**PLS - 536**

# EFFECT OF TRADITIONAL HERBAL PLANT EXTRACTS ON GLUCOSE LEVEL IN YEAST CELLS FOR DIABETIC DISORDER

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**Abstract**

In the present study, the following herbal plants were tested for their anti-diabetic activity. The selected study species such as *Justicia tranquebariensis* L.f. belongs to the family Acanthaceae, *Momordica charantia* L. belongs to the family Cucurbitaceae and *Sesbania grandiflora* (L.) Poiret belongs to the family Fabaceae. The methanolic extracts were prepared from the leaves of study species by soxhlet extraction method. Hence the anti-diabetic activity was determined by glucose uptake in yeast cells. The yeast cells were suspended in various concentrations of plant extract (10, 25, 50, 75 and 100 %) with two different concentrations of glucose (50 mg/ml to 100 mg/ml). The plant extract enhances the yeast cells to take in the glucose and the amount of glucose uptake by yeast cells was estimated by spectrophotometrically at 540 nm. All the extracts of plant species are exhibit potent anti-diabetic activity. In addition, the results identified the concentration of plant extracts increases the percentage of glucose uptake also increases. The overall study results, it is concluded that the maximum percentage of glucose uptake was observed in 100 % concentration of extracts at both level of glucose concentrations. The results revealed the maximum percentage of glucose uptake 93.96 for *J. tranquebariensis* followed by 93.70 for *M. charantia* was observed at 50 mg/ml glucose concentration respectively and the maximum percentage of glucose uptake 93.66 for *S. grandiflora* was observed at 100 mg/ml glucose concentration. The present study provided results to justify the traditional claim of herbs for antidiabetic activity. Hence, the further extended the work to confirm anti-diabetic activity by acute toxicity studies and on *in vivo* models.

**Keywords:** Herbal plants, anti-diabetic activity, glucose uptake