

ABSTRACT

Studies on two Caribbean Octocorals

Erythropodium caribaeorum and *Briareum asbestinum*

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This dissertation reports the isolation and structural elucidation of some secondary metabolites (diterpenoids) from two Caribbean octocoral species, *Erythropodium caribaeorum* and *Briareum asbestinum*. Isolating the metabolites involved subjecting the organism to solvent extraction followed by exhaustive chromatography of the concentrated extracts. The structures of these metabolites were deduced by using modern NMR spectroscopy and for one of these compounds, X-ray analysis was used to confirm its structure.

A review of the diterpenoid metabolites namely the briareins, the asbestinins and the eunicellins/cladiellins obtained from *E. caribaeorum* and *B. asbestinum* with emphasis on Caribbean examples is followed by a detailed investigation of these two gorgonians.

From *E. caribaeorum*, the known compounds, erythrolides A, B and J, together with a new briarane diterpene, 12-O-acetoxerythrolide P were isolated and

identified. The structure of the new diterpene is discussed.

B. asbestinum yielded three known compounds, methyl briareolate, 12-desbutyroxy-12-hydroxymethyl briareolate and briareolide J as well as four novel compounds. All of the new compounds, briareolate esters D, G and I and briareolide K whose structures are fully discussed, showed weak activity in the brine shrimp bioassay. One of the known compounds, briareolide J, previously isolated and reported as an amorphous powder has been obtained in the crystalline form.

Keywords: Rawatee Sharma; diterpenoids; Caribbean octocorals; a new briarane, four novel compounds.