

Neuroprotective Potential Of Gentisic Acid In Aluminium Chloride-induced Alzheimer’s-like Neurodegeneration In Wistar Rats

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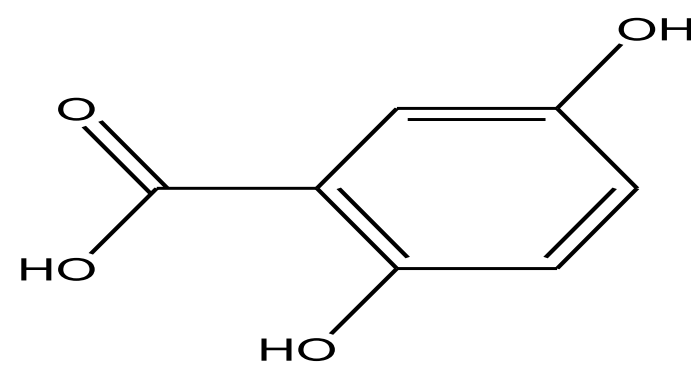
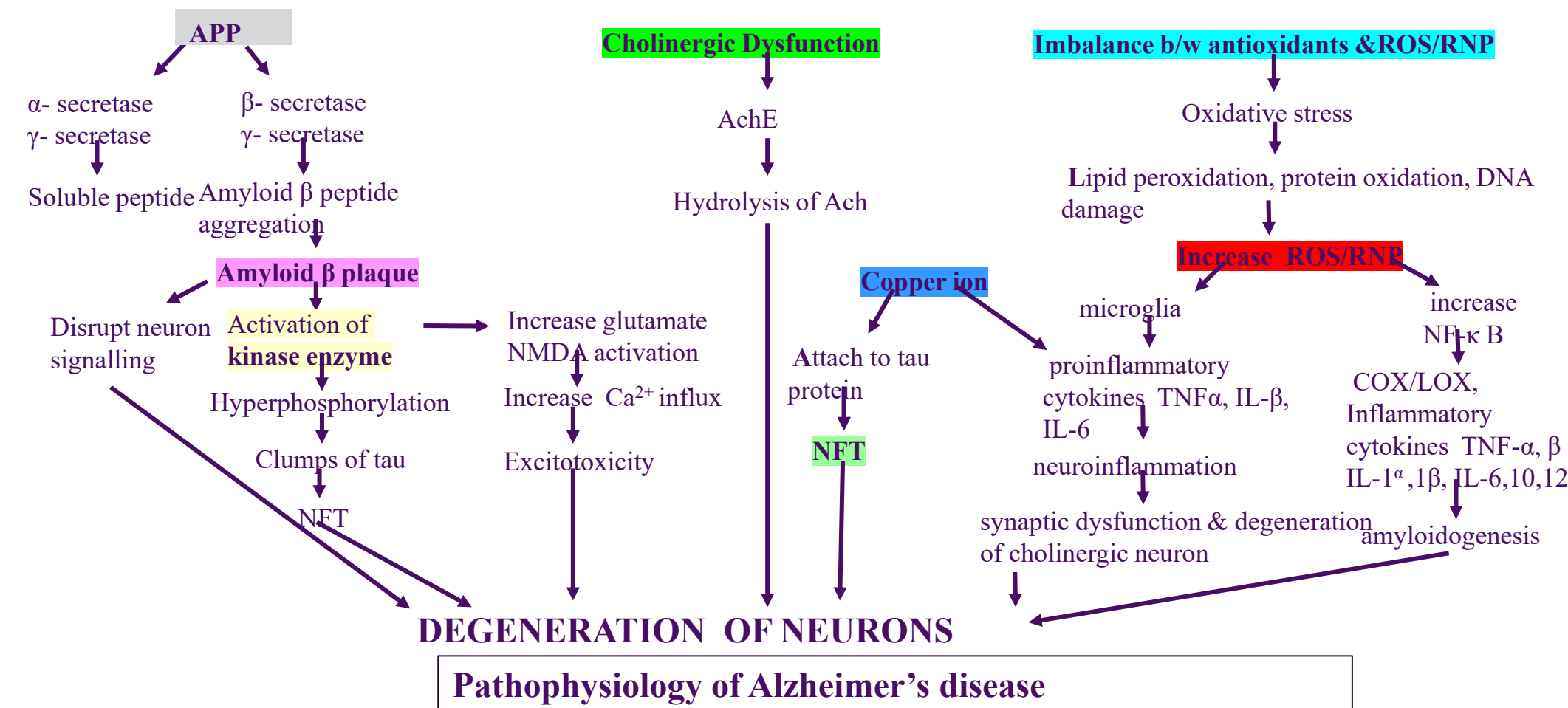
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INTRODUCTION

