



Cytomolecular Organisation of the Nuclear Genome

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Message from the Guest Editors

Modern molecular cytogenetics enables a variety of observations of nuclear genome organisation at the level of the chromosome or in the interphase nucleus. DNA:DNA fluorescence in situ hybridisation combined using the latest microscopes with image acquisition and processing systems enables simultaneous two- or three-dimensional, multicolour visualisation of highly repetitive, low-repeat, and single-copy sequences in the genome. Fluorescent antibodies to specific targets can also be used to selectively localise epigenetically modified components of chromatin, such as methylated DNA and histones. They also have utility in highlighting proteins comprising important biological structures, such as the synaptonemal complex and the enzymatic machinery responsible for genetic recombination events.

This Special Issue encompasses a wide range of topics connected with various aspects of the organisation of the nuclear genome at the cytomolecular level in eukaryotes. The topics may cover, inter alia, analyses of the structure and evolution of karyotypes, the cell cycle and cell division, chromatin arrangement at interphase and nuclear genome instability after mutagenic treatment.





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