

# Leading Edge

Cell Volume 147 Number 3, October 28, 2011

## IN THIS ISSUE

### CELL CULTURE

481 The Musicality of Franz Liszt

### PREVIEWS

- 485 A Breath of Fresh Air  
in Lung Regeneration *S. Beronja and E. Fuchs*
- 487 A Gutsy Way to Grow: Intestinal  
Stem Cells as Nutrient Sensors *A. Sarkar and K. Hochedlinger*
- 489 You AhR What You Eat:  
Linking Diet and Immunity *L.V. Hooper*
- 491 Dueling Ca<sup>2+</sup> Sensors  
in Neurotransmitter Release *M. Xue, N. Giagtzoglou, and H.J. Beilen*
- 493 Two Routes for Remembering the Past  
*W. Suzuki and Y. Naya*

### ANALYSIS

496 Drop that Pipette:  
Science by Design *R. Bernstein*

### PERSPECTIVE

498 The Seeds of Neurodegeneration:  
Prion-like Spreading in ALS *M. Polymenidou and D.W. Cleveland*

### REVIEW

509 Molecular Mechanisms  
of Fear Learning and Memory *J.P. Johansen, C.K. Cain, L.E. Ostroff,  
and J.E. LeDoux*

### SNAPSHOT

706 Autism and the Synapse *J. Peça, J. Ting, and G. Feng*

# Articles

Cell Volume 147 Number 3, October 28, 2011

- 525 Distal Airway Stem Cells Yield Alveoli In Vitro and during Lung Regeneration following H1N1 Influenza Infection  
*P.A. Kumar, Y. Hu, Y. Yamamoto, N.B. Hoe, T.S. Wei, D. Mu, Y. Sun, L.S. Joo, R. Dagher, E.M. Zielonka, D.Y. Wang, B. Lim, V.T. Chow, C.P. Crum, W. Xian, and F. McKeon*
- 539 Endothelial-Derived Angiocrine Signals Induce and Sustain Regenerative Lung Alveolarization  
*B.-S. Ding, D.J. Nolan, P. Guo, A.O. Babazadeh, Z. Cao, Z. Rosenwaks, R.G. Crystal, M. Simons, T.N. Sato, S. Worgall, K. Shido, S.Y. Rabbany, and S. Rafii*
- 554 The Eph-Receptor A7 Is a Soluble Tumor Suppressor for Follicular Lymphoma  
*E. Oricchio, G. Nanjangud, A.L. Wolfe, J.H. Schatz, K.J. Mavrakis, M. Jiang, X. Liu, J. Bruno, A. Heguy, A.B. Olshen, N.D. Socci, J. Teruya-Feldstein, F. Wels-Garcia, W. Tam, R. Shaknovich, A. Melnick, J.P. Hirmanen, R.S.K. Chaganti, and H.-G. Wendel*
- 565 Master Transcription Factors Determine Cell-Type-Specific Responses to TGF- $\beta$  Signaling  
*A.C. Mullen, D.A. Orlando, J.J. Newman, J. Lovén, R.M. Kumar, S. Bilodeau, J. Reddy, M.G. Guenther, R.P. DeKoter, and R.A. Young*
- 577 Lineage Regulators Direct BMP and Wnt Pathways to Cell-Specific Programs during Differentiation and Regeneration  
*E. Trompouki, T.V. Bowman, L.N. Lawton, Z.P. Fan, D.-C. Wu, A. DiBiase, C.S. Martin, J.N. Cech, A.K. Sessa, J.L. Leblanc, P. Li, E.M. Durand, C. Mosimann, G.C. Heffner, G.Q. Daley, R.F. Paulson, R.A. Young, and L.I. Zon*
- 590 Molecular Architecture of the Transport Channel of the Nuclear Pore Complex  
*S.R. Solmaz, R. Chauhan, G. Blobel, and I. Melčák*
- 603 Altered Modes of Stem Cell Division Drive Adaptive Intestinal Growth  
*L.E. O'Brien, S.S. Soliman, X. Li, and D. Bilder*
- 615 Arc/Arg3.1 Regulates an Endosomal Pathway Essential for Activity-Dependent  $\beta$ -Amyloid Generation  
*J. Wu, R.S. Petralia, H. Kurushima, H. Patel, M.-y. Jung, L. Volk, S. Chowdhury, J.D. Shepherd, M. Dehoff, Y. Li, D. Kuhl, R.L. Haganir, D.L. Price, R. Scannevin, J.C. Troncoso, P.C. Wong, and P.F. Worley*
- 629 Exogenous Stimuli Maintain Intraepithelial Lymphocytes via Aryl Hydrocarbon Receptor Activation  
*Y. Li, S. Innocentin, D.R. Withers, N.A. Roberts, A.R. Gallagher, E.F. Grigorieva, C. Wilhelm, and M. Veldhoen*
- 641 Motor Neuron Position and Topographic Order Imposed by  $\beta$ - and  $\gamma$ -Catenin Activities  
*E.Y. Demireva, L.S. Shapiro, T.M. Jessell, and N. Zampieri*
- 653 Patterns of Spinal Sensory-Motor Connectivity Prescribed by a Dorsoventral Positional Template  
*G. Sürmeli, T. Akay, G.C. Ippolito, P.W. Tucker, and T.M. Jessell*

(continued)

666 Doc2 Is a  $\text{Ca}^{2+}$  Sensor Required for Asynchronous Neurotransmitter Release

J. Yao, J.D. Gaffaney, S.E. Kwon, and E.R. Chapman

678 Dynamics of Retrieval Strategies for Remote Memories

I. Goshen, M. Brodsky, R. Prakash, J. Wallace, V. Gradinaru, C. Ramakrishnan, and K. Deisseroth

## RESOURCE

690 A Protein Complex Network of *Drosophila melanogaster*

K.G. Guruharsha, J.-F. Rual, B. Zhai, J. Mintseris, P. Vaidya, N. Vaidya, C. Beekman, C. Wong, D.Y. Rhee, O. Cenaj, E. McKillip, S. Shah, M. Stapleton, K.H. Wan, C. Yu, B. Parsa, J.W. Carlson, X. Chen, B. Kapadia, K. VijayRaghavan, S.P. Gygi, S.E. Celniker, R.A. Obar, and S. Artavanis-Tsakonas

## ERRATUM

704 A Mechanism for Tunable Autoinhibition in the Structure of a Human  $\text{Ca}^{2+}$ /Calmodulin-Dependent Kinase II Holoenzyme

L.H. Chao, M.M. Stratton, I.-H. Lee, O.S. Rosenberg, J. Levitz, D.J. Mandell, T. Kortemme, J.T. Groves, H. Schulman, and J. Kuriyan

## ANNOUNCEMENTS

## POSITIONS AVAILABLE

On the cover: Spinal motor neurons cluster together in stereotypic positions in the spinal cord and innervate specific muscle targets, establishing a topographic projection map. In this issue, Demireva and colleagues (pp. 641–652) show that motor neuron catenin-cadherin signaling is required for clustering specific pools of neurons. Orderly target topography emerges from this patterning. The mosaic cover image provides an artistic impression of the complex clustering pattern of motor neuron subtypes—here depicted as tiles of different color—and also hints at specialized synaptic contacts on neuronal dendrites. This mosaic is displayed at the Flaminio-Piazza del Popolo metro station in Rome. Photo courtesy of Dr. Thomas Jessell.

