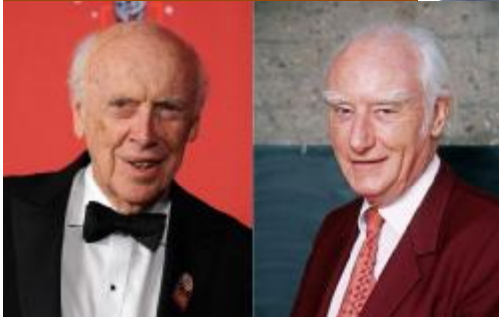




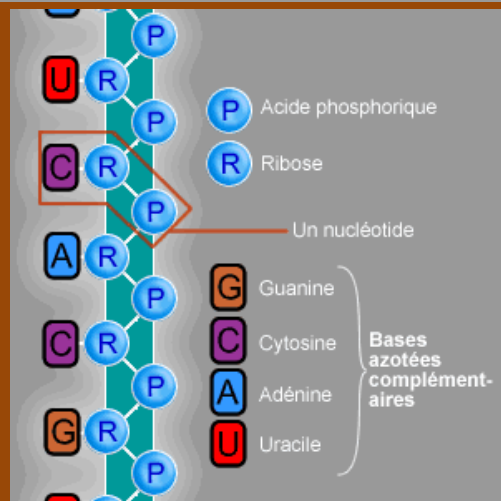
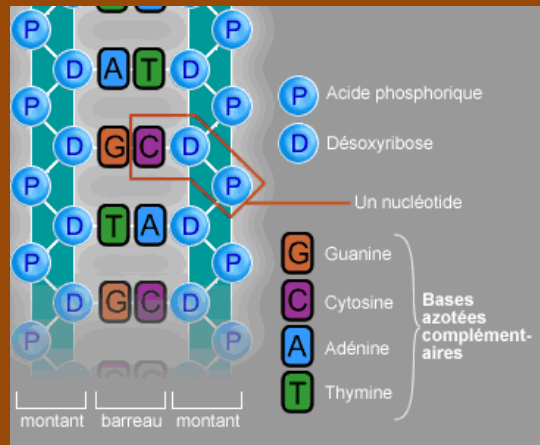
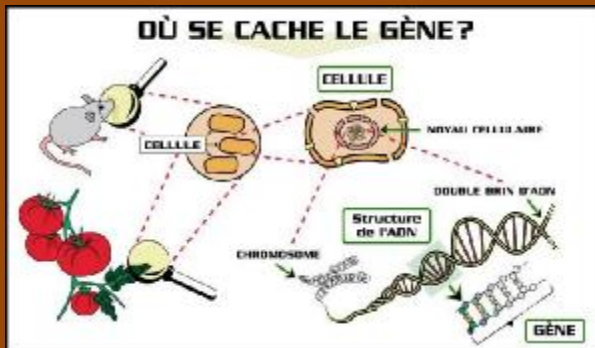
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Le génome



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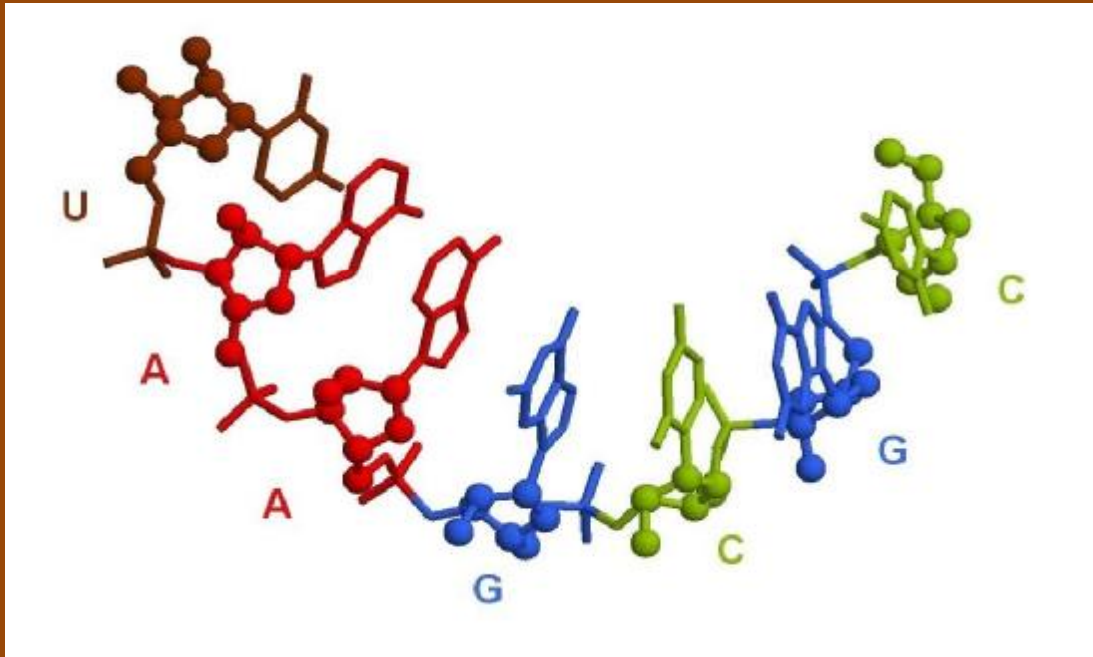
Les acides nucléiques





