

PREFACE

The phenomena encompassed by the term RNA editing range from the subtle to the bizarre. Initially, the term was coined by Benne and colleagues to describe alterations at the RNA level consisting of the insertion of "extra" nucleotides (or deletion of encoded nucleotides). This definition was subsequently expanded to include specific base changes, which often involve the deamination of cytidine to uridine or adenosine to inosine within mRNAs. The feature that these processes have in common is that they result in site-specific changes within an RNA sequence.

Not surprisingly, the various types of editing events differ mechanistically, and comprise both co- and posttranscriptional processes, sometimes within the same organism or organelle. There is also interplay between editing and other cellular processes, including transcription, splicing, and RNA silencing.

The diverse array of editing types has made it necessary to develop a range of different approaches for dissecting editing mechanisms. This volume covers most of the principal methods employed in the field, with the exception of RNA interference, which has been extensively covered elsewhere. Hopefully, the chapters in this volume will lead to a greater appreciation of the breadth of approaches taken by "RNA editors" as they meet the considerable challenges posed by these various experimental systems.

This volume and its companion (Volume 425: RNA Modification) are meant to complement one another. The fields of RNA modification and editing overlap extensively, and it is often impossible to make clear distinctions between changes that are classified as RNA modifications and those that are referred to as RNA editing events (e.g., A-to-I changes in tRNAs versus mRNAs). For the purpose of this series, I have designated chapters for the modification or editing volumes based on common conventions, which are largely historical rather than scientific in origin.

I wish to express my sincere appreciation to the authors for their thoughtful contributions and willingness to share their expertise. This volume is dedicated to William, Katherine, Eric, and the rest of my family in gratitude for their love and encouragement.

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