

ADN y Proteínas

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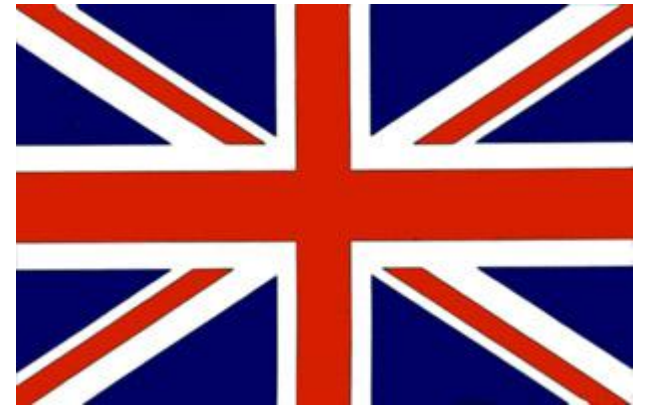
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IDIOMA



Español



English

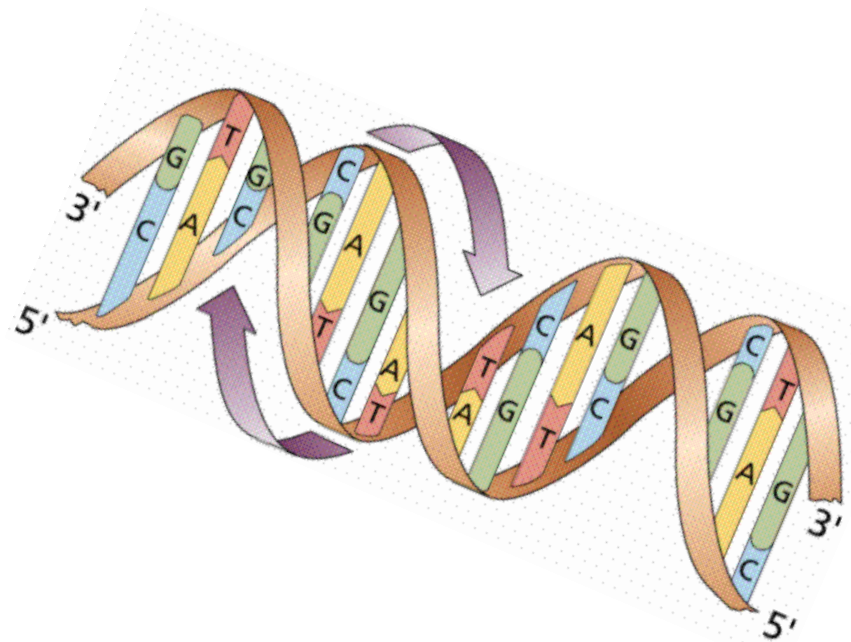
ADN

- Tamén chamado, ácido desoxirribonucleico, é a biomolécula encargada de almacenar a información xenética da célula.
- Con este poderemos fabricar as proteínas necesarias para o corpo humano. Esta biomolécula encóntranse no núcleo das células (eucarióticas), e forma parte dos cromosomas.



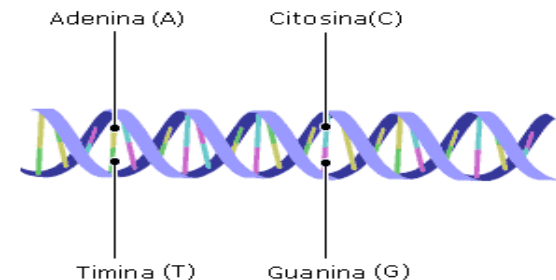
Componentes do ADN

- Está formado pola unión de nucleótidos: tres moléculas, un monosacárido, un ácido fosfórico e unha base nitroxenada.
- Existen 4 nucleótidos: adenina (A), timina (T), citosina (C), guanina (G)



Dobre hélice

- A molécula de ADN está formada por 2 cadeas de nucleótidos, enroladas, forman unha dobre hélice. As cadeas sempre son complementarias.
- Os enlaces so se forman entre adenina-timina e citosina-guanina. Sempre será: A-T ou T-A e C-G ou G-C.