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Structure des bases

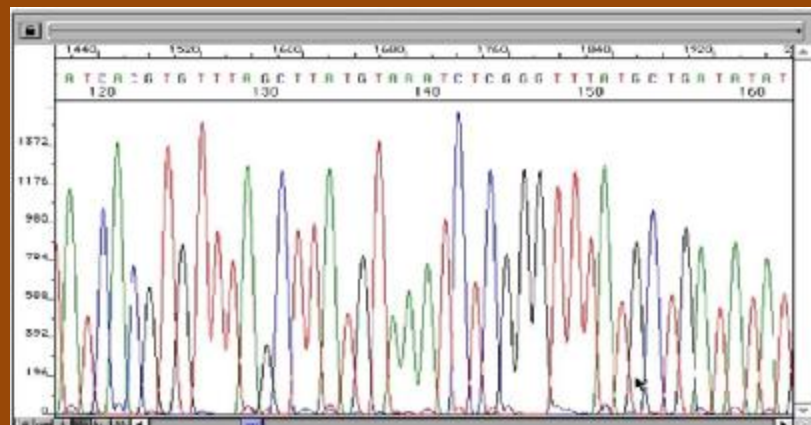


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Le code génétique

Le code génétique

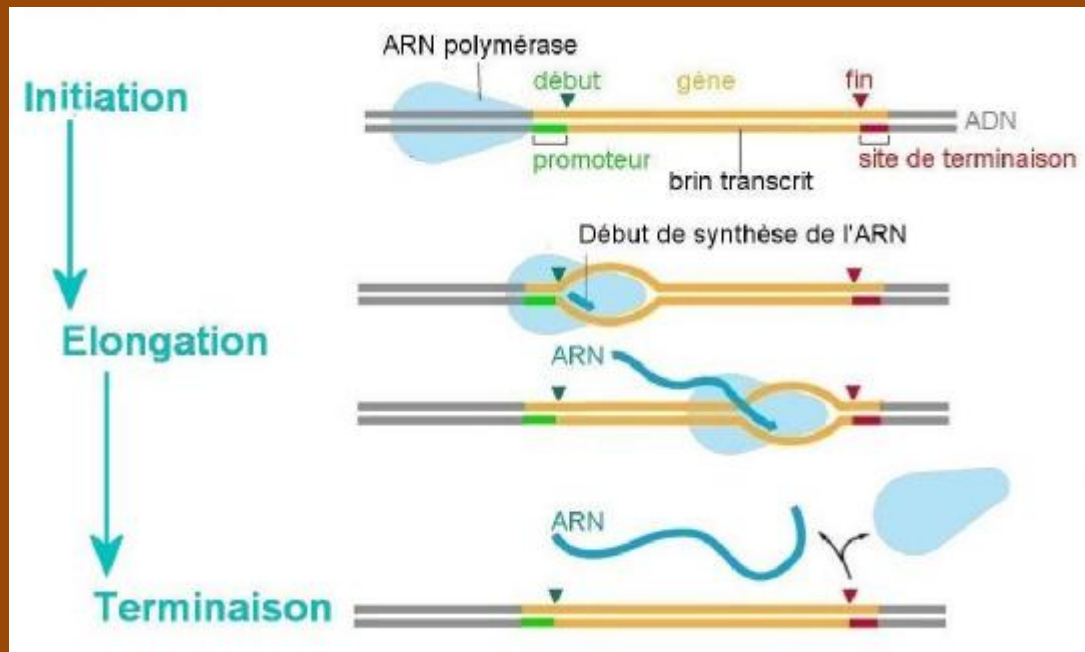
| | | Deuxième nucléotide | | | | | | | | |
|--------------------|-----|---------------------|----------------|-----------|--------|------------------|------------------|-------------|----------|----------------------|
| | | U | | C | | A | | G | | |
| Premier nucléotide | U | UUU | phényl-alanine | UCU | sérine | UAU | tyrosine | UGU | cystéine | Troisième nucléotide |
| | | UUC | | UCC | | | UAC | | UGC | |
| | UUA | leucine | UCA | | | UAA | STOP | UGA | STOP | |
| | UUG | | UCG | | UAG | | UGG | tryptophane | | |
| C | CUU | leucine | CCU | proline | CAU | histidine | CGU | arginine | | |
| | CUC | | CCC | | | CAC | | | CGC | |
| | CUA | | CCA | | | CAA | glutamine | | CGA | |
| | CUG | | CCG | | | CAG | | | CGG | |
| A | AUU | isoleucine | ACU | thréonine | AAU | asparagine | AGU | sérine | | |
| | AUC | | ACC | | | AAC | | AGC | | |
| | AUA | | ACA | | | AAA | lysine | AGA | | |
| | AUG | ACG | | | AAG | | AGG | arginine | | |
| G | GUU | valine | GCU | alanine | GAU | acide aspartique | GGU | glycine | | |
| | GUC | | GCC | | | GAC | | | GGC | |
| | GUA | | GCA | | | GAA | acide glutamique | | GGA | |
| | GUG | | GCG | | | GAG | | | GGG | |





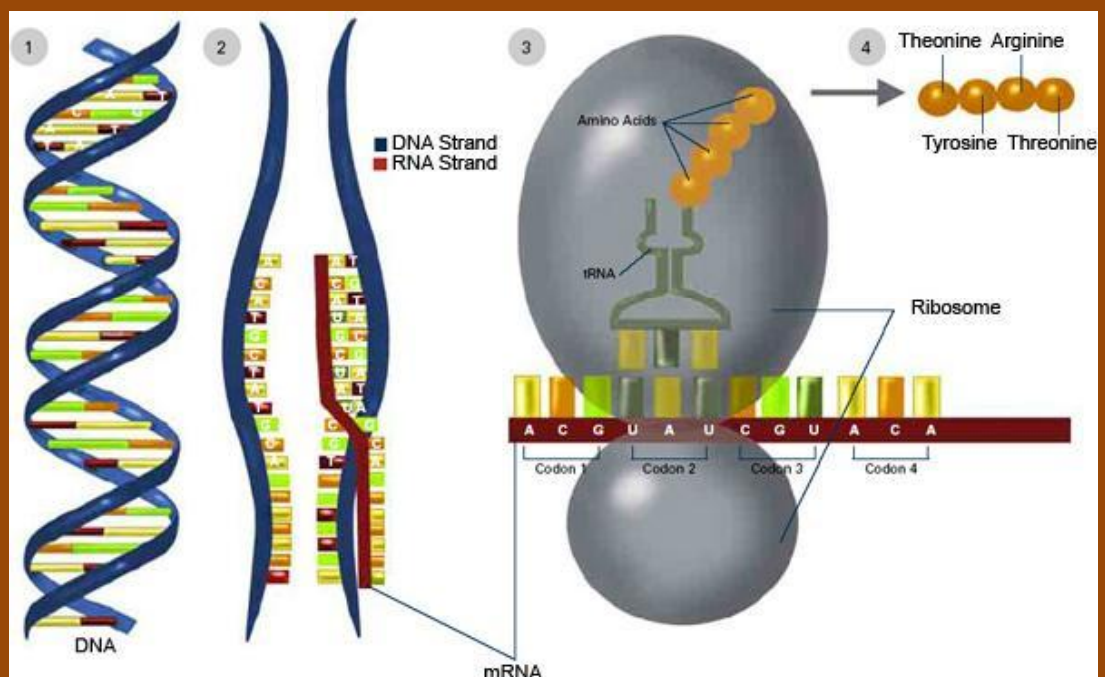
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La transCRIPtion



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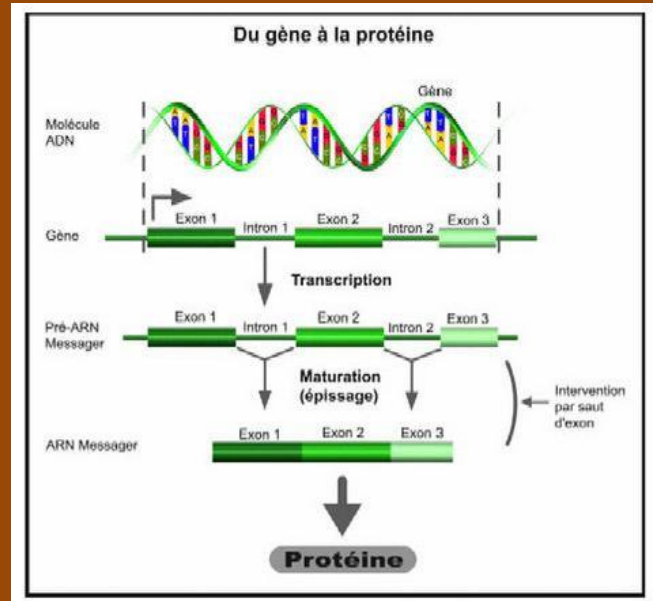
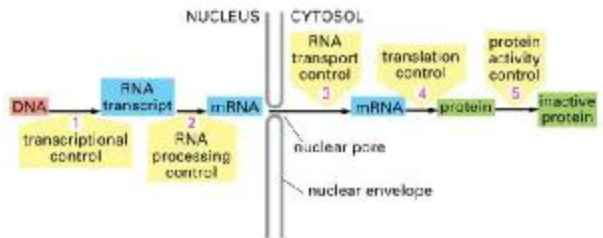
La transLATION





