



Research Highlight

Nigella sativa (BLACK CUMIN): AN EMERGING HOPE TO TREAT DIABETES

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Diabetes Mellitus (DM) is a threatening disease which deteriorates the human health globally and by 2030 it could escalate into global pandemic¹. This disease is characterized by hyperglycemia, caused by defects in insulin action or secretion².

Diabetes mellitus has three main types i.e., Type 1 diabetes, Type 2 diabetes and gestation diabetes. Type 1 diabetes also referred to as Insulin-Dependent Diabetes Mellitus (IDDM) or juvenile diabetes", while type 2 diabetes known as "Non Insulin-Dependent Diabetes Mellitus (NIDDM)" or adult-onset diabetes³.

Type 1 diabetes is produced due to the destruction of pancreatic β -cells while insulin resistance is more likely to cause type 2 diabetes.

Accordingly, streptozotocin (STZ) is a natural alkylating antineoplastic agent that is chiefly poisonous to the insulin-producing beta cells of the pancreas in mammals⁴.

STZ is a diabetogenic agent which is used to produce type 1 diabetes in experimental animals.

Above 1000 different plants have been reported to possess medical properties for

traditional treatment of diabete⁵. In this regard, *Nigella sativa* commonly known as black seed is a potential medicinal plant which belongs to the family Ranunculaceae. It is reported that black cumin seed possess antibacterial⁶, antioxidant⁷, antidiabetic, anti-inflammatory as well as hypoglycemic properties⁸.

In Islamic Literature, black seeds considered as one of the greatest healing medicine. It is also mentioned that black seeds is the remedy for all diseases except death⁹.

These facts motivated the scientists for designing a new research in order to study the role of *Nigella sativa* seed aqueous extract, oil and its active ingredient thymoquinone in protecting against cellular damage of pancreatic cells in STZ-induced diabetic rats by utilizing light and transmission electron microscope¹⁰.

For this purpose, research team selected 5 equal sized groups of male Sprague-Dawley rats. The groups included; control, STZ induced diabetic, STZ diabetic- aqueous extract treated (2 mL kg^{-1}), STZ diabetic-oil treated (0.2 mL kg^{-1}) as well as STZ diabetic-

thymoquinone treated (5 mg kg^{-1}) groups.

At the end of this experiment, it was found that *N. sativa* extracts are effectual to lessen the cellular damage caused by STZ. Moreover, the active ingredient thymoquinone was found to be the most effective against STZ diabetes as its administration vanished most of the poisonous effects.

Conclusively, *N. sativa* is a medicinal herb which has a therapeutic potential to treat diabetes mellitus without causing any side effects on human health.

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