Research Article

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Effect of Tocotrienols Derived from Annatto on Lipid Profile and Some Adipokine Hormones in Rats Fed a High-Fat Diet

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Abstract

Obesity is a metabolic condition that causes people to develop a variety of diseases and has emerged as a serious global public-health problem. Tocotrienol, a member of the vitamin E family that comes from the annatto bean (*Bixa orellana*), is special in that it doesn't contain alpha-tocopherol and instead mostly consists of delta-tocotrienol (approximately 90%) and gamma-tocotrienol (about 10%). This investigation aimed to ascertain whether annatto tocotrienol could improve certain biochemical indicators and metabolic hormones in male rats fed a high-fat diet. Eighteen adult male rats in total were split into three groups randomly (6 for each). Control group was given a diet low in fat (LF 10 % kcal from fat), High fat diet (HFD) group was fed with high fat diet (HF 60 % kcal from fat), And high fat diet with tocotrienol (HFDT) group was fed with high fat diet additive tocotrienol (60 mg/kg) dissolved in olive oil (1ml/kg) for 12 weeks. Tocotrienol treatment led to a significant decrease in total protein and globulin compared with the high-fat diet group and it significantly increased HDL-C compared with rats fed on a high-fat diet and control groups. While, tocotrienols significantly reduced the level of LDL and insulin hormone in the High fat diet plus tocotrienols group compared to the other groups.

Keywords: tocotrienols, high-fat diet, leptin, adiponectin.