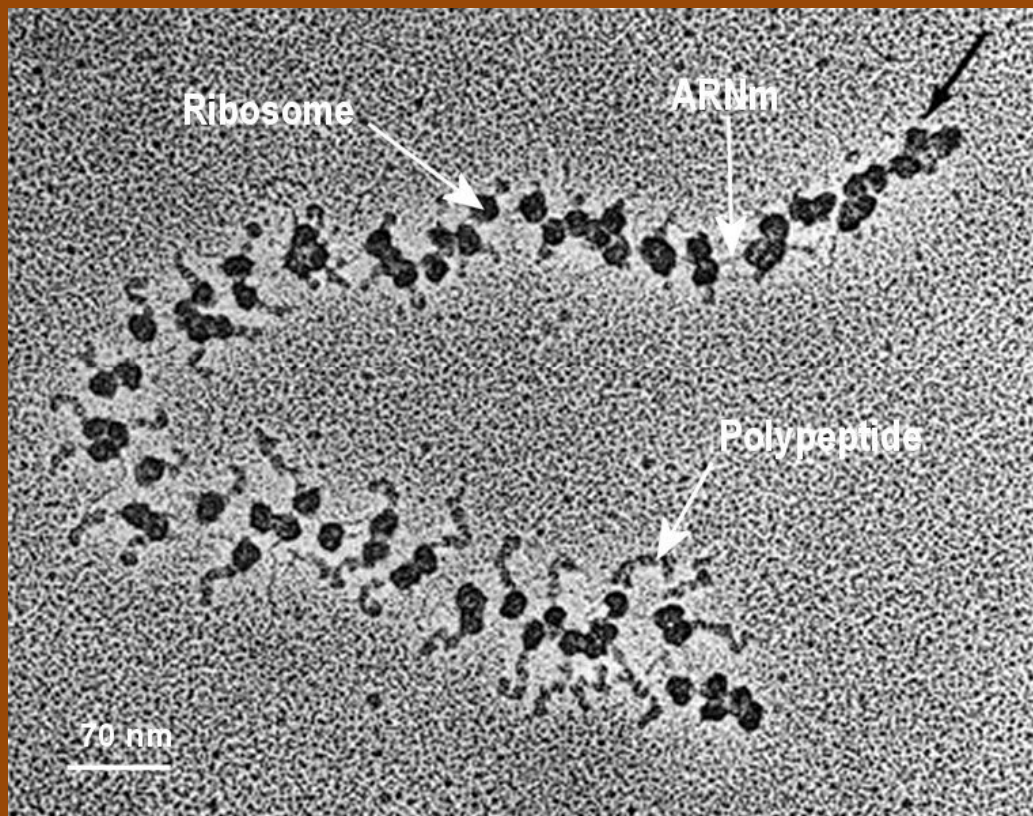
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Traduction des gènes



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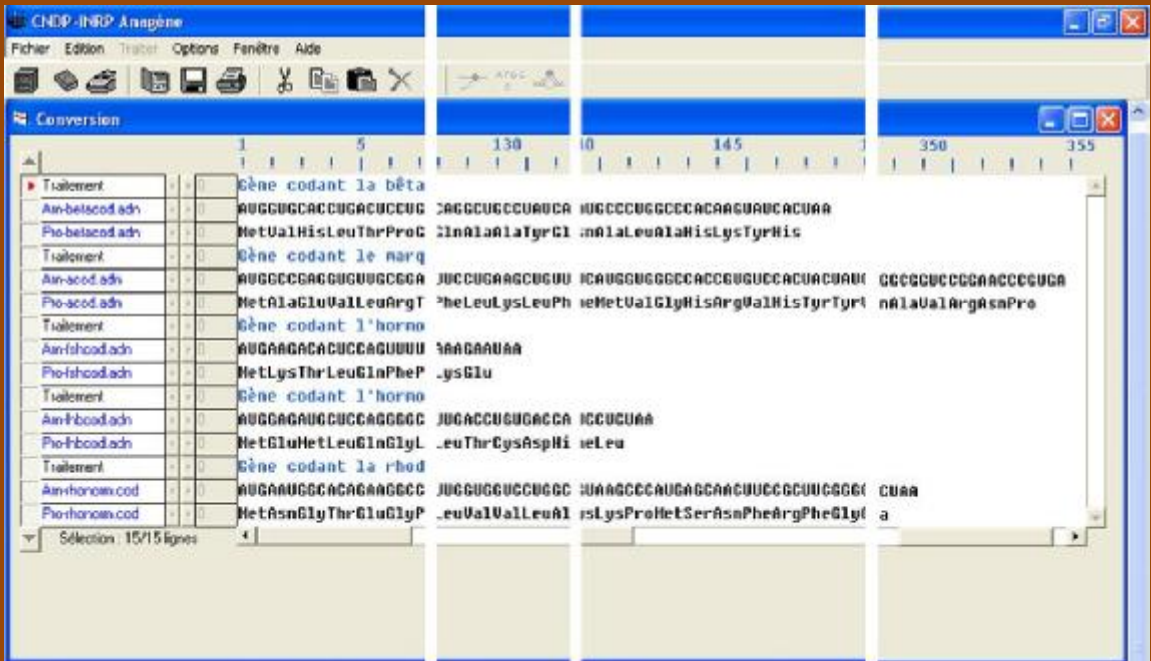
La synthèse des peptides





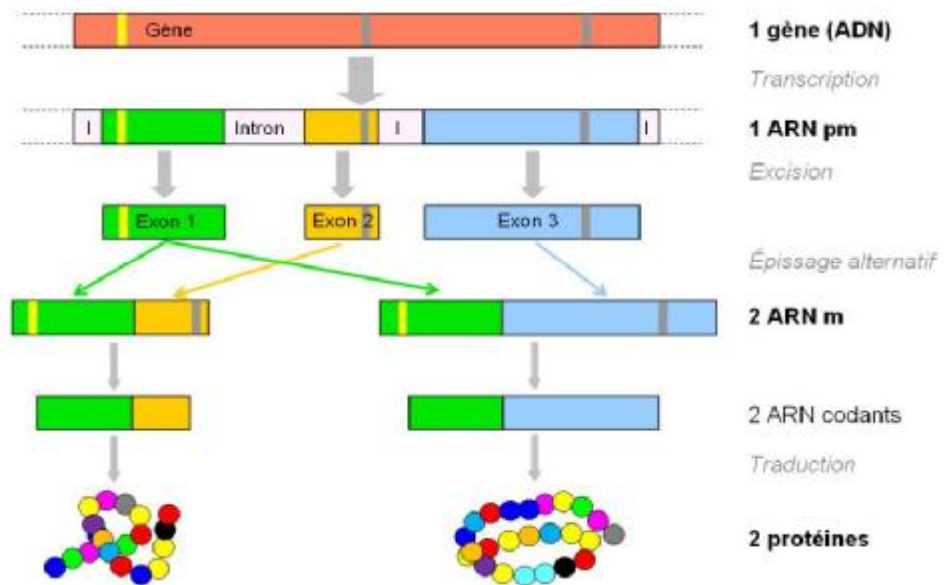
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La synthèse d'ADN



