Abstract

**Purpose:** Oxidative stress may contribute to the pathogenesis of diabetic ocular complications. Recent reports have shown that chemical molecular chaperone 4-phenylbutyric acid (4-PBA) can suppress oxidative stress by attenuating endoplasmic reticulum (ER) stress. We therefore hypothesized that 4-PBA could provide ocular protection through the suppression of oxidative stress in diabetic rats.

**Methods:** Waster rats were divided into four groups: a normal control (NC) group, high fat diet (HFD) group, diabetic group (high fat diet with streptozotocin), and 4-PBA treated group (high fat diet with streptozotocin and 4-PBA). The occurrence of cataract was monitored by slit lamp ophthalmoscope. At the end of experiment, blood glucose, insulin, cholesterol and triglyceride were determined in all groups. In addition, malondialdehyde, reduced glutathione, catalase, superoxide dismutase activities and sFas were examined in blood, lens and retina of all rats. Alterations in protein content in the lens were investigated.