OBJECTIVE

Diabetic problem has become more common in last few decades due to pressure of growing population, ecological disturbances and fast changing life styles. According to World Health Organization projections, the diabetic population is likely to increase to 300 million or more by the year 2025. Moreover, due to increasing level of health awareness and because of fear of toxic medicines, the urge of a choice of safe medicine has become more intense.

Currently available therapies for diabetes include insulin and various oral antidiabetic agents such as sulfonylureas, biguanides, α-glucosidase inhibitors, and glinides, which are used as monotherapy or in combination to achieve better glycemic regulation. Many of these oral antidiabetic agents have a number of serious adverse effects; thus, managing diabetes without any side effects is still a challenge. These treatments have their own drawbacks, ranging from the developing of resistance and adverse effects to lack of responsiveness in large segment of patients population. Sulfonylureas lose effectiveness for 44% of patients within six years. Also, these treatments are associated with side effects or even toxic effects (e.g., thiazolidinediones may cause liver toxicity; sulphonylureas might worsen heart disease, lower the glucose below the normal range and increase the body weight gain; bloating, flatulence, diarrhea and abdominal discomfort and pain are the major complaints with glucosidase inhibitors). Moreover, none of these glucose-lowering agents adequately controls the hyperlipidemia that frequently met with the disease. The limitations of currently-available oral antidiabetic agents either in terms of efficacy/safety coupled with the emergence of the disease into a global epidemic have encouraged a concerted effort to discover drugs that can manage type 2 diabetes more efficiently. Also, with increasing incidence of diabetes mellitus in rural population throughout the world and due to adverse effects of synthetic medicine, there is a clear need for development of indigenous, inexpensive botanical sources for anti-diabetic crude or purified drugs.

The effects of medicinal plants may delay the development of diabetic complications and even assist in correcting the metabolic abnormalities. Moreover, during the past decade and especially in last few years some of the new bioactive drugs isolated from hypoglycemic plants showed antidiabetic activity with more efficacy than synthetic oral hypoglycemic agents. Hence plants, as folk remedies, can be widely used to treat diabetes.
Therefore the main objective of the proposed study is to identify & isolate specific constituent(s) responsible for hypoglycemic activity (from *A. indica*) which will be helpful to formulate new & effective antidiabetic product without any adverse effects even on prolonged use. The formulated drug will be economic also since the plant, *A. indica* is easily available in most of the region of India and can be collected at any season.