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Extraction, purification, and bioevaluation of phycoerythrin from *Halymenia refugium* against pathogenic bacteria and A549 lung cancer cell line

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Supplementary Data

Table S1 — Free radical scavenging potential analysis

Concentration (µg/mL)	% of inhibition	IC_{50}	Concentration (µg/mL)	% of inhibition	IC_{50}
DPPH					
	Ascorbic acid			Phycoerythrin	
20	34.25		20	31.94	
40	52.31		40	45.83	
60	64.81	41.94	60	66.66	45.01
80	83.79		80	77.31	
100	95.83		100	91.20	
ABTS					
	Ascorbic acid			Phycoerythrin	
20	37.18		20	23.10	
40	48.73		40	32.49	
60	67.14	44.85	60	44.40	63.07
80	81.58		80	59.20	
100	92.41		100	81.58	
Phosphomolybdate					
	Ascorbic acid			Phycoerythrin	
20	21.73		20	25.92	
40	36.87		40	31.40	
60	47.82	49.32	60	49.75	61.19
80	58.61		80	55.23	
100	88.27		100	86.15	

Table S2 — *In vitro* anti diabetic assay of phycoerythrin

α-Amylase inhibitory assay

Concentration (µg/mL)	% of inhibition	IC_{50}	Concentration (µg/mL)	% of inhibition	IC_{50}
	Acarbose			Phycoerythrin	
20	32.07		20	33.96	
40	58.49		40	54.33	
60	73.20	35.14	60	66.41	30.81
80	87.92		80	81.13	
100	95.84		100	88.30	

β-Glucosidase inhibitory assay

Concentration (µg/mL)	% of inhibition	IC_{50}	Concentration (µg/mL)	% of inhibition	IC_{50}
	Acarbose			Phycoerythrin	
20	37.02		20	33.19	
40	50.63		40	57.87	
60	58.29	42.13	60	67.65	36.34
80	70.63		80	84.25	
100	86.80		100	91.06	

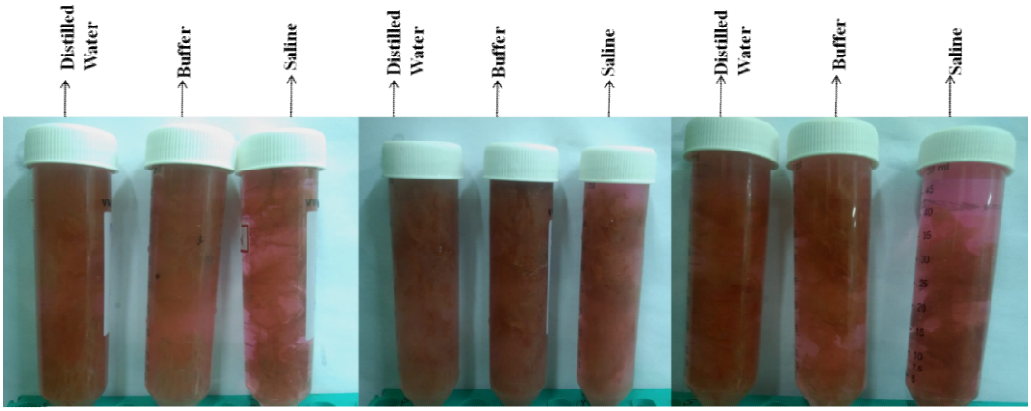
Table S3 — *In vitro* Anti-Inflammatory Activity Evaluation of the phycoerythrin

Protein Denaturation Assay

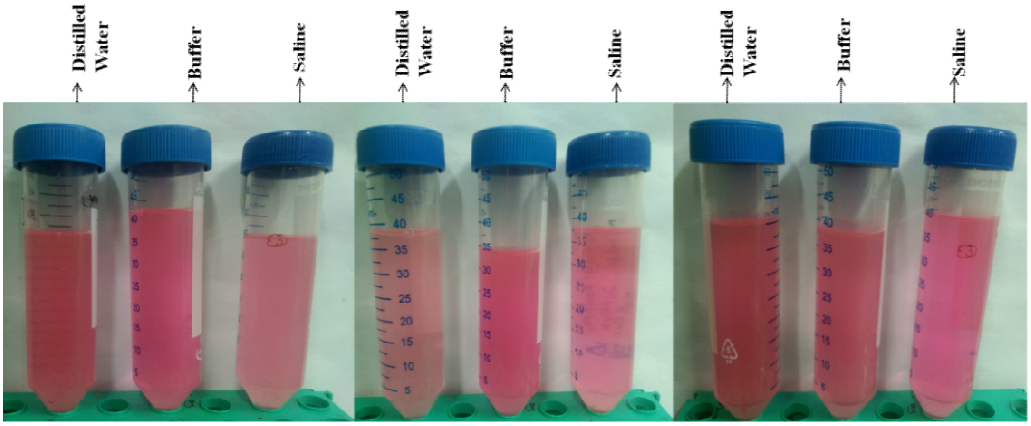
Concentration (µg/mL)	% of inhibition	IC_{50}	Concentration (µg/mL)	% of inhibition	IC_{50}
	Diclofenac sodium			Phycoerythrin	
20	35.23		20	25.05	
40	46.23		40	44.67	
60	59.67	46.22	60	67.07	44.62
80	66.32		80	89.34	
100	80.92		100	94.09	

