ABSTRACT

Phytochemical Investigation of *Croton* species from Trinidad

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Croton species from the Euphorbiaceae family are best known for the tigliane diterpenes which are tumor promoting. More recently, various other diterpene types have been isolated from *Croton*. In this thesis, the latex of *C. gossypifolius* along with the leaves and stems of local *Croton* species, *Croton gossypifolius* and *C. hircinus*, were investigated for their secondary metabolites.

A novel cyclic nonapeptide, Crotogossamide, was isolated from the latex of *C. gossypifolius* along with the flavonoids, quercitrin, myricitrin and afzelin and the amino acid derivative tyramine.

Brine-shrimp bioassay-guided fractionation of the crude extract of the leaves of *Croton gossypifolius* led to the isolation of the known vomifoliol, dehydrovomifoliol and hypoleucolide methyl ester, as well as pinoresinol and kaempferol as minor components. Three novel clerodane diterpenes, Crotohircin A-C were isolated from the leaves of *C. hircinus* along with the flavonoids artemetin and kaempferol.

The structures of the compounds were elucidated using a combination of the following methods: IR and UV-vis spectroscopy, mass spectrometry, and NMR spectroscopy utilising ^{1}H, ^{13}C, COSY, ^{13}C-^{1}H HMQC, ^{13}C-^{1}H HMBC, NOESY and DEPT experiments.

Keywords: Peptide, cyclic peptide, cyclic nonapeptide, *croton* species, *croton gossypifolius*, *croton hircinus*, Euphorbiaceae, clerodane, diterpene, novel, latex, Dragon's blood, flavonoid, methoxy flavonoid, artemetin, norisoprenoids, blumenol A, vomifoliol, dehydrovomifoliol, quercitrin, myricitrin, afzelin, kaempferol, hypoleucolide, crotogossamide, crotohircin, tyramine