- AD is most common type of dementia, it is characterized by the gradual loss of cognitive function, including memory decline, impaired thinking, and changes in behavior.
- Dementia is the term for the progressive loss of behavioural and cognitive functions, such as thinking, remembering and reasoning.
- Gentisic acid (2, 5 dihydroxybenzoic acid) is a diphenolic compound and a derivative of benzoic acid.



Structure of Gentisic acid

AIM AND OBJECTIVES

Evaluation of neuroprotective effect of Gentisic acid against Aluminium Chloride induced Alzheimer's disease in Wistar Rats.

- 1 To evaluating the behavioral effect of Gentisic acid by using Morris water maze test on experimental animals i.e. Wistar rats.
- 2 To evaluate the behavioral effect of Gentisic acid by using Y-maze test on experimental animals i.e. Wistar rats.
- 3 To study the neuroprotective effect of Gentisic acid by assessment of various biochemical parameters.

METHODS

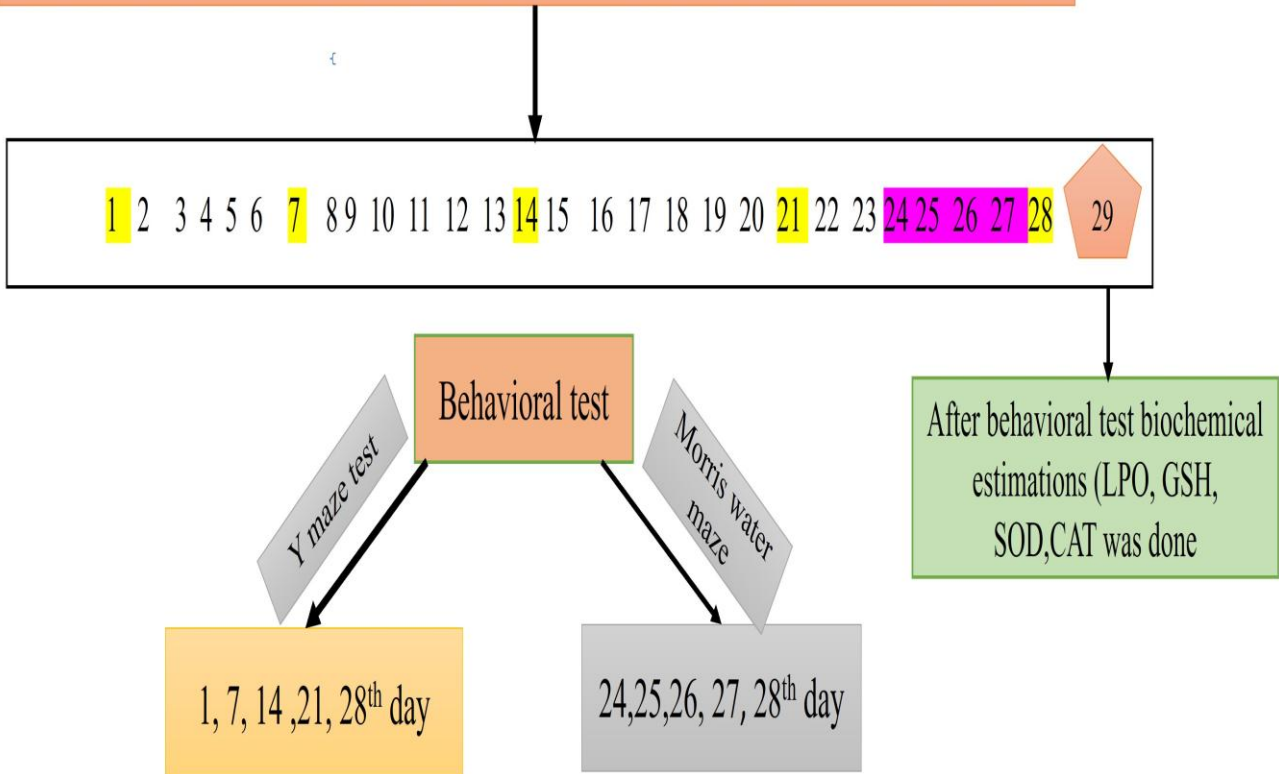
Experimental Animals: Adult Wistar rats (150–200 g) of either sex.

