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Collection | 15 September 2020

[Special Feature] Single Cell Genomics

Technical advancements in single-cell genomics have improved our understanding of molecular and genetic regulation. All cell types in the human body can now be characterized using single-cell multi-omics analyses, which help uncover the complex genetic and epigenetic regulatory mechanisms and indicate cellular interactions within tissues. Now, as single-cell research moves toward clinical implementation, it is being incorporated in diagnostic and therapeutic measures for precision medicine. This special issue in single-cell genomics provides a comprehensive view of the current technological status and the future perspectives and applications of single-cell analysis.



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Single-cell genomics technology: perspectives

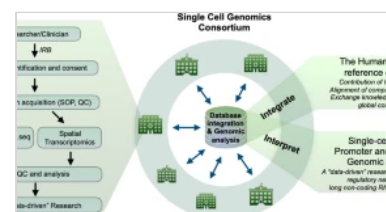
Tae Hee Hong & Woong-Yang Park

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Review

An era of single-cell genomics consortia

Yoshinari Ando, Andrew Tae-Jun Kwon & Jay W. Shin



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Single-cell sequencing techniques from individual to multiomics analyses

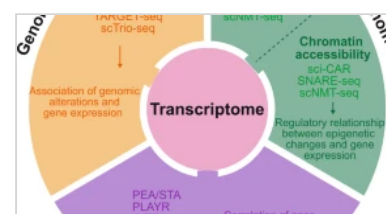
Yukie Kashima, Yoshitaka Sakamoto ... Ayako Suzuki

Technology	Microfluidic plate	Microfluidic droplet
Number of cells per sample	96/800 cells A limited number of cells depending on C1 FFC	500 -10,000 cells A large number of cells
Number of read per cell	100 -1,000 million reads Uniform among cells	5000 -10,000 reads Diverse among cells
Sequencing	Full-length (96 cells)	3'-end
Cell size	5-25 μm Depending on C1 FFC	<40 μm
Sequencing library	Separate Can resequencing the user's selected cells	Mixed
	For individual cells	For individual cells

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Single-cell multiomics: technologies and data analysis methods

Jeongwoo Lee, Do Young Hyeon & Daehee Hwang



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Human Cell Atlas and cell-type authentication for regenerative medicine



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