



Genetic code

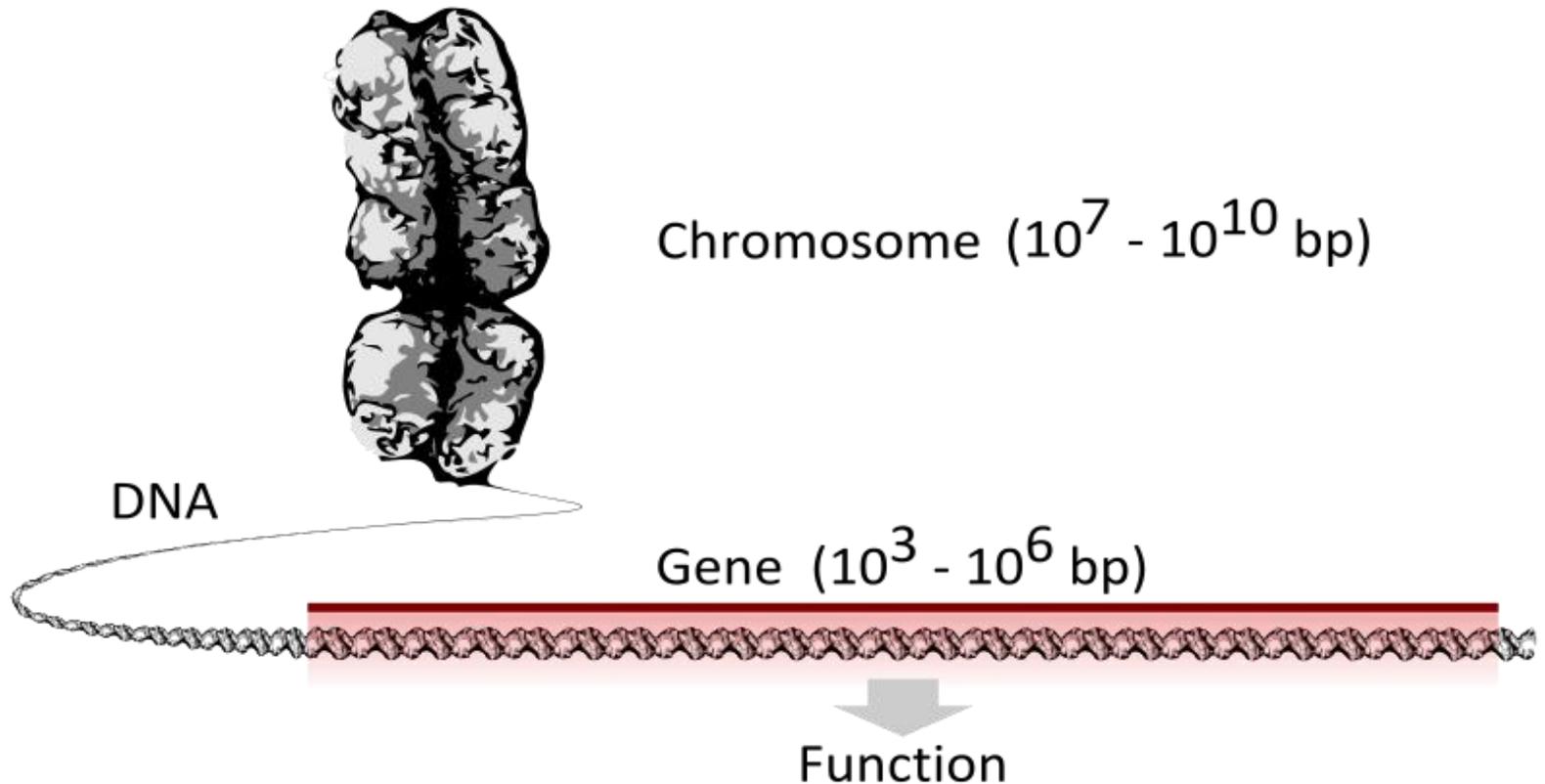
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Projekt ERASMUS+ KAI, CLIL metoda

What is a gene

- A locus of DNA which is made up of nucleotides
- Molecular unit of heredity
- Types of gene:
 - Structural gene
 - Gene for functional RNA
 - Regulative locus

Where a gene is in the DNA



- <https://en.wikipedia.org/wiki/Gene>

What is a genetic code

- A nucleotide sequence of a gene's DNA
- Exactly : amino acid sequence of a protein

Charakteristics of genetic code

- **Triplet code-** amino acid is determined by the triplet of nucleotide sequence
 - Nucleotide - nitrogenous base, five-carbon sugar, phosphate group
 - Codon- Sets of three nucleotides - 64 combinations
- Codons in DNA succeed one by one without gaps or overlapping

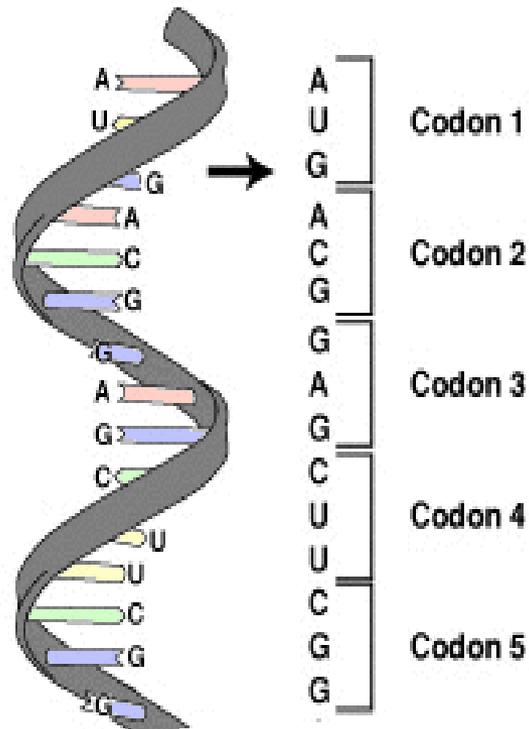
Characteristics of a genetic code

- **Universal code** – the rules of coding are the same in all organisms
- **Degenerate code**- the genetic code has redundancy but no ambiguity (codons GCU, GCC, GCA and GCG specify Alanine acid)

Characteristics of a codon

- Codons UAA , UAG- stop codons
- Codon AUG- start (initiation)_codon
- Codons in DNA follow in succession- without gaps
- Codons are important for translation
- The following codon determines the human genome

Notation system of codons



- https://en.wikipedia.org/wiki/Genetic_code

References

- Úvod do studia genetiky, Prof. Ing. Václav Řehout, CSc. a kolektiv
- Biologie pro gymnázia, Jelínek J., Zicháček V.
- <https://en.wikipedia.org>