Hypolipidaemic Activity of Orally Administered $p$-Chloro-Phenyl-Selenosteroid in Triton WR-1339-induced Hyperlipidaemia in C57BL/6 Mice


$^1$Departamento de Nutrição, UNIPAMPA- Campus Itaqui, RS, Brazil
$^2$Departamento de Bioquímica, UNIPAMPA- Campus Uruguaiana, RS, Brazil
$^3$Departamento de Química, UFSM, RS, Brazil

**Introduction:** The interest in organoselenium pharmacology has increased in the last decade due to a variety of compounds that possess biological activity. In addition, literature data have reported that organoselenium compounds inhibit human squalene monooxygenase, the second enzyme in the downstream pathway for cholesterol biosynthesis and that Se deficiency led to increased HMGCoA reductase activity in rats that in turn resulted in increased endogenous cholesterol synthesis causing hyperlipidaemia, a risk factor for atherosclerosis and coronary artery disease. In this view, the aim of this study was to investigate if the compound $p$-chloro-phenyl-selenosteroid (SE) has hypolipidemic action in a model of hyperlipidaemia induced by triton WR-1339 in mice C57BL/6.

**Materials and Methods:** Triton was administered intraperitoneally (400 mg/kg) to overnight-fasted mice to develop acute hyperlipidaemia. SE was administered orally (10 mg/kg) 30 min before triton. At 24 h after Triton injection, blood samples were collected to measure plasma lipid levels (total cholesterol, non-HDL-cholesterol, triglyceride and HDL-cholesterol levels), non-HDL values were obtained by the difference between total cholesterol and HDL-cholesterol levels.

**Results and Discussion:** Triton increased plasmatic cholesterol total levels in mice (3-times higher than the control group) and SE pretreatment was effective in preventing the increase of cholesterol total levels caused by Triton injection in mice. Triton decreased plasmatic HDL-cholesterol levels in mice (3.3-times lower than the control group), increased plasma non-HDL-cholesterol levels in mice (5.2-times higher than the control group) and increased the plasma triglycerides levels in mice (12.5-times higher than the control group). SE pretreatment partially prevented the decrease in HDL-cholesterol and partially prevented the increase non-HDL-cholesterol and triglycerides levels in mice.

**Conclusions:** These findings indicate that SE was affective in protect against alterations in plasma lipids induced by triton. Further studies are needed to elucidate the exact mechanism by which SE exerted its hypolipidaemic effect.

Patrocínio: CNPq