



Regulation of Mobile Genetic Elements at the Molecular Level

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Message from the Guest Editor

Mobile genetic elements can have devastating or, on the contrary, beneficial effects on genomes. They can create disorders but they also play an essential role in the fluidity of genomes and in evolution. It is therefore extremely important to elucidate the regulatory mechanisms controlling mobile genetic elements in all their aspects at the molecular level.

A number of different regulatory systems exist and operate in different organisms and in different tissues. In the metazoans germline, small RNAs interacting with PIWI family proteins (piRNAs) and small interfering RNAs (siRNAs) are key components of the pathways controlling transposable elements. Chromatin remodeling leads to transcriptional silencing of mobile elements. Truncated proteins derived from transposable elements themselves can control mobility as in the case of P elements in *Drosophila*. Somatic silencing mechanisms may be totally different from germline mechanisms in the same organism. Bringing together different areas of research in this Special Issue will help to expand our knowledge of the molecular mechanisms controlling mobile genetic elements in all their diversity.





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