EP-02

Mangiferin Improves 3-Nitropropionic Acid Induced Huntingtin Disease-Like Memory Impairment and Motor Incoordination in Rats

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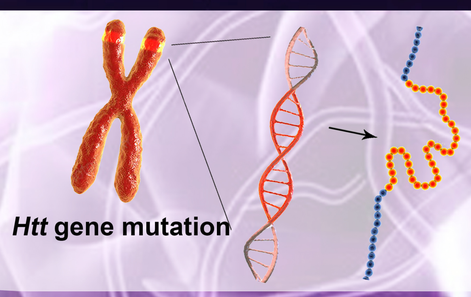
Background

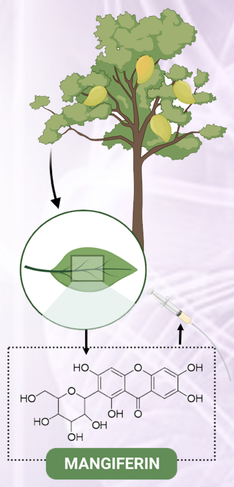


Huntington's disease (HD) is an **autosomal dominant**, inherited neurological disorder associated with the pathogenic ***htt* gene mutation** and progressive neuronal **cell degeneration**. The onset of HD occurs between **30 and 50 years** followed by a gradual occurrence of **psychiatric** disturbances, **cognitive** and **motor dysfunction** until the last stage of **neuronal cell dealth**. To the best of our knowledge, **no treatment is available** to completely mitigate the progression of HD. **Mangiferin**, a natural glucoxilxanthone, is mainly isolated from the ***Mangifera indica* (Mango)** plant. Considerable studies have confirmed the **medicinal benefits** of mangiferin against memory and cognitive impairment in neurodegenerative experimental models such as Alzheimer's and Parkinson's diseases.

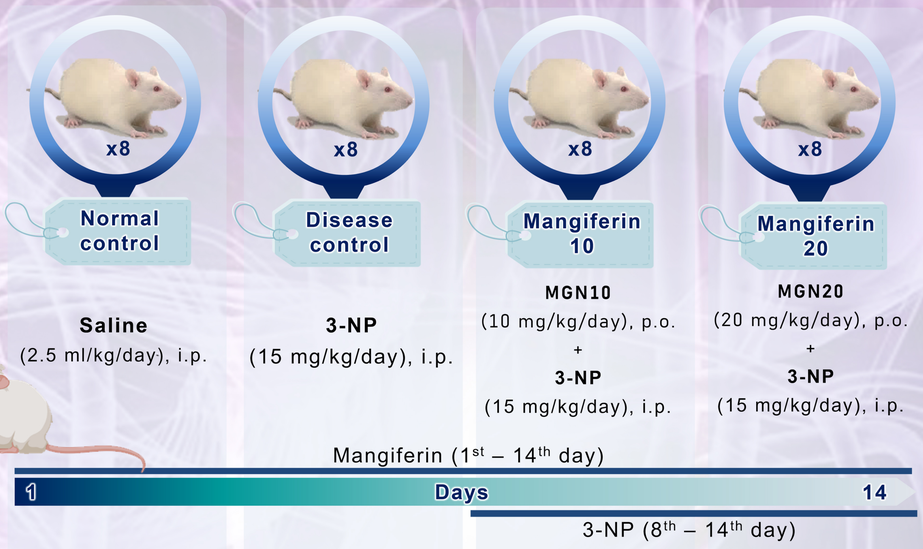
Objectives

- To evaluate the effect of mangiferin against 3-NP-induced **memory** and **cognitive impairments** in rats.
- To evaluate the effect of mangiferin against 3-NP-induced **motor deficits** in rats.

