

Interrelation between DNA, Genes and Chromosomes

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ABSTRACT

Like all other living things, humans are made up of cells. We are all only one cell when we are fertilized. The entire genome is duplicated while a single cell divides, ensuring that every new cell has the entire genome. The technique for duplicating the genome is extremely amazing considering that the human body includes roughly 10 trillion cells. The DNA, or deoxyribonucleic acid, that makes up the genome is arranged into chromosomes, each of which has genes.

Keywords: DNA;Genes;Chromosomes

DESCRIPTION

DNA

The lengthy molecule that contains our unique genetic code is called DNA. Similar to a recipe book, it offers the directions for generating every protein in our body. Two strands of DNA produce a double helix shape, resembling a spiral staircase, by wrapping around one another. Four main building units known as "bases"—Adenine (A), Cytosine (C), Guanine (G), and Thymine (T) make up each strand of DNA. Our individual genetic code, which provides the instructions for our bodies to make molecules, is determined by the order, or sequence, of these bases. Numerous bases can be found in a single gene. Three letters at a time are read from the DNA code by the cell's molecular machinery. An amino acid is represented by each three-letter combination.

Gene

The instructions for creating a particular molecule in your body, often a protein, are found in regions of DNA called genes. These proteins control how our bodies develop and work; they are also in charge of many of our physical traits, including height, eye colour, and blood type. The human genome has about 20,687 protein-coding genes. Different genes or instructions are read at various times in various cells in response to our bodies' needs. Two sets of genes, one from your mother and the other from your father, are present in every cell. To make the genes easier to

store and access, they are separated into 46 units called chromosomes.

Chromosome

The nucleus of almost every cell in our body contains DNA bundles called chromosomes, which are tightly wound. 46 chromosomes can be found in somatic (non-reproductive) human cells. Our mother gives us one set of 23 chromosomes, while our father gives us another set. Therefore, there are 23 pairs of chromosomes or two sets of 23 chromosomes.

Relationship and function of DNA, genes and chromosomes

DNA, genes, and chromosomes all contribute to who you are. Chromosomes transfer DNA within cells. Your human structure is built and maintained by your DNA. Genes are DNA fragments that give you your own physical traits. Your body's cells are given detailed instructions on how to act via a comprehensive guidebook. The science of genetics focuses on heredity, or the features that we inherit from our parents, who in turn inherited them from their parents, and so on. Every cell in the body contains programmed info that controls these traits.

Genome

The entire set of genetic instructions that determine an organism's features is called a genome (characteristics and conditions). It is made up of chromosomes, genes, and DNA.

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DNA is a genetic information-carrying molecule that is present in all cells. It is made up of structural elements. These building components' placement determines how our qualities are genetically coded. Our qualities are determined by genes, which are DNA segments. Between 20,000 and 25,000 distinct genes are present in every individual, with half coming from our biological mothers and the other half from our biological fathers. Numerous genes are housed within the lengthy, coiled strands of DNA known as chromosomes. There are two sets of 23 chromosomes in a cell. We inherit each set from our biological parents.

CONCLUSION

The deoxyribonucleic acid that makes up the genome is arranged into chromosomes, each of which has genes. DNA The

lengthy molecule that contains our unique genetic code is called DNA. Three letters at a time are read from the DNA code by the cell's molecular machinery. An amino acid is represented by each three-letter combination. The instructions for creating a particular molecule in your body, often a protein, are found in regions of DNA called genes. Two sets of genes, one from your mother and the other from your father, are present in every cell. Chromosome The nucleus of almost every cell in our body contains DNA bundles called chromosomes, which are tightly wound. Relationship and function of DNA, genes and chromosomes all contribute to who you are. Numerous genes are housed within the lengthy, coiled strands of DNA known as chromosomes. There are two sets of 23 chromosomes in a cell.