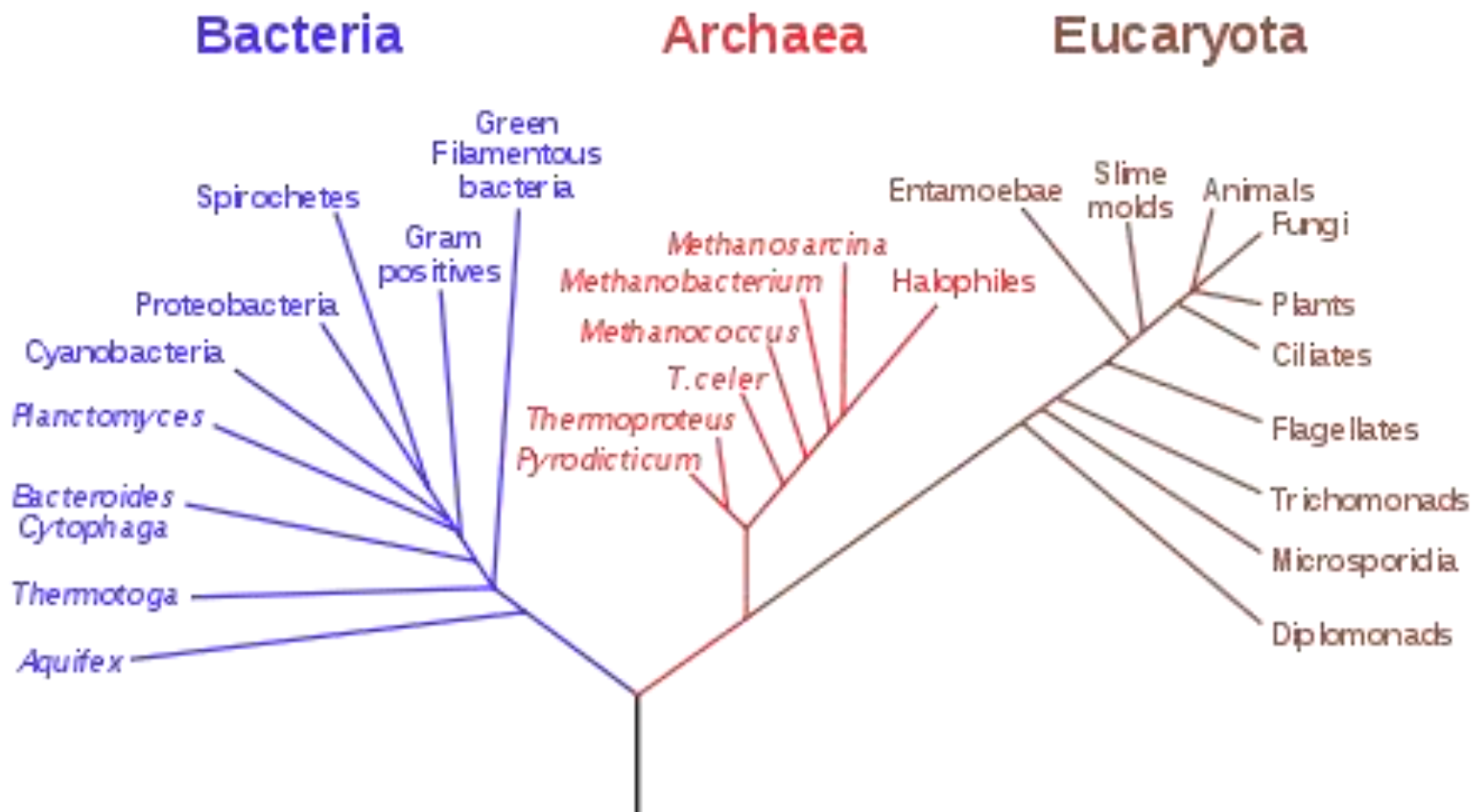


# Taksonomija, zgradba, genetika in metabolizem bakterij

# Phylogenetic Tree of Life

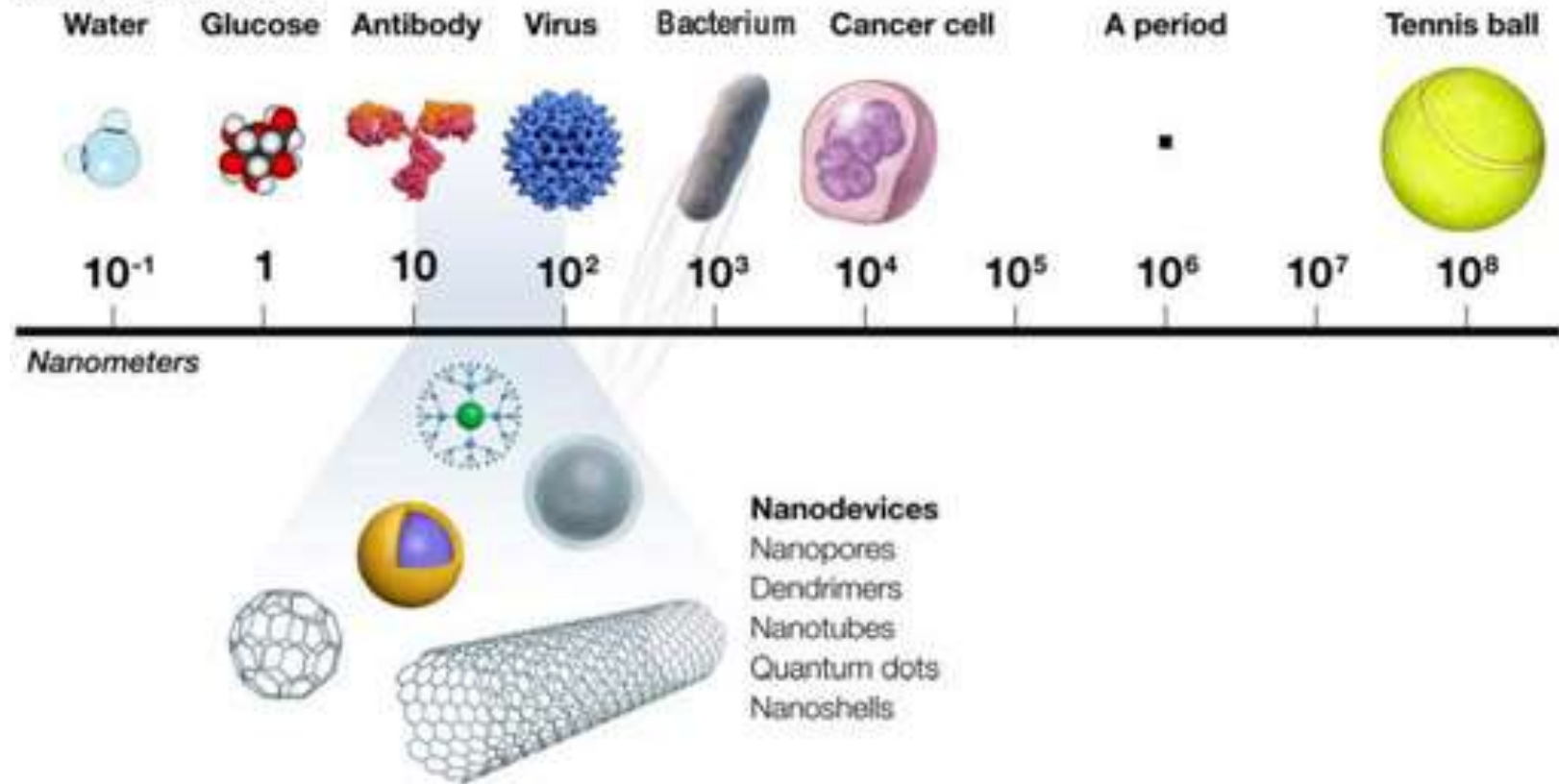


# Poimenovanje bakterij

- Binominalno
- Rod                      Vrsta
- *Staphylococcus aureus*
- *S. aureus*
- Vrsta
- Rod
- Družina
- Red
- Razred
- Oddelek
- Carstvo
- nadcarstvo

# Velikost mikrobov

How Small Is Small?



