

Preface

“Editing a book on editing” has a certain “tongue in cheek” connotation to it, and I must admit that I was not aware what the job truly entailed when the project started. However, over the many months that it took to complete the book, it was interesting to realize that indeed “printing-type editing” and “biological editing” have many matching characteristics. Therefore, the quote by the well-known film editor Verna Fields (1918–1982), *“I wish the word ‘editing’ had never been invented, ‘editing’ implies correcting, and it’s not”*, can function as a motto for the book: the various biological phenomena that are controlled by the different editing reactions are by far more complex than a simple correction process, and it is astounding how multifaceted the field has become.

All chapters of the book focus, as a general “editorial” subtext, on the correlation between RNA structure and function, and on complexity. This involves different length scales: from complex molecular machineries, to the interplay of complex biochemical pathways, and to evolutionary processes. The chapters are organized in a sequence beginning with a status quo account of RNA editing reactions from the focused perspective of RNA structure. This is followed by a chapter on the structure/function correlation in tRNA editing, and a chapter on RNA editing by adenosine deaminases that act on RNA (ADARs). A to I editing is perhaps today’s best example for the wide spectrum of biological functions that are impacted by RNA editing. Especially the recently discovered interaction of the ADAR editing pathway with the microRNA/RNAi machinery is an excellent illustration of this. The next chapter summarizes the remarkable progress in the insertion/deletion-type editing reaction in *Physarum polycephalum*, and the following two chapters are dedicated to editing processes in plant mitochondria and chloroplasts. Three chapters deal with the U insertion/U deletion-type RNA editing reaction in kinetoplastid parasites. This incorporates a description of the molecular editing machinery, a chapter on accessory factors of the reaction pathway, and a detailed discussion of its biological function including the recently discovered alternative editing phenomenon. A final chapter is dedicated to evolutionary aspects of RNA editing.

I hope that the book will prove useful not only to those working directly in this domain, but also to advanced students and researchers, including those in sister disciplines, who wish to “re-edit” their knowledge on RNA editing.

Finally, I would like to thank all contributing authors for their work and efforts, and the series editor H.J. Gross for his help and advice. A special thank you goes to Ursula Gramm for her patient and calm editorial work, and to Monique T. Delafontaine for her superb copy-editing: a perfect example of editing as a “*conditio sine qua non*”.

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