Experimental design

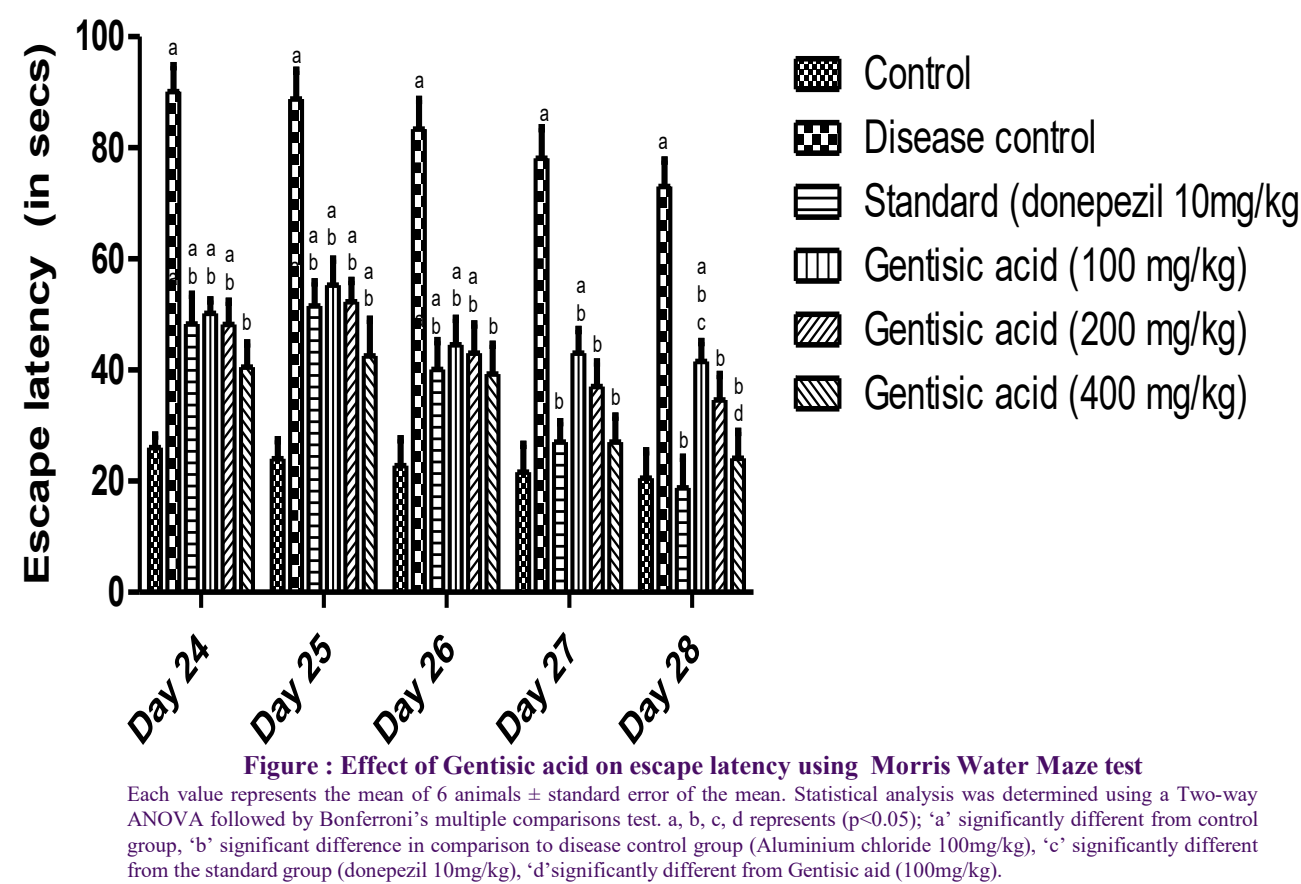
S.No.	Group Name	Treatment	Species	Number of animals Required
1.	Control	Vehicle	Rats	6
2.	Disease control	Aluminium chloride 100mg/kg for 28 days p.o	Rats	6
3.	Standard	Donepezil 10 mg/kg for 28 days p.o	Rats	6
4.	Gentisic acid (low dose)	Gentisic acid 100mg/kg b.wt/oral administration, an hour prior to aluminium chloride (AICl3 : 100 mg/kg)	Rats	6
5.	Gentisic acid (medium dose)	Gentisic acid (200mg/kg b.wt) oral administration, an hour prior to aluminium chloride (AICl3 : 100 mg/kg)	Rats	6
6.	Gentisic acid (High dose)	Gentisic acid (400mg/kg b.wt) oral administration, an hour prior to aluminium chloride (AICl3 : 100 mg/kg)	Rats	6
Total animals required				36

