Marine algae - a source of alternate angiogenic therapeutics for cardiovascular disease

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ABSTRACT

The dysfunction in heart or blockage in blood vessels resulted in Cardio vascular disease (CVD) which is one of the major diseases affecting majority of the people around the world. Hence there is a pressing need to find the therapeutics to either prevent or control CVD. The principle cause of CVD is atherosclerosis and hypertension. Atherosclerosis resulted in decreased blood flow in arteries and causing ischemic wounds and hypoxia. The factors including reactive oxygen species (ROS), matrix metalloproteases, growth factors and angiogenesis are modulating the hypoxia induced CVD. To minimize the side effects induced by CVD drugs, functional food from natural sources should be identified. Seaweeds are rich in secondary metabolites and dietary fibers are explored to prevent CVD. For the current study, brown algae *Padina tetrastomatica* is utilized to analyze the efficacy of phytonutrients in angiogenesis. The phytochemical compounds from *Padina tetrastomatica* are analyzed and their antioxidant potential was assessed. The CAM assay was utilized to assess the angiogenic efficiency. The phytonutrients reduced ROS production and induced angiogenesis. In conclusion, *Padina tetrastomatica* can be used as a functional food to control CVD induced by hypoxia and atherosclerosis

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