It has been asserted that consumption of dietary cholesterol (Chol) raises atherosclerotic cardiovascular diseases and that Chol causes an increase in free radical production. Hypercholesterolemic diet has also been reported to cause changes in the antioxidant system. In our study, different doses of Juniperus communis Linn (JCL) oil, a tree species growing in Mediterranean and Isparta regions and having aromatic characteristics, were administered to rats; and the levels of antioxidant enzymes superoxide dismutase (SOD), glutathione peroxidase (GSH-Px), catalase (CAT), and thiobarbituric acid reactive substances assay (TBARS) were examined in the heart tissue of rats. In this study, 35 Wistar Albino male adult rats weighing approximately 250-300 g were used. The rats were divided into five groups of seven each. The control group was administered normal pellet chow, and the Chol group was administered pellet chow including 2% Chol, while 50 JCL, 100 JCL, and 200 JCL groups were administered 50, 100, and 200 mg/kg JCL oil dissolved in 0.5% sodium carboxy methyl cellulose, respectively, in addition to the pellet chow containing 2% Chol, by gavage. After 30 days, the experiment was terminated and the antioxidant enzyme activities were examined in the heart tissue of rats. While consumption of dietary Chol decreases the activities of SOD, GSH-Px, and CAT in heart tissue of rats (not significant), administration of 200 mg/kg JCL oil in addition to Chol led to a significant increase in the activity of antioxidant enzymes. Administering Chol led to a significant increase in TBARS level. Administering 100 and 200 mg/kg JCL oil together with Chol prevented significantly the increase in lipid peroxides. As a result of the study, JCL oil showed oxidant-antioxidant effect in the heart tissue of rats.