

Reduction of high-fat diet-induced liver proinflammatory state by eicosapentaenoic acid plus hydroxytyrosol supplementation: involvement of resolvins RvE1/2 and RvD1/2

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© 2018 Elsevier Inc. High-fat diet (HFD)-fed mice show obesity with development of liver steatosis and a proinflammatory state without establishing an inflammatory reaction. The aim of this work was to assess the hypothesis that eicosapentaenoic acid (EPA) plus hydroxytyrosol (HT) supplementation prevents the inflammatory reaction through enhancement in the hepatic resolvins content in HFD-fed mice. Male C57BL/6J mice were fed an HFD or a control diet and supplemented with EPA (50 mg/kg/day) and HT (5 mg/kg/day) or their respective vehicles for 12 weeks.

Measurements include liver levels of EPA, DHA and palmitate (gas chromatography), liver resolvins and triglyceride (TG) and serum aspartate transaminase (AST) (specific kits) and hepatic and serum inflammatory markers (quantitative polymerase chain reaction and enzyme-linked immunosorbent assay). Compared to CD, HFD induced body weight gain, liver steatosis and TG accumulation, with up-regulation of proinflammatory markers in the absenc