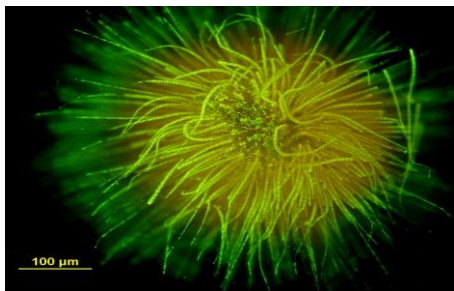
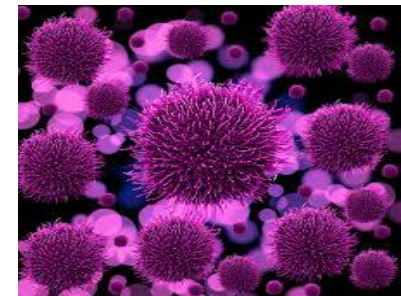


Grunnleggende mikrobiologi



Monica Holm
Grunnkurs i dekontaminering 06.06.2024

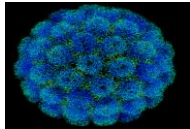
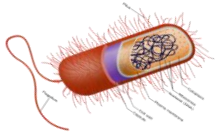


Mikrobiologi

Vitenskapen om
mikroorganismer

Mikroorganismer

Bakterier

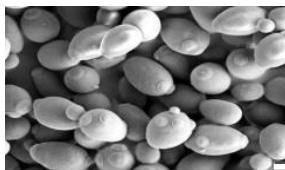


Virus

Selvstendige livsformer man ikke kan se med det blotte øye

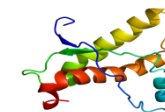
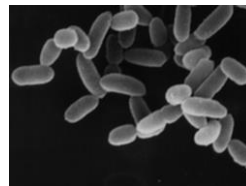


