

**Efek Pemberian Yoghurt Umbi Bit (*Beta vulgaris* L.) dan Kayu Manis (*Cinnamomum burmanii*) terhadap Kadar HDL, LDL, dan Rasio LDL/HDL pada Tikus *Sprague Dawley* yang Diberi Diet Tinggi Lemak**

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**INTISARI**

**Latar belakang:** Dislipidemia menyebabkan munculnya penyakit kardiovaskuler. Dislipidemia dapat ditangani dengan yoghurt yang merupakan pangan fungsional hasil fermentasi susu menggunakan bakteri *Lactobacillus bulgaricus* dan *Streptococcus thermophilus*. Yoghurt dengan penambahan umbi bit dan kayu manis mengandung senyawa bioaktif yang bermanfaat untuk meningkatkan kadar HDL, serta menurunkan kadar LDL dan rasio LDL/HDL. **Tujuan:** Mengetahui efek sebelum dan sesudah pemberian yoghurt umbi bit (*Beta vulgaris* L.) dan kayu manis (*Cinnamomum burmanii*) terhadap kadar HDL, LDL, dan rasio LDL/HDL pada tikus *Sprague Dawley* yang diberi diet tinggi lemak. **Metode:** Jenis penelitian *Quasi Experiment* dengan rancangan *Pretest-Posttest Control Group Design* pada tikus *Sprague Dawley* terbagi menjadi empat kelompok: K1 diberi pakan standar; K2 diberi diet tinggi lemak, P1 diberi diet tinggi lemak + yoghurt 1,8 ml/200gBB; P2 diberi diet tinggi lemak + yoghurt 3,6 ml/200gBB. Kelompok K2, P1, dan P2 diberi diet tinggi lemak selama 14 hari. Selanjutnya, diberikan perlakuan selama 28 hari untuk kemudian dianalisis kadar HDL, LDL, dan rasio LDL/HDL sebelum dan sesudah perlakuan. **Hasil:** Yoghurt umbi bit dan kayu manis dosis 1,8 ml/200gBB dan 3,6 ml/200gBB secara signifikan ( $p < 0,05$ ) berpengaruh pada peningkatan kadar HDL, penurunan kadar LDL dan rasio LDL/HDL. Kelompok yang diberi dosis 3,6 ml/200gBB memiliki kadar HDL paling tinggi ( $73,31 \pm 3,62$ ), kadar LDL paling rendah ( $35,84 \pm 3,30$ ), serta rasio LDL/HDL paling rendah ( $0,49 \pm 0,06$ ). **Kesimpulan:** Terdapat perbedaan kadar HDL, LDL, dan rasio LDL/HDL sebelum dan sesudah pemberian yoghurt umbi bit dan kayu manis pada tikus *Sprague Dawley* yang diberi diet tinggi lemak secara bermakna. **Kata kunci:** dislipidemia, yoghurt, umbi bit, kayu manis, HDL, LDL, rasio LDL/HDL

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## Effects of Beetroot (*Beta vulgaris* L.) and Cinnamon (*Cinnamomum burmanii*) Yogurt on Levels of HDL, LDL, and LDL/HDL Ratio in Sprague Dawley Rats Induced by High Fat Diet

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### ABSTRACT

**Background:** Dyslipidemia causes the emergence of cardiovascular disease. Dyslipidemia can be treated with yogurt which is a functional food made from fermented milk using *Lactobacillus bulgaricus* and *Streptococcus thermophilus* bacteria. Yogurt with the addition of beetroot and cinnamon contains bioactive compounds that are useful for increasing HDL levels, as well as reducing LDL levels and the LDL/HDL ratio. **Objective:** To determine the effect before and after administration of beetroot yogurt (*Beta vulgaris* L.) and cinnamon (*Cinnamomum burmanii*) on levels of HDL, LDL, and LDL/HDL ratio in Sprague Dawley rats induced by high-fat diet. **Method:** This type of research was *Quasi Experiment* with the Pretest-Posttest Control Group Design on Sprague Dawley rats which were divided into four groups: K1 was given standard feed; K2 was given a high-fat diet, P1 was given a high-fat diet+yogurt 1.8 ml/200gBW; P2 was given a high-fat diet+yogurt 3.6 ml/200gBW. Groups K2, P1 and P2 were given a high-fat diet for 14 days. Furthermore, given treatment for 28 days to then be analyzed levels of HDL, LDL, and LDL/HDL ratio before and after treatment. **Result:** Beetroot yoghurt and cinnamon doses of 1.8 ml/200gBW and 3.6 ml/200gBW significantly ( $p < 0.05$ ) had an effect on increasing HDL levels, decreasing LDL levels and the LDL/HDL ratio in the group given the 3.6 dose ml/200gBW had the highest HDL level ( $73.31 \pm 3.62$ ), the lowest LDL level ( $35.84 \pm 3.30$ ), and the lowest LDL/HDL ratio ( $0.49 \pm 0.06$ ). **Conclusion:** There were significant differences in the levels of HDL, LDL, and LDL/HDL ratio before and after administration of beetroot yogurt and cinnamon to Sprague Dawley rats fed a high-fat diet. **Keywords:** dyslipidemia, yogurt, beetroot, cinnamon, HDL, LDL, LDL/HDL ratio

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