A quick technique for direct sequencing of genomic DNA is described and used.

Annalisa Duranti*

Department of Molecular and Structural Biology, University of Aarhus, Denmark

Introduction

One of the most significant developments in the fields of molecular biology and genetics is genomic sequencing, which provides a window into the structure of life itself. Fundamentally, genomic sequencing is a potent scientific method that enables us to interpret the complex code encoded in the DNA of living things. The nucleotide bases that make up this code include the instructions for the growth, operation, and diversity of all life forms on Earth [1].

James Watson and Francis Crick's revolutionary discovery of the DNA double helix structure in 1953 marked the beginning of the genomic sequencing process. Since then, this discipline has advanced because to constant scientific advancement, making it possible to thoroughly read and decipher an organism's entire genetic code. This outstanding accomplishment has far-reaching implications for understanding the genetic causes of health and disease as well as for transforming industries like biotechnology, medicine, and evolutionary biology [2].

For many years, a central goal of molecular biology has been to unravel the mysteries of the genetic code. A key component of this effort has been the capacity to directly sequence genomic DNA, which has allowed researchers to determine the arrangement of the nucleotide bases that make up the DNA molecule. Traditional sequencing techniques have required a lot of time and labor. However, new technological developments have brought forth a speedy and effective method for direct sequencing of genomic DNA [3].

Our understanding of genetics has advanced greatly as a result of traditional DNA sequencing techniques like Sanger sequencing. They do have certain drawbacks, though. These procedures frequently entail numerous steps, thorough sample preparation, and can be time-consuming and expensive [4].

High-throughput sequencing, sometimes referred to as next-generation sequencing (NGS), is a cutting-edge technology that has completely changed the field of genetics. Because NGS enables the simultaneous sequencing of millions of DNA fragments, it is both substantially faster and more affordable than prior methods [5].

Conclusion

Next-Generation Sequencing (NGS), a rapid method for direct sequencing of genomic DNA, marks a revolutionary advance in our ability to understand the genetic code. It has become an essential tool in a variety of sectors, including genetics, medicine, and other areas thanks to its speed, affordability, and precision. NGS will be crucial in helping to solve the genomic puzzles of life as technology develops, offering up new avenues for innovation and discovery.

References

1. Psifidi A, Dovas CI, Bramis G, et al. Comparison of eleven methods for genomic DNA extraction suitable for large-scale whole-genome genotyping and long-term DNA banking using blood samples. Public Lib Sci. 2015;10(1):e0115960.
2. Hwang WY, Fu Y, Reyon D, et al. Efficient genome editing in zebrafish using a CRISPR-Cas system. Nat Biotechnol. 2013;31(3):227-9.
3. Liu YG, Mitsukawa N, Oosumi T, et al. Efficient isolation and mapping of arabidopsis thaliana T-DNA insert junctions by thermal asymmetric interlaced PCR. Plant J. 1995;8(3):457-63.
4. Takita Y, Takahara M, Nogami S, et al. Applications of the long and accurate polymerase chain reaction method in yeast molecular biology: Direct sequencing of the amplified DNA and its introduction into yeast. Yeast. 1997;13(8):763-8.
5. Hu M, Jex AR, Campbell BE, Et al. Long PCR amplification of the entire mitochondrial genome from individual helminths for direct sequencing. Nat Prot. 2007;2(10):2339-44.

***Correspondence to:** Annalisa Duranti, Department of Molecular and Structural Biology, University of Aarhus, Denmark, E-mail: annalisa@du.ranti.dk

***Received:** 26-Aug-2023, Manuscript No. AAMOR-23-112357; **Editor assigned:** 29-Aug-2023, PreQC No. AAMOR-23-112357(PQ); **Reviewed:** 12-Sep-2023, QC No. AAMOR-23-112357; Revised: 18-Sep-2023, Manuscript No. AAMOR-23-112357(R); Published: 25-Sep-2023, DOI:10.35841/aamor-7.5.195*

***Citation:** Duranti A. A quick technique for direct sequencing of genomic DNA is described and used. J Mol Oncol Res. 2023;7(5):195*