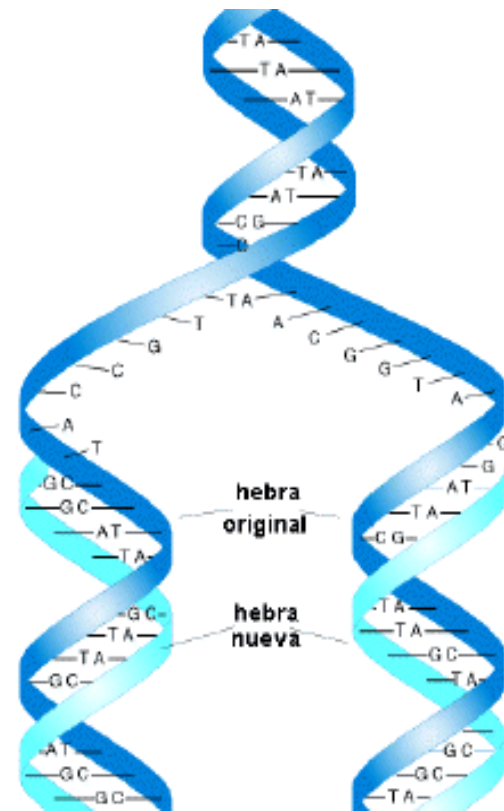


Duplicación do ADN

Ten lugar durante a interfase. O ADN necesita realizar unha copia exacta de seu, para que as 2 células fillas teñan a mesma información xenética.

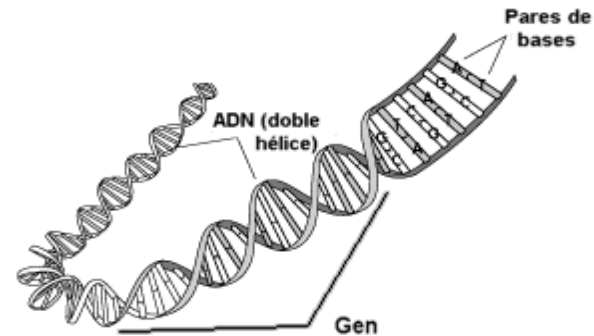
- A dobre hélice de ADN ábrese e as dúas cadeas sepáranse.
- Os nucleótidos libres da célula, que se encontran no núcleo, únense aos nucleótidos do ADN, mediante as súas bases complementarias, explicadas anteriormente.
- Os nucleótidos únense e dan lugar as novas cadeas de ADN.

As células fillas posuirán unha cadea orixinal e outra acabada de sintetizar.



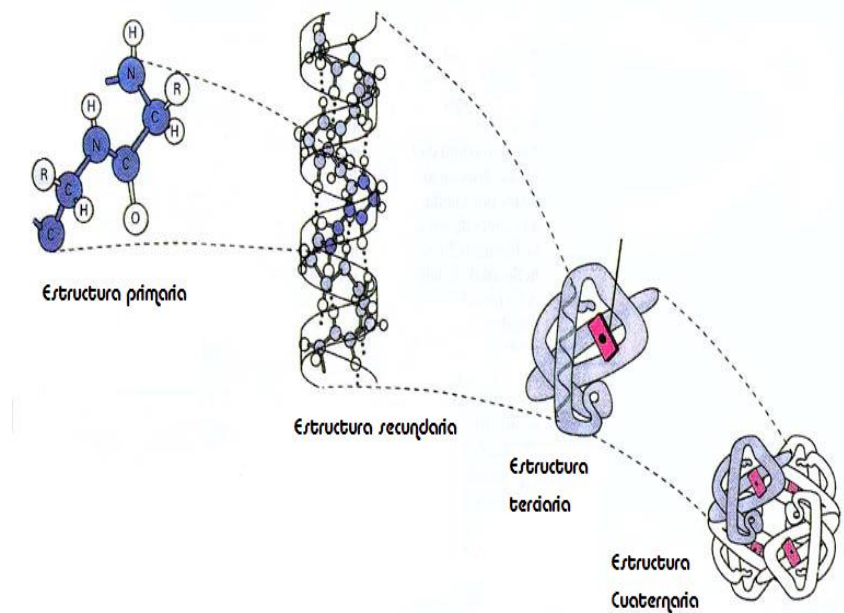
Xenes e proteínas

- Un xene é un segmento de ADN ca información xenética necesaria para producir unha proteína. Cada cromosoma, contén numerosos xenes ordenados nunha liña.
- A información xenética que define a un individuo, reside nas bases do seu ADN, tamén chamadas xenotipos.