TREATMENT SCHEDULE

The treatment protocol included the administration of aluminium chloride (100mg/kg) and donepezil (10mg/kg) and Gentisic acid was administered at doses of 100 mg/kg, 200 mg/kg, and 400 mg/kg for 28 days.



RESULTS



RESULTS

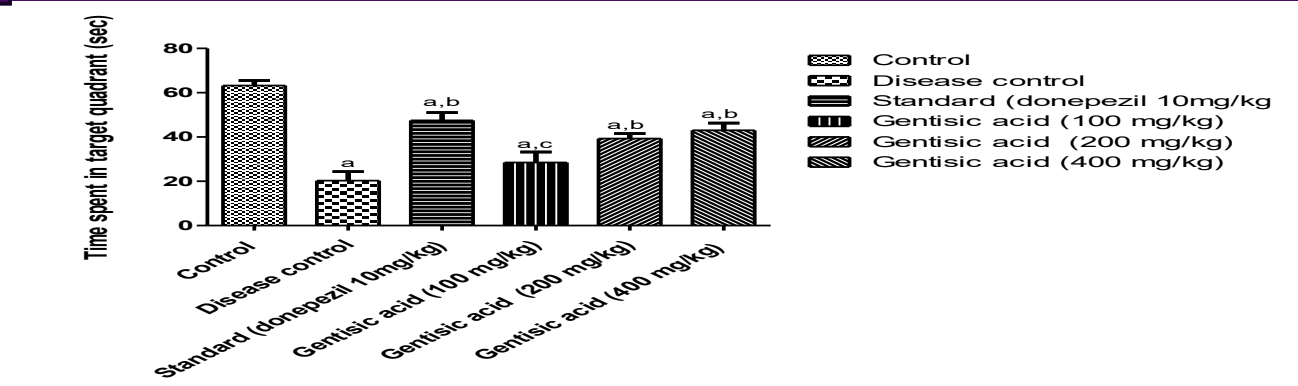


Figure : Effect of various pharmacological interventions on Mean TSTQ using Morris Water Maze