# Oblike bakterij



bacillus  
(rod)



coccus  
(spherical)



spirillum  
(spiral)



spirochaete  
(corkscrew)



vibrio  
(comma)



chain of  
cocci



cluster of  
cocci



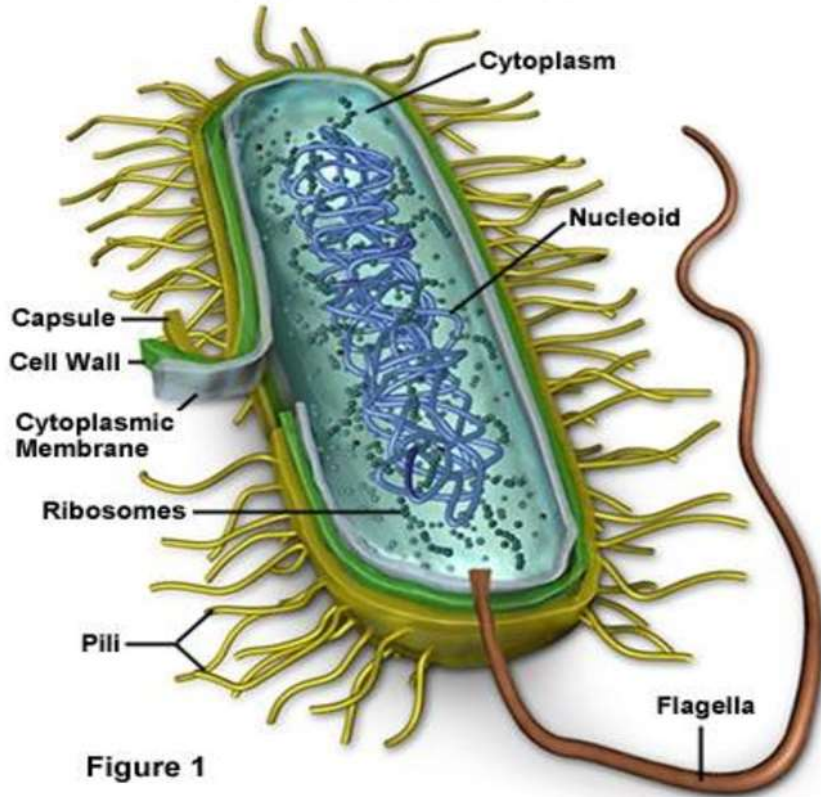
pair of  
cocci



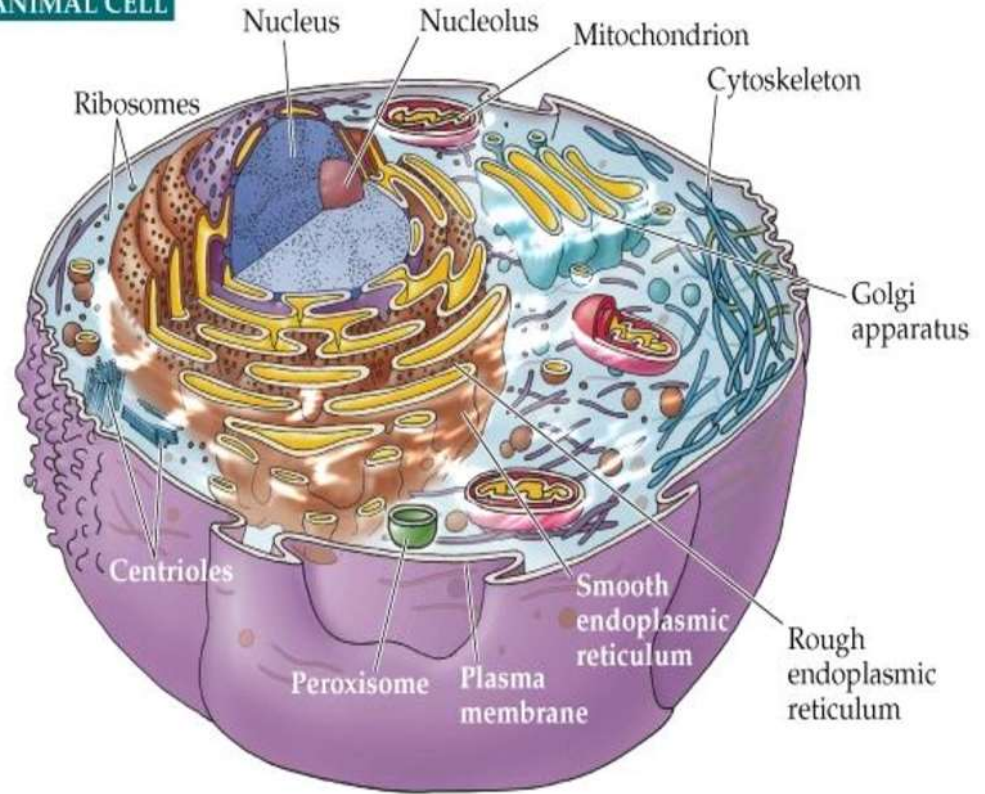
chain of  
bacilli

# Bakterijska celica

Prokaryotic Cell Structure



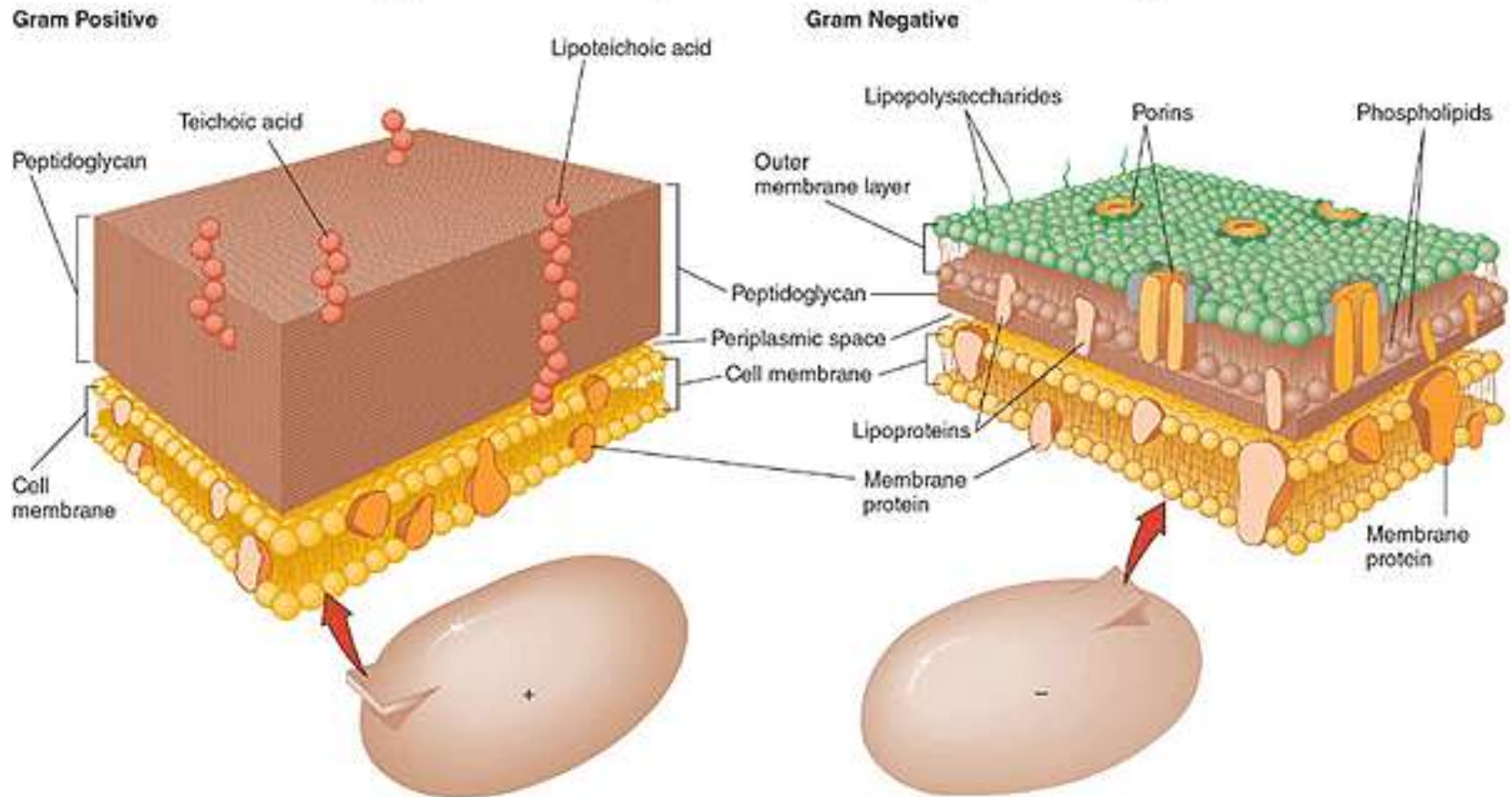
