The spleen is one of the most important lymphoid organs, which has significant roles in cellular and humoral immunity. Diabetes causes some morphological changes and extensive paranchymal fibrosis in the spleen. The mechanism of these changes are related to the increased apoptosis of immune cells due to increased oxidative stress (1). Diabetes also causes significant depletion in the white pulp, dilatation in the blood vessels and collagen depositions in the spleen (2). Silibinin is a potent flavonoid antioxidant derived from Silybum Marianum. Previous studies have demonstrated the antioxidant effects of silibinin on different pathologies and organs (3). The aim of this experimental study was to investigate the effects of silibinin on Streptozotocin (STZ)-induced diabetic rat spleen 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 through intraperitoneal injection and Silibinin was administered through gastric gavage for 4 weeks. Our study is the first study investigating the effects of silibinin in the diabetic rat spleen. We found that silibinin slightly restores the deterioration in the general architecture of the spleen and reduces paranchymal fibrosis. This effect can be attributed to the antioxidant effects of silibinin, but the molecular mechanism of this effect remains unknown.