

Deceleration of Trimethylamine Nitric-Oxide(TMAO) by Preventing Oxidation of Trimethylamine (TMA) Through Hepatic Flavin-Containing Monooxygenase (Hepatic(FMO)'s) via Omega-3 Fatty Acid Polyphenol Induced Experimental Substance

Ramirez, Axel (School: United High School)

As industry processed food becomes increasingly detrimental to human health, studies indicate that the heart and associated cardiovascular tissues deteriorate more rapidly. A significant correlation has been observed that Trimethylamine(TMA) is oxidized into Trimethylamine Nitric-Oxide(TMAO). In its current state, this research seeks to down-regulate the production of (TMAO) using a mixture of (DHA), (EPA), and polyphenols (Rosmarinic Acid, Curcumin, Apple Polyphenol). Invertebrate and vertebrate organisms are fed a daily diet with omega-3-fatty acids and polyphenols. Dosage was created using mg/m^2 to mg/kg conversion then multiplying AVG human dosage by AVG mouse dosage. Dosages provided via oral route circulate for 24 hours over a testing period of 12 weeks. Every 7 days, organism mass is measured, fecal matter components are analyzed using chemical analysis of TMAO levels released in fecal matter, and heart rate and size is compared to the control using EKG at the culmination of 12 weeks. Initial data indicated that invertebrate organisms in the tested groups increased twice their initial length, girth, mass. Fecal matter mass increased by 4x in the independent groups over the course of 8 weeks.