THE ALS RESEARCH FORUM
Discovering a Common Goal, Discovering a Cure
PRIZE4LIFE ALS ASSOCIATION

ALS Research Forum e-Newsletter Vol. 167 **February 28, 2017**

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Research News

A Key Ion Channel May SLACK Off in ALS

Increased excitability of the motor cortex can be detected in most forms of ALS. But how this occurs remains unclear. Now, a new study, led by **Leonard Kaczmarek** at Yale University, suggests that mutant SOD1 may downregulate the sodium-gated potassium channel SLACK, a key regulator of neuronal excitability, through an ASK1-mediated mechanism. The approach, which involved the study of neurons in *Apylsia,* is the same strategy used by Eric Kandel in the 1960s to provide key molecular insights into learning and short-term memory formation. The findings may explain how cortical hyperexcitability may occur in at least one form of the disease. The study is published on January 24 in the *Journal of Neuroscience*.

Read more to find out about potential therapies that are currently being evaluated in the clinic that aim to reduce hyperexcitability in the disease.

Scientists Select Potent Agonists to Target EphA4 in ALS

Blocking EphA4 may help protect motor neurons in people with ALS by facilitating the repair and regeneration of damaged axons. But how to reduce activation of this receptor tyrosine kinase has proven difficult pharmacologically. Now, a research team led by University of California's **Maurizio Pellechia** in Riverside introduce a potent and selective brain penetrant EphA4 agonist that significantly extends survival of a mouse model of SOD1 ALS. The strategy appears to remove EphA4 from neuronal surfaces by receptor-mediated endocytosis. The approach is now being optimized and is at the preclinical stage. The study is published on February 4 in *Cell Chemical Biology*.

Read more about EphA4, an emerging target in ALS.

A New Cellular Model of C9orf72 ALS Cycles In

A new cellular model of C9orf72 ALS may facilitate the discovery of therapies for the most common form of the disease. The NSC34-based motor neuron model, which harbors 102 copies of the G4C2 repeat, is stable, isogenic and tetracycline-inducible. The cells, upon induction, exhibited key aspects of C9orf72 ALS including RNA foci and dipeptide repeat proteins, and resulted in reduced viability. No TDP-43 pathology, however, could be detected. The inducible cellular model may help researchers identify small molecule drugs that reduce potentially toxic RNAs and/or dipeptide repeat proteins in C9orf72 ALS through the performance of high-throughput screens. The study is published online on February 1 in *Human Molecular Genetics*.

Read more to find out about potential therapies for C9orf72 ALS approaching the clinic.

Dreaded Anticipation: ALS Strikes Earlier in Successive Generations

C9orf72 ALS may strike earlier in subsequent generations according to a new study published on February 13 in *JAMA Neurology*. The study, led by University of Antwerp's **Christine Van Broeckhoven**, found that the average age of onset dropped from 62 to 49 over 4 generations. This decrease, which is speculated to occur due to expanding repeat size, does not appear to result in an increase in progression rate. The study, which involved 36 families, is the largest study to date to evaluate whether this disease anticipation occurs in families at risk of developing C9orf72 ALS and/or FTD. The findings may help clinicians decide when to start monitoring people at risk of developing C9orf72-linked disease.

In New Role for TDP-43, Scientists Say it Controls Protein Synthesis

TDP-43 accumulates in the cytoplasm of motor neurons in most forms of ALS. But why this buildup is toxic remains unclear. Now, researchers from Tuscia University in Italy report that cytoplasmic TDP-43 may shut down global protein synthesis. The study found that TDP-43 bound to polysomes and increasing its cytoplasmic levels led to a 50% drop in global protein synthesis - at least in cultured cells. The findings may explain at least in part the underlying toxicity of cytoplasmic TDP-43 in the disease.

Assistive Technology News

Communicating On The Go? There May Be an Eye-tracking App For That.

A new iPhone app from Microsoft may help people with ALS communicate more quickly. The strategy, known as GazeSpeak, uses the iPhone camera to capture eye movements and using computer vision technologies, translates them into words. The approach, according to preliminary results, appears to help people with ALS communicate more than 40% faster than existing e-tran boards and operates up to nearly 90% accuracy.

