

D125 Estrogen and ginsenoside enhance performance of female mice in the Morris water maze.

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Estrogen can influence on the expression of behaviors not associated directly with reproduction, including learning and memory. However, the effects of estrogen on learning and memory in mammals are complex, dependent on a variety of factors. Ginseng also contains several ginsenoside which have similar backbone structure to estrogens. The Morris water-maze is a traditional experimental task that takes advantage of the natural foraging strategy of mice. In the experiments reported here, ovariectomized mice were implanted subcutaneously with Silastic capsules containing 17β -estradiol, protopanaxadiol (PD) and protopanaxatriol (PT) saponin diluted with sesame oil. Results of three separate experiments demonstrated that estradiol, PD and PT administrated by Silastic implants for 2 weeks prior to water-maze training significantly improved spacial memory performance compared to ovariectomized (OVX) mice, as indicated by lower escape latency over trial. The positive effect of estradiol suggests that estrogen can affect performance on learning and memory. Also, the positive effect of PD and PT on training suggest that ginsenosides do act like already known estrogen for behavioral effects.

D201 Isolation and characterization of a MADS box cDNA clone of the *Canavalia lineata*

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MADS box genes represent a large family of highly conserved transcription factor. A cDNA clone, CaMADS(AF144623), containing MADS domain was isolated from *Canavalia lineata* cDNA library constructed from the plant mature leaves. We compare the sequences of this gene with those of other plant MADS box genes, and study the expression of this gene in developing tissue. Antibody that were highly specific for CaMADS gene prepared for use in protein gel-blot analysis. To test the developmental role of leaves, we used CaMADS-specific antibody to examine a variety of stages in leaves. The functional role of the CaMADS gene was investigated by ectopically expressing the gene in transgenic *Arabidopsis* plant. Analysis of CaMADS promoter/5'leader sequence are presently in progress in our laboratory, to gain insights in more detail how CaMADS is controlled.