

## CHAPTER V. CONCLUSION & SUGGESTION

### 5.1 Conclusion

1. Administration of *Curcuma sumatrana* extract at doses of 100 mg/kg BW, 200 mg/kg BW, and 400 mg/kg BW had no significant effect on improving memory, spatial intelligence, and social interaction latency, but significantly improved curiosity and the duration of social interactions in HFD-fed mice.
2. Administration of *C. sumatrana* extract had no significant effect on reducing MDA level as an indicator of oxidative stress in the brains of HFD-fed mice.
3. Administration of *C. sumatrana* extract at three doses had a significant effect on the histopathology of neocortex thickness, while only 400 mg/kg BW had a significant effect on reducing the percentage of neurodegeneration in neocortex in HFD-fed mice.

### 5.2 Suggestion

1. It is necessary to extend the duration of high-fat diet consumption and oral administration of *C. sumatrana* extract to observe the significant effects
2. Additional measurements of biochemical parameters, such as levels of endogenous antioxidants and pro-inflammatory markers in brain tissue, will provide a more comprehensive picture of the occurring neuroprotective mechanisms.
3. Further research is urgently needed to explore the gut microbial diversity in HFD mice and the changes induced by *C. sumatrana* extract administration, to investigate the role of the brain-gut axis in its mechanism of action.

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