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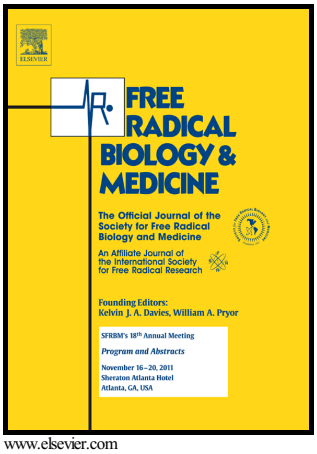

www.elsevier.com

PII: S0891-5849(16)31082-6
DOI: http://dx.doi.org/10.1016/j.freeradbiomed.2016.11.046
Reference: FRB13101

To appear in: *Free Radical Biology and Medicine*

Received date: 12 October 2016
Revised date: 22 November 2016
Accepted date: 27 November 2016

Cite this article as: Naomi Lomeli, Kaijun Di, Jennifer Czerniawski, John F Guzowski and Daniela A. Bota, Cisplatin-induced mitochondrial dysfunction i associated with impaired cognitive function in rats, *Free Radical Biology an Medicine,* http://dx.doi.org/10.1016/j.freeradbiomed.2016.11.046

Cisplatin-induced mitochondrial dysfunction is associated with impaired cognitive function in rats

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Abstract

Purpose:

Chemotherapy-related cognitive impairment (CRCI) is commonly reported following the administration of chemotherapeutic agents and comprises a wide variety of neurological problems. No effective treatments for CRCI are currently available. Here we examined the mechanisms involving cisplatin-induced hippocampal damage following cisplatin administration in a rat model and in cultured rat hippocampal neurons and neural stem/progenitor cells (NSC). We also assessed the protective effects of the antioxidant, N-acetylcysteine in mitigating these damages.

Experimental Design:

Adult male rats received 6 mg/kg cisplatin in the acute studies. In chronic studies, rats received 5 mg/kg cisplatin or saline injections once per week for 4 weeks. N-acetylcysteine (250 mg/kg/day) or saline was administered for five consecutive days during cisplatin treatment. Cognitive testing was performed 5 weeks