

BIO-COTIDIE

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GENOME SEQUENCING

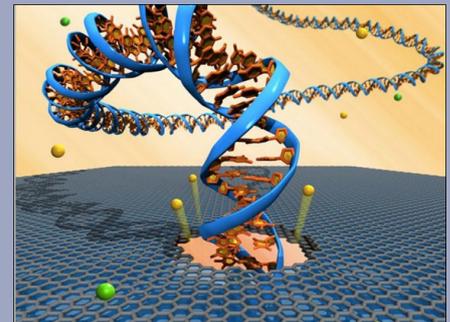
WHAT IS GENOME SEQUENCING?

Genome sequencing is a process for analyzing the order of a sample of DNA nucleotides, or bases, in a genome taken from blood. DNA, the coiled double helix- shaped structure can be unwound into a ladder shape. It's composed of paired chemical letters called 'bases'. In DNA, base A(Adenine) pairs only with base T(Thymine) and base G(Guanine)- only with base C(Cytosine) to form 'base pairs'. The human genome for instance, is made up of over 3 billion of these genetic alphabets. The genomic sequence is used to determine the genetic information type present in a particular DNA segment, and can highlight changes in the disease causing gene. [Read More...](#)

HOW IS IT DONE?

DNA sequencing is performed using advanced technological machines. These machines "read" sequences of DNA bases since a genome sequence is basically a long thread of letters.

This process is usually carried forward by breaking the genome into small pieces, sequencing the pieces and then reassembling them in an orderly manner. Two of these methods that are used to make genome sequencing possible are- "clone-by-clone" and "whole-genome shotgun" approach. [Read more...](#)



VIDEO LINKS:

<https://youtu.be/MvuYATH7Y74>

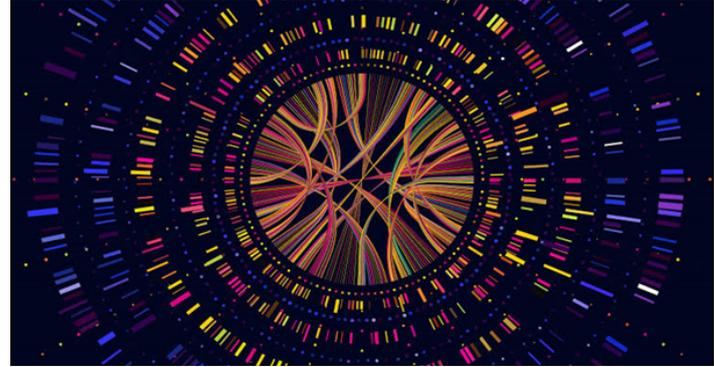
<https://youtu.be/rA8MUR4pqNE>



WHY IS GENOME SEQUENCING IMPORTANT?

- Partial genomes sequencing is widely used for sequencing viruses as the detection of drug resistance. For example, the use of viral sequencing for drug-resistant variants in the management of HAART for HIV.
- Helpful in finding genes more quickly and with ease.
- Genome sequence helps to understand genetic growth, development and maintenance of an entire organism.

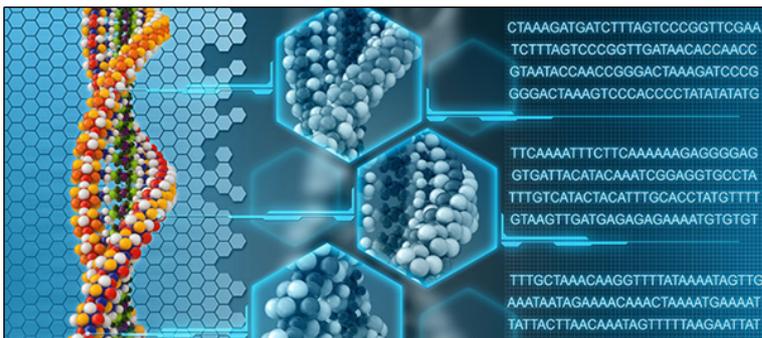
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FUTURE OF GENOME SEQUENCING

- Genomic information will become ubiquitous with better techniques for data acquisition and will be helpful for the testing of rare and undiagnosed diseases, and the genetic makeup of cancers to better treatments.
- They will potentially do sequencing using longer read technologies. Short-read sequencing can miss important structural variations in the genome.
- Long read sequence prices will likely decrease.

[Read More...](#)



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