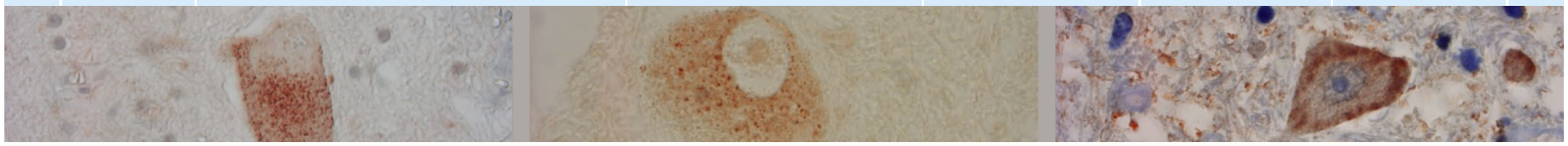

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A New Study Raises Questions About How Axons Degenerate in ALS

July 25, 2018 News in Brief Michelle Pflumm

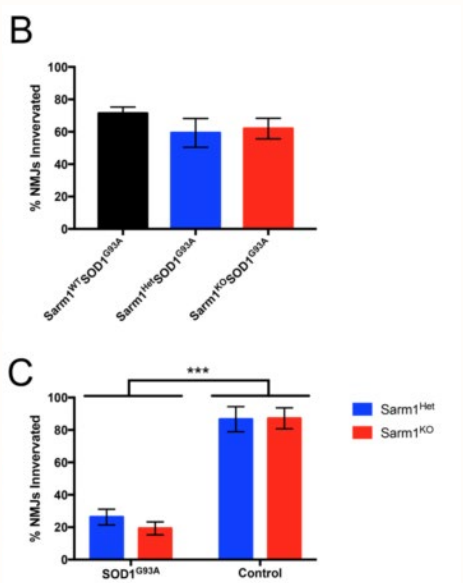
The inhibition of the enzyme SARM1 is emerging as a potential strategy to protect the axons of neurons from being destroyed due to injury or chronic neurodegenerative disease (see January 2015, March 2017 news). But according a new study led by Oregon Health and Science University's Marc Freeman and University of Massachusetts Medical Center's Robert Brown, this strategy may not reduce axon loss in ALS.

The study found that SOD1 G93A ALS model mice that are unable to produce this enzyme did not live longer. And, no improvement in motor function including muscle strength could be detected.

Together, the findings open up the possibility that axons degenerate in ALS and acute neuronal injury by distinct mechanisms. The findings appeared on July 14 in *Human Molecular Genetics.*

SARM1 is an NAD^+ase that triggers the destruction of injured axons by depriving them of energy by locally depleting ATP (see April 2015, March 2017 news; Gerdts et al., 2015; Yang et al., 2015; Essuman et al., 2017).

SARM1 inhibitors are being developed by Disarm Therapeutics in Cambridge,



An army of one? *Axons continue to degenerate in ALS model mice despite eliminating the axon executioner SARM1. Pictured, the number of neuromuscular junctions (NMJs) at the beginning (P80-P90) (B) and endstage (C). [Courtesy of Peters et al., 2018, Human Molecular Genetics, CC BY 4.0.]*

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Massachusetts as a potential therapeutic option for a wide range of neurological conditions including traumatic brain injury and peripheral neuropathies (see Henninger et al., 2016; Geisler et al., 2016).

Featured Paper

Peters OM, Lewis EA, Osterloh JM, Weiss A, Salameh JS, Metterville J, Brown RH, Freeman MR. Loss of Sarm1 does not suppress motor neuron degeneration in the SOD1G93A mouse model of amyotrophic lateral sclerosis. Hum Mol Genet. 2018 Jul 14. [PubMed].

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Further Reading

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