The purpose of this study was to assess the individual and interactive effects of hepatic lipase (LIPC), apolipoprotein E (APOE) (E2, E3, E4) gene polymorphisms on levels of plasma lipoprotein cholesterol and triglyceride among Canadian adults.

All subjects with at least one APOE2 allele had significantly lower low-density lipoprotein cholesterol, total cholesterol, and total cholesterol-high-density lipoprotein cholesterol ratio when compared with those with the APOE3 or APOE4 allele. In addition, the lowest triglyceride levels were found in all APOE2 individuals carrying LIPC-514-CC and LIPC-250-GG genotypes, whereas the highest triglyceride levels were found in APOE2 individuals carrying the opposite genotypes, LIPC-514-TT and LIPC-250-AA.

These observations suggest that there is an interactive effect between APOE and LIPC genotypes on plasma triglyceride levels. These results provide the basis for further studies on establishing which genotype combinations would be the most protective against hypertriglyceridemia.

Acknowledgements

Many thanks to OMAFRA and the HHNS department of the University of Guelph for all of their support. We have delineated the potential beneficial effects of North American ginseng (Panax quinquefolius) root ethanol extract in the context of the Pcyt2-deficient metabolic syndrome phenotype: Pcyt2 +/- mice orally treated for 4 weeks with 200 mg/kg/day ginseng extract, beginning at 20 weeks of age. Possible effects of ginseng were investigated on food intake, 24-hour fasting weight loss, plasma and liver triglyceride content, plasma cytokines, and visceral fat pad mass. The most prominent effects of ginseng treatments were an alleviation of the fatty liver and an increase in the mass of inguinal fat pads, reflecting a mobilization of excess triglycerides from the liver, and subsequent storage in adipose tissues.

References

Panax quinquefolius