Protozoa

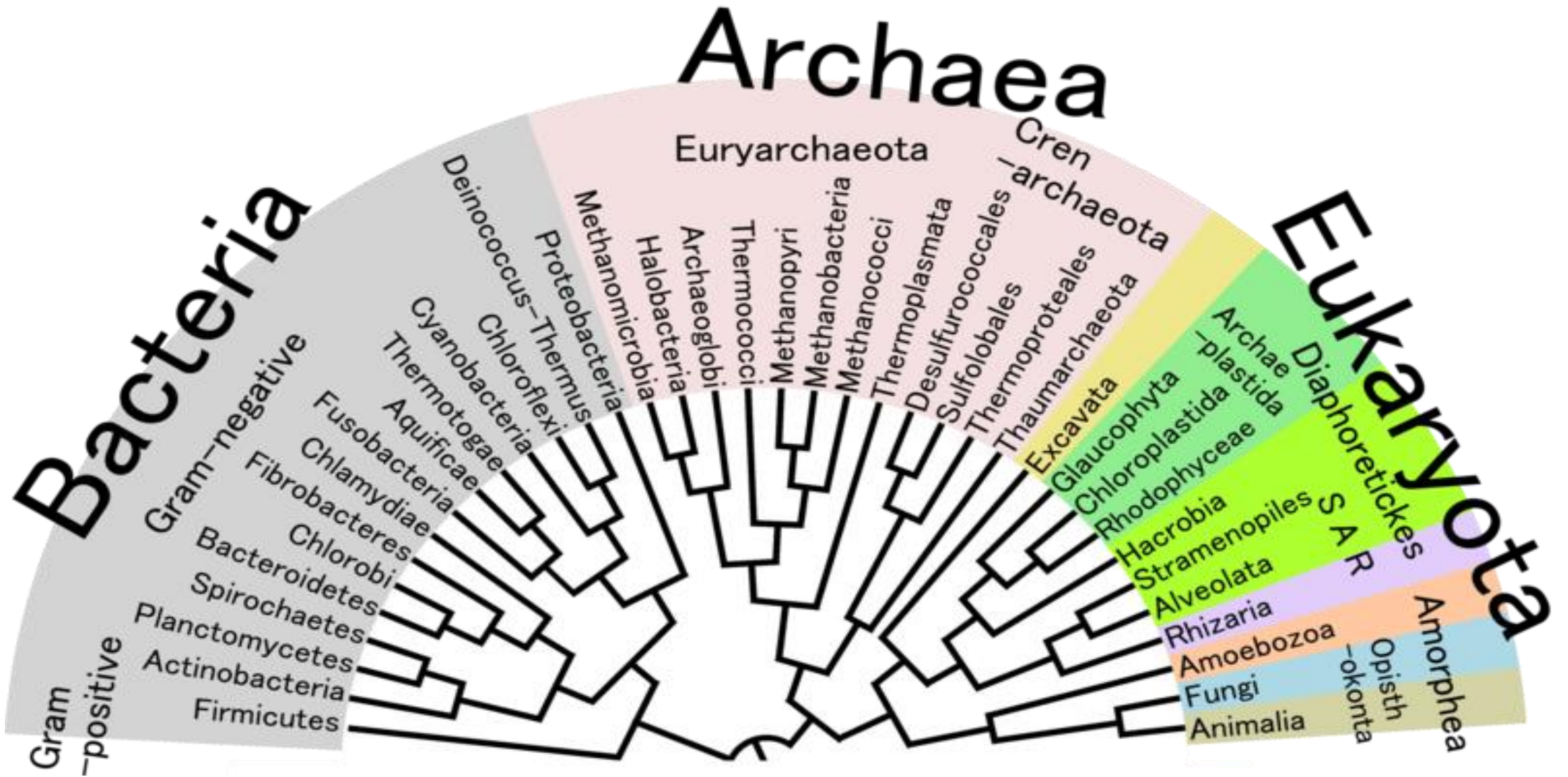


Mikroskopiske sopper

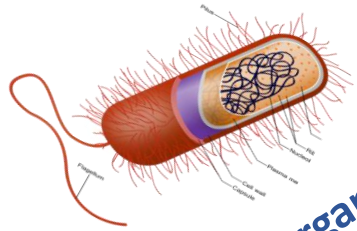
Arkebakterier



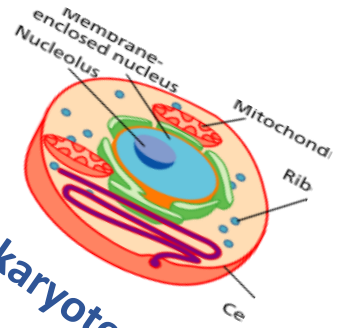
Prioner



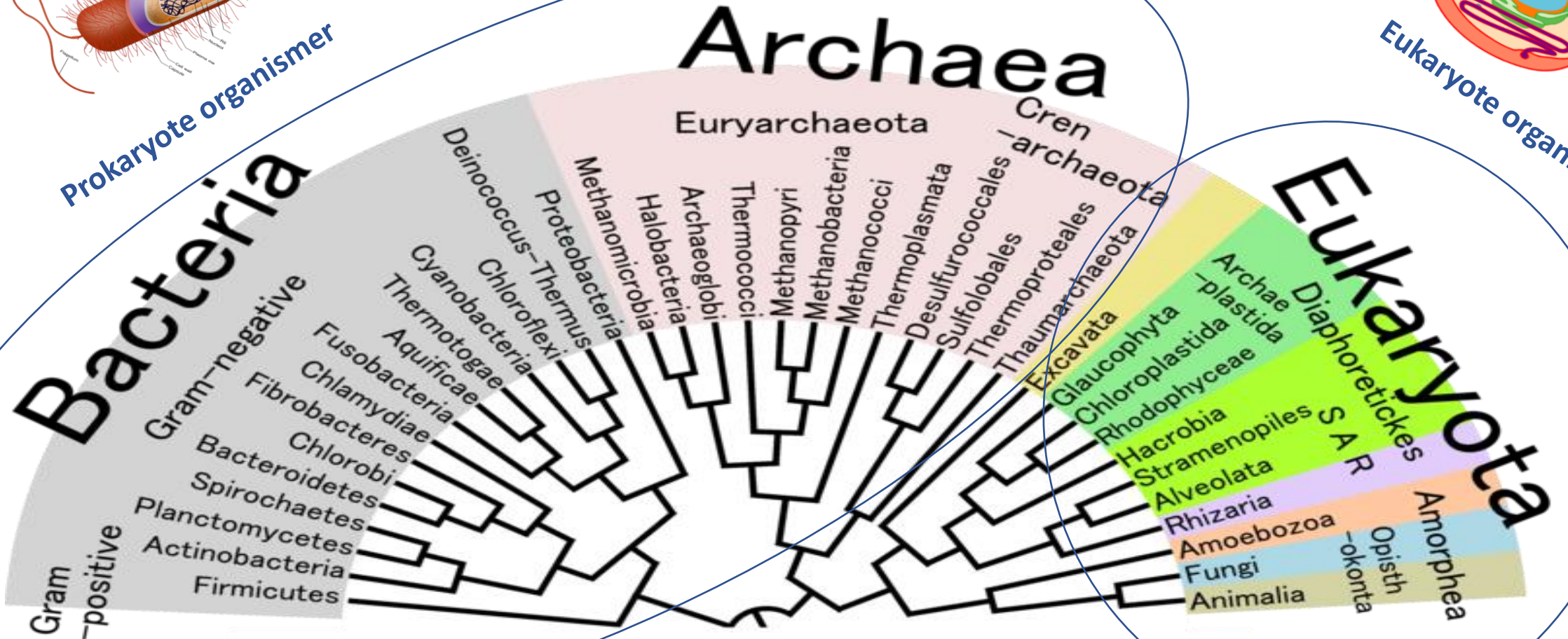
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Prokaryote organismer

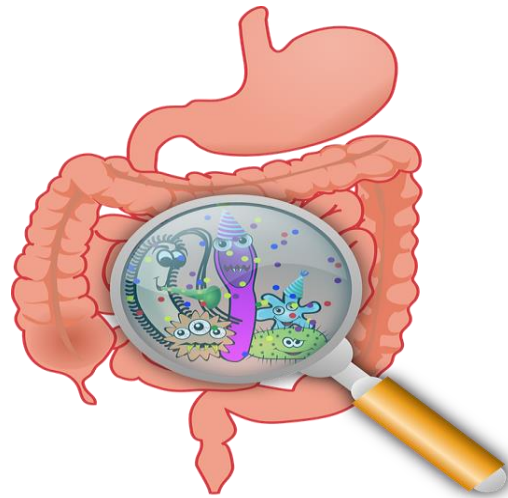


Eukaryote organismer



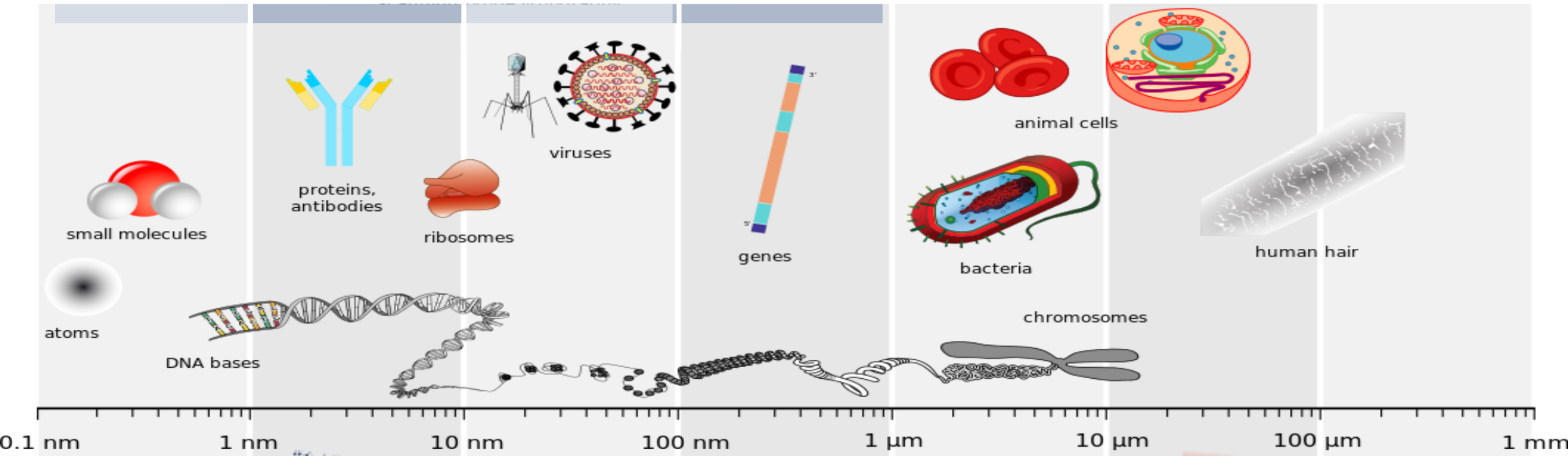
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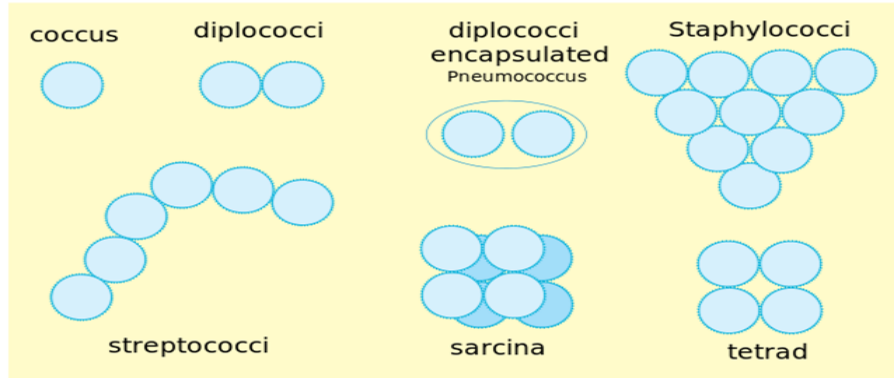
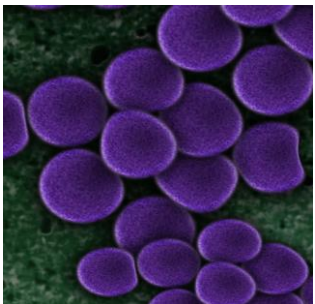
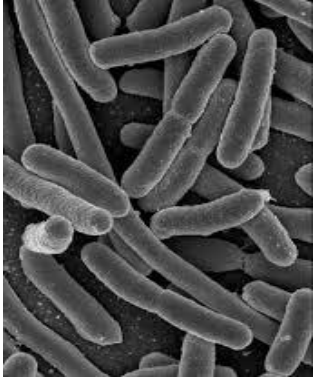


Flickr.com: Beer sampler – Quinn Dombrowski, Wholemeal bread | by treehouse1977 , 02 sauerkraut | by jasonlam , pixabay.com, medicalgraphics.de, commons.wikimedia.org