Egg Albumin Denaturation Assay

Concentration (µg/mL)	% of inhibition	IC_{50}	Concentration (µg/mL)	% of inhibition	IC_{50}
	Diclofenac sodium			Phycoerythrin	
20	26.46		20	28.72	
40	38.73		40	46.24	
60	53.03	53.51	60	62.81	47.31
80	71.27		80	70.32	
100	84.62		100	85.57	

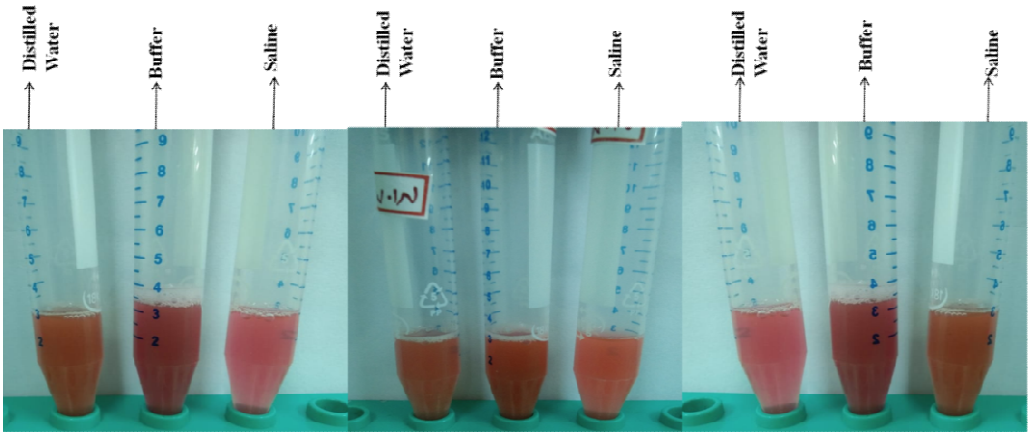


After filtration



Freeze thaw method **Water bath sonication** **Ultra sound sonication**

