



Regulation and Biological Role of Mitochondrial DNA Architecture and Topology

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Message from the Guest Editor

Dear Colleagues,

Nearly 20 years ago, it was discovered that vertebrates have genetically-conserved enzymes dedicated at modifying and controlling mtDNA topology, which indicates that DNA topology and architecture must play a crucial role in mitochondrial function. The above finding raised many questions—to name just a few: How is mtDNA-topology regulated, how does mtDNA replication and transcription impact on mtDNA-topology and vice versa; what role plays DNA topology in mitochondrial stability and mtDNA maintenance; to what extent is regulation of mtDNA topology relevant for mitochondria-delimited etiologies and aging? Meanwhile, a great deal of data germane to these issues have been gathered, and it seems that we are finally approaching a point where clarity emerges from chaos. This Special Issue aims at taking stock of the accumulated knowledge and making an effort to draw a coherent picture of our current understanding of the issue.

Keywords

- mitochondrial DNA-topoisomerases
- mtDNA transcription
- mtDNA replication
- mtDNA maintenance
- mtDNA structure
- mtDNA topology
- mitochondrial ageing
- mitochondrial diseases





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Message from the Editor-in-Chief

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