

547.7

WEE

THESES

C. Coll.

METHYL OXYGENATED FRIEDOOLEANANES

FROM ELAEODENDRON SPECIES

A THESIS PRESENTED BY

GAMINI WEERATUNGA

IN PARTIAL FULFILMENT OF THE

REQUIREMENT FOR THE AWARD OF

DOCTOR OF PHILOSOPHY

OF

UNIVERSITY OF PERADENIYA

SRI LANKA

PERMANENT REFERENCE

FOR USE IN THE
LIBRARY ONLY

June 1984

Research Laboratory

Department of Chemistry

376224

ABSTRACT

This work describes the studies on several angular methyl oxygenated friedooleananes which were isolated from two Sri Lanka Elaeodendron species, E. glaucum and E. balae (Celastraceae). The occurrence and chemistry of angular methyl oxygenated oleananes and friedooleananes is surveyed.

Two new methyl oxygenated D:A-friedooleananes, 3,28-dioxo-D:A-friedooleanan-25-ol and 25,28-dihydroxy-D:A-friedooleanan-3-one along with eight known D:A-friedooleananes were isolated from the stem bark of E. glaucum. Another methyl oxygenated D:A-friedooleanane, 28,29-dihydroxy-D:A-friedooleanan-3-one was isolated from the stem bark of E. balae. The benzene extract of the root bark of E. balae contained a new methyl oxygenated D:B-friedooleanane, 3 β ,29-dihydroxy-D:B-friedoolean-5-ene together with olean-12-ene-3 β ,11 α -diol, pristimerin, tingenone, 20-hydroxytingenone and a new triterpene quinone-methide, 3,21-dihydroxy-24,29-dinor-D:A-friedooleana-2,5,7,9(11),10(1)-pentene-2,22-dione.

The ethyl acetate extract of the root bark of E. balae contained (-)-3,3',5,5',7-pentahydroxy-4'-methoxy 2,3-cis-flavane, 4',5,7-trihydroxy-(-)-epicatechin (4 β →8)-4-O'-methyl-(-)-epigallocatechin and a new leucoanthocyanidin whose structure was postulated on the basis of its ¹H NMR

and ^{13}C NMR spectral data. The first two flavonoids were also found in the methanol extract of the stem bark of E. balae together with the sugar alcohol dulcitol which was also found in the methanol extract of the root bark of the same species.

The thesis also includes a short chapter on the arguments used to assign the ^{13}C NMR signals of four D:A-friedooleananols, one D:A-friedooleananal and two hydroxy-D:A-friedooleanan-3-ones.

genera and over

in the tropic

Twenty two sp.

twelve genera

endemic (Tad

Bhesa are two

endemic to

to be endemic

in the rec

species of

district of

E. balae.