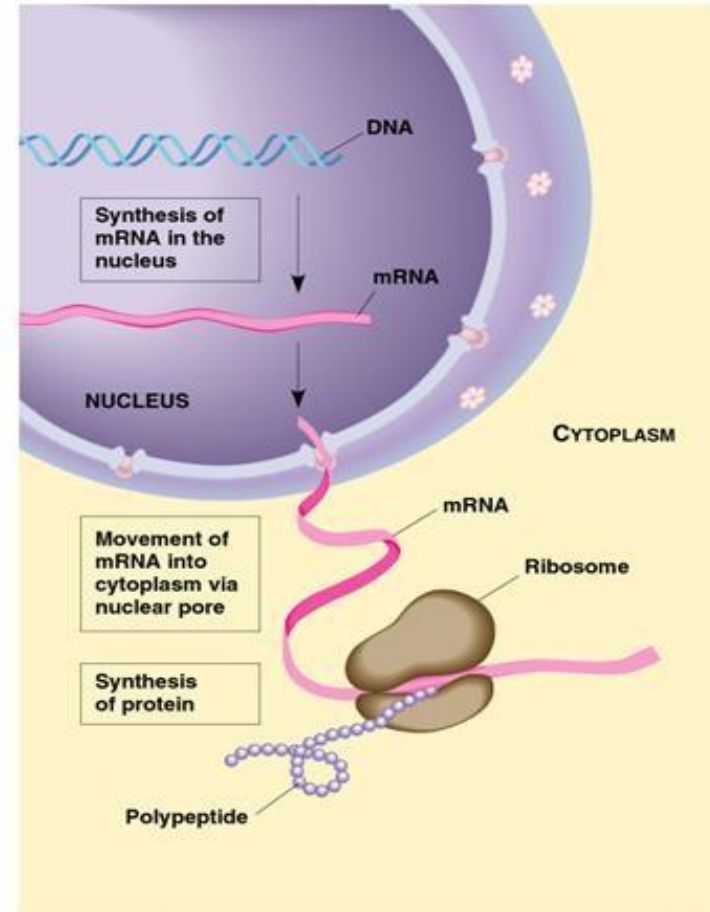
Xenes e proteínas

- As proteínas son biomoléculas formadas pola unión de aminoácidos. Existen 20 diferentes, que constitúen cada unha das proteínas.
- O xenotipo determina o tipo de proteínas que ten que producir un individuo.
- A orde dos aminoácidos e a que determina o tipo de proteína. Unha proteína contén miles de aminoácidos co cal o número de posibilidades é e enorme.



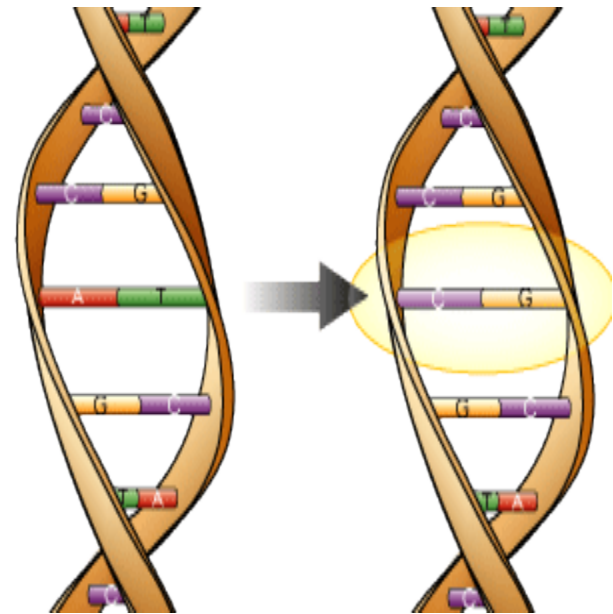
Fabricación de proteínas

- As proteínas fábrícanse nos ribosomas. Pero necesítanse unha copia das bases do xene correspondente para cada proteína.
- Estas bases cópianse nunha molécula de ARN mensaxeiro. Este proceso denomínase transcrición.
- Logo o ARN viaxa ao citoplasma onde ser de molde para que os ribosomas fabriquen a proteína. Este proceso denomínase tradución.
- No ADN a timina é substituída polo uracilo (U), en vez da adenina.



Mutacións

- Son cambios no ADN das células. Ocorren aleatoriamente. Normalmente son malas, pero poden traer vantaxes, para o organismo. Son unha importante fonte de variabilidade xenética. Existen 3 tipos:
 - Xénicas: cambios na secuencia dos nucleótidos do ADN (subtracción, adición, substitución).
 - Xenómicas: afectan ao número total de xenes dun organismo.
 - Cromosómicas: afectan ao número ou estrutura dos cromosomas.



