

ABSTRACT

Marine algae are valuable sources of biologically active substances. Quite a small numbers of studies to reveal the pharmacological activities of marine algae especially those from the coastal area of Thailand have been reported. The present study was carried out to investigate the pharmacological activities of 5 marine algae : *Padina minor* and *Sargassum polysystem* of the Division Phaeophyta, *Ulva reticulata* and *Caulepa racmosa* of the Division Chlorophyta and *Gracilaria fisheri* of the Division Rhodophyta which are found to be abundant on both sides of the coastal area of the gulf of Thailand and the Andaman Sea.

The antioxidant activity of the algae was observed when their aqueous extracts were subjected to DPPH⁺, ABTS⁺, superoxide – scavenging, reducing capacity and anti-lipid peroxidation assays.

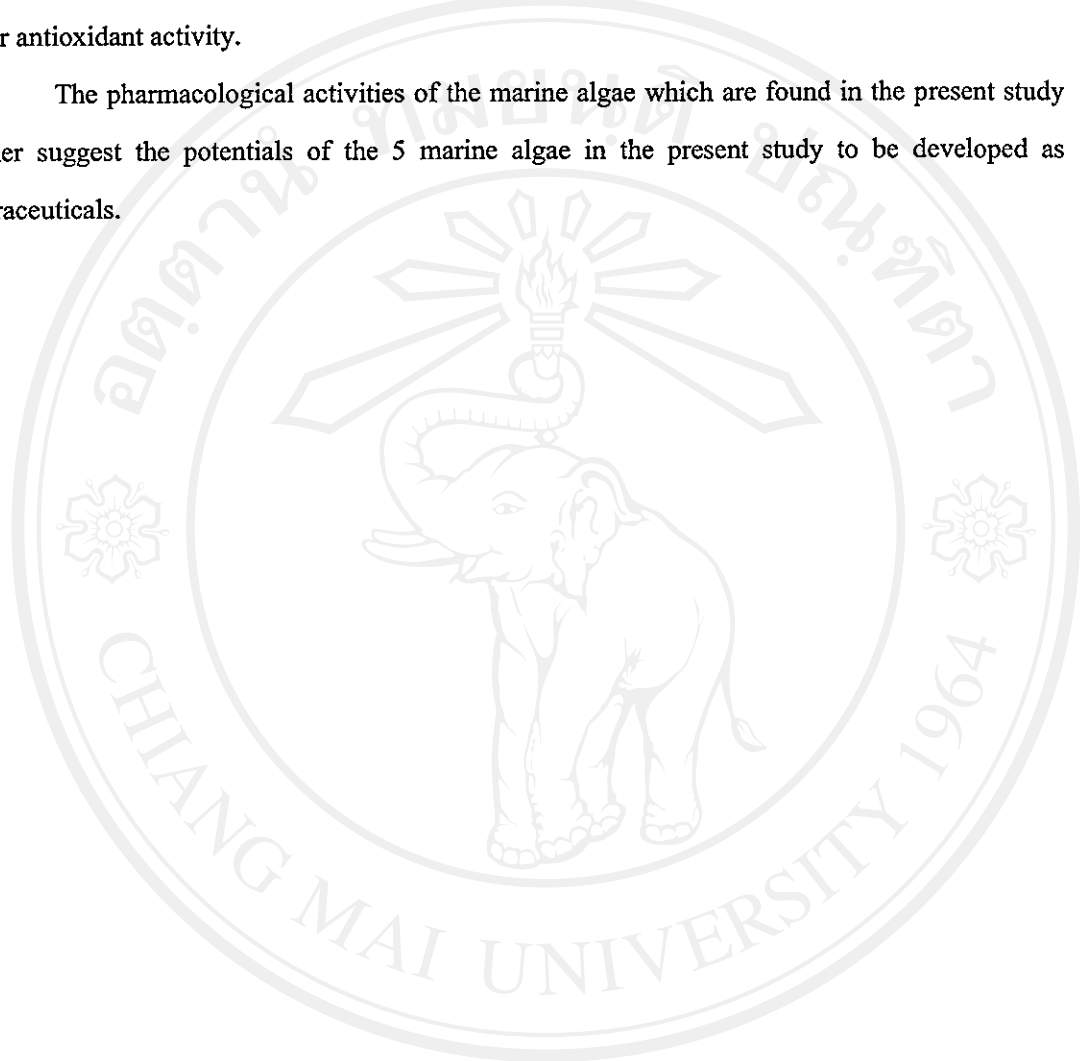
The aqueous extract of the 5 marine algae administered orally, showed an anti-gastric ulcer activity causing inhibition of gastric ulcer formation induced by stress (restraint water immersion), irritating substance (HCl/EtOH mixture) and indomethacin. When tested in the ligated- pylorus experiment the aqueous extracts of *P. minor* and *U. reticulata* as representing other marine algae showed an antisecretory effect causing a decrease of the total acidity and an increase in gastric pH. It is likely that the anti-gastric ulcer activity of the algae is mediated via an antisecretory mechanism. Additionally, in HCl/EtOH induced gastric ulcer, the aqueous extracts of *P. minor* and *U. reticulata* could not protect the loss of gastric wall mucus or did not increase gastric mucus secretion.

Intravenous administration of the aqueous extract of the algae elicited hypotensive response in normotensive as well as in hypertensive rats under anesthesia. When tested in the isolated rat artia and isolated rat experiments , the aqueous extracts of the marine algae caused bradycardia and vasodilation, respectively. It is likely that the hypotensive effect of the algae is due to the bradycardia and vasodilation.

The aqueous extract of the algae showed the presence of polysaccharides, sulfated polysaccharide, and phenolics. The polysaccharides *P. minor* showed an anti-gastric ulcer activity of other marine algae in the present study is also due to their presence of polysaccharides.

It is possible that the anti-gastric ulcer activity. The phenolics have been known to have an antioxidant activity. Sulfated polysaccharides have been reported to have various pharmacological activities including anti-gastric ulcer and antioxidant activities. In addition, the phenolic which are present in the aqueous extract of the marine algae is likely to play roles in their antioxidant activity.

The pharmacological activities of the marine algae which are found in the present study rather suggest the potentials of the 5 marine algae in the present study to be developed as nutraceuticals.



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