AN ANIMAL CELL



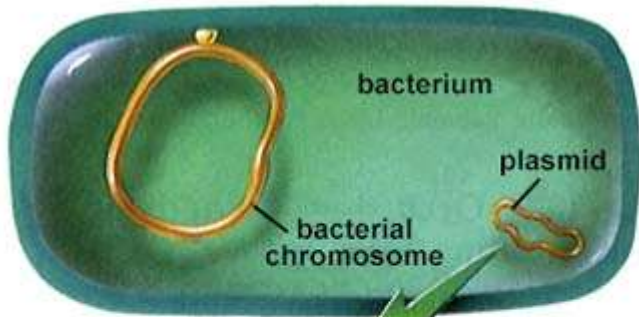


# Celična stena

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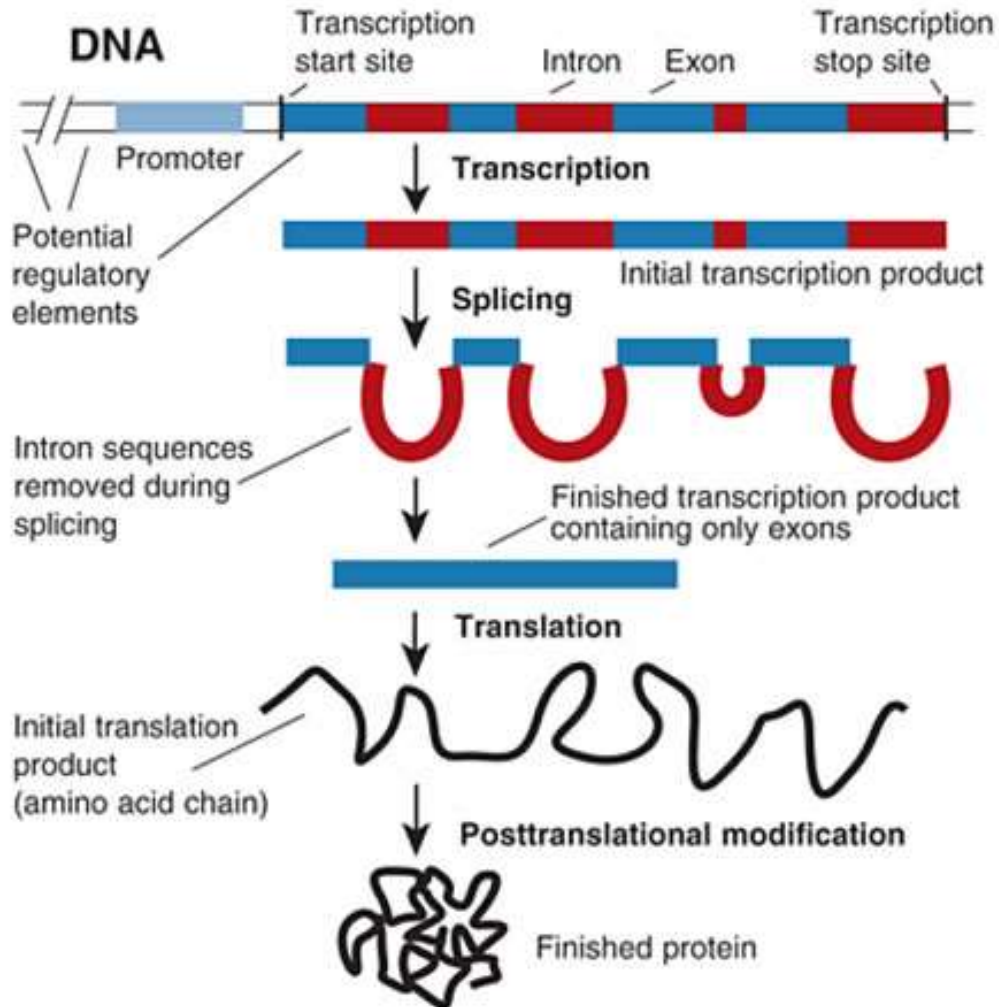


