



Combination of memantine and vitamin D prevents axon degeneration induced by amyloid-beta and glutamate

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Titre	Combination of memantine and vitamin D prevents axon degeneration induced by amyloid-beta and glutamate
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Résumé en anglais	<p>The currently available drugs for treatment of Alzheimer's disease are symptomatic and only temporarily slow down the natural history of the disease process. Recently, it has been proposed that the combination of memantine with vitamin D, a neurosteroid hormone, may prevent amyloid-beta and glutamate neurotoxicity. Here, our purpose was to examine the potential protective effects of memantine and vitamin D against amyloid-beta peptide and glutamate toxicity in cortical neuronal cultures. We provide the first evidence that cortical axons degenerate less after exposure to amyloid-beta peptide or glutamate in microfluidic neuronal cultures enriched with memantine plus vitamin D compared to control medium and cultures enriched with only memantine or only vitamin D. The reported synergistic neuroprotective effect of memantine plus vitamin D -the combination originating an effect stronger than the sum- corroborate previous clinical finding that Alzheimer's disease patients using this drug combination have improved cognition. This finding reinforces the pharmacological potential of a new drug combining memantine plus vitamin D for the treatment or the prevention of Alzheimer's disease.</p>
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Liens

- [1] <http://okina.univ-angers.fr/cedric.annweiler/publications>
- [2] [http://okina.univ-angers.fr/publications?f\[author\]=17608](http://okina.univ-angers.fr/publications?f[author]=17608)
- [3] [http://okina.univ-angers.fr/publications?f\[author\]=17599](http://okina.univ-angers.fr/publications?f[author]=17599)
- [4] [http://okina.univ-angers.fr/publications?f\[author\]=17590](http://okina.univ-angers.fr/publications?f[author]=17590)
- [5] <http://okina.univ-angers.fr/o.beauchet/publications>
- [6] <http://okina.univ-angers.fr/publications/ua9945>
- [7] <http://dx.doi.org/10.1016/j.neurobiolaging.2013.07.029>
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