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## Evaluation of anti-diabetic properties of the compounds isolated from marine macroalgae

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Sea weeds are a group of non-flowering marine plants commonly referred to as marine macroalgae. The edible sea weeds contain biologically active compounds with potential applications in functional food and nutraceuticals, hence they are used against several human diseases traditionally. The present study is to investigate the anti-diabetic and anti-oxidant activities of aqueous, ethanolic and methanolic extracts of different marine macroalgae in streptozotocin (STZ) induced diabetic rats. Oral administration of marine macroalgae extracts at a concentration of 125mg/kg body weight for 21 days treatment showed a significant decrease in fasting blood glucose levels and glycated hemoglobin (HbA1c) levels in marine macroalgae extracts coded AE3, FS4, FM4, OS1 and SS1 out of 30 extracts. Among these FS4 and FM4 showed more significant decrease in fasting blood glucose levels and glycated hemoglobin (HbA1c) levels. The results also demonstrated in significant increase in reduced glutathione, superoxide dismutase, catalase, glutathione peroxidase, glutathione-s-transferase and decrease in lipid peroxidase in liver, kidney and brain of diabetic rats. The results signify that sea weeds typically used as nutraceutical and functional food to reduce anti-diabetic and anti-oxidant effects in in vivo. Thus, the marine macroalgae extracts might have beneficial properties in the prevention of diabetes and could be useful in development of anti-diabetic pharmaceutical and functional food resources.

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