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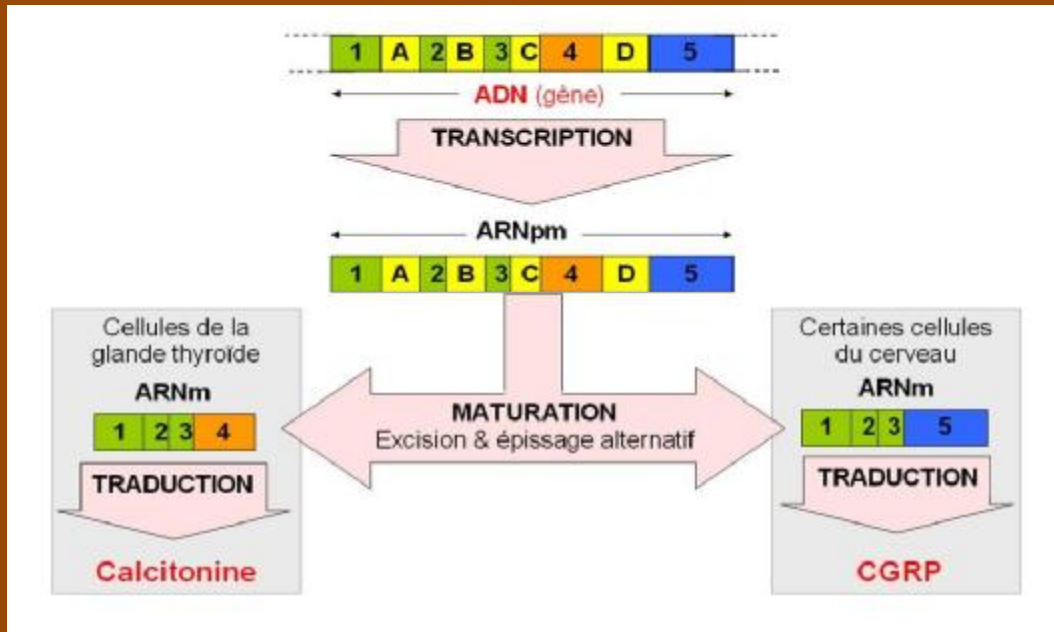
Gènes complexes





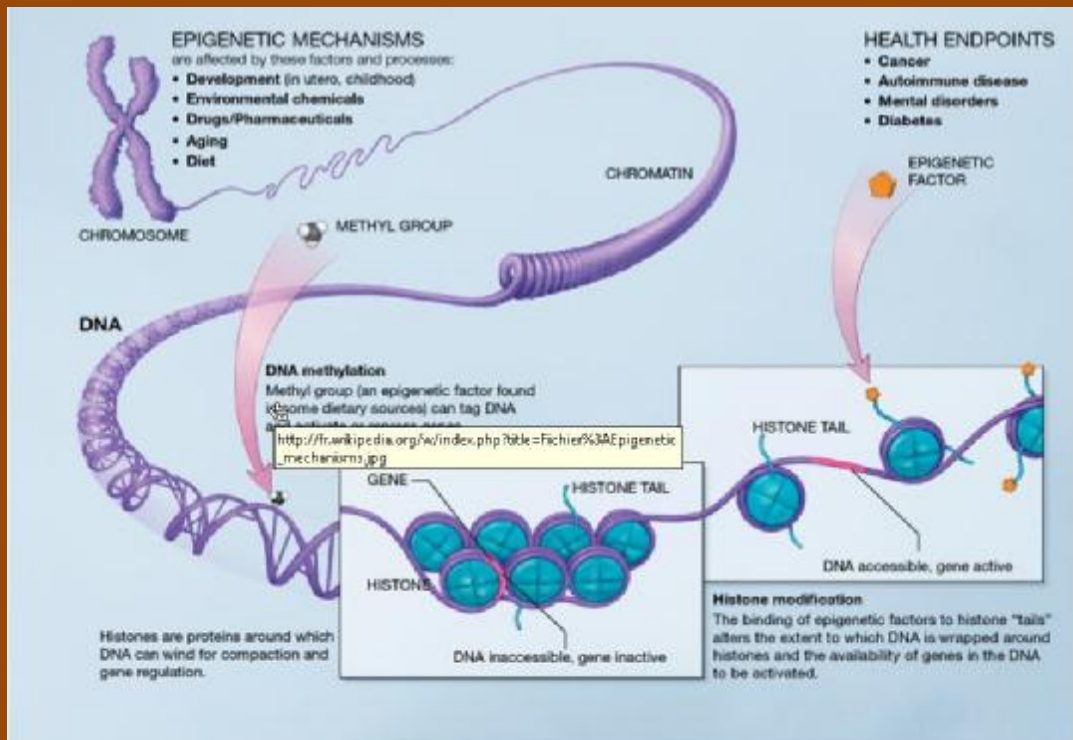
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Traductions complexes



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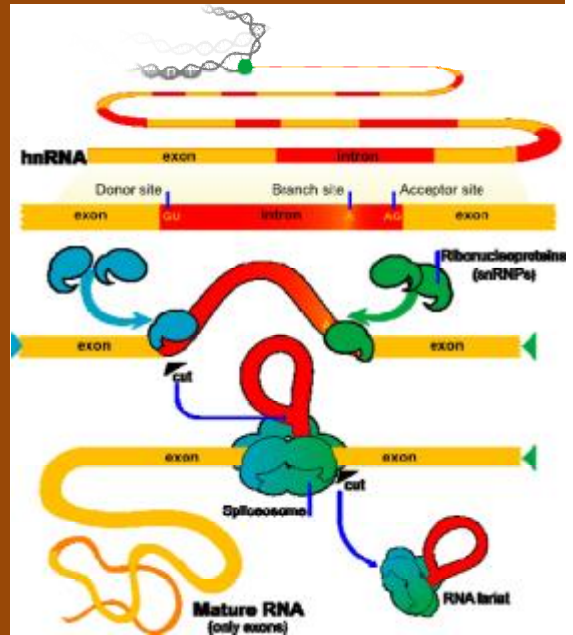
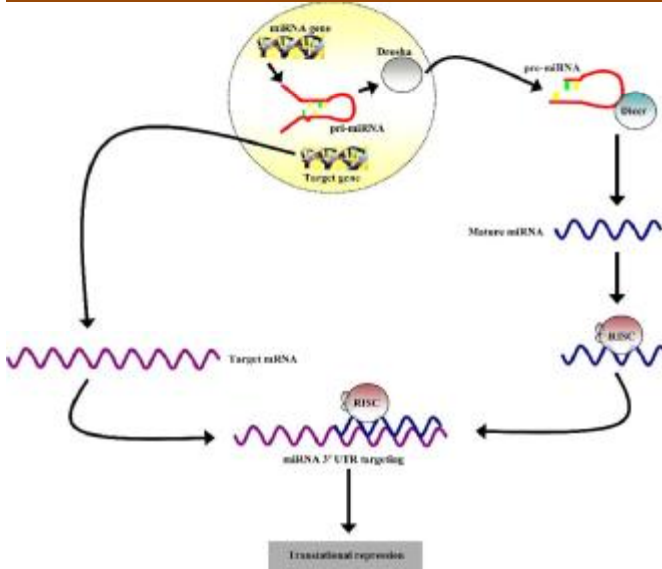
Contrôles épigénétiques





