The incidence of diabetes mellitus is increasing Nowadays. The growing number of oxidative stress and the diabetes is related with each other. Climbing number of free radicals causes several tissue damages by interacting with lipids, proteins and nucleic acids. To encounter with the effects of the defective radicals, the organism has some enzymatic and non enzymatic defense systems. However, the results of the researches points out a decrease in the antioxidant defense systems.

The fruit of “Laurocerasus officinalis Roemer” is widely used as a herbal treatment for diabetes In the Black Sea region of Turkey. Locally they call it “taflan”. It contains considerable amount of antioxidants. This is proven scientifically with many studies, but there is no animal studies about it till now. We aimed to investigate its anti diabetic effects on the islets of Langerhans of rat pancreas.

We prepared four groups of Albino rats. There were eight rats in each group. The 1st group was The healthy control group. The 2nd group was The diabetic control. The 3rd group was The taflan + STZ + taflan and The 4th group was The taflan. The 2nd group received only STZ. The 3rd group had taflan for one month. They received intraperitoneal injections of STZ and then fed with taflan for a month. The 4th group fed with taflan. 3rd and 4th group had taflan during each day from 8 AM to 4 PM. The 1st and 2nd groups had normal pallets all day, but the 3rd and the 4th groups had a pallet diet as ad libitum during 4 PM to 8 AM.

**Serum glucose levels:** The values were high in the 2nd group (≥ 200 mg/dL.). The other groups were low (≤ 200 mg/dL). **Body weight:** There was weight loss in the 2nd group and there were no significant changes in the other groups. **HDL, LDL, VLDL, CHOLESTEROL TRIGLYCERIDE:** HDL was low. LDL, VLDL, cholesterol and triglyceride were high in the second group. HDL was high in the 1st, 3rd and 4th groups. LDL, VLDL, Cholesterol and triglyceride were low in the 1st, 3rd and 4th groups. **Tissue; MDA and SOD values:** MDA was high in 2nd group and it was low in 1st, 3rd and 4th groups. SOD was low in 2nd group and it was high in 1st, 3rd and 4th groups. **Immunohistochemistry findings:** Insulin antibody staining was negative in the 2nd group. It was positive in 1st, 3rd and 4th groups. Glucagon was positive in all groups. **Electronmicroscopy observation:** 2nd group: Secretory granules diminished. GER dilated and the crista of mitochondria vanished. 3rd group: Similar morphological features as 1st and 4th control groups.

**Conclusion:** The fruit of Laurocerasus officinalis Roemer have protective effects against the development of the experimental diabetes and its complications in rat.

**Acknowledgement:** This study was supported by “İstanbul Üniversitesi Bilimsel Araştırma Projeleri (BAP)” Istanbul University Scientific Research Projects. Project Number: 4118
Fig. 1: Immunohistochemical staining for insulin (X10). A: Islet cells of the healthy control group. B: Islet cells of the diabetic control group. C: Islet cells of the taflan + STZ + taflan group. D: Islet cells of the taflan group.