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Listen up! The message is spreading.

The versatility of RNA makes it a powerful tool in transforming how we understand, diagnose and treat disease. Over the past several years, advances in RNA research have catalyzed breakthroughs in therapeutics, personalized medicine, molecular diagnostics, infectious disease research and agricultural biology. Therefore, advanced tools for manipulation and analysis of mRNA are more important than ever. For many years, NEB has invested in the development of products to support RNA research, all of which are vetted by our own scientists in their work. Whether you are in an academic or industrial setting, we have the products, tools, services and support that will help drive your research forward.



mRNA Therapeutics and Personalized Medicine – mRNA therapeutics have emerged as a versatile platform, enabling vaccine development, protein replacement therapies and immunotherapies. NEB offers products for the full mRNA synthesis workflow, which are also available GMP-grade*.



RNA in Agricultural Biology – RNA is emerging as a transformative technology for agricultural applications, including crop protection and precision breeding. NEB's solutions for AgBio researchers include reagents for RT-qPCR, NGS library prep, and nucleic acid purification.



RNA-based Diagnostics and Surveillance – RNA-based diagnostics enable rapid, sensitive and specific detection of pathogens and biomarkers. NEB products for RT-qPCR, RNA-seq, and isothermal amplification deliver sensitive detection and streamlined workflows.



RNA in Basic Research – RNA research in academia focuses on understanding the role of RNA in diverse biological processes, and can be foundational for translational applications. NEB's basic research program focused on RNA biology utilizes many of our reagents and has contributed to advances in this area.

Find more details on products available, request samples, and access helpful RNA-related resources at [NEBrna.com](https://www.neb.com/NEBrna.com)

* "GMP-grade" is a branding term NEB uses to describe products manufactured or finished at NEB's Rowley facility. The Rowley facility was designed to manufacture products under more rigorous infrastructure and process controls to achieve more stringent product specifications and customer requirements. Products manufactured at NEB's Rowley facility are manufactured in compliance with ISO 9001 and ISO 13485 quality management system standards. However, at this time, NEB does not manufacture or sell products known as Active Pharmaceutical Ingredients (APIs), nor does NEB manufacture its products in compliance with all of the Current Good Manufacturing Practice regulations. Products and content are covered by one or more patents, trademarks and/or copyrights owned or controlled by New England Biolabs, Inc (NEB). The use of trademark symbols does not necessarily indicate that the name is trademarked in the country where it is being read; it indicates where the content was originally developed. See www.neb.com/trademarks. The use of these products may require you to obtain additional third-party intellectual property rights for certain applications. For more information, please email busdev@neb.com.

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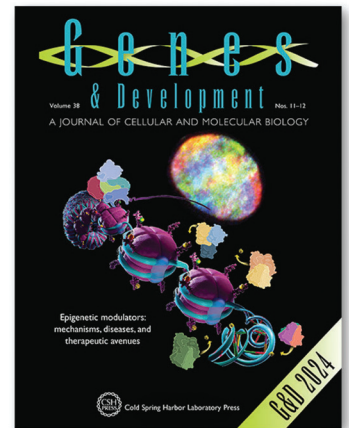
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Scope

Genes & Development is a leading, not-for-profit, scientific journal, publishing high-quality research that spans broad interests and constitutes significant biological advances in the areas of molecular biology, molecular genetics, cancer biology, aging, developmental biology, neuroscience, microbiology, and related fields. **Genes & Development** publishes full-length Research Papers, short Research Communications, novel Resources and Methodologies, comprehensive Reviews, and thought-provoking Outlook articles and Perspectives.



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- Globally renowned scientists with field-specific insight provide rigorous and expert peer review to ensure our published articles receive maximum scientific support and impact.
- Submissions considered with external review reports obtained from other journals or Review Commons.

General areas of interest include

- Molecular Biology
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- Chromatin and Epigenetics
- Cell Biology
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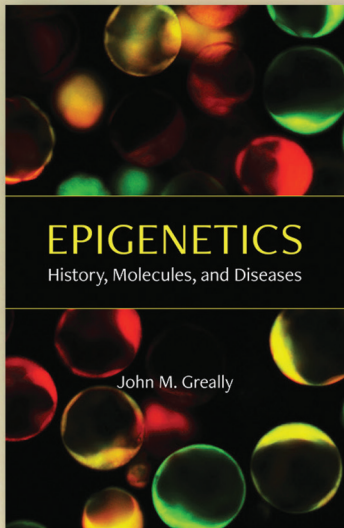
EPIGENETICS

History, Molecules, and Diseases

by John M. Greally

How do cells with the same DNA acquire different identities and behaviors?

