

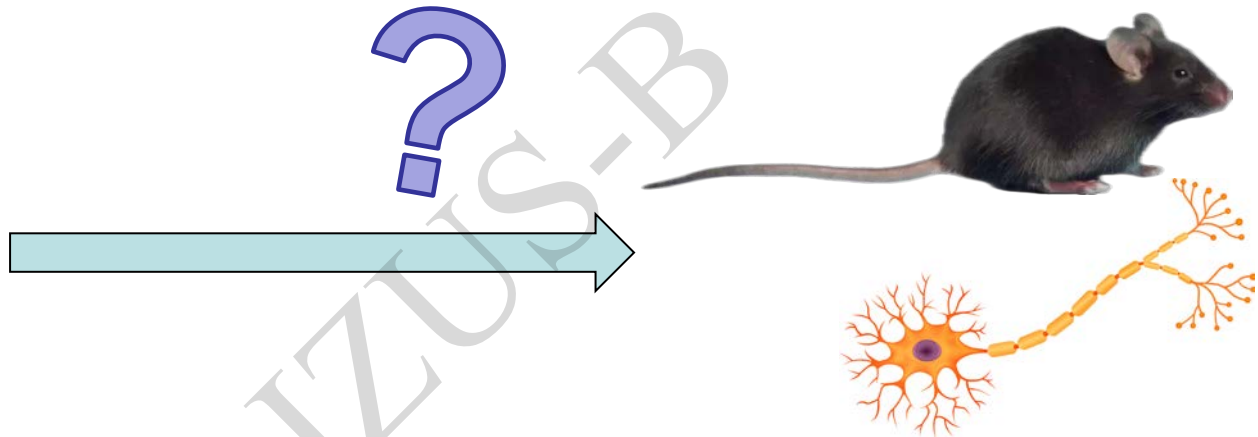
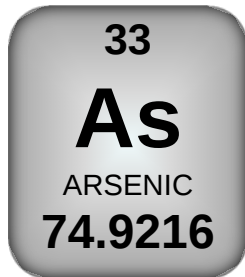
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Reduced nerve growth factor (NGF) mediates arsenic-induced mitochondrial dynamics imbalance and neuronal damage both in vivo and in vitro

Key words: Arsenic; Nerve growth factor (NGF); Mitochondrial dynamics; Neurotoxicity; Phosphatidylinositol 3-kinase/protein kinase B (PI3K/AKT)

Research Summary

Using a mouse model and HT-22 cells, this study explored whether nerve growth factor (NGF) decreases in arsenic-induced cognitive impairment in mice and its mechanism, focusing on:



- Whether arsenic exposure reduces NGF, thereby inducing mitochondrial dysregulation, neuronal damage and cognitive impairment
- Whether PI3K/AKT signaling pathway inactivation mediates these detrimental effects
- The mechanistic role of PI3K/AKT signaling pathway in arsenic-induced neurotoxicity.

Innovation points

- From the perspective of neurotrophic and neuroprotective effects, explore the mechanism of arsenic-induced cognitive impairment.
- Improved the mechanism of action of NGF and explored new targets for the study of antagonizing arsenic neurotoxicity.
- Exploring the relationship between mitochondrial dynamics and NGF at both animal and cellular levels, focusing on hot topics in mitochondrial dynamics.