# Genomics and DNA sequencing methods.

**Franck Pellestor***

Department of Medical Genetics, University Medical Center Montpellier, Montpellier, France

*Accepted Date September 5, 2021*

## Description

Genomics is the study of the full genetic complement of an Organism and it is also called as genome. It employs recombinant deoxyribonucleic acid, DNA sequencing methods, bioinformatics to sequence, and analyzes the structure and performance of genomes. Genomics is that the study of everything of an organism's genes – called the genome. Using high-performance computing and math techniques referred to as bioinformatics, genomics researchers analyses enormous amounts of DNA-sequence data to seek out variations that affect health, disease or drug response. Genomics includes the scientific study of complex diseases like heart condition, asthma, diabetes, and cancer because these diseases are typically caused more by a mixture of genetic and environmental factors than by individual genes. Genomics incorporates elements from genetics. We get genomics with level-3 or A –Level equivalent qualifications. Genomics is split into two basic areas one is genomics and therefore the other is genomics. Structural genomics characterize the physical nature of whole genomes whereas functional genomics characterize the entire range of transcripts produced by a given organism and there is the other type called Mutation genomics and these genomics Studies the genome in terms of mutations that occur in a person's DNA or genome.

The human genome is that the genome of Homo sapiens. It is made from 23 chromosome pairs with a complete of about 3 billion DNA base pairs. There are 24 distinct human chromosomes pairs with 22 autosomal chromosomes, plus the sex-determining X and Y chromosomes. National Human Genome Research Institute an agency of the National Institutes of Health, works with the Joint Genome Institute of the U.S. Department of Energy in non-profit foundations owns the human genome. Most genes are an equivalent altogether people, but a little number of genes but 1 percent of the entire are slightly different between people. Alleles are sorts of an equivalent gene with small differences in their sequence of DNA bases. These small differences contribute to every person's unique physical features.

Genomics contrasts with genetics, which refers to the study of individual genes and their roles in inheritance. Instead, genomics aims at the collective characterization and quantification of genes. Genomic Features are defined segments of a genome. Most often features will code for proteins or RNAs, however some correspond to pseudogenes or repeat regions. Besides attending protein synthesis, transfer RNA is a crucial regulatory non-coding RNA that participates in various cellular processes, including cellular metabolism and necrobiosis. The data on genome browsers is collected from collaborations with various research projects and databases such as the International Nucleotide Sequence Database Collaboration, Single Nucleotide Polymorphism database, the Encyclopedia of DNA Elements, and 1000 Genomes Project.

The Clinical application of genomic technologies are Gene discovery and diagnosis of rare monogenic disorders, Identification and diagnosis of genetic factors contributing to common disease, diagnostic procedure and testing, Infectious diseases, Genome editing, Gene therapy. Gene discovery and diagnosis of rare monogenic disorders Genomic technologies are often employed by clinicians from all specialties to diagnose their patients who have high-risk genetic errors causing disease. Over 4000 diseases now have a known single genetic cause, compared to around 50 in 1990. Identification and diagnosis of genetic factors contributing to common disease Genomic technologies are increasingly getting used to know the contribution of both rare and customary genetic factors to the development of common diseases, like high vital sign, diabetes and cancer. Pharmacogenetics and targeted therapy Genetic information could also be wont to predict whether an individual will answer a specific drug, how well they're going to answer that drug and whether they are likely to urge any side effects from the utilization of a selected drug. In some cases, like cancer, we will identify the genetic drivers of disease then give drugs which specifically target that pathway. This is known as targeted therapy. Prenatal diagnosis and testing Genetic diseases are often devastating and should cause significant disability and even death in childhood. Infectious diseases sequencing the genomes of microorganisms which cause human infection can identify the precise organism causing symptoms, help to trace the explanation for infectious outbreaks, and provides information as to which antibiotics are presumably to be effective in treatment.

## *Correspondence to

Franck Pellestor

Department of Medical Genetics

University Medical Center Montpellier

Montpellier, France.

E-mail:Pellestor.f@franck.fr

***Citation:*** *Pellestor F. Genomics and DNA sequencing methods. J Syst Biol Proteome Res 2021;2(1):2*