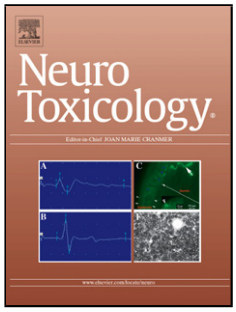

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Methylmercury augments Nrf2 activity by downregulation of the Src family kinase Fyn

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Highlights

- Astrocytes are vulnerable to MeHg-induced toxicity
- Methylmercury induces oxidative stress and Nrf2 activation
- Nrf2 translocates to the nucleus in response to methylmercury exposure
- Methylmercury exposure downregulates Fyn

Abstract

Methylmercury (MeHg) is a potent developmental neurotoxicant that induces an oxidative stress response in the brain. It has been demonstrated that MeHg exposure increases nuclear factor erythroid 2-related factor 2 (Nrf2) activity. Nrf2 is a transcription factor that translocates to the nucleus in response to oxidative stress, and upregulates phase II detoxifying enzymes. Although, Nrf2 activity is augmented subsequent to MeHg exposure, it has yet to be established whether Nrf2 moves into the nucleus as a result. Furthermore, the potential effect MeHg might have on the non-receptor tyrosine kinase, Fyn, has not been addressed. Fyn phosphorylates Nrf2 in the nucleus, resulting in its inactivation, and