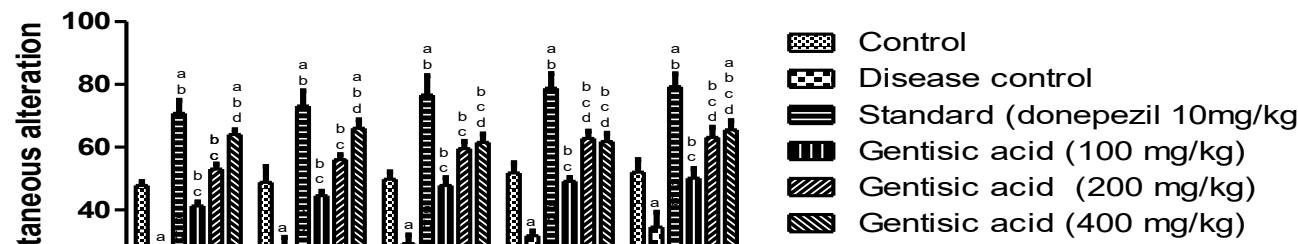


Figure : Effect of Gentisic acid on % spontaneous alteration using Y-Maze test

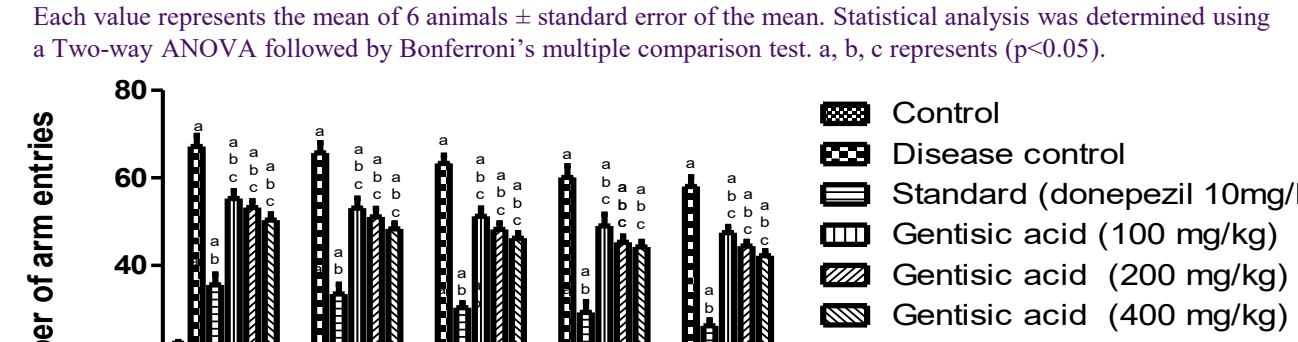


Figure: Effect of Gentisic acid on number of arm entries using Y-Maze test

