

In vitro* Antioxidant, Anti-inflammatory and Antacid Activities of the Crude Extract of the Marine Algae *Codium sp.

HMRP Premadasa¹, RDP Isurika¹, PGNH Dharmasiri², YT Senaweera², BLC Samanmali¹, and KW Samarakoon^{2#}

¹Department of Pharmacy, General Sir John Kotelawala Defence University, Sri Lanka

²Institute for Combinatorial Advance Research and Education (KDU-CARE), General Sir John Kotelawala Defence University, Sri Lanka

#samarakoonk@kdu.ac.lk

Codium sp. is one of the marine algae found in Sri Lankan coastal areas. This study aimed to evaluate the antioxidant, anti-inflammatory, and antacid activities of the chloroform-methanolic crude extract of *Codium sp.* The total phenolic (TPC) and total flavonoid contents (TFC) were measured using Folin-Ciocalteu and aluminium chloride colorimetric methods respectively. The antioxidant activities were determined using 2, 2-diphenyl-1-picryl hydrazyl (DPPH) scavenging assay, ferric reducing power assay (FRAP), and oxygen radical absorbance capacity (ORAC). The TPC, TFC, DPPH, FRAP and ORAC values of chloroform-methanolic crude extract of *Codium sp.* were found to be 24.17 ± 0.00 mg Quercetin equivalent/g of dried extract, 1.94 ± 0.62 mg Gallic acid equivalent/g of dried extract, 73.86 ± 1.38 mg Trolox equivalent/g of dried extract, 20.35 ± 0.55 mg Trolox equivalent/g of dried extract, and 109.42 ± 3.44 mg Trolox equivalent/g of dried extract, respectively. The anti-inflammatory activities of the crude extract based on the egg albumin and the bovine serum albumin denaturation methods were 0.95 ± 0.20 mg Diclofenac equivalent/g of dried extract and 0.84 ± 0.18 mg Diclofenac equivalent/g of dried extract. The antacid activity was determined by preliminary and acid-neutralizing capacity tests. According to the results, the pH and the consumed amount of the H⁺ ions of the *Codium sp.* were 3.73 ± 0.06 after the addition of HCl and 0.02 ± 0.00 mmol/mL, respectively. The results showed the potential of *Codium sp.* extract as a natural source of substances with anti-inflammatory, antacid, and antioxidant properties for the development of novel dosage forms.

Keywords: *antioxidant, antacid, anti-inflammatory, Codium sp.*