Tecnoloxía do ADN

- É o conxunto de técnicas ou procesos que utilizan organismos vivos ou substancias que proveñan destes para fabricar produtos beneficiosos para o ser humano.
- Permite mesturar nunha molécula, dous ADN diferentes, incluso de distintas especies. Normalmente utilízase para transferir xenes.



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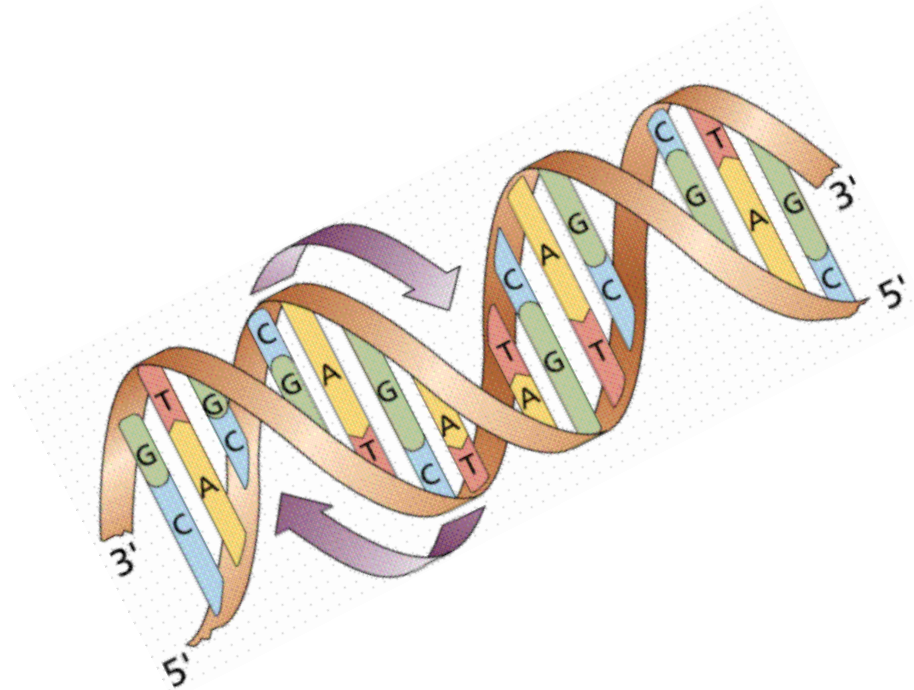
DNA

- Also called, deoxyribonucleic acid. Is the biomolecule that stores the genetic information of the cell.
- With this one we can produce the necessary proteins for our body. This biomolecule is founded in the nucleus of eukaryotic cells, and it's part of the chromosomes.



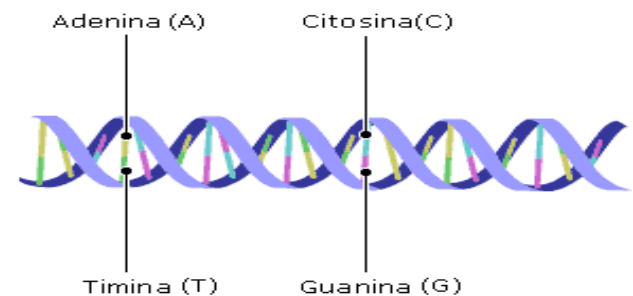
DNA Components.

- The DNA is formed by the union of nucleotides: 3 molecules one monosaccharide, one phosphoric acid and one nitrogenous base.
- There are 3 nucleotides: adenine (A), thymine (T), guanine (G), cytosine(C).



Double helix

- The molecule of DNA is formed by 2 chains of nucleotides, rolled, they form a double helix. The chains are always complementary to each other.
- The links are formed between adenine-thymine and cytosine-guanine. They will always be: A-T or T-A and C-G or G-C.