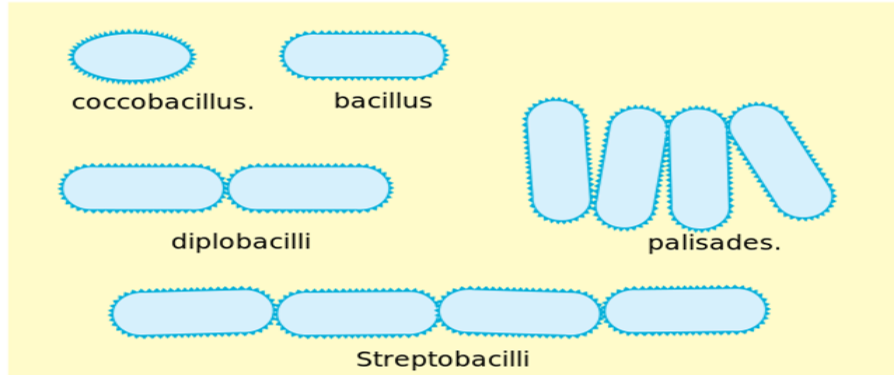
Størrelse



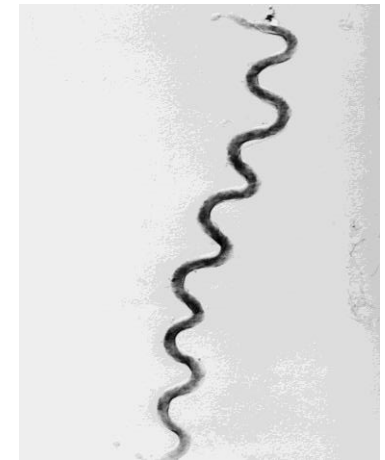
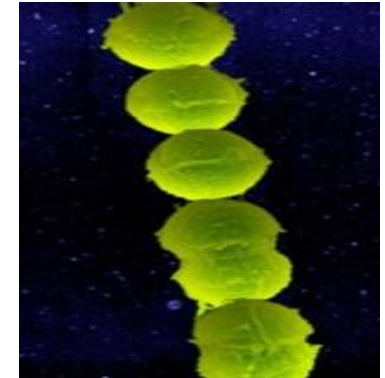
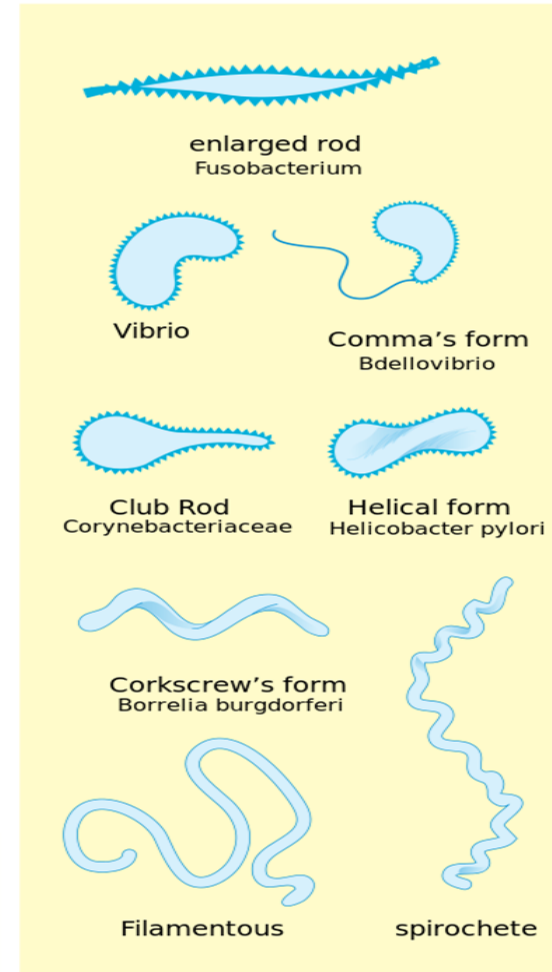
Struktur