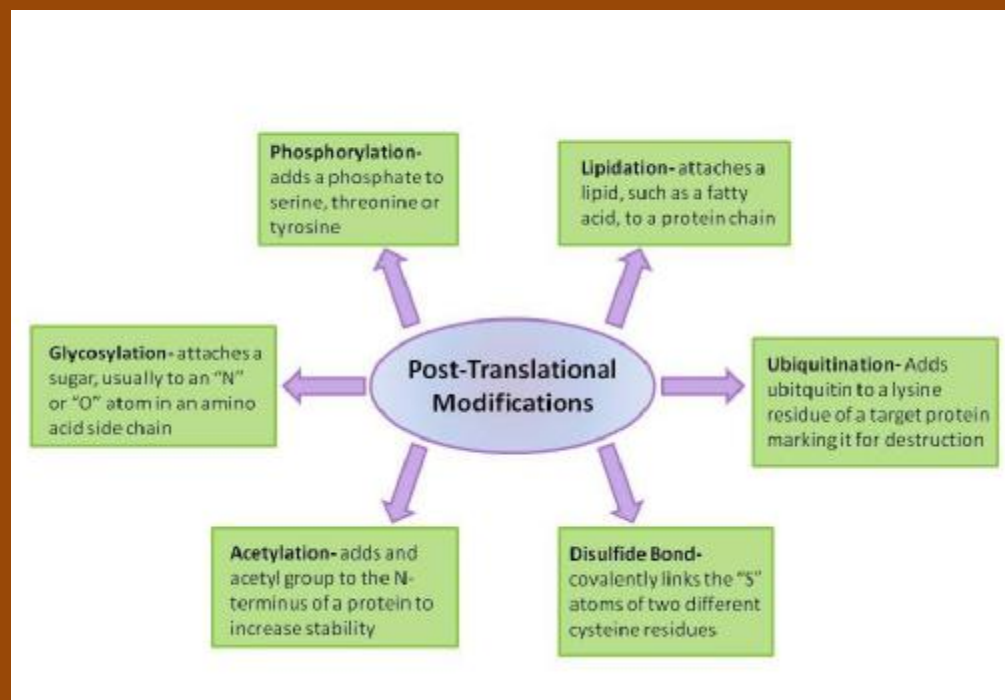
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Contrôles post-transcriptionnels



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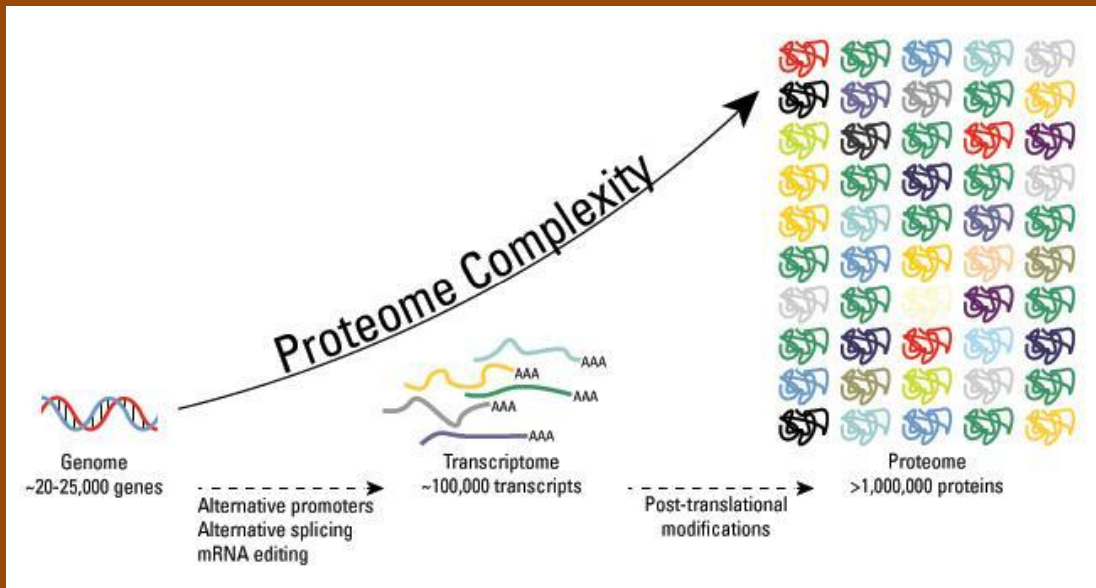
Contrôles post-translationnels





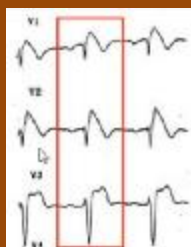
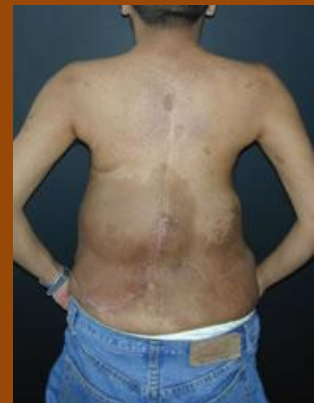
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Contrôles post-translationnels



