

UJI ANTIHIPERGLIKEMIK BIOMASSA DAN EKSTRAK MIKROALGA *Porphyridium cruentum* TERHADAP PENURUNAN KADAR GULA DARAH PADA MENCIT (*Mus musculus*) YANG DIINDUKSI ALOKSAN

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ABSTRAK

Diabetes mellitus merupakan penyakit yang ditandai dengan hiperglikemia akibat kurangnya sekresi insulin, kerja insulin maupun keduanya, serta terjadi perubahan terhadap struktur sel beta pankreas. Tujuan dari penelitian ini adalah mengetahui potensi serta perbedaan dari biomassa dan ekstrak mikroalga *Porphyridium cruentum* dalam menurunkan kadar glukosa darah mencit (*Mus musculus*) yang diinduksi aloksan. Penelitian menggunakan rancangan acak kelompok (RAK) yang terdiri dari 16 ekor mencit putih jantan yang ditentukan secara acak dibagi dalam 4 kelompok perlakuan, yaitu kelompok kontrol (-), kontrol (+), kelompok perlakuan biomassa dan ekstrak *P. cruentum* dengan dosis 500 mg/kg BB. Hasil penelitian menunjukkan pemberian biomassa dan ekstrak *P. cruentum* 500 mg/kg BB memberikan pengaruh yang tidak berbeda nyata meskipun dari selisih rata-ratanya terlihat ada perbedaan sedikit, yaitu biomassa *P. cruentum* sebesar 50,75 mg/dL, sedangkan ekstrak *P. cruentum* sebesar 46,25 mg/dL terhadap penurunan kadar glukosa darah mencit jantan yang diinduksi dengan aloksan. Kandungan senyawa aktif yang terdapat pada *P. cruentum* memperlihatkan adanya perbaikan jaringan pankreas walupun belum dapat mengembalikan pada kondisi normal akibat senyawa diabetogenik aloksan. Pemberian biomassa dan ekstrak *P. cruentum* selama 7 hari berpotensi menurunkan kadar glukosa darah.

Kata kunci: diabetes mellitus, *Porphyridium cruentum*, pankreas.

**THE TEST OF ANTIHYPERGLYCEMIC BIOMASS AND EXTRACT MICROALGAE
Porphyridium cruentum TO THE DEGRESSION OF BLOOD GLUCOSE LEVE IN MICE
(*Mus musculus*) INDUCED BY ALLOXAN**

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ABSTRACT

Diabetes mellitus is a kind of disease characterized by hyperglycemia due to a lack of insulin secretion, insulin action or both of them. It is as well as a changes to the structure of the pancreatic beta cells. The aims of this research is to determine the potencial distinction of biomass and extracts microalgae *Porphyridium cruentum* in lowering blood glucose levels in mice (*Mus musculus*) induced by alloxan. The research used randomized block design (RBD) consisting of 16 white male mice were determined randomly and divided into four treatment groups. The group was control group (-) and control (+), the treatment group was *P. cruentum* biomass and extract of 500 mg/kg. The results of the research showed that the provision of biomass and extract of *P. cruentum* 500 mg /kg gave and effected to the degression of blood glucos level even if it was not significantly different. From the difference between the average, it was seen a little difference, namely biomass *P. cruentum* amounted to 50.75 mg / dL, whereas extracts of *P. cruentum* at 46.25 mg / dL to the blood glucose levels in male mice which induced by alloxan. The content of active compound contained in *P. cruentum* showed an improvement in pancreatic tissues, even though it has not been able to restore into normal conditions due to alloxan diabetogenic compound. Therefore, The provision of biomass and extract of *P. cruentum* for 7 days is potentially lowering blood glucose levels.

Keywords: diabetes mellitus, *Porphyridium cruentum*, pancreas.