Bacilli

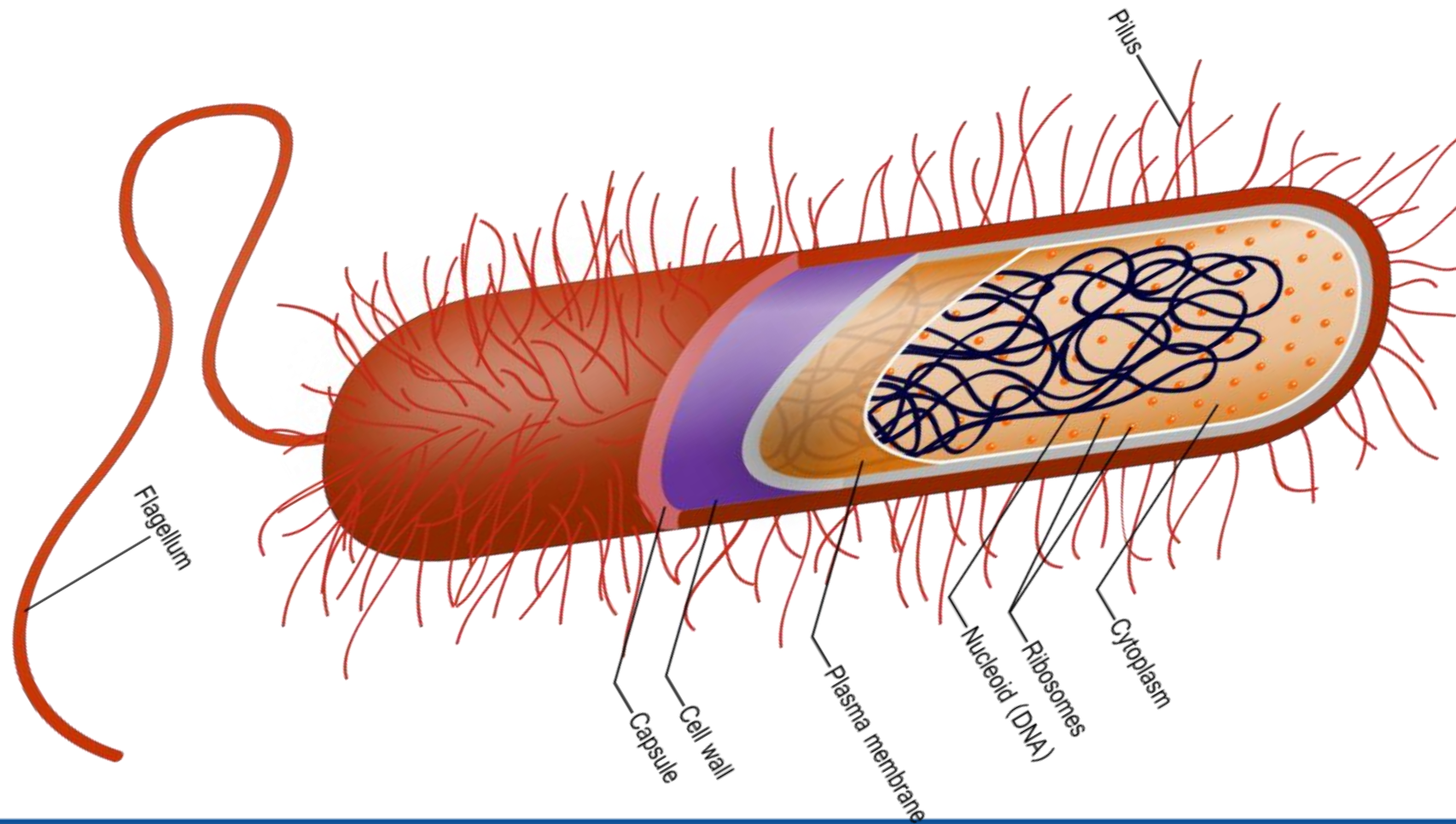


Budding and appendaged bacteria



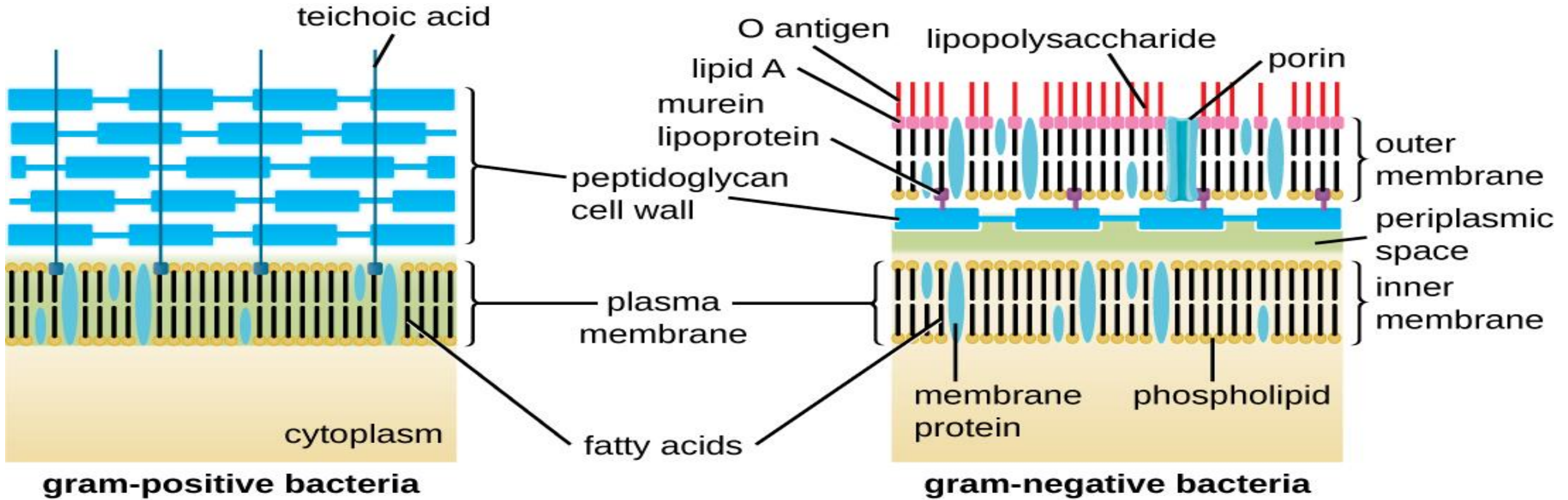
https://en.wikipedia.org/wiki/Bacterial_cellular_morphologies, flickr.com, pixabay

Struktur

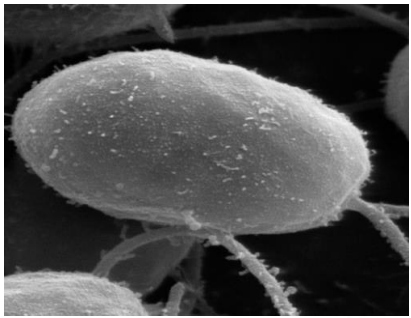


This vector image is completely made by Ali Zifan - Own work; used information from Biology 10e Textbook (chapter 4, Pg: 63) by: Peter Raven, Kenneth Mason, Jonathan Losos, Susan Singer · McGraw-Hill Education., CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=44194140>