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Maladies génétiques



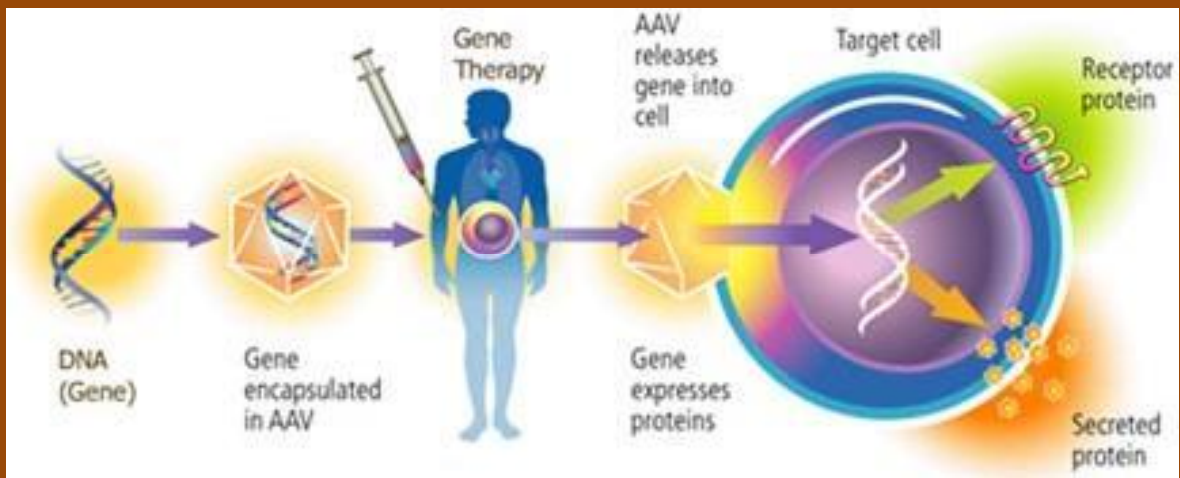
Young at risk of sudden death





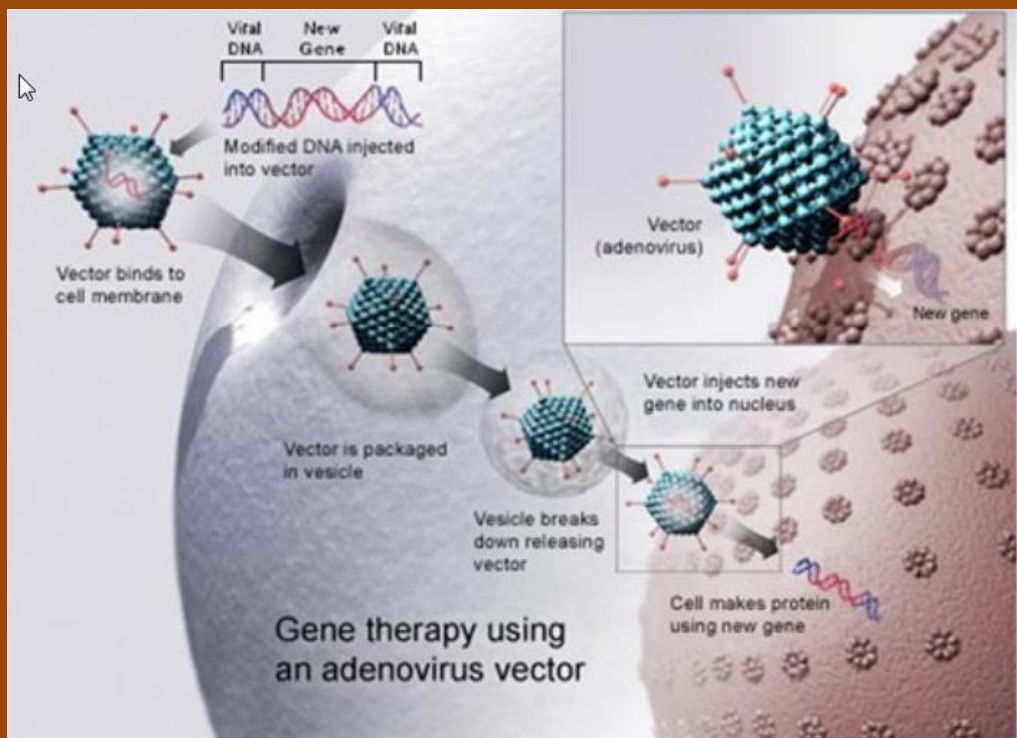
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Principes de la Thérapie Génique



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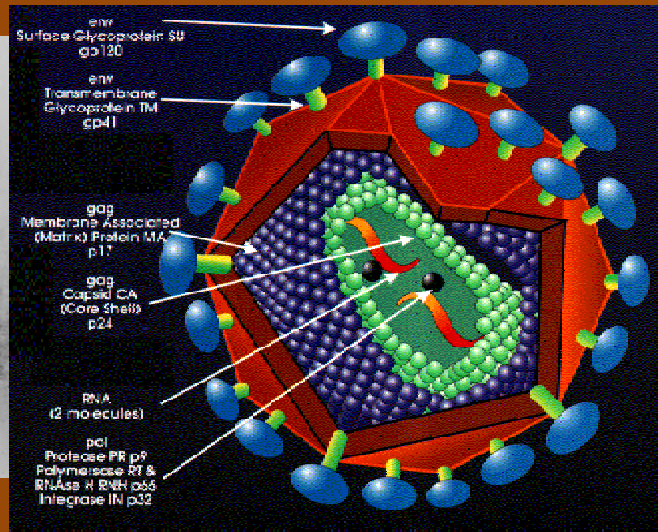
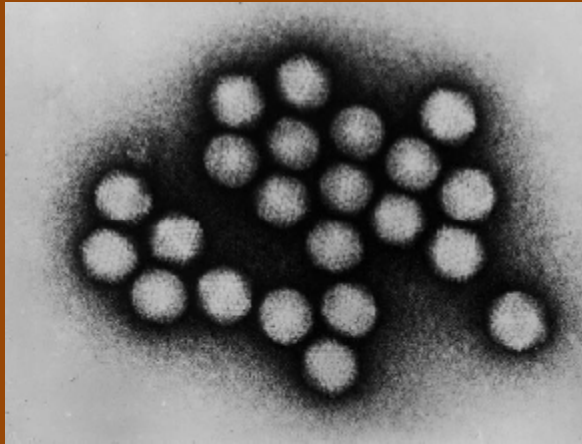
Vecteur viral





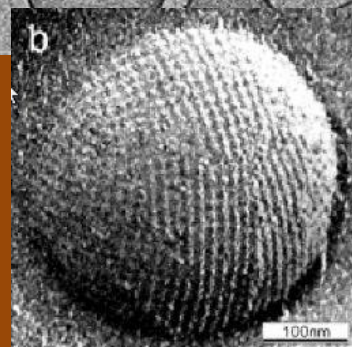
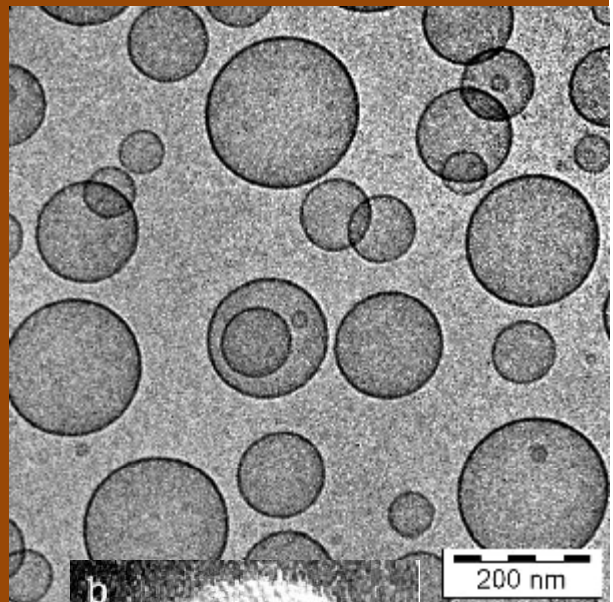
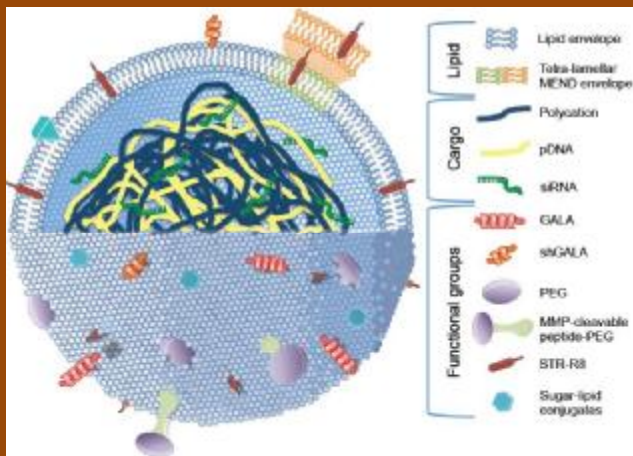
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Vecteur viral



