

The complete know-how on optimizing lab protocols for handling every RNA species – from the very small to the very large.

In contrast to DNA, which is restricted to the single function of carrier of genetic information in the cell nucleus, RNA – a closely related but biochemically very different molecule, is employed in a variety of functions. Consequently, there are dozens of functionally different RNA classes in the cell. Their analysis and selective enrichment requires special knowledge and special tools, many of which have been substantially improved in recent years.

This is the first book on the market to cover the many new and important RNA species discovered over the past five years, and it explains current methods for their enrichment, separation and purification.

Building up from general principles of RNA biochemistry and biophysics, it addresses the practical aspects relevant to the laboratory researcher throughout, while discussing the performance and potential problems of the methods discussed.

An appendix contains a glossary with the important chromatographic terms and techniques used in RNA analysis.



Douglas T. Gjerde received his PhD in analytical chemistry from Iowa State University. After having worked in large and small companies for a number of years, Gjerde founded Sarasep, Inc. in 1990 for the commercialization of polymeric separation technologies and co-founded Transgenomic, Inc. in 1997 for the commercialization of nucleic acid separation technology. Gjerde is now working on his third start-up company, PhyNexus, Inc. PhyNexus produces miniaturized sample preparation tools for the biological research market. Gjerde has authored and coauthored numerous articles, book chapters and 6 books and holds over fifty patents in separation science.



Lee Hoang received his Ph.D. in 2006 from the University of California, Santa Cruz in Department of Molecular, Cell and Developmental Biology where he performed research in the area of genetic and biochemical analysis of ribosomal proteins and RNA. Hoang is now Applications Scientist at PhyNexus where he is developing high-throughput, automated biomolecule purification technologies. His R&D work has led to several new, novel products and new intellectual property. Hoang duties also include developing new business relationships.



David Hornby received his PhD in 1984 from the University of Sheffield. Hornby is currently Department Head for The Department of Molecular Biology and Biotechnology at the University of Sheffield and also Academic Head of Enterprise activities. Hornby's current research includes the investigation of DNA recognition specificity of DNA modifying enzymes and the purification of protein complexes for structural and biochemical analysis. In addition, through a commercial collaboration over several years with Gjerde, Hornby's laboratory has developed a range of analytical and preparative methods for the isolation and characterization of nucleic acids including most recently RNA.

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