
Preface

This second edition of *Mobile Genetic Elements: Protocols and Genomic Applications* gathers into a highly practical, single source volume, a wide array of strategies and protocols for identifying transposable elements (TEs) and their evolutionary derivatives, and for studying genome structure, function, and evolution. The overlaps between both editions have been limited in order to set a second volume depicting in silico tools, strategies, and protocols that are complementary of those described in the first.

In front of the exponential increase of sequence genome data and the “easiness” to obtain them, Chapters 2–7 provide a series of complementary approaches in silico to identify, to name, and to classify TEs, but also to follow the consequences of their mobility between datasets obtained from genomes resequenced. Chapters 8 and 9 described TE-derived techniques that have been used successfully in vitro to detect genome polymorphisms. Chapters 10–15 are focused on TE-based technologies to make mutagenesis or gene delivery in vivo in a wide range of organisms ranging from bacteria to mammals, including nematods, insects, and plants. Chapter 16 is devoted to an in vitro method to define the insertion profile of neo-inserted TEs in the genomes of a cell population. Chapters 17 and 18 concerns novel TE-based technologies used for cancer and cell biology purposes.

I hope that this second edition of *Mobile Genetic Elements: Protocols and Genomic Applications* will appeal to those scientists and students intending to use TEs as genetic tools for dissecting the function of a specific gene and elaborating on mechanisms leading to genetic change and diversity, as well as to those studying the evolutionary impact of mobile DNA on the biology and evolution of organism.

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