Research

Letters

Epigenetics of human T cells during the G0—G1 transition

Endonuclease-sensitive regions of human spermatozoal chromatin are highly enriched in promoter and CTCF binding sequences
Ali Arpanahi, Martin Brinkworth, David Iles, Stephen A. Krawetz, Agnieszka Paradowska, Adrian E. Platts, Myriam Said, Klaus Steger, Philip Tedder, and David Miller

Does the human X contain a third evolutionary block? Origin of genes on human Xp11 and Xq28
Margaret L. Delbridge, Hardip R. Patel, Paul D. Waters, Daniel A. McMillan, and Jennifer A. Marshall Graves

High-resolution analysis of epigenetic changes associated with X inactivation
Hendrik Marks, Jennifer C. Chow, Sergei Denissov, Kees-Jan François, Neil Brockdorff, Edith Heard, and Hendrik G. Stunnenberg

Epigenetic profiling at mouse imprinted gene clusters reveals novel epigenetic and genetic features at differentially methylated regions
Scott V. Dindot, Richard Person, Mark Strivens, Rejinaldo Garcia, and Arthur L. Beaudet

Tracking the past: Interspersed repeats in an extinct Afrotherian mammal, Mammutthus primigenius
Fangqing Zhao, Ji Qi, and Stephan C. Schuster

Domain shuffling and the evolution of vertebrates
Takeshi Kawasaki, Shuichi Kawasaki, Chisaki Tanaka, Miho Murai, Masahiko Yoneda, Nicholas H. Putnam, Daniel S. Rokhsar, Minoru Kanehisa, Nori Satoh, and Hiroshi Wada

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Evolution of gene function and regulatory control after whole-genome duplication: Comparative analyses in vertebrates
Karin S. Kassahn, Vinh T. Dang, Simon J. Wilkins, Andrew C. Perkins, and Mark A. Ragan

Epigenetic silencing of transposable elements: A trade-off between reduced transposition and deleterious effects on neighboring gene expression
Jesse D. Hollister and Brandon S. Gaut

Clusters and superclusters of phased small RNAs in the developing inflorescence of rice
Cameron Johnson, Anna Kasprzewska, Kristin Tennessen, John Fernandes, Guo-Ling Nan, Virginia Walbot, Venkatesan Sundaresan, Vicki Vance, and Lewis H. Bowman

Horizontal gene transfer of an entire metabolic pathway between a eukaryotic alga and its DNA virus
Adam Monier, António Pagarete, Colomban de Vargas, Michael J. Allen, Betsy Read, Jean-Michel Claverie, and Hiroyuki Ogata

The consequences of genetic drift for bacterial genome complexity
Chih-Horng Kuo, Nancy A. Moran, and Howard Ochman

Methods and Resources

Methods
MS-qFRET: A quantum dot-based method for analysis of DNA methylation
Vasudev J. Bailey, Hariharan Easwaran, Yi Zhang, Elizabeth Griffiths, Steven A. Belinsky, James G. Herman, Stephen B. Baylin, Hetty E. Carraway, and Tza-Huei Wang

Genome-wide screen of promoter methylation identifies novel markers in melanoma
Yasuo Koga, Mattia Pelizzola, Elaine Cheng, Michael Krauthammer, Mario Sznol, Stephan Ariyan, Deepak Narayan, Annette M. Molinaro, Ruth Halaban, and Sherman M. Weissman

Transcriptional and post-transcriptional profile of human chromosome 21
Sergey I. Nikolaev, Samuel Deutsch, Raphael Genolet, Christelle Borel, Leila Parand, Catherine Ucla, Frederic Schütz, Genevieve Duriaux Sail, Yann Dupré, Pascale Jaquier-Gubler, Tanguy Araud, Beatrice Conne, Patrick Descombes, Jean-Dominique Vassali, Joseph Curran, and Stylianos E. Antonarakis

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Incorporating nucleosomes into thermodynamic models of transcription regulation
Tali Raveh-Sadka, Michal Levo, and Eran Segal

Resources
Automated identification of conserved synteny after whole-genome duplication
Julian M. Catchen, John S. Conery, and John H. Postlethwait

Erratum

Open Access paper.

Cover  Horizontal gene transfer is one of the major evolutionary processes in phage-bacteria systems, but its occurrence in eukaryotes has been less documented. In this issue, a clear case of gene transfer was identified between the cosmopolitan marine eukaryote *Emiliania huxleyi*, known for its beautiful exoskeletons made of calcium carbonate scales (“coccoliths”), and an icosahedral giant virus that lytically kills this microalga. The gene transfer involved not only one gene, but a series of genes coding for key enzymes of almost the entire sphingolipid/ceramide biosynthesis pathway. (Cover illustration by Miguel Frada and Glynn Gorick. [For details, see Monier et al., pp. 1441–1449.])