Novel Anti-Depressant Effects of *Nelumbinis Semen*

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Nelumbinis semen is one of the most wellknown traditional herbal medicine frequently used for treatment of depression in Asian countries. The anti-depression effect and its molecular mechanism of *Nelumbinis Semen* on the rats under chronic mild stress (CMS) inducing depression-like symptom for 8 weeks was investigated through animal behavior change, the change of neurotransmitter concentration, the change of serotonin receptor density and change of protein expression in brain compared to the effects of two well-known anti-depressants, St. John's Wort and Prozac. *Nelumbinis Semen* reversed the decreases of several behavior activities and sucrose intake in rat induced by CMS. *Nelumbinis Semen* also reversed sexual dysfunction and the decrease of body weight in rat induced by CMS and other two anti-depressants. In molecular mechanism of *Nelumbinis Semen* in anti-depression, *Nelumbinis Semen* increased the density of serotonin receptor 1A (5-HT1A), serotonin concentration and four important proteins involved in anti-depression, adenylosuccinate synthetase, MAP kinase, aldehyde dehydrogenase and cytochrome C oxidase in brain. Those results suggest that the anti-depression effect of Nelumbinis semen may be due to recovery of decrease of serotonin concentration involved in depression and *Nelumbinis Semen* may reverse the damaged brain and anti-depressant adverse effects induced by depression through serotonin-induced neuronal cell growth and protection, and unknown mechanism. Thus, it is strongly suggest that *Nelumbinis Semen* could be used as a safer and more effective anti-depressant than common anti-depressant (This study was supported by a grant from the Korean Health 21 R&D Project (02-PJI-PG11-VN01-SV04-0054), Ministry of Health and Welfare, Korea (2002)).