

Many studies have investigated the effect of crude tomato peel *in vivo*, but no studies have determined the dose-effect of dry tomato peel (DTP) on glucose intolerance, insulin resistance, and atherogenic dyslipidemia induced by a high-saturated-fat (HSF) diet *in vivo*. The aim of this study was to investigate the effects of different doses of DTP on the levels of oxidative stress in mice fed an HSF and cholesterol-rich diet for 12 weeks. The main outcomes are glucose and insulin tolerance, plasma lipids, and hepatic steatosis and inflammation. BALB/c male mice ($n=40$) (8 weeks old, weighing 22.2 ± 1.0 g) were divided into four treatment groups (10 mice/group): (a) high-fat control diet (HF Ctrl), which contains sunflower oil as a sole source of fat; (b) HSF/high-cholesterol (HC) diet; (c) HSF/HC diet supplemented with 9% DTP and (d) HSF/HC diet supplemented with 17% DTP. The HSF/HC diet significantly increased body weight gain, adipose tissue weight, fasting plasma glucose, fasting plasma insulin and lipid peroxidation and caused the development of liver steatosis and inflammation. Supplementation with DTP increased plasma lycopene concentration and reduced the development of indicators of metabolic syndrome, with no consistent effect of the DTP dose. Hepatic steatosis and inflammation were not reversed with DTP supplementation. Among mice fed the HSF/HC diet, DTP supplementation appears to have a beneficial effect on insulin resistance, which confirms the antiatherogenic effect of DTP