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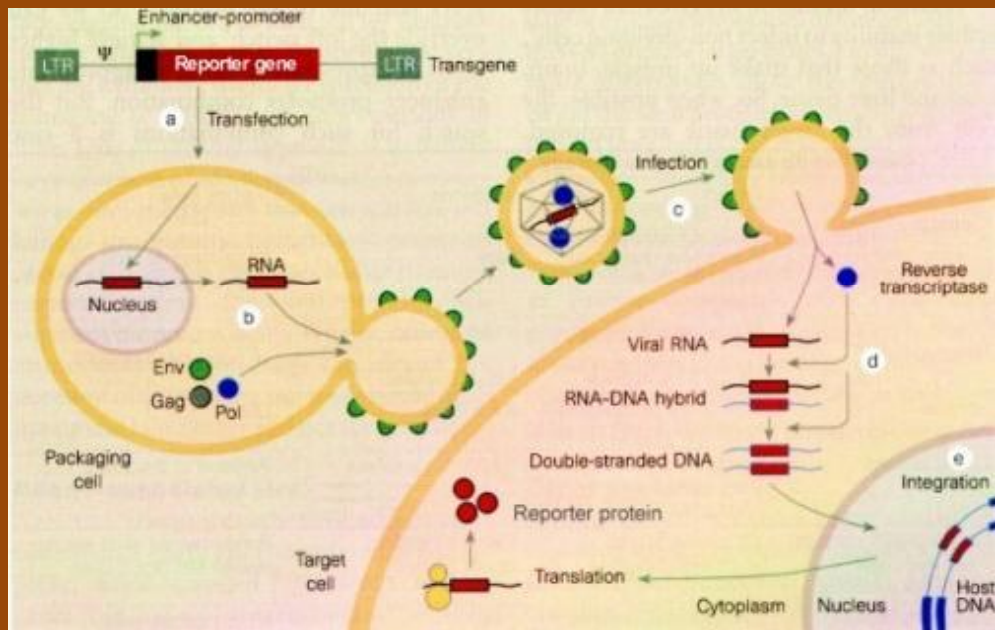
Vecteur Liposome





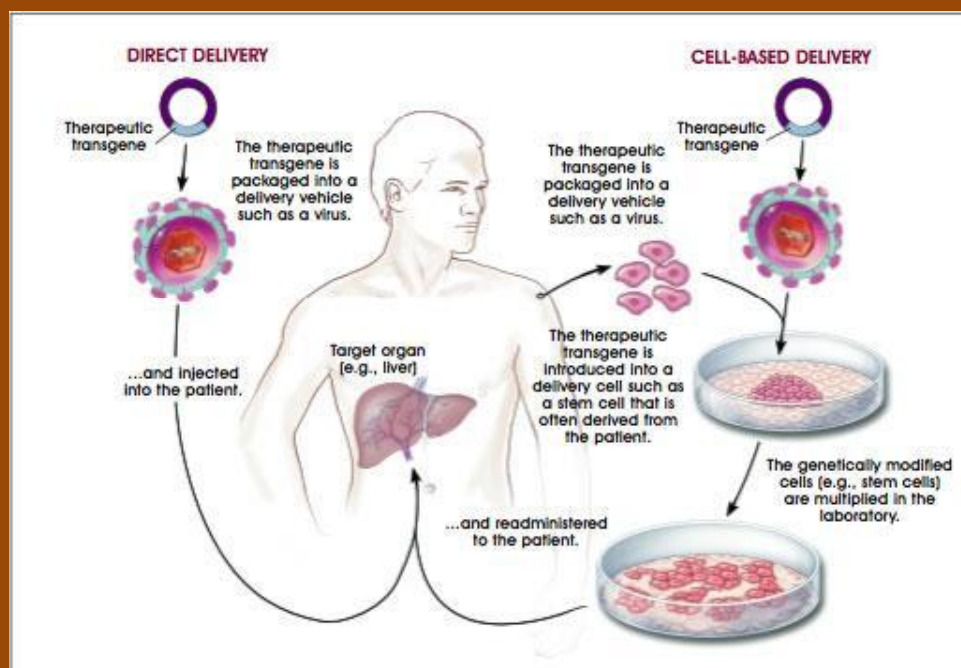
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Principe de l'intégration d'un gène



