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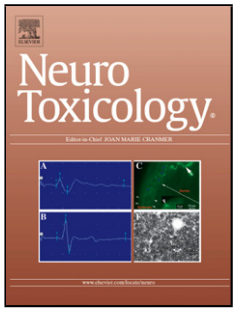

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Familial manganese-induced neurotoxicity due to mutations in *SLC30A10* or *SLC39A14*

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Highlights

- Mechanisms of Mn toxicity due to *SLC30A10* or *SLC39A14* mutations are described.

Abstract

Over the last few years, two rare, familial diseases that lead to the onset of manganese (Mn)-induced neurotoxicity have been discovered. Loss-of-function mutations in SLC30A10, a Mn efflux transporter, or SLC39A14, a Mn influx transporter, increase Mn levels in blood and brain, and induce severe neurotoxicity. The discoveries of these genetic diseases have transformed our understanding of Mn homeostasis, detoxification, and neurotoxicity. Current knowledge about the mechanisms by which mutations in these transporters alter Mn homeostasis to induce human disease is reviewed here.

Keywords

SLC30A10; SLC39A14; ZnT10; ZIP14; manganese neurotoxicity; parkinsonism; metal homeostasis.

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