

# Leading Edge

Cell Volume 147 Number 6, December 9, 2011

## IN THIS ISSUE

### SELECT

1203 Microbial Genomics

### CORRESPONDENCE

1207 Interdisciplinary Graduate  
Education: A Case Study

*S.K. Bronson, M.F. Verderame, and R.L. Keil*

### ANALYSIS

1209 Virus Hunters:  
Catching Bugs in the Field

*G. Vaidyanathan*

### BENCHMARK

1212 Bridging Innate and Adaptive Immunity

*W.E. Paul*

### OBITUARY

1216 Ralph M. Steinman  
1943–2011

*A. Lanzavecchia and F. Sallusto*

### PREVIEWS

1218 Lock and Key to Transcription:  
 $\sigma$ -DNA Interaction

*X. Liu, D.A. Bushnell, and R.D. Kornberg*

1220 A Partner Evokes Latent Differences  
between Hox Proteins

*A.Z. Ansari and K.J. Peterson-Kaufman*

1222 Tankyrase Loses Its Grip  
on SH3BP2 in Cherubism

*A.D. Berendsen and B.R. Olsen*

1224 Samurai Sword Sets Spindle Size

*S. Reber and A.A. Hyman*

### REVIEW

1226 Weaving the Web of ER Tubules

*J. Hu, W.A. Prinz, and T.A. Rapoport*

### SNAPSHOT

1422 Retinoic Acid Signaling Pathway

*S. Kumar and G. Duester*

# Articles

Cell Volume 147 Number 6, December 9, 2011

- 1233 An HNF4 $\alpha$ -miRNA Inflammatory Feedback Circuit Regulates Hepatocellular Oncogenesis  
*M. Hatzia Apostolou, C. Polytarchou, E. Aggelidou, A. Drakaki, G.A. Poultsides, S.A. Jaeger, H. Ogata, M. Karin, K. Struhl, M. Hadzopoulou-Cladaras, and D. Iliopoulos*
- 1248 Transgenerational Inheritance of an Acquired Small RNA-Based Antiviral Response in *C. elegans*  
*O. Rechavi, G. Minevich, and O. Hobert*
- 1257 Structural Basis for Promoter -10 Element Recognition by the Bacterial RNA Polymerase  $\sigma$  Subunit  
*A. Feklistov and S.A. Darst*
- 1270 Cofactor Binding Evokes Latent Differences in DNA Binding Specificity between Hox Proteins  
*M. Slattery, T. Riley, P. Liu, N. Abe, P. Gomez-Alcala, I. Dror, T. Zhou, R. Rohs, B. Honig, H.J. Bussemaker, and R.S. Mann*
- 1283 Polycomb-Repressed Genes Have Permissive Enhancers that Initiate Reprogramming  
*P.C. Taberlay, T.K. Kelly, C.-C. Liu, J.S. You, D.D. De Carvalho, T.B. Miranda, X.J. Zhou, G. Liang, and P.A. Jones*
- 1295 Selective Ribosome Profiling Reveals the Cotranslational Chaperone Action of Trigger Factor In Vivo  
*E. Oh, A.H. Becker, A. Sandikci, D. Huber, R. Chaba, F. Gloge, R.J. Nichols, A. Typas, C.A. Gross, G. Kramer, J.S. Weissman, and B. Bukau*
- 1309 The STARD9/Kif16a Kinesin Associates with Mitotic Microtubules and Regulates Spindle Pole Assembly  
*J.Z. Torres, M.K. Summers, D. Peterson, M.J. Brauer, J. Lee, S. Senese, A.A. Gholkar, Y.-C. Lo, X. Lei, K. Jung, D.C. Anderson, D.P. Davis, L. Belmont, and P.K. Jackson*
- 1324 Loss of Tankyrase-Mediated Destruction of 3BP2 Is the Underlying Pathogenic Mechanism of Cherubism  
*N. Levaot, O. Voytyuk, I. Dimitriou, F. Sircoulomb, A. Chandrakumar, M. Deckert, P.M. Krzyzanowski, A. Scotter, S. Gu, S. Janmohamed, F. Cong, P.D. Simoncic, Y. Ueki, J. La Rose, and R. Rottapel*
- 1340 Structural Basis and Sequence Rules for Substrate Recognition by Tankyrase Explain the Basis for Cherubism Disease  
*S. Guettler, J. LaRose, E. Petsalaki, G. Gish, A. Scotter, T. Pawson, R. Rottapel, and F. Sicheri*
- 1355 Sec22b Regulates Phagosomal Maturation and Antigen Crosspresentation by Dendritic Cells  
*I. Cebrian, G. Visentin, N. Blanchard, M. Jouve, A. Bobard, C. Moita, J. Enninga, L.F. Moita, S. Amigorena, and A. Savina*
- 1369 Neuralized1 Activates CPEB3: A Function for Nonproteolytic Ubiquitin in Synaptic Plasticity and Memory Storage  
*E. Pavlopoulos, P. Trifilieff, V. Chevaleyre, L. Fioriti, S. Zairis, A. Pagano, G. Malleret, and E.R. Kandel*

(continued)

1384 Suppression of PKR Promotes Network Excitability and Enhanced Cognition by Interferon- $\gamma$ -Mediated Disinhibition

*P.J. Zhu, W. Huang, D. Kalikulov, J.W. Yoo, A.N. Placzek, L. Stoica, H. Zhou, J.C. Bell, M.J. Friedlander, K. Krnjević, J.L. Noebels, and M. Costa-Mattioli*

## THEORY

1397 Katanin Contributes to Interspecies Spindle Length Scaling in *Xenopus*

*R. Loughlin, J.D. Wilbur, F.J. McNally, F.J. Nédélec, and R. Heald*

## RESOURCE

1408 Comprehensive Genome-wide Protein-DNA Interactions Detected at Single-Nucleotide Resolution

*H.S. Rhee and B.F. Pugh*

## ERRATUM

1420 A Genome Befitting a Monarch

*M.C. Stensmyr and B.S. Hansson*

## ANNOUNCEMENTS

## POSITIONS AVAILABLE

On the cover: The opening of promoters to expose the coding DNA strand is the first universal step in gene expression. The crystal structure presented by Feklistov and Darst (pp. 1257–1269) uncovers the molecular details of promoter recognition and the initiation of melting. The authors show that bacterial promoter melting/recognition occurs as two conserved bases are flipped out of the  $-10$  element DNA (TATAAT) and into protein pockets of a subunit of RNA polymerase. The cover photograph depicts the promoter  $-10$  element sequence on the type bars of an old typewriter. The two lifted type bars represent the key bases flipped out of the DNA base stack during promoter recognition. The vintage look of the typewriter bars evokes the realm of prokaryotes and the fundamental yet evolutionary primal mechanism that they use for coding of promoter sequences within the genome.