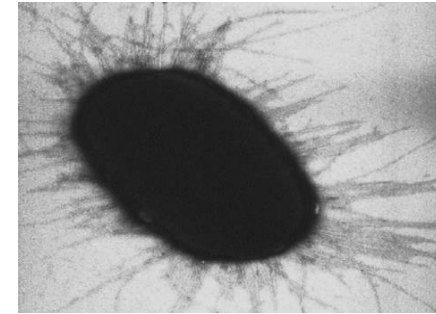
Cellevegg



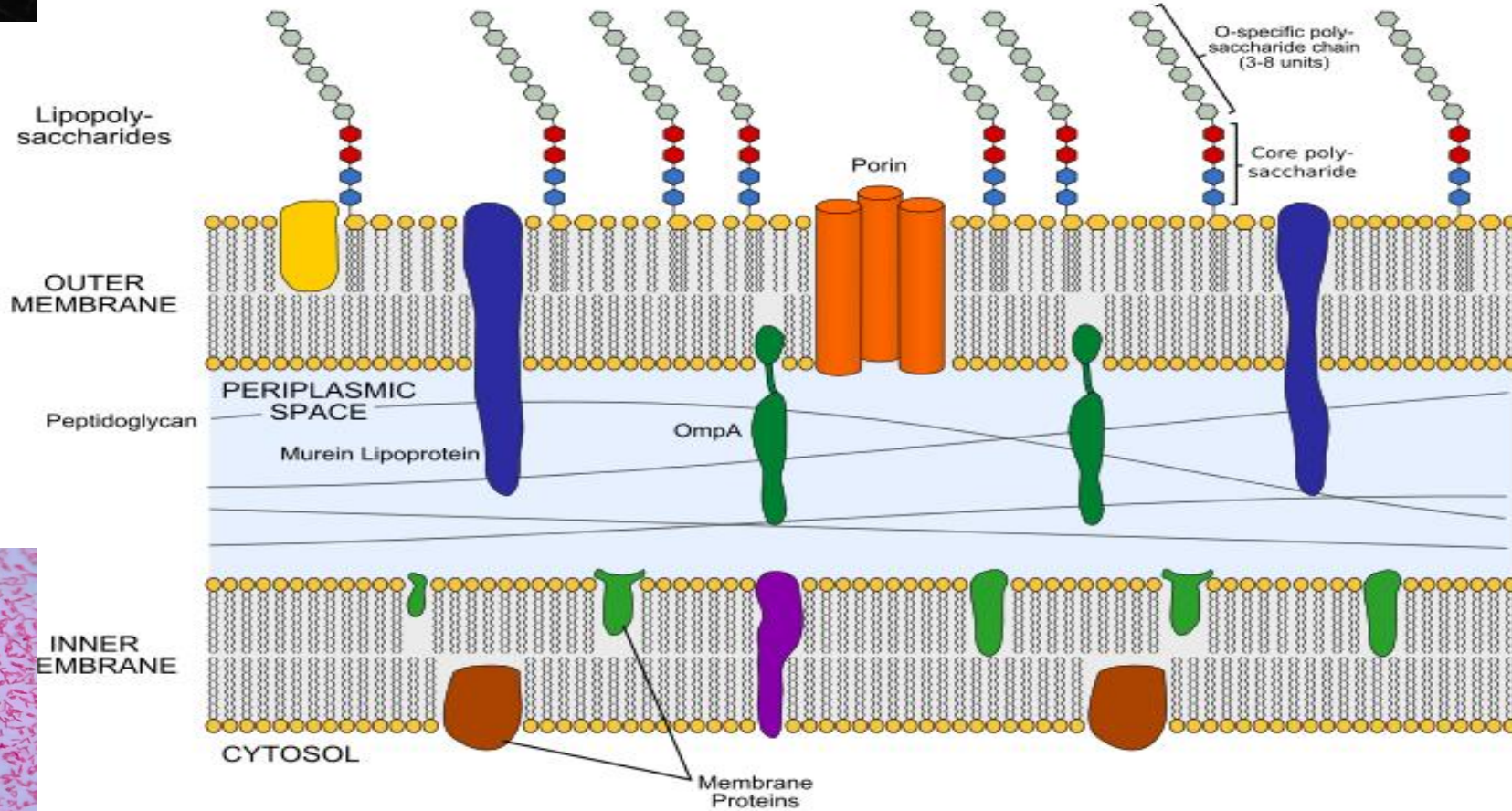
Cellevegg



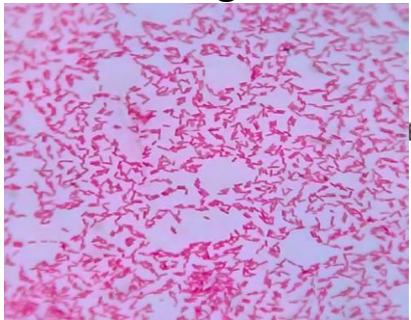
Flagell



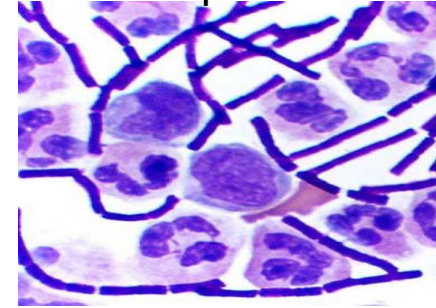
Pilier



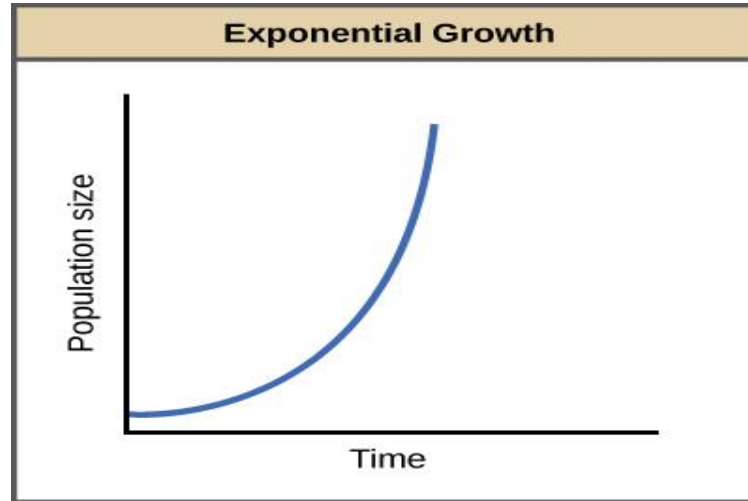
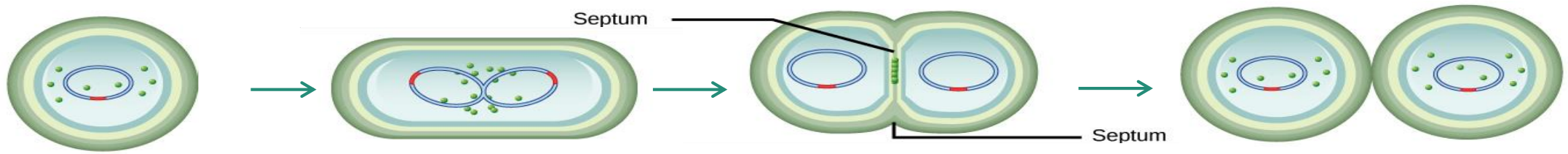
Gram-negativ



Gram-positiv



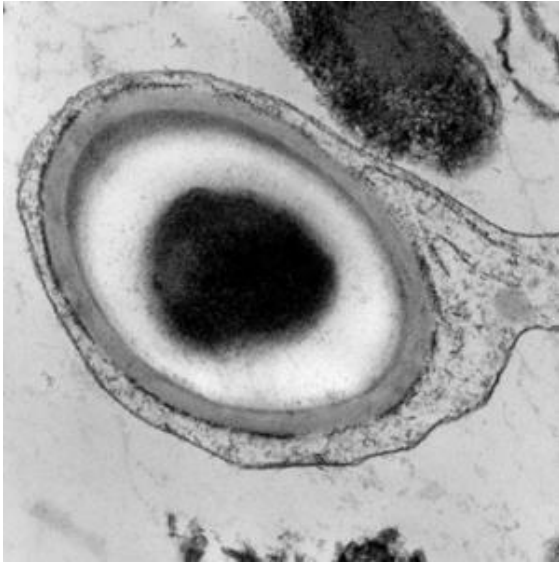
Formering



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Bakteriers overlevelsesmekanismer

Biofilm



Sporedannelse

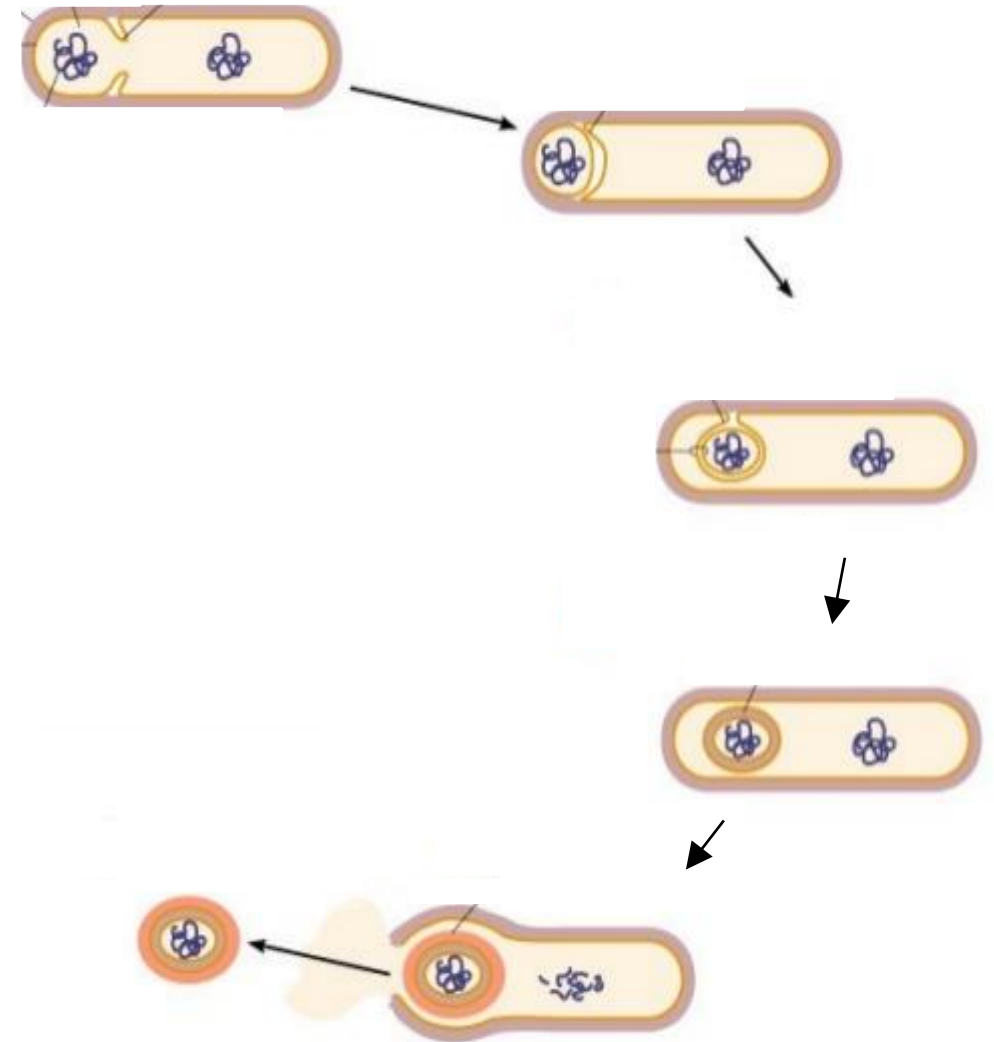


Antibiotikaresistens



Bakteriesporer

- Enkelte bakterier kan danne sporer når vekstforholdene blir dårlige
- Ekstremt motstandsdyktige mot tørke, varme, stråling og giftstoffer – inkludert noen desinfeksjonsmidler
- Kan overleve i årevis uten noen form for næring



