

The effectiveness of various salacca vinegars as therapeutic agent for management of hyperglycemia and dyslipidemia on diabetic rats

ABSTRACT

The aim of this study was to explore the potency of salacca vinegar made from various Indonesian salacca fruit extracts as therapeutic agent for hyperglycemia and dyslipidemia for STZ-induced diabetic rats. The rats were grouped into untreated rats, STZ-induced diabetic rats without treatment, and STZ-induced diabetic rats treated with Pondoh salacca vinegar, Swaru salacca vinegar, Gula Pasir salacca vinegar, Madu salacca vinegar, or Madura salacca vinegar. Parameter observed included blood glucose, total cholesterol (TC), high density lipoprotein (HDL), low density lipoprotein (LDL), triglyceride (TG), malondialdehyde (MDA), superoxide dismutase (SOD), and pancreas histopathology of the samples. The results demonstrated that all salacca vinegars were capable of reducing blood sugar (from 25.1 to 62%) and reducing LDL (from 9.5 to 14.8 mg/dL), TG (from 58.3 to 69.5 mg/dL), MDA (from 1.1 to 2.2 mg/dL), and TC (from 56.3 to 70.5 mg/dL) as well as increasing HDL blood sugar of STZ-induced diabetic Wistar rats (from 52.3 to 60 mg/dL). Various salacca vinegars were also capable of regenerating pancreatic cells. Nevertheless, the ability of Swaru salacca vinegar to manage hyperglycemia and dyslipidemia appeared to be superior to other salacca vinegars. Swaru salacca vinegar is a potential therapeutic agent to manage hyperglycemia and dyslipidemia of STZ-induced diabetic rats.