INTRODUCTION
A study of ancient literature indicates that diabetes was fairly well known and well conceived as an entity in India. The nature has provided abundant plant wealth for all the living creatures, which possess medicinal virtues. Therefore, there is a necessity to explore their uses and to conduct Pharmacognostic and pharmacological studies to ascertain their therapeutic properties. In fact, nowadays diabetes is a global problem. Hence, the present study aims to open new avenues for the improvement of medicinal uses of Morus alba for the area for diabetes. Another important objective of such study is to bring the anti-diabetic medicinal plants sector on a firm scientific footing, raise awareness and add value to the resource. Dried petroleum ether (60-80°C) extracts of leaves of Morus alba were subjected for hypoglycemic activity in New Zealand rabbits (1.5-3.5 kg). Blood sugar level was determined using digital glucometer. The oral administration of leaf extracts at doses of 200 mg/kg lead to a significant blood glucose reduction. This laid the foundation to study the active compounds of such anti-diabetic plants that are responsible for the hypoglycemic activities. It also proves the traditional claim of Kachch region with regard to Morus Alba for its anti-diabetic activity.

Keywords: Hypoglycemic activity, Morus alba, Alloxan-induced diabetes

MATTERIAls AND METHODS
Collection and identification Morus alba leaves were collected from kachch region, Gujarat. The leaves were shed, dried, powdered mechanically and sieved. It was extracted with ethanol; by cold maceration method. Experimental animal New Zealand Rabbits weighing 1.5-3.5kg. Were given by department of Pharmacology, n. r. vekaria institute of pharmacy, Junagadh. After the approval of institutional animal ethical committee. Animals of either sex housed in groups five under standard laboratory conditions of temperature (25±2) or 12hrs/12hrs-light/dark cycles. They had free access to standard Pellet Chow and water ad libitum. The animals were allowed to acclimatize to laboratory conditions for not less than 10 days after their arrival.

Experimental Design
Diabetes was induced using alloxan monohydrate (80 mg/kg). Only alloxanised hyperglycemic and glycosuria animals were used for further studies. Animals were fasted for 18h before the experiment and divided into 5 groups (5 animals in each group). The first group (Group I) served as control which received normal saline and the second group (Group II) served as diabetic control received alloxan monohydrate alone. The third group (GroupIII) received standard drug metformin 0.5 mg/kg ,Group IV - animals treated with extract alone (ethnolic). Group V - animals treated with extract alone (ethnolic) All the animals were regularly observed for their general behavior Effects on blood glucose levels dried petroleum ether (60-80°C) extracts of Leaves of Morus alba (50, 100, and 200 mg/kg) were suspended in 1% tween 80 and subjected for hypoglycemic activity in New Zealand rabbits (1.5-3.5 kg). Diabetes was induced by the intravenous administration of alloxan (80 mg/kg) 12 after anesthesia with diethyl ether. Forty-eight hours later, the blood (1 mL) was collected from the orbital veins and subjected for glucose estimation using Ketone test strip and a digital ketone meter. The results were evaluated through Statistical package software (SPSS, version 16) and results were evaluated using one way ANOVA followed by Dunnet’s post hoc test. The significance level was set at P<0.05. Results and Discussion

Leaf extracts of Morus alba was administered to normal rabbits at doses of 200 mg/kg (Group I) and 400 mg/kg (Group II). The blood glucose level was determined using digital glucometer. The oral administration of leaf extracts at doses of 200 mg/kg lead to a significant blood glucose reduction. This laid the foundation to study the active compounds of such anti-diabetic plants that are responsible for the hypoglycemic activities. It also proves the traditional claim of Kachch region with regard to Morus Alba for its anti-diabetic activity.

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sinus into tubes and immediately used for the determination of blood glucose. Only animals that presented with glycemic levels equal to or above 200 mg/dL were submitted to treatments, which consisted of a single oral administration (by gavages) of extracts of leaves of Polyalthia longifolia. The blood was collected after 0.5h, 1h, 2h, 4h, 6h, 8h, 10h, 12h and 24h of a single oral treatment of extract for blood glucose measurements using a glucometer.

**Phytochemical screening**

Preliminary Phytochemical screening of ethanolic extract was performed for the presence of alkaloids, flavonoids, tannins, and glycosides, steroids.

**Statistical analysis**

The data was statistically analyzed by one-way ANOVA followed by Dunnett multiple comparison test with equal sample size. The difference was considered significant when p<0.001. All the values were expressed as mean ± standard deviation (S.D.).

**TREATMENT OF DIABETIC RATS**

Five groups of five rabbits were used in the experiment. Group 1 served as normal healthy control group and group 2 as diabetic untreated control. Group 3 as standard drug. Group 4 and 5 was treated with a intervened dose extract for 10 days. At the beginning and end of the experiment, FBG was estimated. Blood glucose level (PPG) was estimated daily during the treatment period.

**ANTI-DIABETIC ACTIVITY**

The diabeticogetc rabbits, having blood glucose level more than 250mg/dl they were selected for the study. The rabbits were deprived for food 18 hours before the experiment and water is allowed, but on the day of experiment water is withdrawn. Animals were divided into five groups, contained six rabbits in each group. The blood samples were withdrawn at interval of initial 0 (zero hours), 0.5, 1, 2, 4, 8, 10, 12 and 24 hours of administration of single dose and blood sugar levels were measured by glucometer.

**RESULTS**

The effect of single oral administration of petroleum ether extracts of Polyalthia longifolia leaves are shown in [Table 1 and Figure 1.](image) Experimental studies reveals that the petroleum ether extracts from *Morus alba* leaves (50, 100, and 200 mg/kg) orally administered produced a significant decrease in the blood glucose level in the model of alloxan-induced diabetes in rabbits. Maximum reduction in blood glucose level was seen at dose of 200 mg/kg of ethanolic extracts of *Morus alba* leaves.

**DISCUSSION**

Alloxan causes diabetes through its ability to destroy the insulin-producing beta cells of the pancreas. In vitro studies have shown that alloxan is selectively toxic to pancreatic beta cells, leading to the induction of cell necrosis. The cytotoxic action of alloxan is mediated by reactive oxygen species, with a simultaneous massive increase in cytosolic calcium concentration, leading to a rapid destruction of beta cells. Experimental studies reveals that the ethanolic extract from *Morus alba* leaves (50, 100,200 and 300 mg/kg) orally administered produced a significant decrease in the blood glucose level in the model of alloxan-induced diabetes in rabbits. It also proves the traditional claim with regard to *Morus alba* and its antidiabetic activity.
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REFERENCES

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