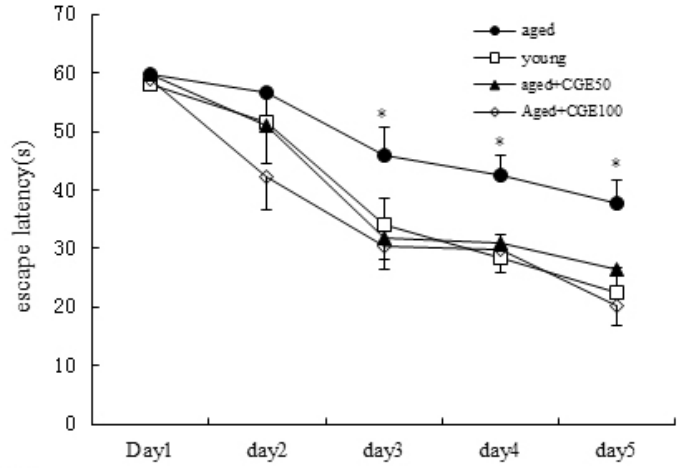
CGD treatment improve the spatial learning and memory ability in aged rats

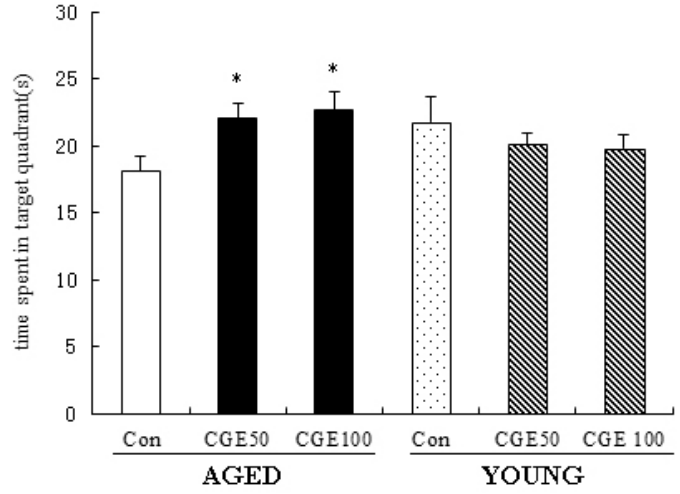
Across the 5 d of training, escape latencies decreased in both young and aged rats as they showed learning of the submerged platform location. As shown in FigA, the aged rat cohort exhibited significantly higher mean escape latencies than the young controls on day 3, 4, and 5. To investigate the influence of CGD on water maze learning deficit in aged animals, the drug was administered daily (50 mg/kg and 100 mg/kg) for 8 weeks from 22 months of age. The aged rat treated with CGD 50 mg/kg and CGD100 mg/kg for 8 weeks reached the platform faster than aged-matched control on day 3, 4, and 5 and the values of mean escape latencies were similar to those from young rats (FigA).

Spatial retention was assessed in probe trial, in which the escape platform was removed. In the probe test , the time spent in the target quadrant of the young control rats was significantly longer than in the opposite quadrant and the other two quadrants, but there was no significant difference in the time spent by aged rats in all the four quadrants. The animals in aged CGD 50 mg/kg and 100 mg/kg groups showed a longer search time in the target quadrant than did the animals in the aged control group ($P<0.05$; ANOVA). No significant difference among the young-matched control and the young rats treated with CGD 50 mg/kg and 100 mg/kg for 8 weeks was found in search time of the target quadrant (Fig B).

A


aged
young
aged+CGE50
Aged+CGE100
escape latency(s)
70
60
50
40
30
20
10
0
Day1
day2
day3
day4
day5
*
*
*

B


time spent in target quadrant(s)
30
25
20
15
10
5
0
*
*
Con
CGE50
CGE100
Con
CGE50
CGE 100
AGED
YOUNG