Biofilm

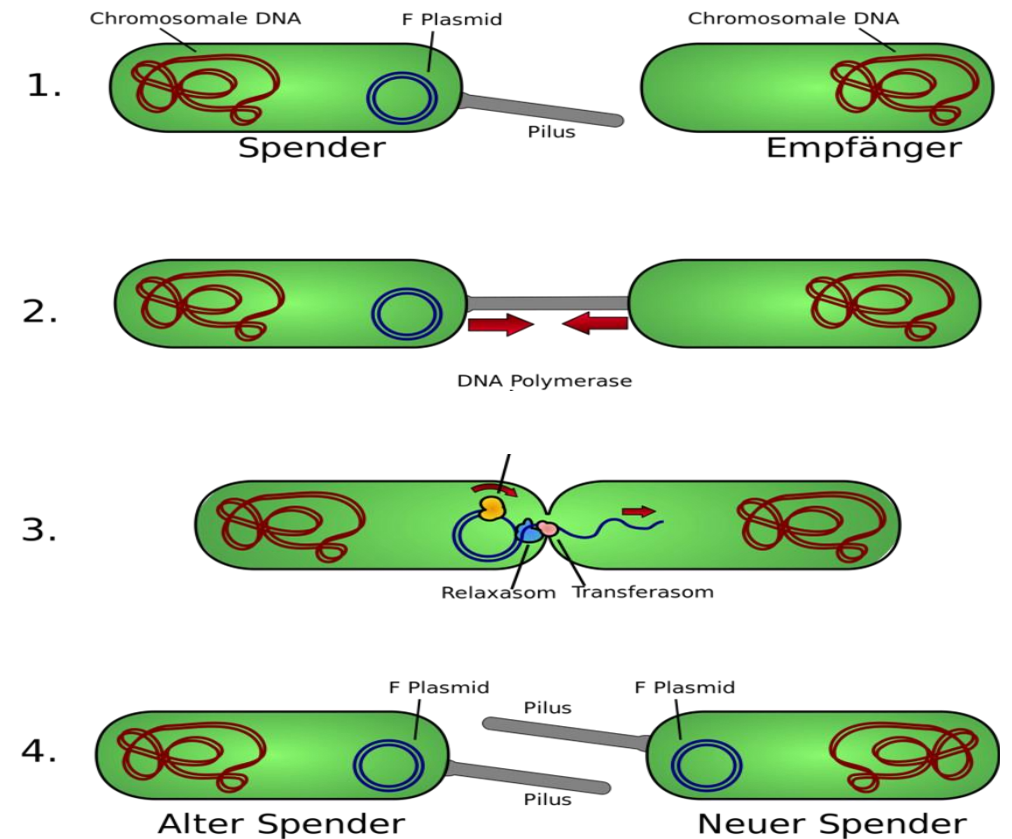
- Belegg av mange forskjellige typer bakterier som fester seg til underlag og danner en glatt overflate
- Kan dannes på medisinsk utstyr som katetre og endoskop, i vannrør, kjøletårn osv.
- Mikroorganismene festes tett sammen i en matriks som gjør at biofilmen blir svært vanskelig å fjerne med desinfeksjonsmidler, må derfor ofte fjernes mekanisk



By Ustill (Own work) [CC BY-SA 3.0 de (<https://creativecommons.org/licenses/by-sa/3.0/de/deed.en>)], via Wikimedia Commons

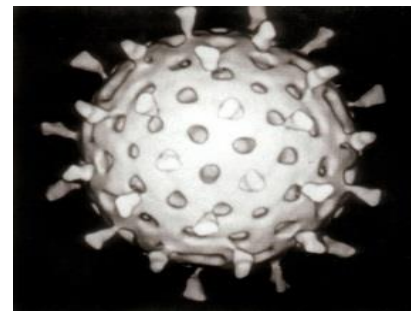
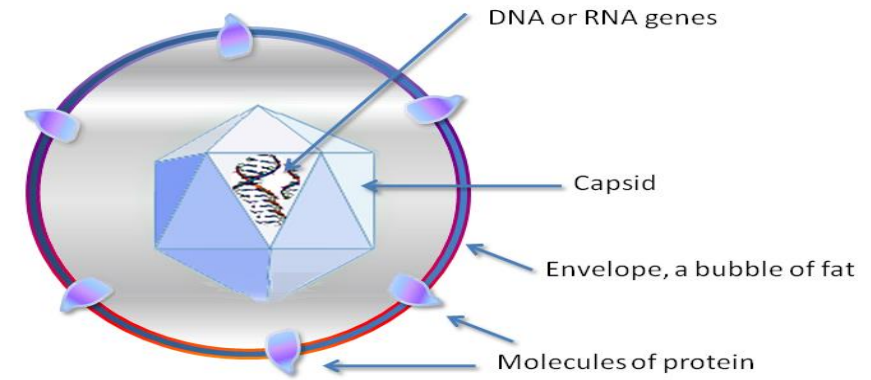
Antibiotikaresistens

- Bakterier som motstår virkningen av antibiotika
- Antibiotikaresistens kan oppstå:
 - Naturlig
 - Ervervet
 - Genoverføring
 - Mutasjoner

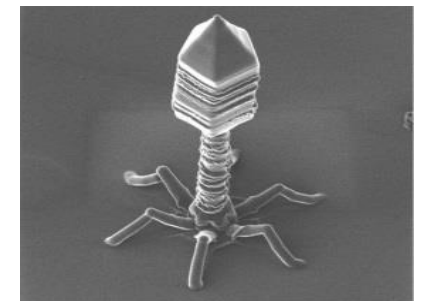


Virus

- Kan infisere alle livsformer
- Størrelse: 0,02- 0,3 μm
- Kan ikke sees i vanlig lysmikroskop
- Enkel struktur:
 - DNA/RNA
 - Proteinkapsel
 - (Lipidkappe)
- Virus er avhengig av en levende celle for å formere seg
- Virus uten lipidkappe er vanskeligere å inaktivere



