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3-3-1. Effect of Silkworm Extract on Monoamine Oxidase Activity in Mice Brain

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Monoamine oxidases(MAOs) exists two distinct forms, MAO-A and MAO-B with a different amino acid sequences, inhibitors and substrate specificities. These enzymes play a pivotal roles in conduction of central nervous system, regulation of blood pressure and detoxification. Especially, MAO-B activity in brain is increased with aging and is further accelerated in the neurodegenerative diseases such as Alzheimer's disease and Parkinson's disease.

Silkworm has been utilized traditional medicine in korea for hundreds of years. Recently, several studies have been explored its phamacological efficacies on the central nervous system. Therefore, we investigated that the effects of silkworm extract(SE) on MAO-A and -B activities in mice(male, C57/BL/6) brain. *In vitro* experiment, the SE inhibited significantly MAO-A and MAO-B activity of mice brain with dose dependent manner. Namely, MAO-A activity was 16-25 % inhibited and MAO-B activity was 20-50 % inhibited by SE treatment(12.5, 25, 50 ㎍). *In vivo* experiment, Male C57BL/6 mice received intraperitoneal injection of SE(20 ㎎/㎏/day) for 15 days. The SE also inhibited MAOs in most regions of the brain including cerebral cortex, cerebellum and substantia nigra but with a different manner according to the MAO types.

These results suggest that MAO inhibition by SE may plays in neuro-protective and/or anti-stress effect.