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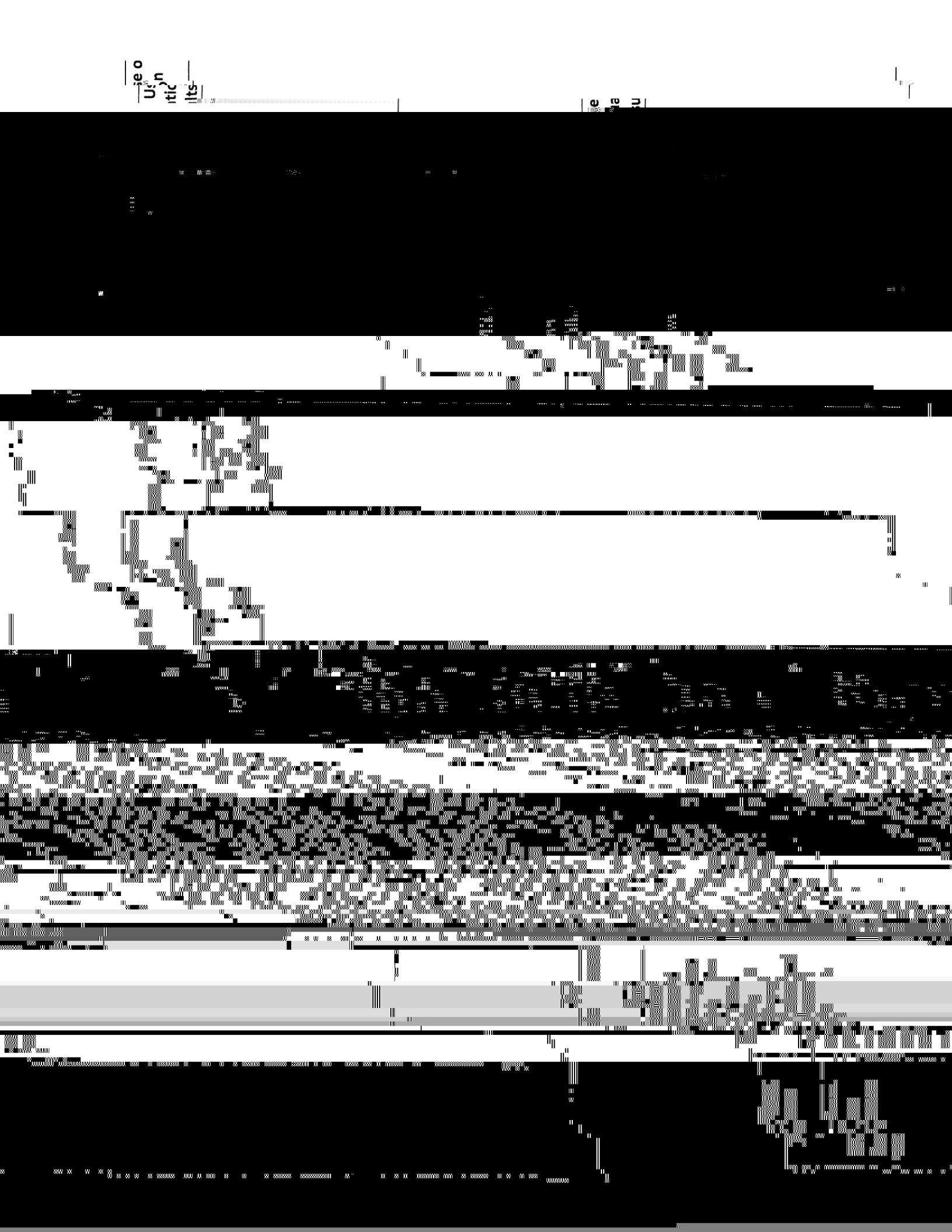
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Development/Plasticity/Repair • α -Synuclein Promotes Axonal Growth Inhibition

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Key Words: axonal growth; axonal growth inhibition; axonal growth cone; axonal growth cone collapse; axonal growth cone extension; axonal growth cone retraction

Introduction: Axonal growth inhibition is a major barrier to axonal growth in the CNS. α -Synuclein is a major component of Parkinson's disease pathology. We investigated whether α -synuclein promotes axonal growth inhibition.

Methods: We used primary hippocampal neurons and axonal growth cone explants to study the effects of α -synuclein on axonal growth.

Results: We found that α -synuclein promotes axonal growth inhibition in primary hippocampal neurons and axonal growth cone explants. α -Synuclein promotes axonal growth inhibition by increasing the expression of myelin-associated glycoprotein and by promoting axonal growth cone collapse. α -Synuclein also promotes axonal growth inhibition by decreasing the expression of axonal growth cone extension factors and by promoting axonal growth cone retraction. α -Synuclein promotes axonal growth inhibition by increasing the expression of myelin-associated glycoprotein and by promoting axonal growth cone collapse. α -Synuclein also promotes axonal growth inhibition by decreasing the expression of axonal growth cone extension factors and by promoting axonal growth cone retraction.

Conclusions: These findings suggest that α -synuclein promotes axonal growth inhibition, which may contribute to the pathogenesis of Parkinson's disease.

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