Diabetic cardiomyopathy is one of the most important complications of diabetes. The acute stage effects of diabetes on the heart and the aorta are not sufficiently known. Diabetes causes microvascular and macrovascular pathologies that affect many organs and systems. The heart is one of these organs. The most important mechanism for these effects is oxidative stress that results from decreased blood flow (1). Silibinin is a potent flavonoid antioxidant derived from a plant called Silybum Marianum (2). The aim of this experimental study was to investigate the effects of silibinin on the heart tissue of Streptozotocin (STZ)-induced diabetic rats through histochemical methods. There were five groups in our study as follows: The Control group, Diabetic Group, Treatment Group 1 (diabetic group treated with 100 mg/kg silibinin), Treatment Group 2 (diabetic group treated with 200 mg/kg silibinin), and the Silibinin Group (no diabetes, but 5 rats treated with 100mg/kg and 5 rats treated with 200 mg/kg silibinin). STZ was administered at a dose of 65mg/kg by intraperitoneal injection and Silibinin was administered through gastric gavage for 4 weeks. We found that histologically, there was a slight decrease in damage on the heart tissues of silibinin-treated diabetic groups. Silibinin seems to cure some deleterious effects of diabetes on heart tissue. Silibinin is a potent flavonoid antioxidant. Previous studies have demonstrated the antioxidant effects of silibinin on different pathologies and organs (3). In our study, the restorative effect of silibinin on diabetic heart damage can be attributed to the antioxidant properties of silibinin.