# Genetika

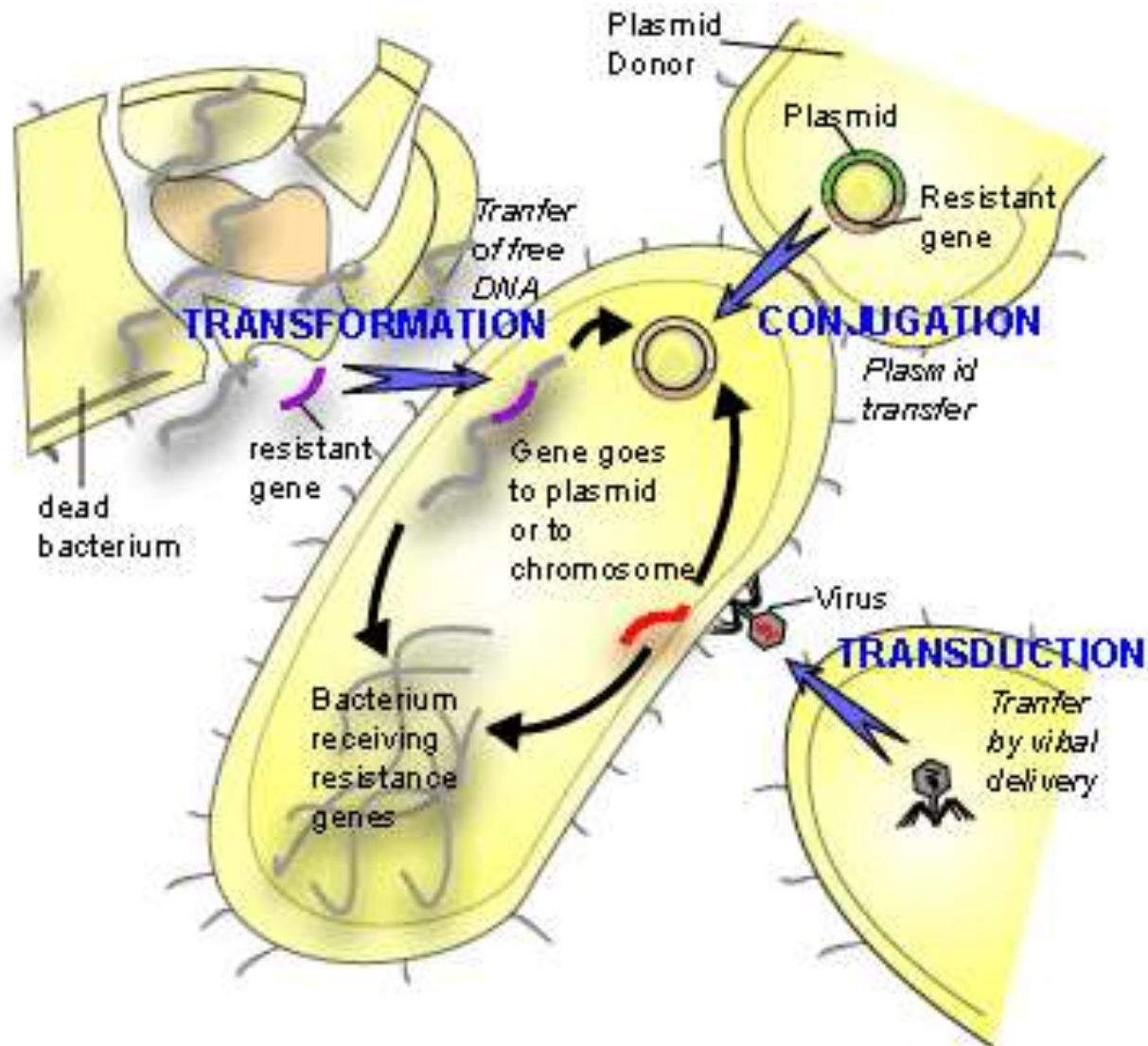




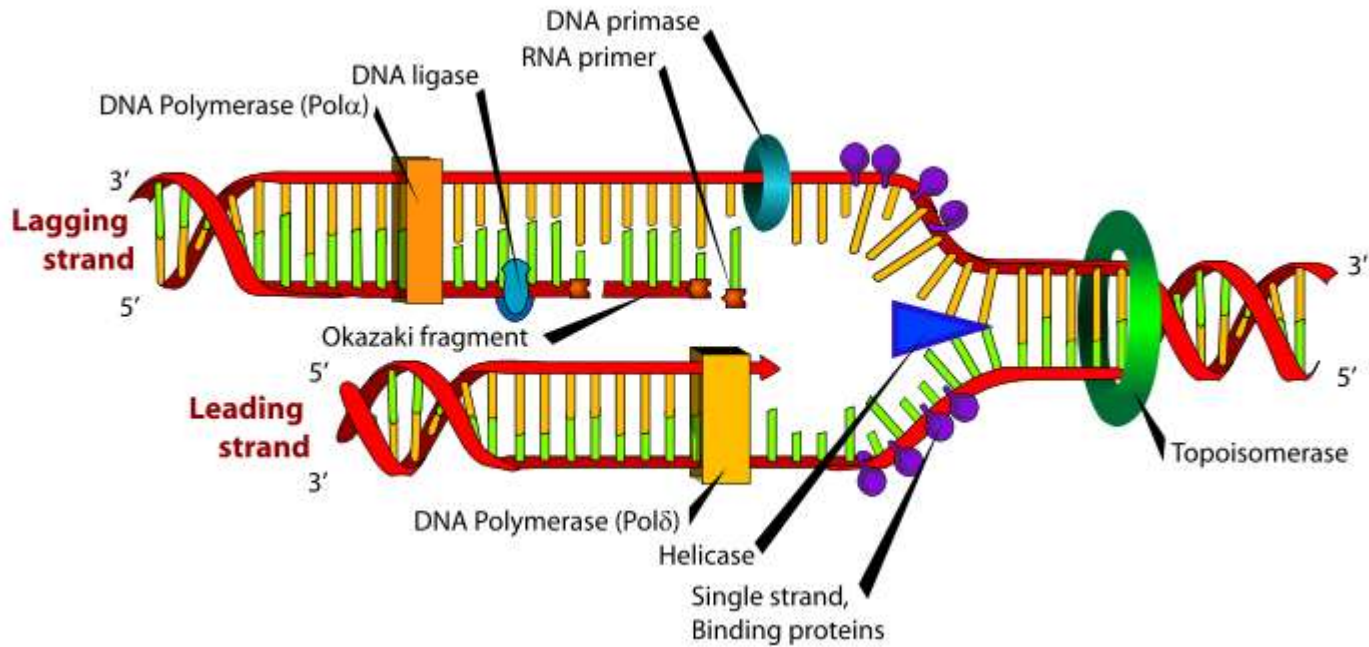
# Od DNA do proteina



# Izmenjava DNA med bakterijami



# Podvojevanje DNA



# Mutacije

(a) Point mutations and small deletions

**Wild-type sequences**

Amino acid	N-Phe	Arg	Trp	Ile	Ala	Asn-C
mRNA	5'-UUU	CGA	UGG	AUA	GCC	AAU-3'
DNA	3'-AAA	GCT	ACC	TAT	CGG	TTA 5'
	5'-TTT	CGA	TGG	ATA	GCC	AAT 3'

**Missense**

3'-AAT	GCT	ACC	TAT	CGG	TTA-5'
