

## Society for Neuroscience Annual Meeting 2006 Abstract

### Effects of uric acid in protecting spinal cord neurons from glutamate toxicity

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Uric acid (UA) is a ubiquitous anti-toxicant in the body. Our current study examined whether UA can protect neurons in spinal cord cultures from glutamate neurotoxicity. Cells derived from spinal cords of embryonic rats at 16 days gestation were plated and grown in serum containing medium. These cultures were then treated with high concentrations of glutamate for a brief period of time. Neurons were identified with specific markers, and the numbers of neurons were counted to assess survival. Glutamate elicited significant neuron loss in these cultures. When UA was applied after glutamate exposure, the decrease in neuron number was reversed, suggesting that UA protects neurons from glutamate-induced toxicity. To determine if other cell types are involved in mediating the effects of UA, pure neuronal cultures were established. Strikingly, in these cultures, UA had no effect in reducing glutamate damage to neurons, suggesting that other cell types contribute to UA actions. (Funded by NJCSCR)