

Unraveling the role of motoneuron autophagy in ALS

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© 2018 Informa UK Limited, trading as Taylor & Francis Group. In recent years, the role of autophagy in the pathogenesis of most neurodegenerative diseases has transitioned into a limbo of protective or detrimental effects. Genetic evidence indicates that mutations in autophagy-regulatory genes can result in the occurrence of amyotrophic lateral sclerosis (ALS), suggesting a physiological role of the pathway to motoneuron function. However, experimental manipulation of autophagy in ALS models led to conflicting results depending on the intervention strategy and the disease model used. A recent work by the Maniatis group systematically explored the role of cell-specific autophagy in motoneurons at different disease stages, revealing surprising and unexpected findings. Autophagy activity at early stages may contribute to maintaining the structure and function of neuromuscular junctions, whereas at later steps of the disease it has a pathogenic activity possibly involving cell-nonautonomo