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Mapping the Functional 3D Genome

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Message from the Guest Editors

Dear Colleagues,

Functional genomes require precise DNA interactions to enable gene expression in interphase, DNA duplication in S-phase and segregation in M-phase. Many protein complexes are involved in orchestrating and maintaining a functional genome throughout the cell cycle. We now know that beyond the linear genome sequence, the three-dimensional organization of the genome affects genome function and vice versa.

Improvements in genomic and microscopy techniques have allowed a detailed mapping of DNA–DNA as well as protein–DNA interactions. For instance, conformation capture with micro-C allows for an unprecedented genome-wide mapping of DNA interactions at a sub-kilobase resolution, and microscopy with OligoSTORM enables detailed visualization of interactions for large regions. In this Special Issue, we review recent advances in 3D nuclear mapping and the way it helps us understand the functioning of the nucleus.

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Dr. Kuniko Samejima

Guest Editors



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Special Issue



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Message from the Editor-in-Chief

Genes are central to our understanding of biology, and modern advances such as genomics and genome editing have maintained genetics as a vibrant, diverse and fastmoving field. There is a need for good quality, open access journals in this area, and the *Genes* team aims to provide expert manuscript handling, serious peer review, and rapid publication across the whole discipline of genetics. Starting in 2010, the journal is now well established and recognised.

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