

Treatment and Prevention of Cadmium-induced alterations on human neurons

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The effects of Cadmium on the central nervous system are still relatively poorly understood and its role in neurodegenerative diseases has been debated (Matés et al., 2010). In this study we investigate the protective role of a Cadmium antagonist, Zinc, and of a molecule positively affecting neuronal viability such as GcMAF (Vitamin D-binding protein-derived macrophage activating factor) (Mohamad et al., 2002) in counteracting Cadmium-induced cell modifications. Cell line Sh-SY5Y is treated with Cadmium for 24 h with and without Zinc or GcMAF at different concentrations and exposure times. Cell viability, cell morphology and activation of apoptotic pathways are investigated. Results show that Zinc as well as GcMAF are able to partially or totally counteract the toxic effects of Cadmium on human neurons. This lead us to think at the real possibility of limiting, avoiding or reversing toxic effects of Cadmium on human neurons.

References

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Key words

Cadmium, Zinc, human neurons, GcMAF.