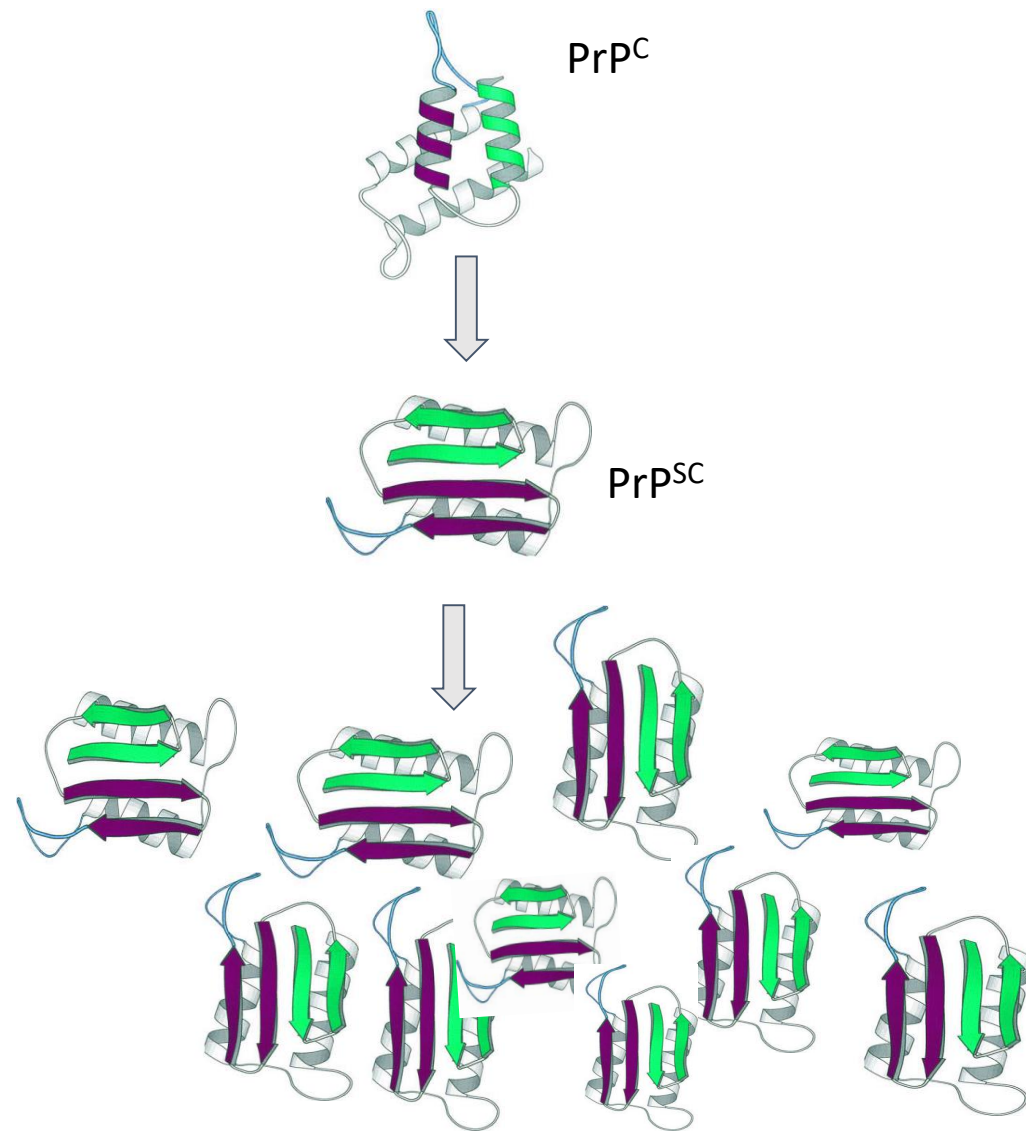
Rotavirus



Bakteriofag

Prioner

- Proteiner som finnes hos organismer med cellekjerne
- Er kun farlig i «unormal» form
- Kan oppstå spontant, arves og overføres
- Kan ikke ødelegges med tradisjonelle steriliseringsmetoder

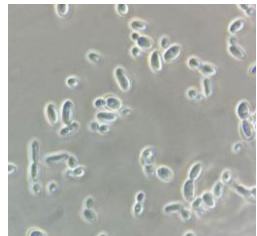
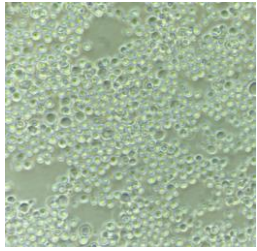


Mikroskopiske sopper

- Overflatiske soppinfeksjoner – dermatofytter og gjærsopp
- Subkutane soppinfeksjoner
- Sopper som gir dype infeksjoner

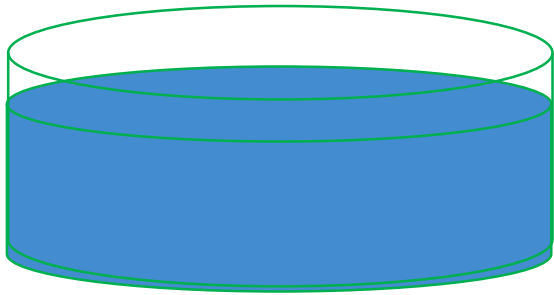
Inhalering, hudkontakt eller sår

- Infeksjon i hud og slimhinner
 - Fotsopp, ringorm
- Allergi
- Respiratoriske problemer
- Systemiske soppinfeksjoner
 - Alvorlige lidelser som angriper indre organer, oftest hos immunsupprimerte

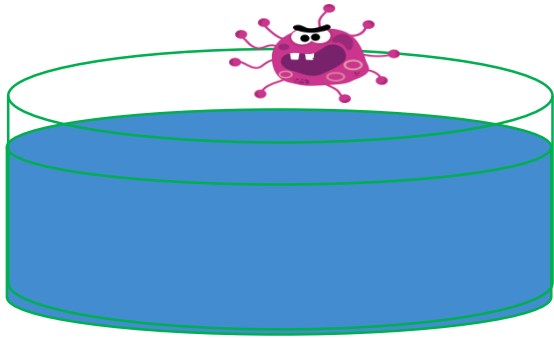


Én bakterie er vel ikke så farlig?

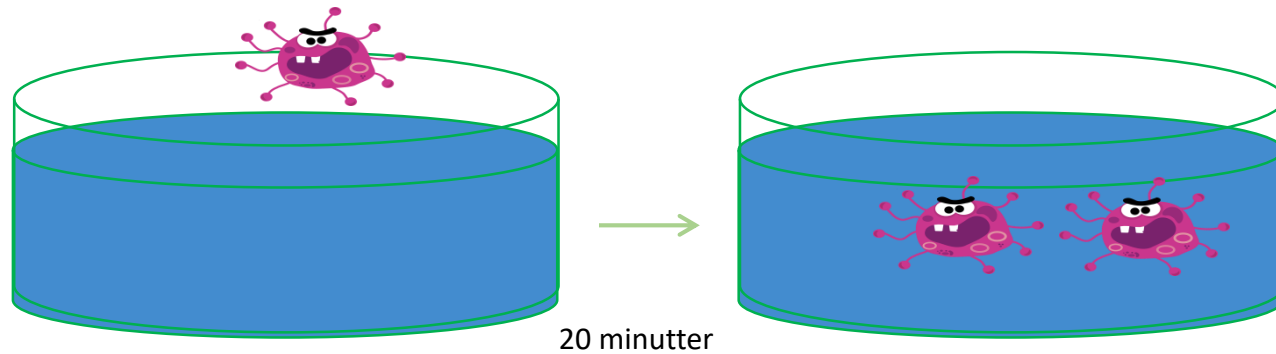
Én bakterie er vel ikke så farlig?



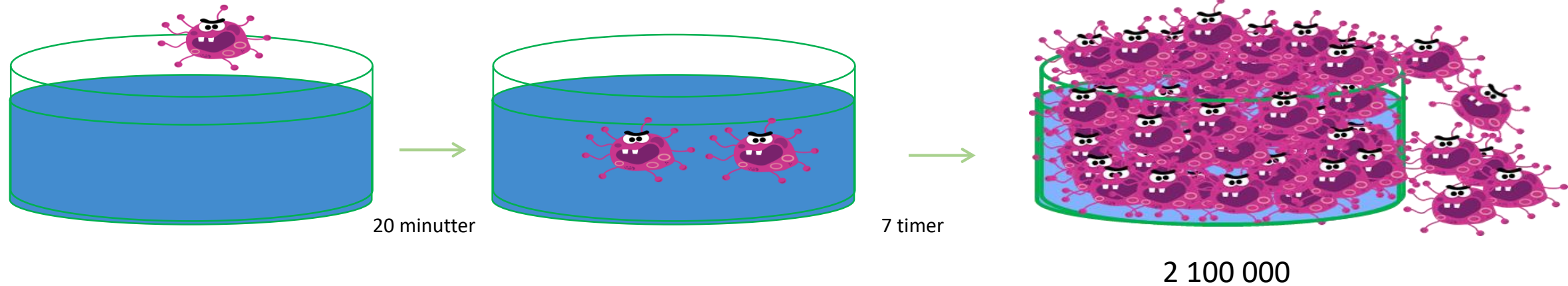
Én bakterie er vel ikke så farlig?