Methods

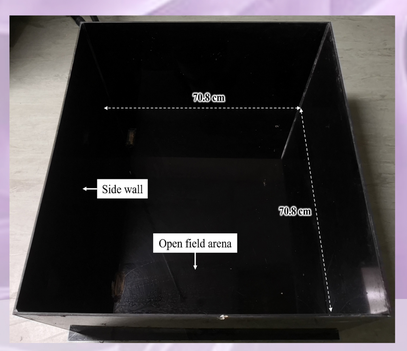


Treatments

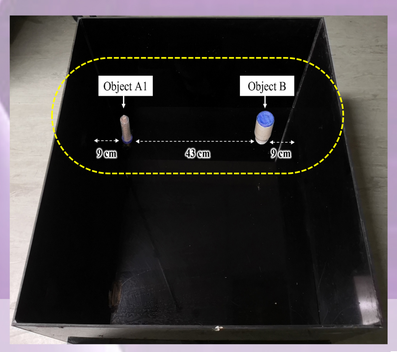


Behavioral Assessment

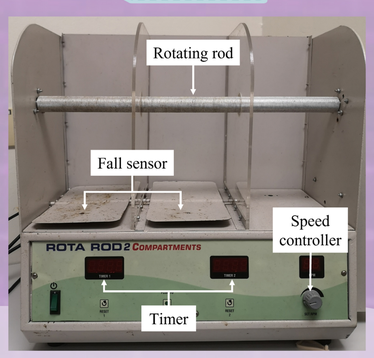
Open field test



Novel object recognition



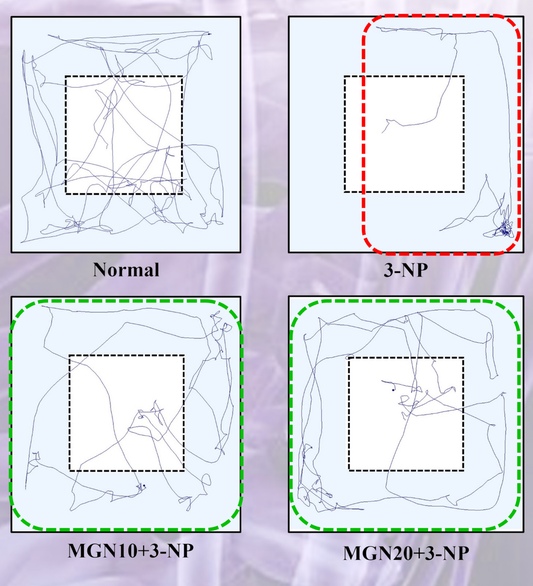
Rotarod



- To access their **memory**, **cognitive** and **motor** functions.

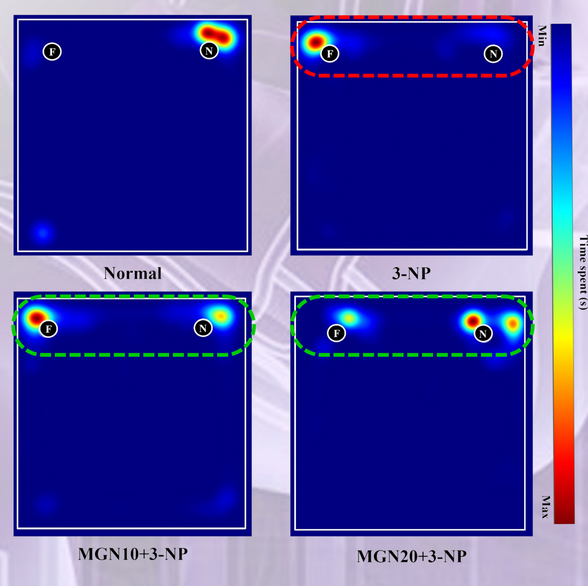
Results and Discussion

Anxiety-like behaviour/Locomotor activity



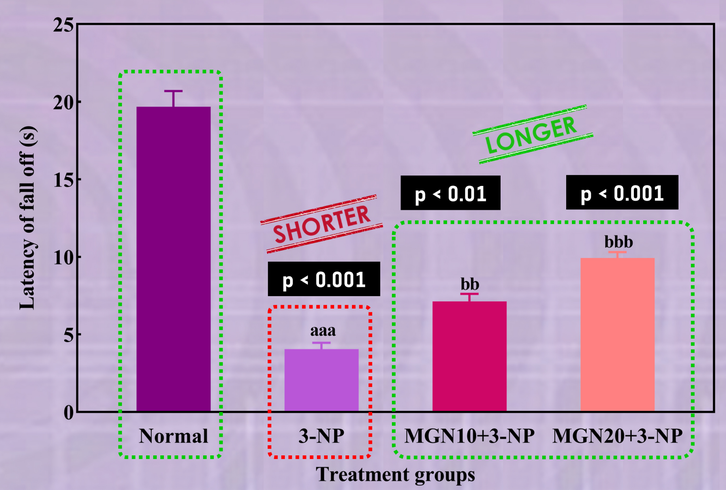
- Treatment groups: **More time spent** in **center**, **Less anxious**; **Longer** travelled **distance**, **Higher locomotor** activity

Recognition memory



- **3-NP** group: Prefer to explore **familiar** object (**F**), **Lower recognition** index.
- **Treatment** groups: Prefer to explore **novel** object (**N**), **Higher recognition** index.

Motor performances



- **Treatment** groups: **Longer latency** to fall off, **Normal motor** coordination

Conclusion

- **Mangiferin** effectively **improved** 3-NP induced **memory, cognitive and motor abnormalities**.
- The present findings provide a **new possibility** of **mangiferin** as an alternate **neuroprotective** agent for **HD**.
- **Contributions**: Promote **brain well-being**; Expand understanding of **neuroprotection**; Foster **a sense of hope** for HD patients; **Raise awareness** about neurodegenration diseases

References

Please scan the QR code below for references.

https://drive.google.com/file/d/1uhECfzc7raZvpI_U4zcHBNIBB2FyQAwa/view?usp=sharing

Acknowledgement

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❝ A small number of patients doesn't mean it is not important or not serious. These unfortunate people deserve the best possible treatment and support.❞