Can environmental exposure influence biological functions and human health?



Epigenetics explores the field from its historical roots in embryology to the modern landscape of genomic technologies—bringing clarity to a topic often clouded by oversimplification and overreach. It rejects exaggerated claims to refocus attention on how cells establish and preserve identity, and how this understanding translates into insights that are meaningful for human health.

A rigorous, insightful guide for anyone seeking an understanding of what epigenetics is—and what it is not.



Learn more

www.cshlpress.org/epigenetics

About the Author

John Greally is Professor of Genetics and Pediatrics at the Albert Einstein College of Medicine in the Bronx and Founding Director of its Center for Epigenomics. He is also Founder and Executive Director of the New York Center for Rare Diseases and an attending physician in Genetics at Montefiore Medical Center. Originally from Galway, Ireland, he trained in pediatrics at the Children's Hospital of Pittsburgh and clinical genetics at Yale University, and is a Fellow of the American College of Medical Genetics. His research focuses on discovering functional non-coding variants to improve genomic diagnostics, with over 210 peer-reviewed publications.



Cold Spring Harbor Laboratory Press



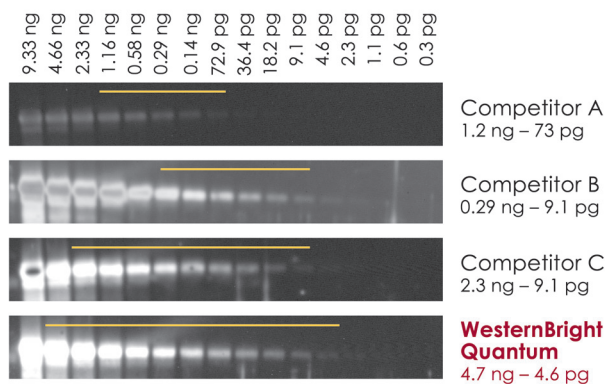
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WesternBright Quantum produces a strong, long-lasting signal with extremely low background, perfect for detecting low abundance proteins. Since it does not exhibit substrate depletion at high protein loads, WesternBright Quantum provides a large dynamic range for the most quantitative chemiluminescent Western experiments.

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Highest sensitivity, greatest linear range



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SIRVs reflect transcriptome complexity

SIRVs were designed as a family of modules, each imitating specific aspects of natural transcriptome complexity. The SIRVs isoform module probes transcription and splicing variants, the ERCCs module addresses concentration dynamics, and the long SIRVs module mimics length.

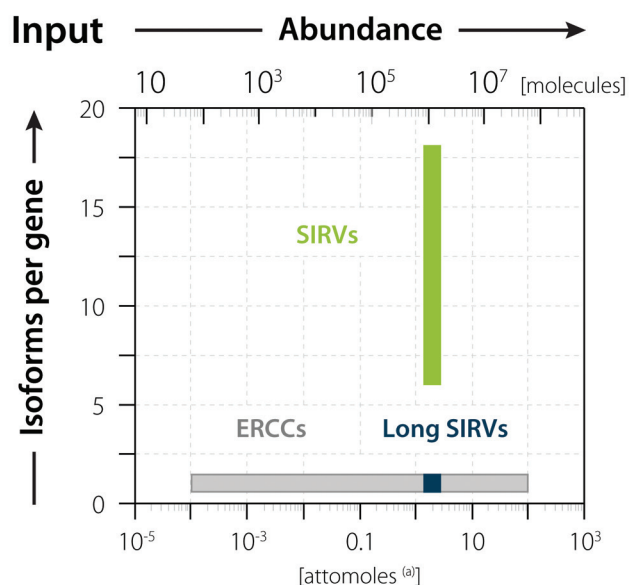


Figure 1 | Isoform and abundance complexity. The SIRV isoform and ERCC transcripts control for the two main dimensions of transcriptome complexity: isoforms and abundance. The Long SIRVs module additionally contains controls for length complexity.