

**Abstract Type : Poster**

**Abstract Submission No. : PO-1454**

## **Nephroprotective effect of *Brassica oleracea* sprouts against streptozotocin induced diabetes nephropathy via alteration of SGLT1 and GLUT2**

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**Objectives:** Diabetes nephropathy (DN) is a serious risk of diabetes mellitus and its leading global end-stage development of renal disease. Diverse causes, such as asthma, hyperglycemia, advancing age and obesity, have been shown to lead to the development of DN. The aim of this study and experiments is to estimate the nephroprotective effect of *Brassica oleracea* sprouts extract in streptozotocin induced diabetic nephropathy in rats.

**Methods:** Diabetes is induced in rats by intra-peritoneal injection of Streptozotocin. Diabetes introduction of was verified 3 days post administering Scheduled doses of methanolic extract of *Brassica oleracea* sprouts were given to the diabetic rats. The life span of this experiment was 28 days. Rats were fasted overnight for oral glucose tolerance test; renal parameter; antioxidant parameters and inflammatory parameters were also estimated. After these rats were euthanized for histopathological studies.

**Results:** One of the three doses of methanolic extract of *Brassica oleracea* sprouts showed results almost similar and sometimes even better than Glibenclamide (standard drug used for the experiment). Depletion in blood glucose level, renal parameters such as creatinine, blood urea nitrogen, total protein, albumin and urea were seen after administering *Brassica oleracea* extract doses. Effects on HOMA-IR and HOMA-  $\beta$ , plasma insulin level, glycated hemoglobin and several other parameters was seen to be positive. Also, antioxidant parameters, GLUT2 and SGLT1 showed enhancement in diabetic condition of rats. It can be inferred that methanolic *Brassica oleracea* sprouts extract had a noteworthy effect on Streptozotocin induced rats. Especially 200mg/kg dose had an impressive results record. Elevated level of GLUT2 and SGLT1 in rats was reduced on treatment with *Brassica oleracea* sprouts extract.

**Conclusions:** This shows that *Brassica oleracea* extract has a remarkable nephroprotective effect.