5'-TTA	CGA	TGG	ATA	GCC	AAT-3'
N-Leu	Arg	Trp	Ile	Ala	Asn-C

**Nonsense**

3'-AAA	GCT	ATC	TAT	CGG	TTA-5'
5'-TTT	CGA	TAG	ATA	GCC	AAT-3'
N-Phe	Arg	Stop			

**Frameshift by addition**

3'-AAA	GCT	ACC	ATA	TCG	GTT A-5'
5'-TTT	CGA	TGG	TAT	AGC	CAA T-3'
N-Phe	Arg	Trp	Tyr	Ser	Gln

**Frameshift by deletion**

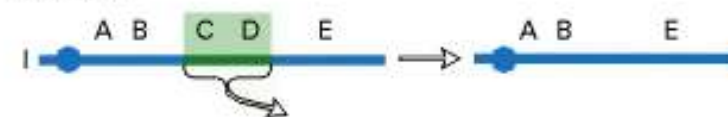
	GCTA				
	CGAT				
3'-AAA	↓ CCT	ATC	GGT	TA-5'	
5'-TTT	GGA	TAG	CCA	AT-3'	
N-Phe	Gly	Stop			

(b) Chromosomal abnormalities

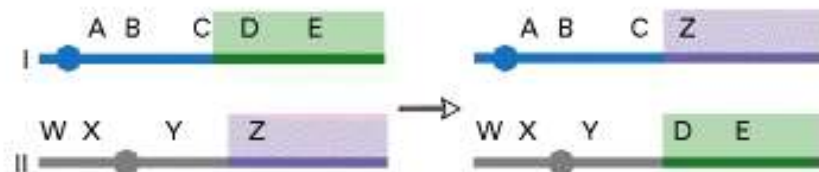
**Inversion**



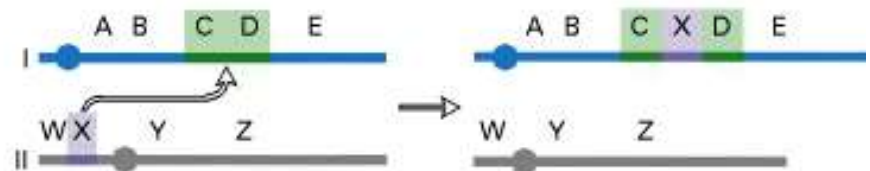
**Deletion**



**Balanced translocation**



**Insertion**



# Metabolizem bakterij

- **Kisik**

- Aerobne
- Anearobne
- Mikroaerofilne
- Fakultativno anaerobne

- **pH**

- Acidofilne
- nevtrofilne
- alkalofilne

- **Temperatura**

- Psihrofilne
- Mezofilne
- Termofilne

