

# Neurotoxins and neurotoxicity mechanisms. An overview

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Neurotoxins represent unique chemical tools, providing a means to 1) gain insight into cellular mechanisms of apoptosis and necrosis, 2) achieve a morphological template for studies otherwise unattainable, 3) specifically produce a singular phenotype of denervation, and 4) provide the starting point to delve into processes and mechanisms of nerve regeneration and sprouting. There are many other notable uses of neurotoxins in neuroscience research, and ever more being discovered each year. The objective of this review paper is to highlight the broad areas of neuroscience in which neurotoxins and neurotoxicity mechanism come into play. This shifts the focus away from neurotoxins per se, and onto the major problems under study today. Neurotoxins broadly defined are used to explore neurodegenerative disorders, psychiatric disorders and substance use disorders. Neurotoxic mechanisms relating to protein aggregates are indigenous to Alzheimer disease, Parkinson's disease. NeuroAIDS is a diso