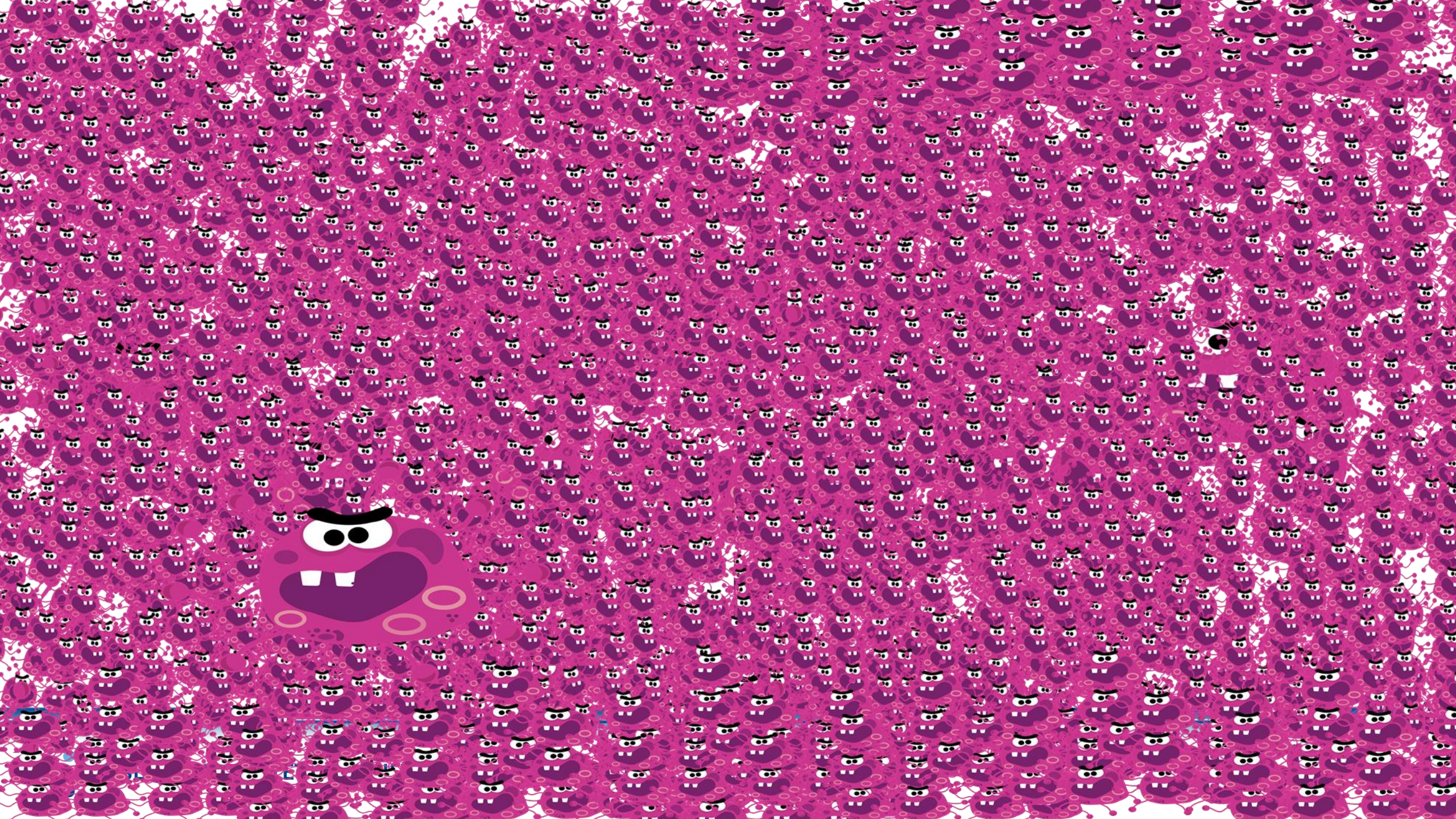
Én bakterie er vel ikke så farlig?

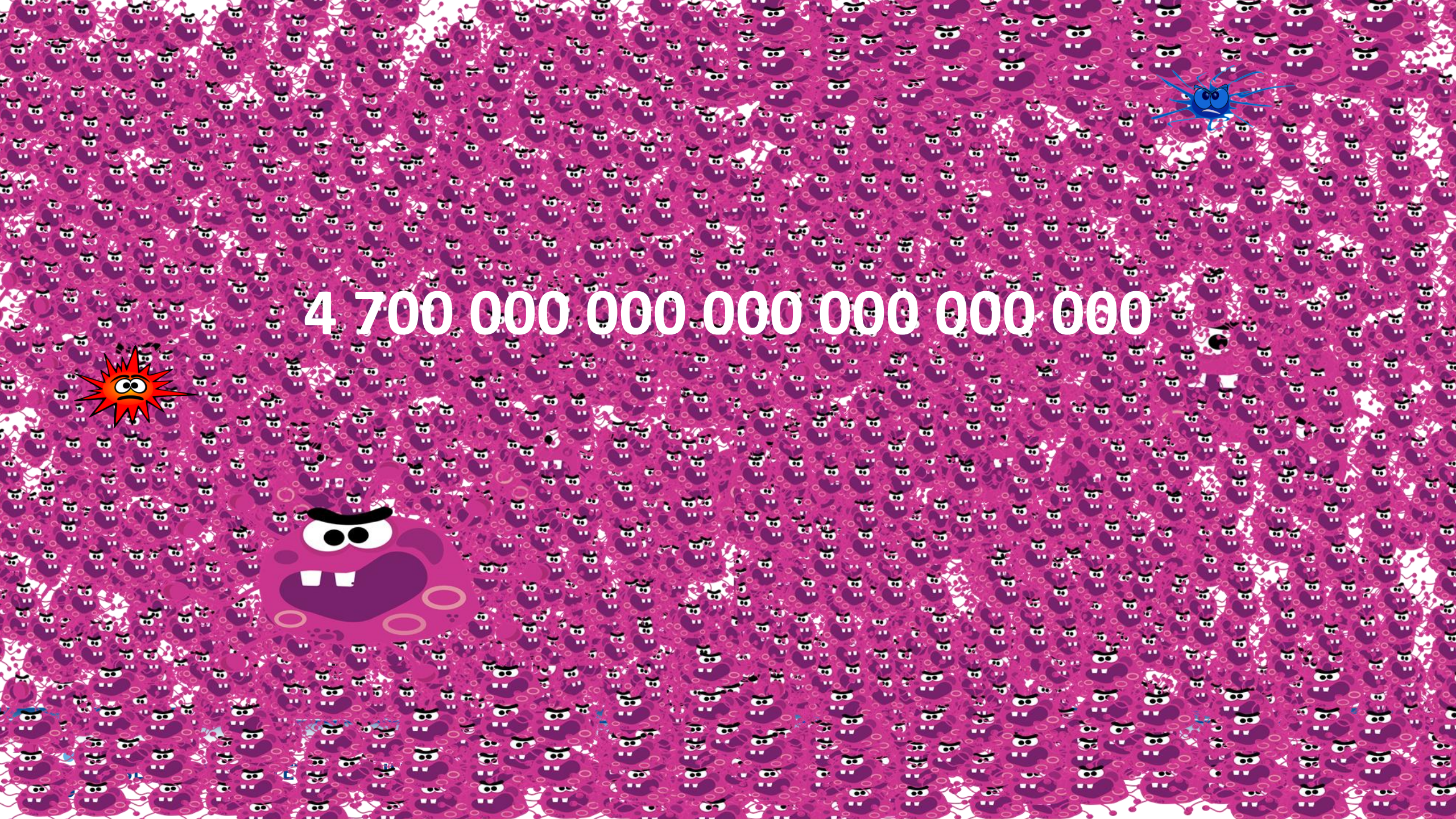


Én bakterie er vel ikke så farlig?



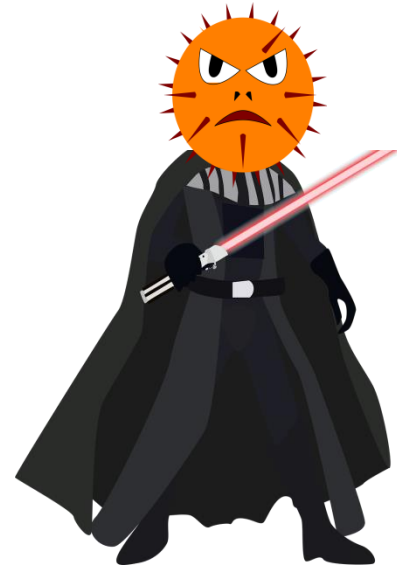
24 timer senere ...





4 700 000 000 000 000 000 000

Korrekt dekontaminering tar knekken på alle mikrober...



Free svg, pixabay, needpix

Korrekt dekontaminering tar knekken på alle mikrober...



... både «slemme» og «snille»

Free svg, pixabay, needpix