Read more about GazeSpeak, including its tentative release date.

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

Funding Opportunities:

Wondering about the US CDRMP's ALS Research Program? CDRMP anticipates that they will begin accepting grant applications in March 2017. Read more

here.

March 2017

MDA Venture Philanthropy (MVP) Program. LOI due: March 1, 2017.

Target ALS Research Consortia. Applications are due by March 6, 2017.

Pathways 2017. Multinational Research Consortia. EU Joint Programme - Neurodegenerative Disease Research (JPND). Applications are due by March 6, 2017.

NEW! Arthur J. Hudson Translational Team Grant. ALS Canada. LOI: March 17, 2017.

NEW! NIH-Industry Partnership Initiative: Repurposing Existing Drugs. In collaboration with AstraZeneca and Janssen Pharmaceuticals. LOI: March 17, 2017.

Transformational Research 2017. FTD. Weston Brain Institute. LOI. March 31, 2017.

Identify and Characterize Potential Environmental Risk Factors for ALS and Evaluate Their Impact on ALS Disease Incidence and Progression. Applications are due by Mar 31, 2017.

April 2017

NEW! ALS Canada Trainee Program. Clinical, Postdoctoral and Graduate Fellowships. LOI: April 14, 2017.

UK: Novel Biomarkers 2017. FTD. Weston Brain Institute. LOI. April 19, 2017.

Check out our updated list of grants and awards.

Job Opportunities:

Professor, Neurodegeneration (W3). University of Heidelberg. Heidelberg, Germany.
Professor, Pharmacology. Wayne State University. Detroit, MI.
Assistant or Associate Professor, Neuroscience. University of North Dakota. Grand Forks, ND.
Postdoctoral Fellow, De Paola Lab. Imperial College London. London, England.
Research Assistant, FTD. University of College London. London, England.
Research Technician, Ferrari Lab. FTD. University College London. London, England.
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Research Scientist, AC Immune. Lausanne, Switzerland.
Scientist, Neuroscience. Genentech. San Francisco, CA.
Sr. Scientist, Laboratory of Neuronal Cell Biology. Biogen. Cambridge, MA
Scientist I/II, Translational Sciences. Biogen. Cambridge, MA.
Associate Scientist II / III, Neuroimmunology. Biogen. Cambridge, MA.
Associate Scientist II, Neuroimmunology. Biogen. 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:

March 2017

March 4-5, 2017. Ventura, CA, USA. Gordon Research Conference: Glial Biology: Functional Interactions Among Glia & Neurons.

NEW! March 21, 2017. Cambridge, England. The Inflamed Brain. **Abstracts due: March 1, 2017.**

NEW! March 22-23, 2017. London, England. UK Neuromuscular Translational Research Conference. Registration deadline: March 17, 2017.

March 23-26, 2017. Athens, Greece. World Congress on Controversies in Neurology.

March 26-30, 2017. Solden, Austria. International Neuroscience Winter Conference.

April 2017

April 22-28, 2017. Boston, MA. AAN 2017.Early registration: March 30, 2017. **Hotel deadline: March 8, 2017.**

May 2017

N E W ! May 11-13, 2017. Bonn, Germany. 5th Venusberg Meeting on Neuroinflammation. **Registration deadline: March 15, 2017.**

May 18-20, 2017. Ljubljana, Slovenia. ENCALS 2017.Abstracts due: March 20, 2017.

May 22-24, 2017. Barcelona, Spain. Annual World Congress on NeuroTalk. "New Technologies, New Ideas and New Future." Abstracts due: March 31, 2017.

June 2017

June 14-17, 2017. EMBL Heidelberg, Germany. EMBO-EMBL Symposium: Mechanisms of Neurodegeneration. Abstracts Due: March 22, 2017.

June 19-23, 2017. Keystone Symposium: Neuroinflammation: Concepts, Characteristics, Consequences. Abstracts Due: March 21, 2017.

June 26-27, 2017. Meeting the Challenges of Modelling Neurodegenerative Disease in Mice. Buckinghamshire, England.

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

STAY CONNECTED: