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Characterization of superparamagnetic iron oxide nanoparticle-induced apoptosis in PC12 cells and mouse hippocampus and striatum

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Highlights:

- SPIONs' neurotoxicity in PC12 cells, mouse hippocampus and striatum was detected.
- SPIONs had a dose-dependent cytotoxic in PC12 cells at 60-200 ug/mL.
- SPIONs decreased TH+ fiber density, motor coordination and spatial memory of mice.
- SPIONs-induced neurotoxicity might be mediated through the JNK signaling pathway.