BIOCHEMICAL ESTIMATIONS

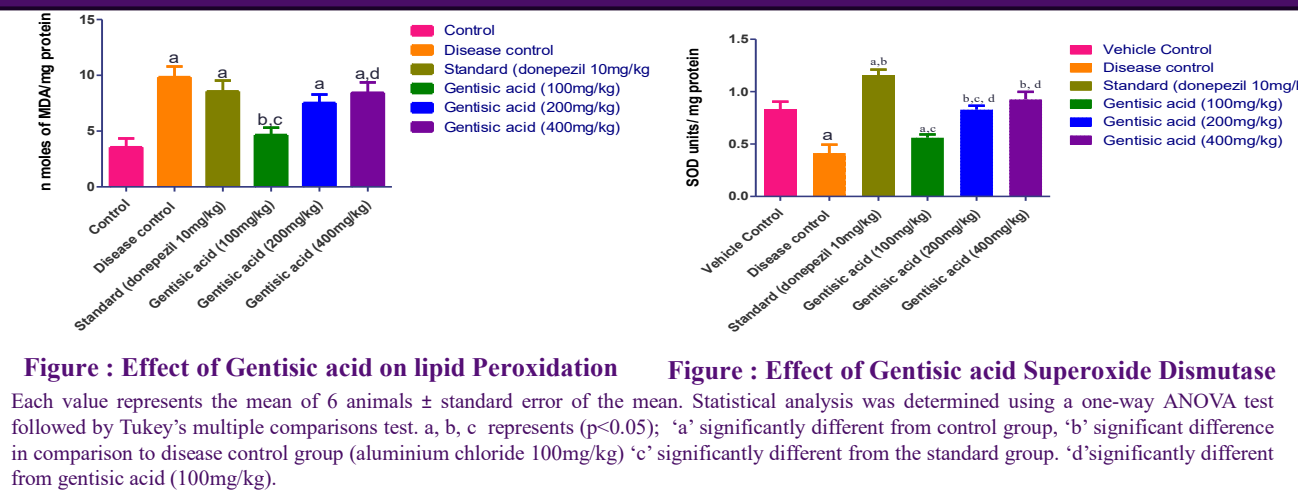


Figure : Effect of Gentisic acid on lipid Peroxidation

BIOCHEMICAL ESTIMATIONS

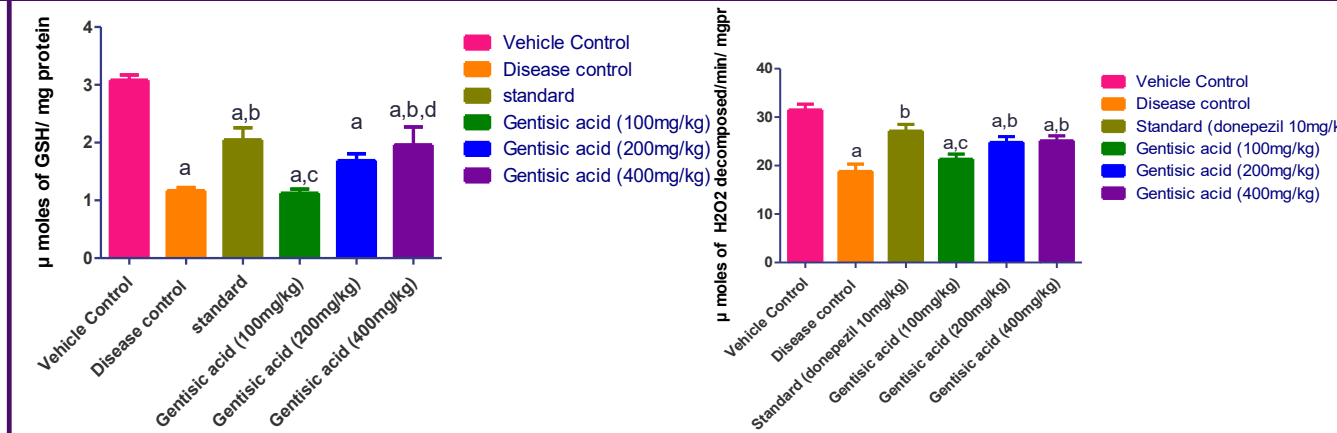
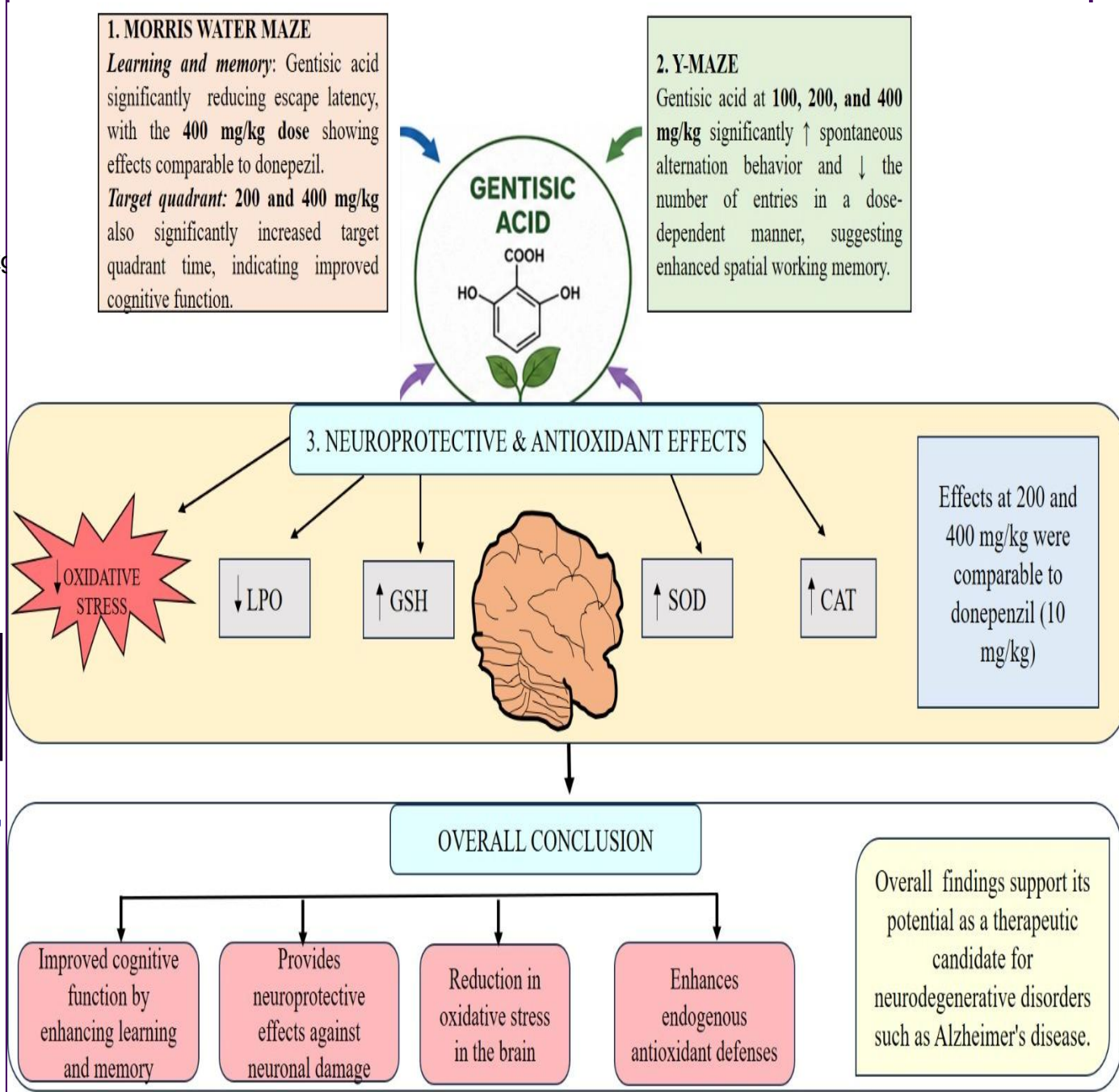


