

## Comparative evaluation of hypoglycemic activity of *Cucumis sativus* and *Cucurbita pepo* whole plant in normal and streptozotocin-induced diabetic rats

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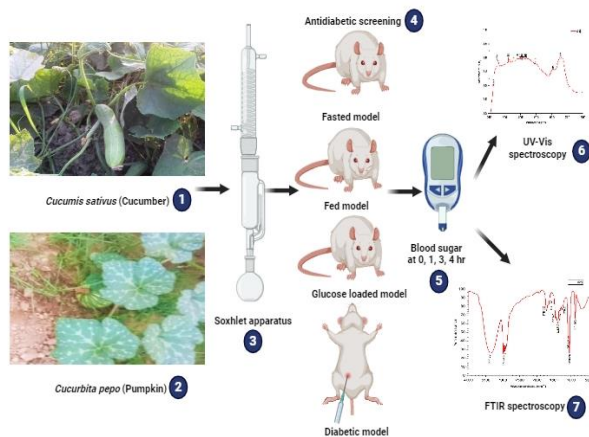
### INTRODUCTION

**Diabetes Mellitus (DM)** is a metabolic disorder characterized by chronic hyperglycemia resulting from defects in insulin secretion, insulin action, or both. Early symptoms of DM are glycosuria, polyurea, polydipsia, polyphagia, unexpected weight loss, fatigue etc. The persistently elevated sugar level induced diabetic complications results in damage of various organs. Chronic DM complications: Cardiovascular disease, Retinopathy, Nephropathy, Neuropathy etc. Various medicinal plants have been studied using modern scientific approaches and results have recorded the potential of medicinal plants in the area of pharmacology.

### OBJECTIVES

- Collection and Extraction of whole plant of *Cucumis sativus* (CS) and *Cucurbita pepo* (CP).
- *In-vivo* blood glucose lowering efficacy of plant extracts on fasted, fed, glucose-loaded and streptozotocin-induced diabetic rats.
- Molecular spectroscopic characterization using UV-Vis and FTIR spectroscopy.

### MATERIALS AND METHODS



1, 2 represents the tested plants used in this analysis, 3 represents the method used for the plant extraction, 4, 5 represents the antidiabetic screening models and blood sugar determination up-to 4hr time interval and 6, 7 represents the techniques used for the phytochemical profiling.

### ACKNOWLEDGEMENT

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### RESULTS

#### Diabetes *in-vivo* screening of CS and CP plant at a single dose of 250 mg/kg b.w.

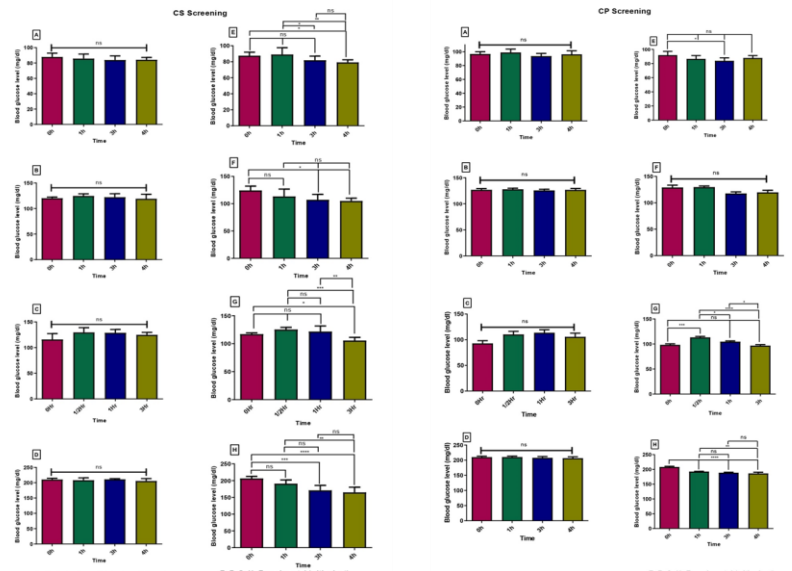
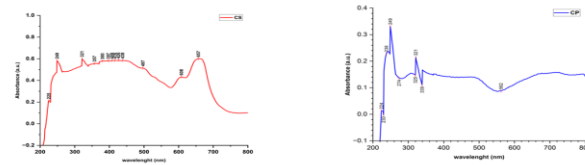


Fig. 1. A, B, C, D- Control (without plant) E, F, G, H- Experimental (with plant) Significance between the control and experimental group: \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$ , \*\*\*\* $P < 0.0001$ .

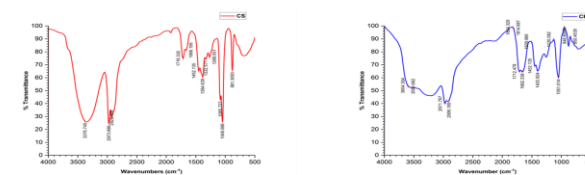
Fig. 2. A, B, C, D- Control (without plant) E, F, G, H- Experimental (with plant) Significance between the control and experimental group: \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$ , \*\*\*\* $P < 0.0001$ .

#### UV-Vis spectroscopy



UV-visible spectral analysis of the ethanolic extracts of CS and CP from 200 to 800 nm.

#### FTIR spectroscopy



FTIR spectral analysis of the ethanolic extracts of CS and CP from 500 to 4000 nm.

### CONCLUSIONS

Our observations through this experiment are suggestive of facts that 95% ethanolic extract of *Cucumis sativus* and *Cucurbita pepo* possess a hypoglycemic activity in normal & diabetic male rats and can improve oral glucose tolerance probably by stimulating the insulin release from beta cells or through insulin-like action.

### REFERENCES

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