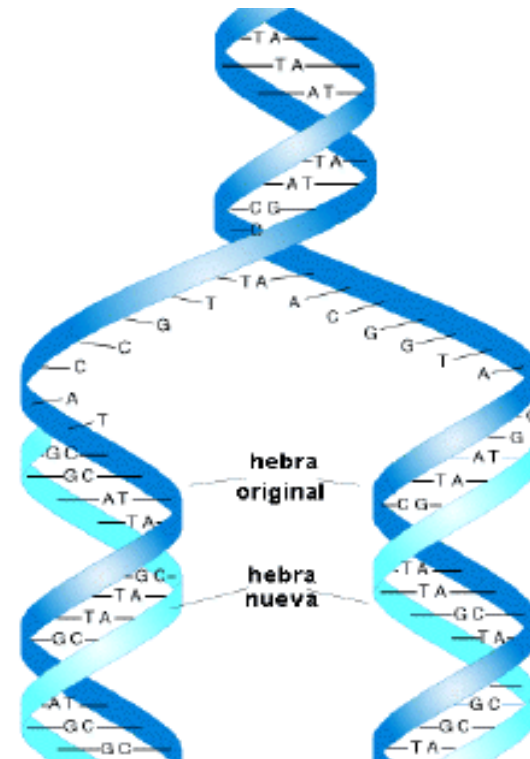


DNA duplication

Is realized during the interphase. The DNA needs to make an exact copy from it self, for the 2 daughter cells have the same genetic information.

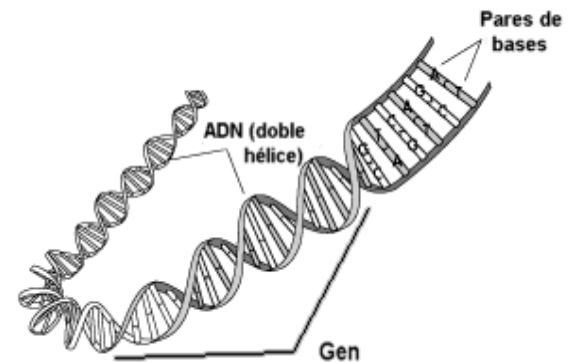
- The double helix is opened and the two chains get separated.
- The free nucleotides of the cell, founded in the nucleus, get joined to the nucleotides of the DNA, by complementary bases, explained before.
- The new nucleotides get joined with the old ones and they form the new DNA chains.

The daughter cells will have a new recent synthesized chain, and the old one.



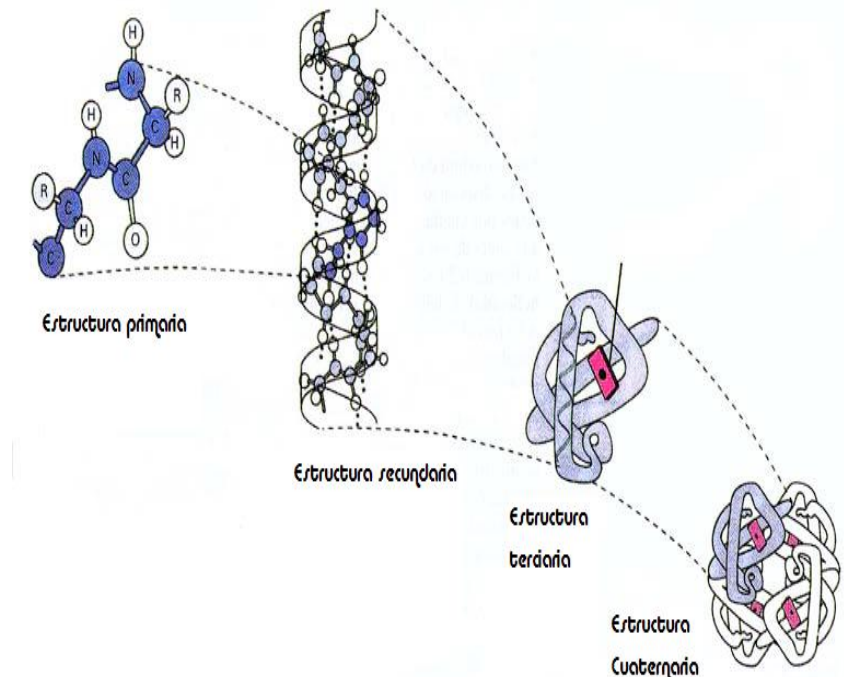
Genes and proteins

- A gene is a piece of DNA with the genetic information needed to produce one protein. Each chromosome, has numerous genes linearly ordered.
- The genetic information that define one organism, lies in his DNA bases, also called genotypes.



