

Inhibitory effects of palm α -, γ - and δ -tocotrienol on lipopolysaccharide-induced nitric oxide production in BV2 microglia.

Abstract

Anti-inflammatory actions of the vitamin E fragment tocotrienol have not been described for microglia. Here, we screened palm α -, γ - and δ -tocotrienol isoforms and Tocomin® 50% (contains spectrum of tocotrienols and tocopherols) for their ability to limit nitric oxide (NO) production by BV2 microglia. Microglia were treated with varying doses of tocotrienols for 24h and stimulated with 1 μ g/ml lipopolysaccharide (LPS). All tocotrienol isoforms reduced NO release by LPS-stimulated microglia, with 50 μ M being the most potent tocotrienol dose. Of the isoforms tested, δ -tocotrienol lowered NO levels the most, reducing NO by approximately 50% at 48 h post-LPS treatment ($p < .05$). None of the tocotrienol doses tested affected microglia viability.

Keyword: Lipopolysaccharide; Microglia; Nitric oxide; Palm tocotrienols; Viability.