Contents

Research papers

Characterization of chromosome fragmentation in two protozoans and identification of a candidate fragmentation sequence in *Euplotes crassus*
Scott E. Baird and Lawrence A. Klobutcher 585

A bacterial environmental sensor that functions as a protein kinase and stimulates transcriptional activation
Michele M. Igo, Alexander J. Ninfa, and Thomas J. Silhavy 598

DNA bending by negative regulatory proteins: Gal and Lac repressors
Christian Zwieb, Jin Kim, and Sankar Adhya 606

CpG methylation of the cAMP-responsive enhancer/promoter factor binding as well as transcriptional activation
Sanae M.M. Iguchi-Ariga and Walter Schaffner 612

DNA-binding activity of the adenovirus-induced E4F transcription factor is regulated by phosphorylation
Pradip Raychaudhuri, Srilata Bagchi, and Joseph R. Nevins 620

A gene with homology to the myc similarity region of MyoD 1 is expressed during myogenesis and is sufficient to activate the muscle differentiation program
Diane Edmondson and Eric N. Olson 628

Complementary homeo protein gradients in developing limb buds
Guillermo Oliver, Neil Sidell, William Fiske, Camilla Heinzmann, T. Mohandas, Robert S. Sparkes, and Eddy M. De Robertis 641

Positive and negative regulation of the gene for transcription factor IIIA in *Xenopus laevis* oocytes
Kathleen W. Scotto, Hildegard Kaulen, and Robert G. Roeder 651

Developmental and tissue-specific regulation of a novel transcription factor of the sea urchin
Alcide Barberis, Giulio Superti-Furga, Luigi Vitelli, Iris Kemler, and Meinrad Busslinger 663

A neuron-specific enhancer of the *Drosophila* dopa decarboxylase gene
Wayne A. Johnson, Carol Ann McCormick, Sarah J. Bray, and Jay Hirsh 676

Differential requirements for cell-specific elastase 1 enhancer domains in transfected cells and transgenic mice
Galvin H. Swift, Fred Kruse, Raymond J. MacDonald, and Robert E. Hammer 687

Genetic analysis of the role of human U1 snRNA in mRNA splicing: I. Effect of mutations in the highly conserved stem-loop I of U1
Chung-Yee Yuo and Alan M. Weiner 697

The *Drosophila* female-specific sex-determination gene, *Sex-lethal*, has stage-, tissue-, and sex-specific RNAs suggesting multiple modes of regulation
Helen K. Salz, Eleanor M. Maine, Linda N. Keyes, Mark E. Samuels, Thomas W. Cline, and Paul Schedl 708
Analysis of the cis-acting requirements for germ-line-specific splicing of the P-element ORF2–ORF3 intron
Frank A. Laski and Gerald M. Rubin

Cis-acting DNA sequence requirements for P-element transposition
Mary C. Mullins, Donald C. Rio, and Gerald M. Rubin

Cover Gradient of homeo domain protein in a developing chicken wing bud. Image processing shows the most intensely stained nuclei in red, the intermediate ones in yellow, and the least stained ones in green. [For details, see Oliver et al., p. 641.]