Special Issue

The Opportunities and Challenges of Next-Generation Sequencing in Cancer Biology

Message from the Guest Editors

Next-generation sequencing (NGS) has revolutionized omics studies, including genomics, transcriptomics, and epigenomics, allowing researchers to explore a wide array of biological questions. NGS's high throughput and parallel processing capabilities reduce the cost of sequencing significantly compared to traditional methods. Over the past decade, there has been tremendous progress in NGS technologies alongside a sharp decrease in per-base costs. NGS has revolutionized the study and treatment of cancer as it has become an essential tool for gaining a deeper and more accurate understanding of the molecular basis of individual tumors, particularly in genomics-focused pharmacology and personalized medicine. As targeted therapies become the new standard of care in oncology, NGS-driven companion diagnostics are increasingly recognized as crucial for selecting treatments that optimize patient outcomes. NGS offers improved accuracy, sensitivity, and speed over traditional methods in oncology. By assessing multiple genes in a single test, NGS reduces the time to obtain results and conserves valuable clinical samples.

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Genes is central to our understanding of biology, and modern advances such as genomics and genome editing have maintained genetics as a vibrant, diverse and fast-moving 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. Why not consider *Genes* for your next genetics paper?

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