Methods in ENZYMOLOGY

Volume 431

Translation Initiation: Cell Biology, High-Throughput Methods, and Chemical-Based Approaches

Edited by

Jon Lorsch

VOLUME FOUR HUNDRED AND THIRTY-ONE

METHODS IN ENZYMOLOGY

Translation Initiation: Cell Biology, High-Throughput Methods, and Chemical-Based Approaches

EDITED BY

JON LORSCH
Department of Biophysics and Biophysical Chemistry
Johns Hopkins University School of Medicine
Baltimore, Maryland

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SIDNEY P. COLOWICK AND NATHAN O. KAPLAN

CONTRIBUTORS

Paul Anderson
Division of Rheumatology, Immunology, and Allergy, Brigham and Women's Hospital, Boston, Massachusetts

Yoav Arava
Department of Biology, Technion—Israel Institute of Technology, Haifa, Israel

Mark P. Ashe
Faculty of Life Sciences, The University of Manchester, Manchester, United Kingdom

Traude H. Beilharz
Molecular Genetics Program, Victor Chang Cardiac Research Institute (VCCRI), Sydney, Australia; and
St. Vincent's Clinical School, University of New South Wales, Sydney, Australia

Letizia Brandi
Biotechnomics, Insubrias BioPark, Gerenzano, Italy

Susan G. Campbell
Faculty of Life Sciences, The University of Manchester, Manchester, United Kingdom

Marcello Carotti
Department of Biology MCA, University of Camerino, Camerino, Italy

Regina Cencic
Department of Biochemistry, McGill University, Montreal, Quebec, Canada

Nam Song Choi
Department of Chemistry, Texas A&M University, College Station, Texas

Jennifer L. Clancy
Molecular Genetics Program, Victor Chang Cardiac Research Institute (VCCRI), Sydney, Australia

Yongjun Dang
Department of Pharmacology, Johns Hopkins School of Medicine, Baltimore, Maryland

Edward Darzynkiewicz
Division of Biophysics, Institute of Experimental Physics, Faculty of Physics, Warsaw University, Warsaw, Poland

Naama Eldad
Department of Biology, Technion—Israel Institute of Technology, Haifa, Israel

Attilio Fabbretti
Department of Biology MCA, University of Camerino, Camerino, Italy

Edith Gomez
Faculty of Life Sciences, The University of Manchester, Manchester, United Kingdom

Ewa Grudzien-Nogalska
Division of Biophysics, Institute of Experimental Physics, Faculty of Physics, Warsaw University, Warsaw, Poland; and
Department of Biochemistry and Molecular Biology, Louisiana State University Health Sciences Center, Shreveport, Louisiana

Claudio O. Gualerzi
Department of Biology MCA, University of Camerino, Camerino, Italy

Raphaël Haddad
Faculty of Life Sciences, The University of Manchester, Manchester, United Kingdom

Yi-Shuian Huang
Division of Neuroscience, Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan

David T. Humphreys
Molecular Genetics Program, Victor Chang Cardiac Research Institute (VCCRI), Sydney, Australia

Jacek Jemielity
Division of Biophysics, Institute of Experimental Physics, Faculty of Physics, Warsaw University, Warsaw, Poland

Nancy Kedersha
Division of Rheumatology, Immunology, and Allergy, Brigham and Women's Hospital, Boston, Massachusetts

Shukun Li
Department of Chemistry, Texas A&M University, College Station, Texas

Jun O. Liu
Department of Pharmacology; Solomon H. Synder Department of Neuroscience; and Department of Oncology, Johns Hopkins School of Medicine, Baltimore, Maryland

Woon-Kai Low
Department of Pharmacology, Johns Hopkins School of Medicine, Baltimore, Maryland

Gil Ma
Department of Chemistry, Texas A&M University, College Station, Texas

Daniel Melamed
Department of Biology, Technion—Israel Institute of Technology, Haifa, Israel

Pohl Milon
Department of Biology MCA, University of Camerino, Camerino, Italy

Sarah S. Mohammad-Qureshi
Faculty of Life Sciences, The University of Manchester, Manchester, United Kingdom

Christopher V. Nicchitta
Department of Cell Biology, Duke University Medical Center, Durham, North Carolina

Klaus H. Nielsen
Department of Molecular Biology, University of Aarhus, Aarhus, Denmark

