


# Chapter 11

## Cardiovascular Disease Management With Marine-Derived Compounds: Marine Metabolites in Cardiovascular Disease Management

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### **ABSTRACT**

*Cardiovascular diseases are severe global health issues with side effects. Current treatments are unclear and can cause side effects. Marine carotenoids, found in plants, are a promising source for drug discovery due to their biological activities and chemical variety. Their physiological actions may prevent degenerative diseases and have antioxidant effects. The biological activities and chemical variety of ma-*

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*rine natural products have made them an attractive source for drug discovery. This review focuses on the specific functions and mechanisms of these active constituents in coronary artery disease, highlighting their abilities such as reducing lipid levels, acting as antioxidants, inhibiting platelet aggregation, and possessing anticoagulant properties. This presents a challenge for the food industry, as consumers now seek foods that are not only nutritious but also convenient and pleasurable to eat.*

## **Cardiovascular Disease Management with Marine Derived Compounds**

### **INTRODUCTION**

Cardiovascular Diseases (CVDs) stand as a paramount concern in global health-care, covering matters of the heart, lungs, vascular system, and brain. These illnesses demonstrate notable rates of both occurrence and recurrence. Despite advances in medical science, there is an ongoing quest to discover novel therapeutic agents that can effectively manage CVDs while minimizing adverse effects. As of 2019, Cardiovascular Diseases (CVDs) accounted for 32% of global deaths, totaling approximately 17.9 million lives lost worldwide (Akram *et al.*, 2023). The number of deaths related to Cardiovascular Diseases (CVDs) has risen from 12.1 million in 1991 to 18.6 million in 2019, with projections indicating a further increase to 24 million by 2030 (Roth *et al.*, 2020). Cardiovascular disease stands as the foremost contributor to female mortality, accounting for 35% of all female deaths in 2019. Over the years, grassroots initiatives have played a pivotal role in shedding light on the significant impact of cardiovascular disease on women. Concurrently, there has been a notable surge in movements and transformations aimed at empowering women and enhancing their control over their health during this era (Vogel *et al.*, 2021).

In recent years, there has been a growing interest in exploring natural sources for potential cardiovascular treatments, and the marine environment has emerged as a promising frontier. The oceans, with their vast and diverse ecosystems, harbor a plethora of organisms, from microscopic algae to large marine mammals, each producing unique bioactive compounds. These compounds have evolved over millions of years as defense mechanisms against predators, pathogens, and environmental stressors. Remarkably, many of these bioactive molecules exhibit pharmacological properties that can be harnessed for therapeutic purposes.

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