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Modes d'administration

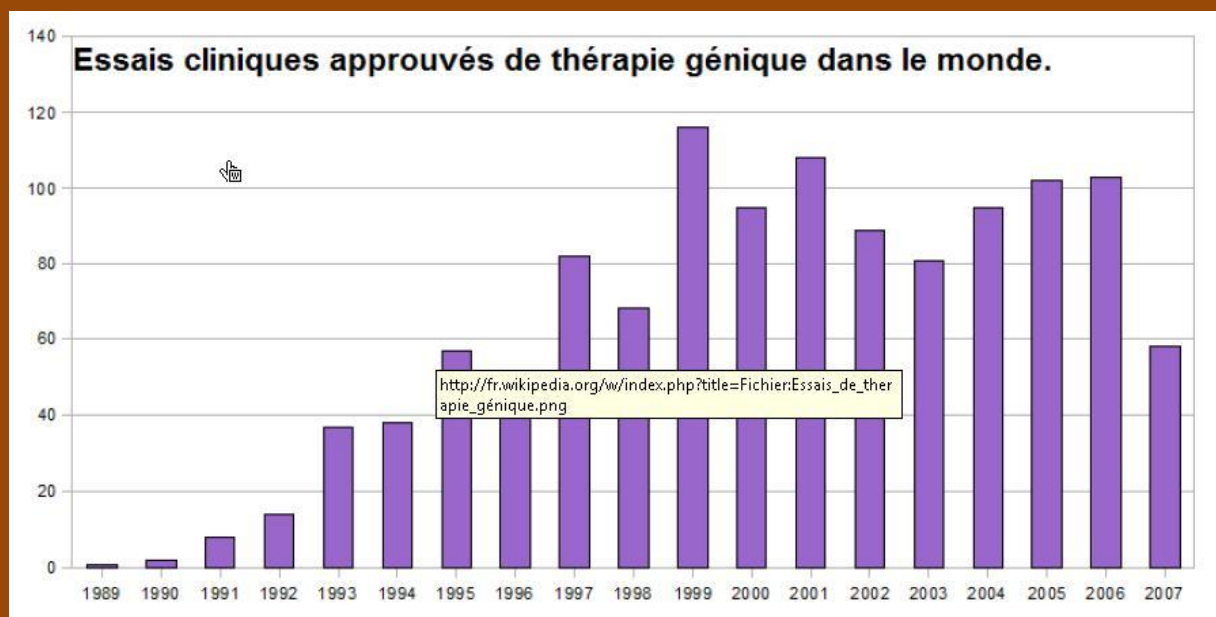




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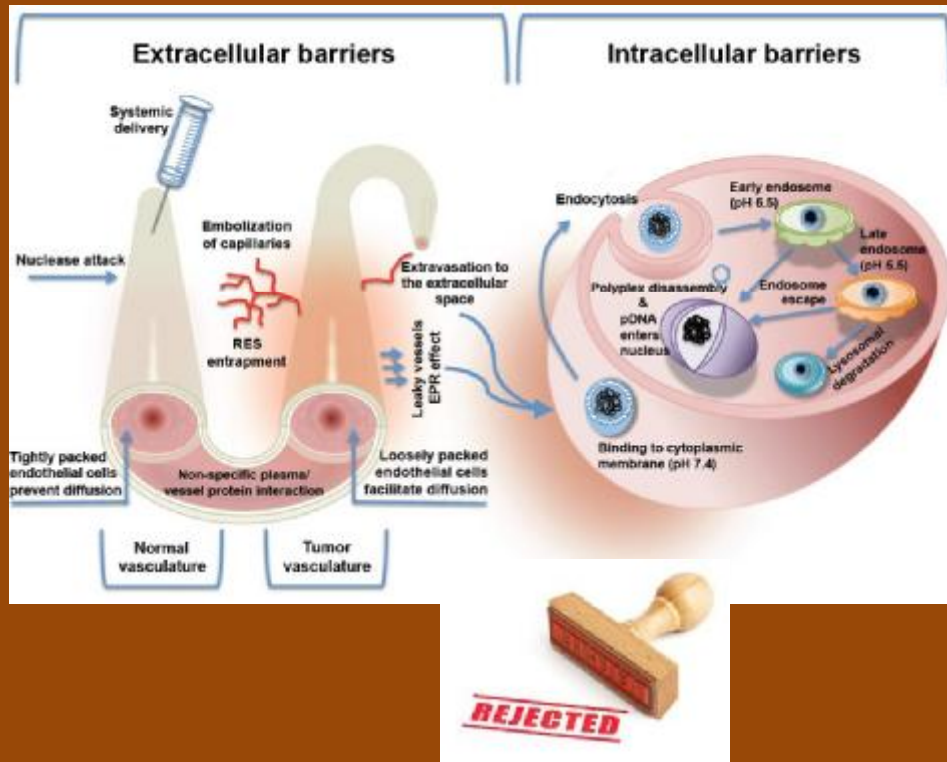
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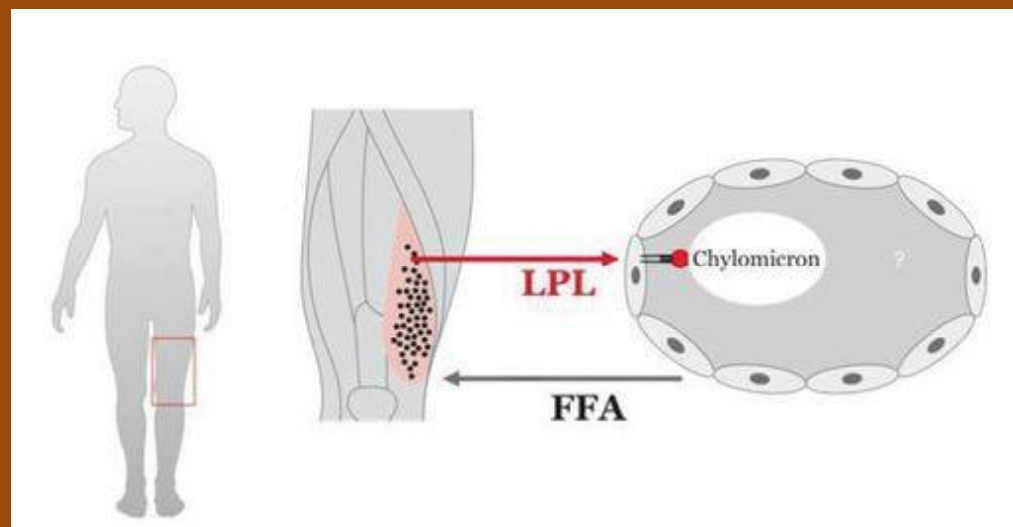


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Les difficultés de la thérapie génique



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Gene therapy's big promise: Fighting vision loss with gene therapy

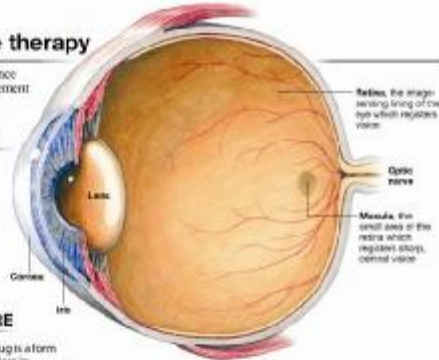
Doctors of the Casey Eye Institute at Oregon Health & Science University are conducting clinical trials using a gene replacement therapy to treat three eye diseases.

THE THREE TARGETED EYE DISEASES

Stargardt's disease - An inherited disease that has onset in childhood between the ages of six and twelve, leading to severe vision loss in young adults.

Usher syndrome - A condition that affects both vision and hearing. It affects the retina, initially causing the loss of peripheral vision but later affects central vision. Also causes severe hearing loss.

Macular degeneration - A major cause of visual impairment and blindness among older adults, it affects the macula of the eye, causing the loss of central vision.



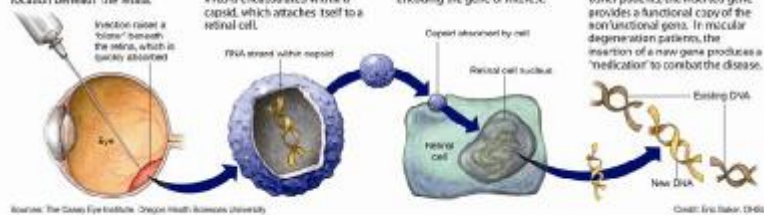
THE GENE REPLACEMENT PROCEDURE

1 Under anesthesia, the gene therapy drug is injected into the patient's eye. The tip of the needle is the width of a human hair, and the drug is infused into a specific location beneath the retina.

2 The gene therapy drug is a form of an oncolytic virus, harmless in humans. The virus contains a double strand of RNA, that encodes the gene for transplantation. The virus is encapsulated within a capsid, which attaches itself to a retinal cell.

3 The retinal cell engulfs the capsid, absorbing it into the cell. The RNA is converted to DNA, encoding the gene of interest.

4 The gene from the new DNA strand incorporates in the cell's existing DNA. In Stargardt's and Usher patients, the inserted gene provides a functional copy of the nonfunctional gene. In macular degeneration patients, the insertion of a new gene produces a "medicinal" to combat the disease.



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Infarctus & Angiogenèse: Thérapie génique = apprenti-sorcier ?