Marco Nousch
Molecular Genetics Program, Victor Chang Cardiac Research Institute (VCCRI), Sydney, Australia

Karren S. Palmer
Faculty of Life Sciences, The University of Manchester, Manchester, United Kingdom

Kaapjoo Park
Department of Chemistry, Texas A&M University, College Station, Texas

Graham D. Pavitt
Faculty of Life Sciences, The University of Manchester, Manchester, United Kingdom

Jerry Pelletier
Department of Biochemistry and McGill Cancer Center, McGill University, Montreal, Quebec, Canada

Cynthia L. Pon
Department of Biology MCA, University of Camerino, Camerino, Italy

Thomas Preiss
Molecular Genetics Program, Victor Chang Cardiac Research Institute (VCCRI), Sydney, Australia;
St. Vincent's Clinical School; and School of Biotechnology and Biomolecular Sciences, University of New South Wales, Sydney, Australia

Christopher G. Proud
Department of Biochemistry and Molecular Biology, University of British Columbia, Vancouver, Canada

Robert E. Rhoads
Department of Biochemistry and Molecular Biology, Louisiana State University Health Sciences Center, Shreveport, Louisiana

Jonathan P. Richardson
Faculty of Life Sciences, The University of Manchester, Manchester, United Kingdom

Joel D. Richter
Program of Molecular Medicine, University of Massachusetts Medical School, Worcester, Massachusetts

Francis Robert
Department of Biochemistry, McGill University, Montreal, Quebec, Canada

Daniel Romo
Department of Chemistry, Texas A&M University, College Station, Texas

Robert M. Rzasa
Department of Chemistry, Texas A&M University, College Station, Texas

Tilman Schneider-Poetsch
Department of Pharmacology, Johns Hopkins School of Medicine, Baltimore, Maryland

Helene A. Shea
Department of Chemistry, Texas A&M University, College Station, Texas

Zonggao Shi
Department of Pharmacology, Johns Hopkins School of Medicine, Baltimore, Maryland

Samuel B. Stephens
Department of Cell Biology, Duke University Medical Center, Durham, North Carolina

Janusz Stepinski
Division of Biophysics, Institute of Experimental Physics, Faculty of Physics, Warsaw University, Warsaw, Poland

Ryszard Stolarski
Division of Biophysics, Institute of Experimental Physics, Faculty of Physics, Warsaw University, Warsaw, Poland

Leoš Valášek
Laboratory of Regulation of Gene Expression, Institute of Microbiology, Prague, the Czech Republic

Xuemin Wang
Department of Biochemistry and Molecular Biology, University of British Columbia, Vancouver, Canada

Belinda J. Westman
Division of Gene Regulation & Expression, School of Life Sciences, Wellcome Trust Biocentre, University of Dundee, Dundee, United Kingdom

Joanna Zuberek
Division of Biophysics, Institute of Experimental Physics, Faculty of Physics, Warsaw University, Warsaw, Poland

PREFACE

Over the past 15 years, it has become clear that translation initiation is a key regulatory point in the control of gene expression. Loss-of-control of protein synthesis has been implicated in a variety of diseases ranging from cancer to viral infection, and there is increasing interest in the development of new drugs that target translation initiation. Despite the profound biological and medical importance of this key step in gene expression, we are only beginning to understand the molecular mechanics that underlie translation initiation and its control, and much work remains to be done.

These MIE volumes (429, 430, and 431) are a compilation of current approaches used to dissect the basic mechanisms by which bacterial, archaeal, and eukaryotic cells assemble, and control the assembly of, ribosomal complexes at the initiation codon. A wide range of methods is presented from cell biology to biophysics to chemical biology. It is clear that no one approach can answer all of the important questions about translation initiation, and that major advances will require collaborative efforts that bring together various disciplines. I hope that these volumes will facilitate cross-disciplinary thinking and enable researchers from a wide variety of fields to explore aspects of translation initiation throughout biology.

Initially, we had planned to publish a single volume on this subject. However, the remarkable response to my requests for chapters allowed us to scale up to three volumes. I would like to express my sincerest appreciation and admiration for the contributors to this endeavor. I am impressed with the outstanding quality of the work produced by the authors, all of whom are leaders in the field. I am especially grateful to John Abelson for giving me the opportunity to edit this publication and for his support and advice throughout the project. Finally, I am indebted to Cindy Minor and the staff at Elsevier for their help and wisdom along the way.

JON LORSCH

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