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Sequencing Technologies: Introduction and Applications

Rishabh Gaur, Anupam Jyoti, Sanket Kaushik and Vijay Kumar Srivastava*

Amity Institute of Biotechnology, Amity University Rajasthan, Kant Kalwar, NH-11C, Jaipur-Delhi Highway, Jaipur 303 002, Rajasthan, India

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ABSTRACT In the past decade, the expansion of next-generation sequencing (NGS) has smoothened the approach for whole-genome analysis in individuals. The sequencing technology until today has developed very fast. Many techniques of sequencing are present these days, but the challenge is cost effectiveness in sequencing technologies. The cost varies from technique to technique and the new and improved sequencing targets the region of determination and cost. That's why, the new and improved sequencing techniques have more effective methods in terms of run time, time is taken, cost per megabase, read length, error rate and output data run. The massive parallel DNA sequencing is revolutionary, changing the paradigm of genomics to deal with biological questions at a genome-wide scale. Sequencing techniques now entitle medical diagnostics and other forms of health care, as well as disease risk, therapeutic recognition, and prenatal testing. This review explores the current state, methodology, and comparison of first, second, third and fourth generation sequencing techniques.