After precipitation



Freeze thaw method **Water bath sonication** **Ultra sound sonication**

Fig. S1 — Extraction of phycoerythrin

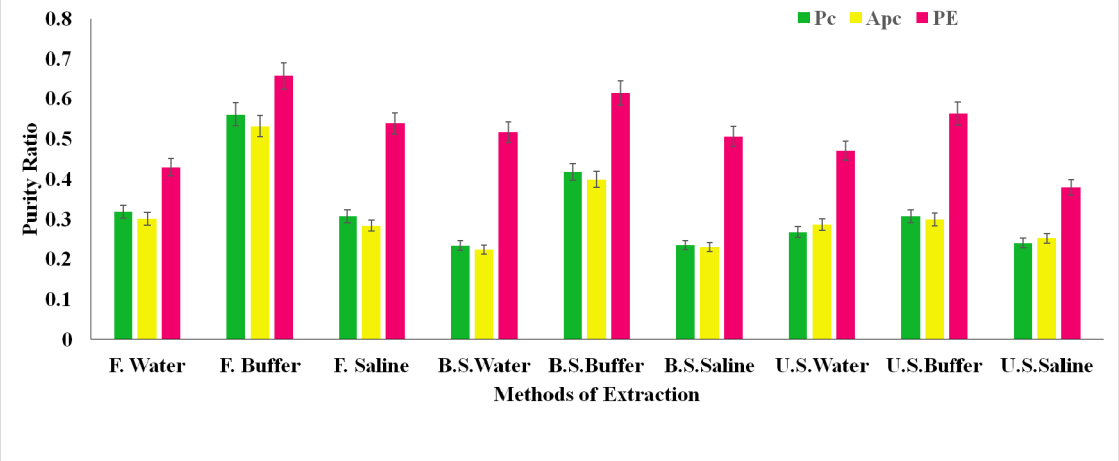


Fig. S2 — Purity ratio after Precipitation

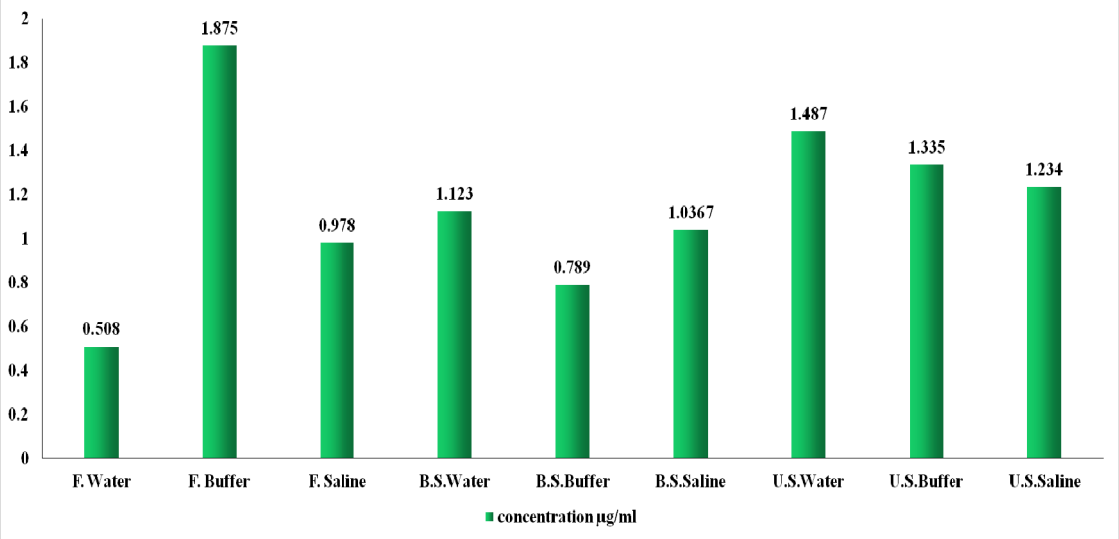


Fig. S3 — Concentration of the protein by Bradford

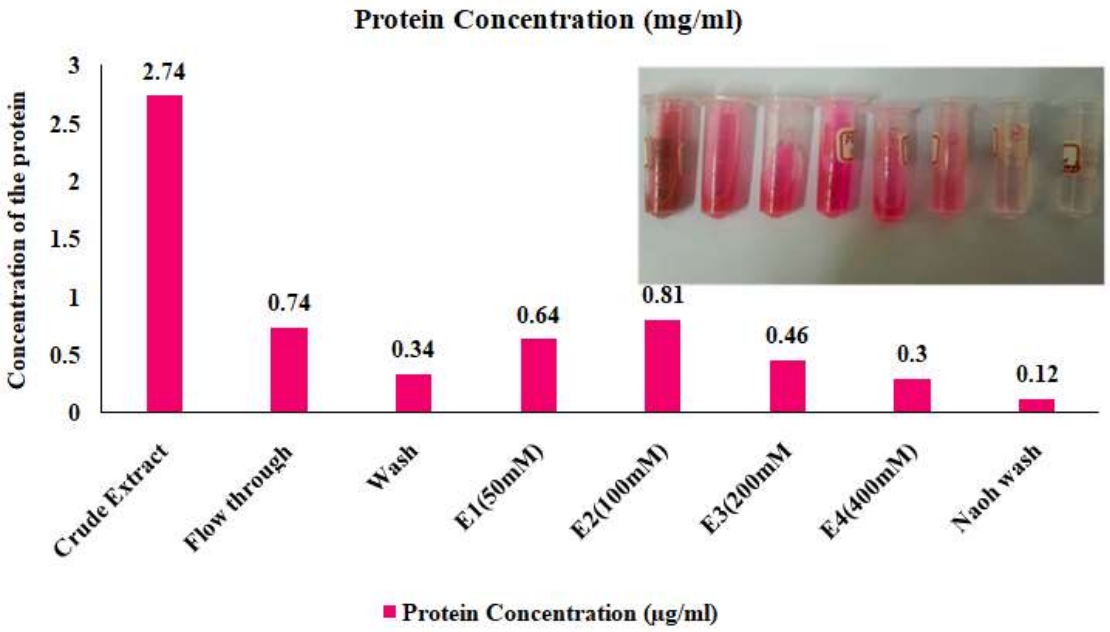


Fig. S4 — Ion Exchange chromatography