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The Roles of Telomeres and Telomerase in Early Developmental Processes and Cancer Development

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Message from the Guest Editor

Telomere and telomerase play important roles in replicative senescence and aging, which are closely related to cancer transformation. Telomere caps chromosome ends to keep genomic integrity from incomplete DNA replication. Telomeric heterochromatin could regulate distal gene expression via changes in genome architecture.

Telomerase extends telomeric repeats so that enzymatic activity is indispensable in the propagation of cancer cells and extensive cell divisions in early development. It is not precisely known what causes its repression in somatic cells. Reactivation telomerase or ALT (alternative lengthening of telomeres) still await extensive studies for understanding and therapeutic intervention of cancer.

For this Special Issue, we will cover the biology of the telomere in early developmental processes and cancer development. Regulation of telomere during aging will also be discussed. This Special Issue also invites studies on transcription and post-transcriptional regulation of TERT as well as post-translational regulation of telomerase activity. Mechanistic insights into telomerase reactivation and ALT will also be covered in this Special Issue.



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