

D9: The Effect of Palm Oil-Derived Tocotrienol Rich Fraction on Heme Oxygenase-1 Protein Expression in Mice Liver

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ABSTRACT

Introduction: Tocotrienols are part of the vitamin E family and has been reported to possess potent antioxidant activity. Palm oil is a rich natural source of tocotrienols. Heme oxygenase-1 (HO-1) is an enzyme that possess antioxidant, anti-inflammatory and cytoprotective functions. **Methods:** The objective of this study is to determine the effects of increasing doses of palm oil-derived tocotrienol rich fraction (TRF) supplementation on HO-1 protein expression in mice livers. Thirty male ICR white mice (25–30 g) were divided into five groups; three groups were administered palm TRF orally for 14 days at doses of 200, 500 and 1000 mg/kg respectively (n=6 for each group), a positive control group administered butylated hydroxyanisole (BHA) orally for 14 days at a dose of 100 mg/kg (n=6), and the last group (n=6), which comprise control mice, were only administered vehicle which is corn oil. At day 15, the mice were sacrificed and their livers isolated. The livers were then homogenized and protein expression of HO-1 was determined by Western blotting. **Results:** Palm TRF oral supplementation at concentrations of 200, 500 and 1000 mg/kg for 14 days caused a significant concentration-dependent increase in HO-1 protein expression in mice livers, compared to controls. **Conclusion:** Palm TRF oral supplementation for 14 days resulted in increased HO-1 protein expression in mice liver dose dependently, with the highest protein expression seen in mice treated with 1000 mg/kg TRF, followed by 500 and 200 mg/kg respectively.

KEY WORDS:

Palm TRF; HO-1; mice; liver; protein expression