Figure : Effect of Gentisic acid on Reduced Glutathione

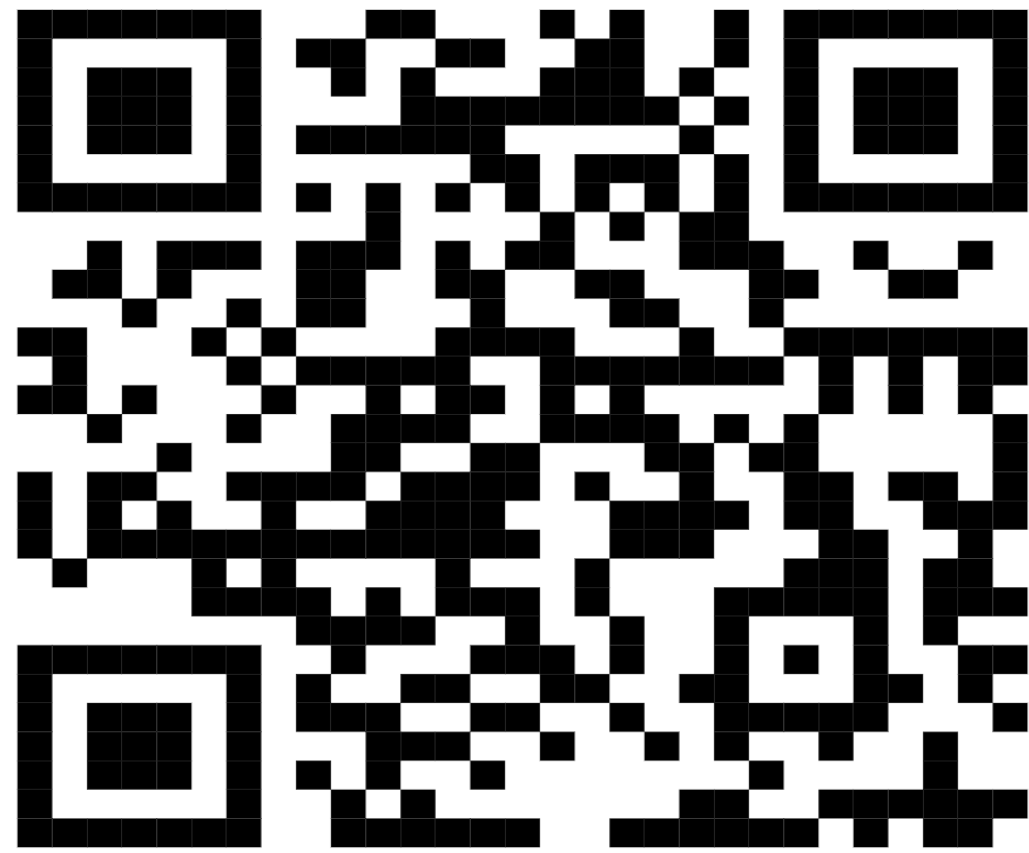
Figure : Effect of Gentisic acid on Catalase

CONCLUSIONS



REFERENCES

References QR code



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