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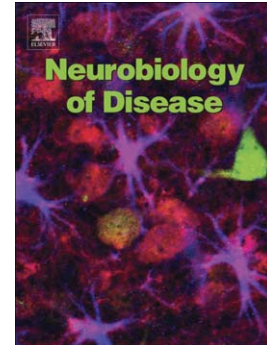
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Climbing fibers in spinocerebellar ataxia: A mechanism for the loss of motor control

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Abbreviations

AMPA α -amino-3-hydroxy-5-methylisoxazole-4-propionate; CB1R Type 1 cannabinoid receptor; Cbln-1 Precerebellin; CF-LTD Climbing fiber long term depression; CF-PC Climbing fiber-Purkinje cell; E Embryonic day; LTD Long term depression; LTP Long term potentiation; P Postnatal day; PC Purkinje cell; PF-LTD Parallel fiber long term depression; PF-LTP Parallel fiber long term potentiation; PF-PC Parallel fiber-Purkinje cell; NMDA *N*-methyl-D-aspartate; NO Nitric oxide; NSF *N*-ethyl-maleimide-sensitive factor; SCA Spinocerebellar ataxia

Abstract

The spinocerebellar ataxias (SCAs) form an ever-growing group of neurodegenerative disorders causing dysfunction of the cerebellum and loss of motor control in patients. Currently, 41 different genetic causes have been identified, with each mutation affecting a different gene. Interestingly, these diverse genetic causes all disrupt cerebellar function and produce similar symptoms in patients. In order to understand the disease better, and define possible therapeutic targets for multiple SCAs, the field has been searching for common ground among the SCAs. In this review, we

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