

# Effect of CDP-choline on Hippocampal Acetylcholinesterase and Na<sup>+</sup>,K<sup>+</sup>-ATPase in Adult and Aged Rats

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The aim of this study was to investigate the effect of different cytidine-5'-diphosphocholine (CDP-choline) concentrations (0.1–1 mM) on acetylcholinesterase (AChE), (Na<sup>+</sup>,K<sup>+</sup>)-ATPase and Mg<sup>2+</sup>-ATPase activities in homogenates of adult and aged rat hippocampi. Tissues were homogenised, centrifuged at 1000 × g for 10 min and in the supernatant, AChE activity and Na<sup>+</sup>,K<sup>+</sup>-ATPase and Mg<sup>2+</sup>-ATPase activities were determined according to Ellman's method and Bowler's and Tirri's method, respectively. After an 1–3 h preincubation of the homogenised tissue with CDP-choline, a maximal AChE stimulation of about 25% for both adult and aged rats (p < 0.001) and a Na<sup>+</sup>,K<sup>+</sup>-ATPase activation of about 50% for adult rats (p < 0.001) and about 60% for aged rats (p < 0.001) were observed, while hippocampal Mg<sup>2+</sup>-ATPase activity was not influenced in either adult or aged animals. It is suggested that: CDP-choline can restore hippocampal AChE and Na<sup>+</sup>,K<sup>+</sup>-ATPase activities in the aged rat and thus it may play a role in improving memory performance which is impaired by aging and some neuronal disturbances.

*Key words:* Rat Hippocampal Acetylcholinesterase, Rat Hippocampal Na<sup>+</sup>,K<sup>+</sup>-ATPase, CDP-choline