UJI AKTIVITAS ANTIDIABETES SEDIAAN EMULSI EKSTRAK AKAR PANDAN LAUT (*Pandanus odorifer*) TERHADAP MENCIT JANTAN (*Mus musculus*)

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ABSTRAK

Diabetes melitus adalah penyakit metabolik yang ditandai peningkatan glukosa darah akibat gangguan insulin. Pemanfaatan bahan alam sebagai terapi alternatif masih terbatas, termasuk pandan laut (*Pandanus odorifer*) yang mengandung metabolit sekunder berpotensi hipoglikemik. Mengetahui aktivitas antidiabetes emulsi ekstrak akar pandan laut pada mencit jantan (*Mus musculus*), membandingkan efektivitasnya dengan kontrol, serta menilai pengaruh kombinasi dengan metformin. Sebanyak 24 ekor mencit dibagi ke dalam dua model (normoglikemia dan hiperglikemia), masing-masing terdiri dari empat kelompok: kontrol negatif (Na-CMC 1%), kontrol positif (metformin), emulsi 5%, dan kombinasi emulsi + metformin. Hiperglikemia diinduksi glukosa, kadar glukosa diukur dengan glukometer pada beberapa interval. Pada hiperglikemia, kombinasi emulsi + metformin menurunkan glukosa terbesar (127,67 mg/dL pada 120 menit), lebih tinggi dari metformin (117 mg/dL) dan emulsi tunggal (71,67 mg/dL). Pada normoglikemia, kombinasi juga tertinggi (52,34 mg/dL) dibandingkan emulsi (34,67 mg/dL) dan metformin (27 mg/dL). Emulsi ekstrak pandan laut memiliki aktivitas antidiabetes signifikan, hampir sebanding dengan metformin, dan kombinasi keduanya menunjukkan efek sinergis sehingga berpotensi dikembangkan sebagai terapi tambahan berbasis bahan alam.

Kata kunci: *Pandanus odorifer*, emulsi, antidiabetes, mencit, glukosa darah.

ANTIDIABETIC ACTIVITY TEST OF SEA PANDAN ROOT EXTRACT (Pandanus odorifer) EMULSION PREPARATION ON MALE MICE (Mus musculus)

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ABSTRACT

Diabetes mellitus is a metabolic disease characterized by elevated blood glucose levels due to impaired insulin function. The use of natural products as alternative therapy remains limited, including Pandanus odorifer, which contains secondary metabolites with potential hypoglycemic activity. To evaluate the antidiabetic activity of pandanus root extract emulsion in male mice (Mus musculus), compare its effectiveness with controls, and assess the effect of its combination with metformin. A total of 24 mice were divided into two models (normoglycemic and hyperglycemic), each consisting of four groups: negative control (Na-CMC 1%), positive control (metformin), pandanus emulsion (5%), and pandanus emulsion + metformin combination. Hyperglycemia was induced with glucose, and blood glucose levels were measured at several intervals using a glucometer. In the hyperglycemic model, the combination of pandanus emulsion + metformin showed the greatest glucose reduction (127.67 mg/dL at 120 minutes), higher than metformin alone (117 mg/dL) or emulsion alone (71.67 mg/dL). In the normoglycemic model, the combination also produced the highest reduction (52.34 mg/dL), compared to emulsion (34.67 mg/dL) and metformin (27 mg/dL). The pandanus root extract emulsion demonstrated significant antidiabetic activity, almost comparable to metformin, while the combination showed a synergistic effect, suggesting its potential as a natural-based adjunct therapy for diabetes management.

Keywords: Pandanus odorifer, emulsion, antidiabetic, mice, blood glucose.

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