

## INTISARI

**Latar Belakang:** Hiperlipidemia dapat menjadi faktor resiko terjadinya penyakit jantung iskemik. Risiko jantung iskemik dapat diprediksi dengan *castelli's risk index* 1 (CRI1). Variasi genotipe PRKAA2 rs1124900 dan ABCA1 rs2066714 berpengaruh terhadap perubahan lipid plasma. Asupan nutrisi isomaltooligosakarida (IMO) memiliki efek hipolipidemik. **Tujuan Penelitian:** penelitian ini menganalisis perubahan CRI1 pada subjek dengan variasi genetik PRKAA2 dan ABCA1 yang mengkonsumsi kukis IMO. **Metode:** 30 isolat DNA dari subjek hiperlipidemia yang telah diberi perlakuan kukis IMO selama 4 minggu. Analisis genotipe menggunakan PCR-RFLP dan enzim restriksi. **Hasil Penelitian:** Kukis IMO menyebabkan penurunan rerata CRI1 subjek hiperlipidemia (8,06%) ( $p < 0,05$ ). Interaksi genotipe PRKAA2 rs1124900 dengan intervensi kukis IMO menurunkan CRI1 ( $p < 0,05$ ). Sedangkan interaksi genotipe ABCA1 rs2066714 dengan intervensi kedua kukis tidak berpengaruh signifikan terhadap CRI1 ( $p > 0,05$ ). **Kesimpulan:** Kukis IMO menyebabkan penurunan CRI1 pada subjek hiperlipidemia. Konsumsi kukis IMO pada genotipe TG dan GG PRKAA2 rs1124900 dapat menurunkan resiko jantung iskemik.

Kata kunci: Hiperlipidemia, isomaltooligosakarida, PRKAA, ABCA1, CRI1

## ABSTRACT

**Background:** Hyperlipidemia can contribute to the development of ischemic heart disease, and Castelli's Risk Index 1 (CRII) can help predict the risk. Genetic variations, such as PRKAA2 rs1124900 and ABCA1 rs2066714, can influence lipid levels in the blood. Moreover, the consumption of isomaltooligosaccharide (IMO) can have a beneficial effect on lowering lipid levels. **Objectives:** aims to analyze the changes in CRII) in subjects with genetic variations who consume isomaltooligosaccharide (IMO) cookies. **Method:** In this study, 30 DNA isolates were collected from subjects with hyperlipidemia who were given a treatment of isomaltooligosaccharide (IMO) cookies for 4 weeks. Using PCR-RFLP and restriction enzyme digestion. **Result:** consumption of IMO cookies resulted in a significant decrease in CRII in subjects with hyperlipidemia (8.06%) ( $p < 0.05$ ). Significant interaction between the PRKAA2 rs1124900 genotype and the consumption of IMO cookies concerning the reduction in CRII ( $p < 0.05$ ). The interaction between the genotype of ABCA1 rs2066714 and both of cookie intervention is not statistically significant in CRII changes ( $p > 0.05$ ). **Conclusion:** IMO cookies lead to a decrease in Castelli's Risk Index 1 (CRII) in subjects with hyperlipidemia. The consumption of IMO cookies in TG and GG genotypes of PRKAA2 rs1124900 can reduce CRII ischemic heart disease risk.

Keywords: Hyperlipidemia, isomaltooligosaccharide, PRKAA, ABCA1, CRII