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Telomeres

Monograph 29

Edited by Elizabeth H. Blackburn, *University of California, San Francisco*; Carol W. Greider, *Cold Spring Harbor Laboratory*

Research on telomeres has recently surged forward. Telomeres have been found to shorten in neoplastic and aging cells, and their analysis has been stimulated by the molecular cloning of key components in telomere metabolism. This is therefore a timely book, a comprehensive account of telomere structure and function in a variety of organisms including yeast, *Drosophila*, ciliates, plants and mammals. Starting with a historical overview, it covers telomere structure, dynamics, localization, transcriptional silencing, as well as the significance of length regulation and the roles of telomeres. Written and edited by members of leading laboratories worldwide, this book will

have lasting value for investigators of cancer and aging as well as those with interests in replication, ribonuclear particles, chromosome dynamics and polymerases.

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Beginning of the End: Origins of the Telomere Concept (J.G. Gall); Telomere DNA Structure (E. Henderson); Telomerase Biochemistry and Regulation (C.W. Greider); Telomere Proteins (G. Fang, T.R. Cech); *Saccharomyces* Telomeres: Function, Structure, and Replication (V.A. Zakian); Telomere Position Effects and Transcriptional Silencing in the Yeast *Saccharomyces cerevisiae* (D. Shore); Developmentally Programmed Healing of Chromosomes (E.H. Blackburn); Non-programmed and Engineered Chromosome Breakage (H. Cooke); Telomeres and Aging (C.B. Harley); Telomere Dynamics and Genome Instability in Human Cancer (T. de Lange); Cytology of Telomeres (A.F. Dernburg et al.); *Drosophila* Telomeres: Another Way to End It All (M.-L. Pardue); Plant Telomeres (E.J. Richards)

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NEWLY
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Translational Control

Monograph 30

Edited by John W.B. Hershey, *University of California, Davis*; Michael B. Mathews, *Cold Spring Harbor Laboratory*; Nahum Sonenberg, *McGill University, Montreal*

Patterns of protein synthesis and gene expression are much influenced by changes in the efficiency of mRNA translation. Translation is controlled at many levels and the complexity of this regulation has been clearly revealed by the recent application of biochemical and genetic techniques. This monograph is a broad, critical and comprehensive account of the numerous control mechanisms observed in eukaryotes. Written and edited by leaders in the field, the book is a timely work of reference for both specialists and investigators with wider interests in gene expression, RNA biology, and protein synthesis.

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Origins and Targets of Translational Control (M.B. Mathews, N. Sonenberg, and J.W.B. Hershey); The Pathway and Mechanism of Eukaryotic Protein Synthesis (W.C. Merrick and J.W.B. Hershey); A Comparative View of Initiation Site Selection Mechanisms (R.J. Jackson); Binding of Initiator Methionyl-tRNA to Ribosomes (H. Trachsel); Protein Kinases That Phosphorylate eIF2 and eIF2B, and Their Role in Eukaryotic Cell Translational Control (M.J. Clemens);

Translational Control Mediated by Upstream AUG Codons (A.P. Geballe); Translational Control of GCN4: Gene-specific Regulation by Phosphorylation of eIF2 (A.G. Hinnebusch); mRNA 5' Cap-binding Protein eIF4E and Control of Cell Growth (N. Sonenberg); Translational Control during Heat Shock (R.F. Duncan); Regulation of Protein Synthesis by Calcium (A.C. Nairn and H.C. Palfrey); Masked and Translatable Messenger Ribonucleoproteins in Higher Eukaryotes (A.S. Spirin); Translational Control of Ferritin (T.A. Rouault, R.D. Klausner, and J.B. Harford); Translational Control of Ribosomal Protein mRNAs in Eukaryotes (O. Meyuhas, D. Avni, and S. Shama); Ribosomal Protein S6 Phosphorylation and Signal Transduction (H.B.J. Jefferies and G. Thomas); Translational Control of Developmental Decisions (M. Wickens, J. Kimble, and S. Strickland); Poly(A) Metabolism and Translation: The Closed-loop Model (A. Jacobson); Dynamics of Poly(A) Addition and Removal during Development (J.D. Richter); Interactions between Viruses and the Cellular Machinery for Protein Synthesis (M.B. Mathews); Initiation of Translation by Picornavirus RNAs (E. Ehrenfeld); Adenovirus and Vaccinia Virus Translational Control (R.J. Schneider); Translational Control in Cells Infected with Influenza Virus and Reovirus (M.G. Katze); Translationally Coupled Degradation of mRNA in Eukaryotes (N.G. Theodorakis and D.W. Cleveland); Regulatory Recoding (J.F. Atkins and R.F. Gesteland); Mammalian Ribosomes: The Structure and the Evolution of the Proteins (I.G. Wool, Y.-L. Chan, and A. Gluck); Genetics of Mitochondrial Translation (T.D. Fox); Control of Translation Initiation in Prokaryotes (H.O. Voorma)

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