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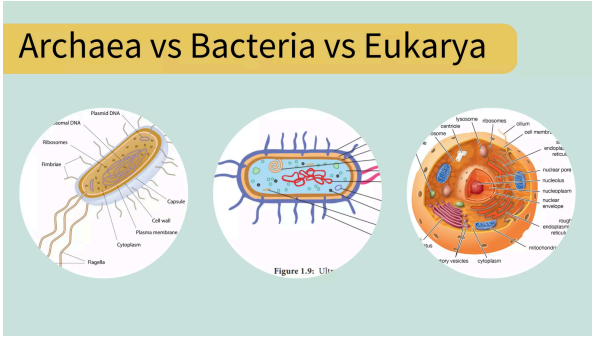
Genomics (基因组学): The study of the structure, function, evolution, and mapping of genomes, which include all of an organism's genetic material. It involves sequencing DNA, analyzing genes, and understanding their interactions.
研究基因组结构、功能、进化和图谱的学科，涉及DNA测序、基因分析及其相互作用.



Bioinformatics (生物信息学): The application of computational tools to store, analyze, and interpret biological data, particularly in genomics and molecular biology.
利用计算工具存储、分析和解释生物数据，特别是在基因组学和分子生物学领域.

Human Genome Project (人类基因组计划): A large-scale international research initiative (1990-2003) aimed at mapping and sequencing the entire human genome to identify and understand all human genes.
1990年至2003年进行的大型国际研究计划，旨在绘制和测序完整的人类基因组，以识别和理解所有人类基因.

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Reference Genome (参考基因组): A representative genome sequence used as a standard for comparing and studying genetic variations across individuals and species.
作为标准用于比较和研究个体或物种间基因变异的代表性基因组序列.

Whole-Genome Shotgun Approach (全基因组鸟枪法测序): A sequencing technique that randomly breaks DNA into fragments, sequences them, and then assembles the complete genome using computational methods.
一种测序技术，通过随机打碎DNA片段、测序并利用计算方法组装完整基因组.

Proteomics (蛋白质组学): The study of the structure, function, and interactions of proteins within an organism, often complementing genomics.
研究生物体内蛋白质的结构、功能和相互作用，通常与基因组学互补.

Proteome (蛋白质组): The complete set of proteins expressed by a genome, cell, or organism at a given time.
某一时间点由基因组、细胞或生物体表达的全部蛋白质集合.

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Systems Biology (系统生物学): An interdisciplinary field that studies biological systems as a whole, integrating genomics, proteomics, and computational modeling.
一个跨学科领域，从整体角度研究生物系统，整合基因组学、蛋白质组学和计算建模.

C. Elegans (秀丽隐杆线虫): A microscopic nematode used as a model organism in genetics and developmental biology due to its simple genome and well-mapped cell lineage.
一种微小的线虫，被广泛用作遗传学和发育生物学的模式生物，因其基因组简单且细胞谱系清晰.

Drosophila Melanogaster (黑腹果蝇): A fruit fly species widely used in genetic research due to its short life cycle, ease of breeding, and well-studied genome.
一种广泛用于遗传研究的果蝇物种，因其生命周期短、易繁殖且基因组研究较为完善.

Intergenic Sequences (基因间序列): DNA sequences located between genes that do not code for proteins but may have regulatory or structural functions.
位于基因之间的DNA序列，不编码蛋白质，但可能具有调控或结构功能.

Repetitive DNA Elements (重复DNA元件): DNA sequences that are repeated multiple times in the genome, playing roles in genome structure, evolution, and regulation.
在基因组中重复多次的DNA序列，在基因组结构、进化和调控中发挥作用.

Transposons (转座子): Mobile genetic elements that can move within the genome, potentially causing mutations or altering gene expression.
能够在基因组内移动的遗传元件，可能引起突变或改变基因表达.

Tandem Repeat (串联重复序列): Repeated DNA sequences that occur adjacent to each other in a head-to-tail manner within the genome.
基因组中相邻且头尾相接的重复DNA序列.

Interspersed Repeat (散布重复序列): Repeated DNA sequences scattered throughout the genome, often derived from transposons.
基因组内分散存在的重复DNA序列，通常源自转座子.

Alu Sequence (Alu序列): A type of short interspersed nuclear element (SINE) found in primate genomes, particularly abundant in humans, playing a role in genome evolution and regulation.

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灵长类基因组中特有的一种短散布核元件（SINE），在人类基因组中尤为丰富，对基因组进化和调控具有重要作用.

Pseudogenes (假基因): Non-functional gene sequences that resemble functional genes but have lost their ability to code for proteins due to mutations.
类似功能基因但因突变丧失编码蛋白质能力的非功能性基因序列.

Repetitive DNA (重复DNA): DNA sequences that appear multiple times in the genome, including transposons, satellite DNA, and tandem repeats.
基因组中多次出现的DNA序列，包括转座子、卫星DNA和串联重复序列.

Transposable Elements (转座元件): DNA sequences that can move within the genome, playing roles in genetic diversity and genome rearrangement.
能够在基因组内移动的DNA序列，在基因多样性和基因组重排中起重要作用.

Short Tandem Repeat (STR) (短串联重复序列): Repeated DNA motifs of 2-6 base pairs found in the genome, commonly used in forensic DNA profiling.
基因组中由2-6个碱基对组成的重复DNA序列，广泛用于法医学DNA鉴定.

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Multigene Families (多基因家族): Groups of related genes with similar sequences and functions, originating from gene duplication events.
一组具有相似序列和功能的相关基因，由基因重复事件产生.

Nonidentical Genes (非同源基因): Genes within a multigene family that have similar functions but differ in sequence and expression patterns.
多基因家族中具有相似功能但序列和表达模式不同的基因.

Evo-Devo (进化发育生物学): A field of biology that studies the relationship between evolution and development by comparing developmental processes across species.
研究进化与发育关系的生物学领域，通过比较不同物种的发育过程来理解进化机制.

Homeobox (同源盒基因序列): A DNA sequence found in genes that regulate development by controlling the expression of other genes.
调控发育的基因中发现的一种DNA序列，通过控制其他基因的表达来影响发育过程.

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Hox Genes (Hox基因): A subset of homeobox genes that determine body plan and segment identity in animals.

同源盒基因的一个子集，决定动物的体轴结构和节段特征.

Human Proteome (人类蛋白质组): The complete set of proteins expressed by the human genome, essential for understanding human biology and disease.

由人类基因组表达的所有蛋白质的集合，对于理解人类生物学和疾病至关重要.

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