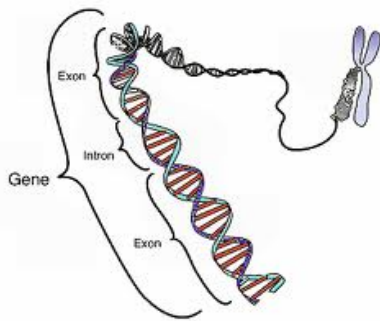


Location of a Gene

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How do Geneticists indicate the location of a gene?



What is a Gene?

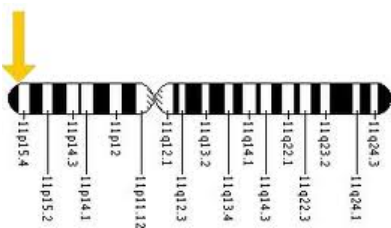
A gene is the basic physical and functional unit of heredity made up of DNA.

Who is Geneticist?

A geneticist is a scientist who studies genetics, the science of genes, heredity and variation of organisms.

Geneticists use maps to find the location of a gene present on a chromosome. To find the cytogenetic location can be identified by the chemical application. When chromosomes are stained with certain chemicals and the banding patterns would be visible and cytogenetic location can be seen.

Using molecular location, the gene's position on a chromosome can be found. It is based on the sequence of DNA base pairs which make up the chromosome.



Cytogenetic location:

To describe the genes cytogenetic location, the Geneticists use a standardized way. They stain the chromosomes and find the position of the specific gene.

Address of the Genes

17q12-q21

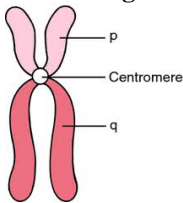
The combination of numbers and letters provide a gene's "address".

The first number or letter used to describe a gene's location represents the chromosome. 22 autosomes are designated by their chromosome number 1- 22. The sex chromosomes are designated by X or Y.

The arm of the chromosome

Each chromosome is divided into two sections named the arms based on their location of a narrowing called the centromere. The shorter arm is called p, and the longer arm is called q.

Location of a gene:



The position of the gene on the p or q arm is based on a distinctive pattern of light and dark bands that appear

when the chromosome is stained in a certain way. The position is usually designated by two digits which are sometimes followed by a decimal point and one or more additional digits (representing sub-bands within a light or dark area). The number indicating the gene position increases with distance from the centromere. For example: 14q21 represents position 21 on the long arm of chromosome 14. 14q21 is closer to the centromere than 14q22.

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