

# **Mechanism of neuroprotective function of taurine**

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摘要

## **Abstract**

Taurine has potent protective function against glutamate-induced neuronal injury presumably through its function in regulation of intracellular free calcium level,  $[Ca^{2+}]_i$ . In this communication, we report that taurine exerts its protective function through one or more of the following mechanisms: 1. Inhibition of glutamate-induced calcium influx through L-, N- and P/Q-type voltage-gated calcium channels and NMDA receptor calcium channel; 2. Attenuation of glutamate-induced membrane depolarization; 3. Prevention of glutamate-induced apoptosis via preventing glutamate-mediated down-regulation of Bcl-2; 4. Prevention of cleavage of Bcl-2 by calpain. This action of taurine is due to its inhibition on glutamate induced calpain activation. Based on these observations, we propose that taurine protects neurons against glutamate-induced neurotoxicity in part, by preventing glutamate-induced membrane depolarization, elevation of  $[Ca^{2+}]_i$ , activation of calpain, reduction of Bcl-2 and apoptosis.