CHAPTER IX
CONCLUSION

As the elderly people increases, the burden of neurodegenerative diseases such as Alzheimer's disease (AD) and Parkinson's disease (PD) are increased substantially. Despite the increase their importance, the therapeutic efficacy is still limited. Therefore, the safe and effective intervention which is cheap and easy to approach interventions have gained attention. Thus, this study aimed to search for the intervention against neurodegenerative diseases such as AD and PD. Based on the long term used of Complementary Alternative Medicine with safety and success, the implementation of Complementary Alternative Medicine has been focused. In this dissertation, both laser acupuncture which integrates the traditional wisdom of meridian system with photo medicine and the herbal products which have been developed have clearly demonstrated the high potential to be served either as adjuvant or as alternative therapy against AD and PD.

Various types of vegetables were screened for the neuroprotective against AD and PD potential in vitro. Then, the selected plants were further investigated in vivo. According to the protective effect against AD, the selected plants were test either as single or as the combination extract. It was found that both single herb therapy such as *M.oleifera*leaves extract and the combination extract therapy such as CP1 produced the significant improvement of memory deficit and neurodegeneration in AD model. According to the results of this study, it has been shown that *M.oleifera*leaves extract produces higher benefit both on memory and on neurodegeneration than CP1.When compared between herbal therapy and laser acupuncture, laser acupuncture shows high benefit on the neuroprotection in hippocampus whereas herbal medicine shows the high benefit on learning and memory impairment in AD model.

The current results also clearly demonstrate that both CP1 and laser acupuncture at HT7 can improve both motor and non-motor symptom such as cognitive deficit in animal model of PD induced by 6-OHDA. Laser acupuncture at HT7 exerts a high advantage on the improved motor deficit and degeneration of dopaminergic neurons in substantia nigra. Concerning the non-motor symptom of PD, it has been shown that

laser acupuncture at HT7 exerts a high benefit on the improved escape latency or learning acquisition whereas CP1 produces abundant benefit on retention memory and on the neurodegeneration in hippocampus.

Based on the data obtained from this study, *M.oleifera* leaves extract appears to provide highest benefit for memory deficit in animal model of early phase of AD. With regard to PD, laser acupuncture at HT7 is suitable for treating motor symptom of PD while CP1 is suitable for treating cognitive deficit in PD. Therefore, this study provides valuable information to support the benefit of complementary alternative medicine against AD and PD. In addition, the information for selecting the appropriate intervention of complementary alternative medicine which match for the condition of disease is also provided. In addition to the mentioned benefits, this study also provides the potential way to increase the value of agricultural product such as *M.oleifera, C.rotundus* and *Z.officinale*. Moreover, it also provides the opportunity for the people in community to take care themselves with herbal medicine which is cheap and easy to approach with safety because LD50 of both *M.oleifera* leaves and CP1 are more than 2 g/kg BW.