Antiglycation and Antioxidant Activities of Black Garlics in Streptozotocin and Staphylococcus aureus Induced Rats Model of Diabetes Mellitus

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ABSTRACT

Diabetes mellitus (DM) is one of the diseases that has received attention due to various complications and is one of the comorbidities of the severity of Covid-19. Free radicals are products of oxidative stress that arise because of hyperglycemia, so the prevention of their formation and their elimination is a potential mechanism in the management of DM patients. One biological potential candidate reported to have anti-hyperglycemic effects is *black garlic*. This study aims to determine the antiglycation and antioxidant activity of black garlics in DM model rats induced with *streptozotocin* (STZ) and infected with *S aureus*. The study used male Wistar rats (8 weeks, 200 g) which were divided into 7 groups, namely normal mice, STZ-induced mice, STZ and *S aureus*-induced rat and 3 groups of STZ and *S aureus*-induced rats treated with 3 doses of black garlics and 1 metformin dose. The parameters measured in this study were glucose levels measured using the GOD PAP method; H_2O_2 with spectrophotometry, and CML with ELISA. The results showed that black garlic ethanol extract has the potential as an antiglycation agent in terms of the IC value of $_{50}$ BSA-glucose test. The administration of black garlics ethanol extract for 7 days at levels of 1.5, 3 and 6 mg / 200gBW can reduce plasma glucose levels and levels of 6 mg / 200gBW can reduce H_2O_2.

Kata Kunci: *diabetes, streptozotocin, S aureus, black garlic, antiglycation, antioxidant*