Oxidative stress and impaired antioxidant defense mechanisms has been associated with the development and progression of diabetes, thus natural antioxidants might be an effective strategy for reducing diabetic complications. Dietary polyphenols are able to neutralize reactive oxygen species and have been shown to modulate a number of cellular processes including induction of endogenous antioxidant enzymes expression. Because of their high polyphenolic content the present study was undertaken to evaluate the effects of açai pulp on the liver antioxidant defense system in control and streptozotocin-induced diabetic rats. Female Fischer rats were divided into four groups, control (C), açai (A), diabetic (D), diabetic + açai (DA). Diabetes was induced by a single intraperitoneal injection of streptozotocin (35 mg/kg body weight). Animals in groups C and D were fed a standard diet (AIN-93); those in groups A and DA were given the standard diet with 2% (w/w) açai pulp added for 30 days. The mRNA expression of liver antioxidant enzymes catalase (CAT), Zn-superoxide dismutase (Zn-SOD) and Mn-SOD was evaluated by qRT-PCR. Diabetic rats showed reduced Zn-SOD expression compared to control animals. Dietary açai did not affect the mRNA levels of Zn-SOD and Mn-SOD but CAT expression was significantly lower in diabetic rats supplemented with açai. These data indicate that açai pulp can modulate liver antioxidant system in vivo.

Keywords: açai, diabetes, rats, ROS, antioxidant enzymes.

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