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ANTIOXIDANT ACTIVITY OF KAPPAPHYCUS ALVAREZII AND SARGASSUM POLYCYSTUM SEAWEEDS EXTRACTS

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The aim of present study was to optimize the extraction condition of *K. alvarezii* and *S. polycystum* resulting in the highest antioxidant activity. The extraction conditions, namely extraction time (X1: 3-24 hours) and ethanol concentration (X2: 0-100%), were optimized by employing Response Surface Methodology (RSM). Each of the seaweed has 14 extraction conditions generated by Central-Composite Design to obtain maximum yield (Y1), maximum Total Phenolic Content (Y2), maximum Ferric Reducing Ability of Plasma (Y3), and minimum EC50 of 2, 2-diphenyl-1-picrylhydrazyl (DPPH) scavenging ability (Y4). All dependent variables were fitted into second-order polynomial equations of reduced model and showed no significant ($p>0.05$) lack of fit. The optimal extraction conditions for *K. alvarezii* and *S. polycystum* were found to be at 24 hours with 100% ethanol and 16.6 hours with 0% ethanol, respectively. The yield, TPC, FRAP, and EC50 of optimum extraction of *K. alvarezii* was 0.25±0.01 g, 15.86±0.02 mg GAE/g extract, 72.18±0.04 mM TE/g extract, and 1.12±0.01 mg/ml, respectively, while for *S. polycystum* extract the values were 0.86±0.01 g, 17.85±0.05 mg GAE/g, 75.70±0.15 mM TE/g extract, and 0.30±0.01 mg/ml, respectively. The final reduced models were fitted by RSM, and hence, the models were accepted and exhibited high antioxidant activity. Overall, the studied seaweeds found to be a good source of antioxidants.

Biography

Babak Rasti has completed his PhD in Food Technology from University Putra Malaysia. He is a Senior Lecturer of Food Technology and Bioprocessing at University Malaysia Sabah (UMS). He has published more than 14 papers in reputed journals.

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