

ABSTRACT

STRUCTURE AND BIOACTIVITY OF COMPOUNDS FROM ENDEMIC JAMAICAN RUTALEAN PLANTS

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This thesis consists of two sections, Section A and Section B. Section A is divided into three parts detailing the isolation and structure elucidation of metabolites from the Rutaceae (Part I), the Meliaceae (Part II) and the Simaroubaceae (Part III).

Part I gives a literature review of the metabolites from the Rutaceae and also presents a description of the isolation and structure elucidation of ten compounds from *Spathelia glabrescens* (Compounds A-E) and *S. coccinia* (Compounds F-J), including two new squalene derivatives from *S. glabrescens*. Part II gives a literature review of natural products from the Meliaceae and also reviews the *Guarea* and *Trichilia* genera. In addition the isolation and structure elucidation of twenty compounds from *Guarea jamaicensis* (Compounds K-O), *Guarea swartzii* (Compounds P and Q) and *Trichilia reticulata* (Compounds R-A4) are described in Part II and include a new steroid (Compound X). Part III provides a literature review of the Simaroubaceae and the *Alvaradoa* and *Castela* genera from this family. The isolation and structure elucidation of three known compounds (Compounds A5-A7) from *Castela macrophylla* and two known anthraquinones and four new

anthraquinone arabinosides (Compounds A8-A13) from *Alvaradoa jamaicensis* are also described in Part III.

Section B describes some simple chemical transformations of spatheliabischromene and bioactivity studies on the derivatives. Details of biological assays performed on natural compounds are also presented in this section.