



Antidiabetic and antineuropathic effect of *Onosma dichroanthum* extract on acute stress in STZ diabetic mice

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Background and objectives: Diabetes is a metabolic disease with hyperglycemia, decrease in insulin secretion or de-sensitization of peripheral cells to insulin. *Onosma dichroanthum* is a species of Boraginaceae and is used in traditional medicine for its anti-oxidant, anti-inflammatory and antibiotic properties, however data on its anti-diabetic effects are limited. This research has been designed to assess its anti-diabetic, anti-neuropathy and anti-oxidative stress effects in an *in vivo* model of diabetes. **Methods:** The hydroalcoholic extract was prepared from over-ground organs, (shoots and leaves) and underground organs (roots), and administered by gavage (50 mg/kg) for 3 weeks to mice in a streptozocin induced diabetic model. After the treatment period, blood glucose, weight and neuropathy were determined and for positive control, metformin (50 mg/kg) was used. After removing the brain and liver of mice and homogenization of tissues, the MDA and glutathione contents of the tissues have been assayed by a colorimetric method. **Results:** The results of this research demonstrated anti-diabetic properties of *O. dichroanthum* hydro alcoholic extract which demonstrated beneficial effects for some parameters such as hypoglycemia and reducing MDA. The underground organs as roots extracts showed stronger effects. However for increasing weight, diminishing neuropathy and increasing GSH contents, the effects of over-ground organs as leaves and shoots extracts were more significant. **Conclusion:** The results of this research indicated the anti-diabetic and anti-neuropathy properties of *Onosma dichroanthum* as a medicinal herb. Considering the anti-oxidant ability and limited side effects, the plant could be used along with other anti-diabetic drugs.

Keywords: diabetes, GSH, MDA, neuropathy, oxidative stress, *Onosma dichroanthum*