chromatography. Two unknown compounds were isolated and their structures were determined by using spectroscopic methods such as Infra-red,  $^1\text{H}$  Nuclear Magnetic Resonance,  $^{13}\text{C}$  Nuclear Magnetic Resonance and Mass Spectroscopic methods. From these data, the molecular formula of the product was generated and based on

this generate formula, all plausible structures were proposed. These compounds were established as triterpenoids and after combination of all spectral data, one unknown compound was confirmed to be lupeol and the other as 3-epi moretenol.



*Millettia auriculata* is a tropical plant and said to have insecticidal property. The root samples of *M. auriculata* were collected from Ye-Mon-Tut-Myo, Yangon Division, Myanmar. It was extracted with methanol and the neutral portion was separated by column chromatography for two times. The main constituent of the fifth fraction was isolated by High Pressure liquid chromatography and examined by Infra-red,  $^1\text{H}$  Nuclear Magnetic Resonance,  $^{13}\text{C}$  Nuclear Magnetic Resonance and Mass Spectroscopic methods. From these data, the molecular formula of the compound was generated and based on this generated formula, all plausible structures were proposed. This compound was established as isoflavonoid and after

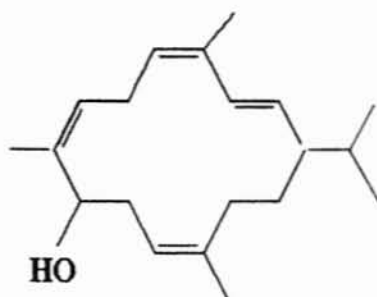
combination of all spectral data, the unknown compound was confirmed to have angular structure. The presence of this compound in this particular plant and the existence of this compound were reported for the first time.



Angular Structure

*Croton oblongifolius* is a tropical plant. The bark is said to be purgative, poisonous in larger dose and usually used to cure diarrhea, dysentery, etc. The bark samples were collected from New Civil Lines Quarter, Mandalay, Myanmar. It was extracted with Petroleum ether (60-80 C). A pure compound is isolated from the extract by using chromatographic methods. The pure compound was examined by Mass Spectrometry, High Resolution Mass Spectrometry, and its molecular formula was generated. The structure of this compound was also determined by Ultraviolet, Infrared,  $^1\text{H}$  Nuclear Magnetic Resonance, Distortionless Enhancement by Polarization Transfer (DEPT), Two-Dimensional Correlation

Spectroscopy (2D-HH COSY), and spin-decoupled  $^1\text{H}$  Nuclear Magnetic Resonance Spectroscopy. Consequently, a new cembrenoid compound was reported for the first time in this plant.



(9- hydroxy- 1- isopropyl- 4, 8, 12 - trimethyl- cyclotetradeca- 2, 4, 7, 11- tetraene).