
Research Article



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**EFFECT OF CYNARA SCOLYMUS L ON
FASTING BLOOD SUGAR OF RAT**

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Abstract

Since ancient times, plants have been an exemplary source of medicine. Iranian literature mentions the use of plants in treatment of various human ailments. In the streptozotocin induced diabetic rats treated separately with diet of dry leaves of *Cynara scolymus* L. Administration of 200 mg/kg body weight of diet of *Cynara scolymus* L to STZ-diabetic animals daily 3 times for one day brought down fasting blood sugar (FBS) levels while in the untreated group FBS remained at a higher value. The present paper reviews dry leaves *Cynara Scolymus* L showe that the experimentally induced- diabetes increased the level of plasma glucose by 183.1% of control level. However, treatment of STZ-diabetic rats with the juices of dry leaves *Cynara Scolymus* L reduced their plasma glucose levels by 66.8%, compared with the STZ-diabetic group.

Keywords: Fasting, Blood sugar, *Cynara scolymus* L, Rat.

Introduction

Globally, diabetes is the fifth leading cause of death, the majority of which are related to various human diseases, including cardiovascular and other metabolic diseases, atherosclerosis, hyperlipidemia thrombosis, hypertension and Complications are the major cause of morbidity and mortality in diabetes (1,2,3). There are an estimated 143 million people in the world with diabetes and increasing obesity and a sedentary lifestyle (4,5). Some Harbal plants decreased hyperglycemic and fasting blood sugar tests conducted in rabbits (6). The medicinal use of dry leaves *cynara Scolymus* L dates back

handerads of years, but until recently there has been little scientific support of its therapeutic and pharmacological properties. In the present study, aqueous extract of dry leaves *cynara Scolymus* L was found to have potent antidiabetogenic activity that reduces blood sugar level in streptozotocin (STZ)-induced diabetic male rat.

Materials and methods**Plant material**

All plant materials used in the study were collected in garden in Behbahan city (Khozestan Iran) and

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were identified with the herbarium collection in the Department of Biological Sciences, Faculty of Science, and University of shahid chamran Ahwaz.

Butanol extract of cynara Scolymus L

Air-dried plant leaves of cynara Scolymus L (50 g) were powdered in an electric grinder and then mixed with 1600 ml of distilled water (15 min) and mixed at room temperature for 24 h. The mixture was then centrifuged and filtered with Whatman paper and solution distilled water kept in 10–20°C and percipitate (264.4 g) mixed with 509.4 ml ethanol at room temperature for 24 h.

Animals

Albino rats (203–250 g) of male were obtained from the experimental animal facility of the Ahwaz

Jondishapur University of Medical Sciences. For plant extract, 20 rats (10 streptozocin-induced diabetic treated with the extract, 10 normoglycemic untreated (control) were used. The animals were kept in the animal house unit for 6 weeks.

Streptozocin-induced hyperglycemia

Diabetes was induced by intraperitoneal administration of streptozocin (Sigma, Germany) 60 mg streptozocin dissolved in 1000 ml distilled water, in a dose of 60 mg/kg (Junodet al., 1969). Experiments on hyperglycemic animals were carried out 1 week after streptozocin injection. During this period, diabetes was well established with blood glucose levels >316 mg/100 ml. The blood concentration of glucose in normal rats was in the range of 80–110 mg/100 ml.

Table No. 01: Effect of cynara Scolymus L on STZ -diabetic rat

S. No	Blood sugar (mg /ml) before STZ	Blood sugar (mg /ml) one week after STZ	Blood sugar (mg /ml) 4 weeks after STZ and treat with cynara Scolymus L
1	240	528	450
2	247	460	226
3	250	430	240
4	250	316	167
5	245	583	468
6	203	137	134
7	320	558	450
8	295	585	430
9	225	470	230
10	230	520	270

Result

The effect of oral administration of dry leaves Cynara Scolymus L on plasma glucose is presented in. The experimentally induced- diabetes increased the level of plasma glucose by 183.1% of control level (Table 1). However, treatment of STZ-diabetic rats with the juices of dry leaves Cynara Scolymus L reduced their plasma glucose levels by 66.8%, compared with the STZ-diabetic group.

Discussion

The objective of the present study was to evaluate the preventative effect of 6 weeks dry leaves Cynara Scolymus L treatment on streptozotocin-diabetic rats. The results of plasma glucose (Table 1) is consistent with the finding other researchers with other sources (Augusti and Sheela (7) and Campos et al. (8) in rats), found a significant decrease in blood sugar level in the Cynara Scolymus L treated STZ-diabetic rats.

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