ALS Research Forum e-Newsletter Vol. 189 **January 24, 2018**

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Research News

Stressed-Out Cells Translate C9ORF72 Repeats, Unleash Toxic Peptides

Increased stress in neurons may unleash toxic C9orf72 dipeptide repeat proteins in people with the most common genetic form of ALS according to new results from University of Michigan's **Peter Todd** and Johns Hopkins University's **Shuying Sun** in Baltimore. But is this PERK-based mechanism a promising approach to tackle the disease? Experts weigh in.

To learn more about potential ALS therapies targeting the integrated stress response, check out *A New Treatment Approach May PERK Up The ALS Pipeline*.

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TDP-43 Snarls Nuclear Traffic

A nuclear traffic jam may contribute to more cases of ALS than previously thought according to a new study led by Mayo Clinic's **Wilfried Rossoll** in Jacksonville, Florida. The study found in part, that TDP-43 aggregates in ALS patient-derived motor neurons sequester key structural components of the nuclear pore in the cytoplasm, leading to a defect in the transport of proteins and RNAs. The findings suggest that TDP-43 pathology may contribute to ALS in part, by disrupting nucleocytoplasmic transport in as many as 95-97% of cases of the disease. The study is published on January 8 in *Nature Neuroscience*.

Traffic Tie-up May Lead to ALS, Scientists Say

A mitochondrial pileup in motor neurons may contribute to at least one form of ALS. The study, led by University of Ulm's **Jochen Weishaupt** in Germany, found that mutations in the gene encoding the microtubule motor protein Kif5A is associated with ALS and segregates with the disease. The intracellular delivery vehicle, according to studies led by University of Tübingen's **Ludger Schöls** in Germany, transports key cargo including mitochondria along axons in motor neurons. The findings add to growing evidence, which suggest that the disruption of axonal transport in motor neurons may contribute to motor neuron toxicity in ALS (see March 2017 news; Magrane et al., 2014). The study appeared on January 12 in *Brain*.

To learn more about the emerging role of axonal transport in ALS, check out *FUS Jams Mutant Axons, Blocking a Deacetylase Might Help*.

Targeting Mitochondria in ALS: Divide Less and Conquer?

An emerging strategy may help protect motor neurons against ALS according to a new report published on January 15 in *EMBO Molecular Medicine*. The approach, which aims to restore mitochondrial dynamics, reduced muscle atrophy, improved motor function and increased survival of G93A SOD1 mice. The strategy, which targets the mitochondrial fission regulator Drp1, may also be of benefit in Huntington's and Parkinson's disease. The peptide-based approach, developed by Stanford University's **Daria Mochly-Rosen** and colleagues in California, is now licensed to Mitochonix Bio in Israel. Efforts to identify a small molecule targeting Drp1 are also underway (see November 2017 news).

To learn more about the emerging role of mitochondria in ALS and the challenges targeting them, check out *Powering Ahead Targeting Mitochondria in ALS*.

Inflammation May Increase FTD Risk, Scientists Say

Inflammation in the brain is a key sign of neurodegenerative diseases including ALS and FTD. But whether this immune response is a cause or consequence of these diseases remains hotly debated. Now, a research team led by University of California-San Francisco's **Leo Sugrue** reports that inflammation may increase the susceptibility of developing FTD. The findings add to growing evidence that inflammation may contribute to the onset of at least some forms of FTD (see February 2017 news). And, therefore, emerging treatment strategies that reduce this inflammation may be a potential strategy to tackle them. The study is published on January 9 in *PLOS Medicine*.

To learn more about the emerging role of inflammation in the onset of neurodegenerative diseases including ALS, check out *Early Inflammation May Play A Role in FTD*.

Check out our website to read more of the latest research advances in ALS.

Funding Opportunities:

January 2018

ALS Research Grants. Thierry-Latran Foundation. Abstracts due by **January 29, 2018**.

Altman Award in Developmental Neuroscience. Japan Neuroscience Society. Application due by **January 31, 2018**. Scientists worldwide are invited to apply.

February 2018

Joint Call for European Research Projects on Rare Diseases. E-Rare. Pre-Proposal due by February 6, 2018.

High Impact Neuroscience Research Resource Grants. NINDS. Application due by February 9, 2018.

Clinical Trial Readiness for Rare Neurological and Neuromuscular Diseases. Focus: Clinical Outcome Measures and Biomarkers. NINDS. Application due by February 15, 2018.

Klingenstein-Simons Fellowship in Neuroscience. (For Early-Career PIs.) Applications due by February 15, 2018.

Transformational Research: Canada 2018. Weston Brain Institute. Deadline extended! LOI now due

by February 15, 2018.

Neuroscience Investigator Awards. (For Early-Career PIs.) New York Stem Cell Foundation. Application due by February 21, 2018.

Stem Cell Investigator Awards. (For Early-Career PIs.) New York Stem Cell Foundation. Application due by February 21, 2018.

March 2018

NEW! MDA Venture Philanthropy Program. Muscular Dystrophy Association. LOI due by March 1, 2018.

NEW! Health and Social Care for Neurodegenerative Diseases 2018. JPND. Pre-Proposals due by March 6, 2018.

April 2018

Research Grants. Potential ALS Therapies: Preclinical to Phase 1. Fight MND. Application due by April 1, 2018.

Graduate Student Fellowship. AFM-Téléthon. Application due by April 24, 2018.

Check out our updated list of grants and awards.

Job Opportunities:

Head of Translational Science. University of Texas Southwestern Medical School. Dallas, TX
Assistant Professor, Neuroscience. University of Rhode Island. Kingston, RI
Clinical Cognitive Neuroscientist. University of Nebraska Medical Center. Omaha, NE
Physician, Neuropathologist. West Virginia University School of Medicine. Morgantown, WV
Postdoctoral Fellow, Gao Lab. UMass Medical School. Worcester, MA
Postdoctoral Fellow, Sun Lab. Johns Hopkins University. Baltimore, MD
Data Analyst. University of Pennsylvania School of Medicine. Philadelphia, PA
Assistant Project Scientist. University of California. Los Angeles, CA

Senior Scientist. AveXis. La Jolla, CA.
Associate Scientist. Amgen. Cambridge, MA.

Hiring someone onto your team? Contact us to add your listing to our updated job board: ALSjobs@prize4life.org.

Full List of Job Opportunities >>

Upcoming Meetings:

Attending FENS 2018 in Berlin, Germany this July? Abstracts are due February 13, 2018.

March 2018

March 11-14, 2018. Arlington, VA. MDA Clinical Conference.

March 18-21, 2018. EMBL. Heidelberg, Germany. Microglia 2018. Abstracts due: February 15, 2018.

March 22-24, 2018. Melbourne, Australia. Australasian Motor Neurone Disease Symposium.

April 2018

April 17-21, 2018. Cold Spring Harbor Laboratory. Cold Spring Harbor, NY. Protein Homeostasis in Health and Disease . Abstracts due: February 2, 2018.

April 21-27, 2018. Los Angeles, CA. Annual Meeting of the American Academy of Neurology.

NEW! April 30-May 4, 2018. Jackson Laboratory. Bar Harbor, ME. Workshop: Using Mouse Models to Study Neurodegenerative Disease.

May 2018

April 17-21, 2018. Cold Spring Harbor Laboratory. Cold Spring Harbor, NY. Cellular Mechanisms Driven by Liquid Phase Separation. Abstracts due: February 14, 2018.

Organizing an ALS meeting? Contact us to add your conference to our updated calendar: ALSmeetings@prize4life.org.

Full List of Upcoming Meetings>>

Download the Working with ALS Mice Manual Here

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