Orange beverage ameliorates high-fat-diet-induced metabolic disorder in mice

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Metabolic syndrome (MetS) refers to a group of disorders that includes insulin resistance, central obesity, arterial hypertension and hyperlipidaemia. Regular consumption of bioactive compounds has consistently been associated with a reduced risk of these disorders. The aim of this study was to determine if an orange beverage with high concentrations of bioactive compounds (flavanones, carotenoids, melatonin, and ascorbic acid) and low alcohol content (<1%, v/v) improves metabolic parameters through modulation of oxidative stress, lipid profile and inflammatory response in a rodent model of high fat diet (HFD)-induced obesity. Mice with HFD-induced MetS were fed the orange beverage for 12 weeks (volume equivalent to 250 mL/day in human). Long-term intake of the orange beverage decreased plasma TAG, oxidized LDL and C-reactive protein levels. The present data provide evidence of a beneficial effect of orange beverage intake on some outcome parameters related to HFD-induced MetS.

Antioxidant status

Bioactive compounds

Fermented orange juice

HFD

Lipid profile

Metabolic syndrome