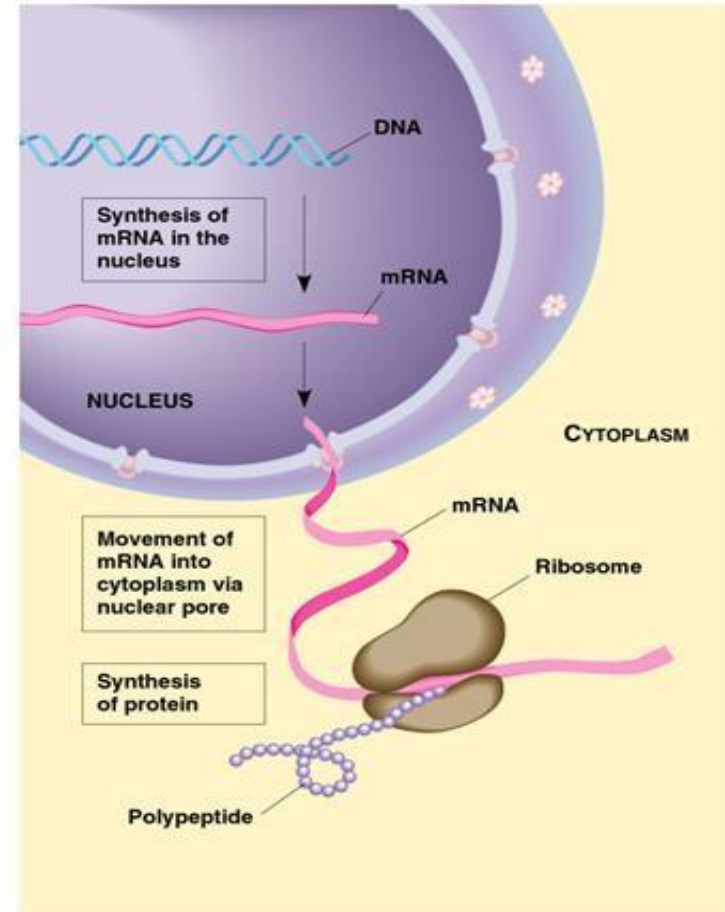
Genes and proteins

- The proteins are biomolecules formed by the union of amino acids. There are 20 different ones, that constituted each protein.
- The genotype determine the type of protein that one organism have to produce.
- The sequence of the amino acids is the one who determines the type of protein. One protein has thousand of amino acids so the number of possibilities is huge.



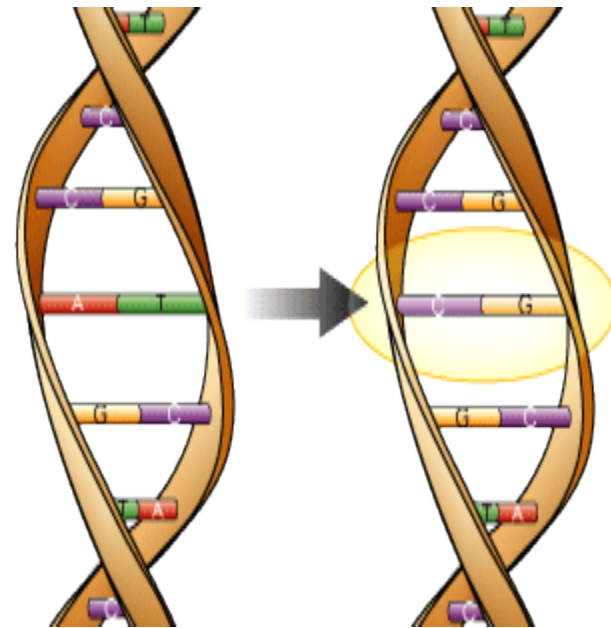
Proteins fabrication

- The proteins are made in the ribosomes. But is needed one copy of the correspondent gene's bases for each protein.
- This bases are copied in an ARN messenger molecule. This process is called transcription.
- Then the ARN travels to the cytoplasm where it's a mold for the fabrication of the protein by the ribosome. This process is called translation.
- In ARN the thymine is substituted by the uracil (U), instead of adenine.



Mutations

- They are changes in the DNA of the cells. They are random things. Normally they're bad, but they can provide advantages for the organism. They're an important source of genetic variability. There are 3 types:
 - Genics: changes in the sequence of the DNA nucleotides (subtraction, addition, substitution).
 - Genomics: affect to the total number of genes of an organism.
 - Chromosomic: affect the number or structure of the chromosomes.



DNA technology

- Is the set of techniques or processes that utilizes living organism or substances of this ones to make beneficial products for the living beings
- Allow us to mix in one molecule two different DNAs even of different species. Normally they are used for the transference of genes.



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