

VOLATILE CONSTITUENTS OF *CRATOXYLUM FORMOSUM* SSP. *PRUNIFLORUM*

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Cratoxylum formosum (Jack) Dyer in the family Guttiferae distributes in several Southeast Asian countries including Thailand. It is mostly grown in the North-Eastern region and is known locally as Tiew¹⁾. Fresh shoots and young leaves are vegetable with sour taste. *C. formosum* has been traditionally used for the treatment of diarrhea, internal bleeding, food poisoning, wound healing and cough^{2,3)}. Xanthenes and triterpenoids have been characterized from the genus *Cratoxylum*²⁾. It has been reported that the leaf extract showed strongly antioxidant and antimutagenic properties when compared with 108 species of indigenous Thai plants³⁾. In addition the oleoresin gum exudates from stem bark of *C. formosum* have also been used by hill tribe people residing in Thailand for caries prevention. It has been reported that *C. formosum* gum has high antimicrobial activity against *Streptococcus mutans*⁴⁾.

This study reveals the chemical compositions of the oleoresin gum exudates of *Cratoxylum formosum* (Jack) Dyer ssp. *pruniflorum* (Kurz) Gogel. The gum was extracted by methanol and investigated by capillary column gas chromatography/ mass spectrometry using a Finnigan Trace GC ultra with Finnigan DSQ Quadrupole detector and BPX5 fused silica column (30 m x 0.25 mm, 0.25 µm film thickness). The programmed temperature was start at 60°C for 1 min., ramp with the rate of 3°C/ min to 240°C hold for 5 min, then ramp with the rate of 10°C/ min to 300°C hold for 10 min. Helium was used as carrier gas (flow rate 1 ml/min). MS was performed by electron impact ionization using the electron energy of 70 eV and the mass range was 40-650 amu. The constituents were

identified by matching their mass spectra and retention indices with NIST05 MS library and the percentage composition was computed from GC peak areas. The main volatile constituents are pinenes *alpha*- and *beta*- (16% and 2% respectively). The main non-volatile constituents include triterpenoid derivatives (68%). Triterpenoids such as oleanolic acid and its isomer, ursolic acid, and their derivatives have been reported for their pharmacological activities including anti-carcinogenic activity against *S. mutans*, a primary carcinogenic bacteria⁵⁾.

Keywords: *Cratoxylum formosum*, oleoresin gum, chemical compositions

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