Znanost na cesti

ZNANSTVENI SLAM

Maja Ratej (Val 202), Aleš Novak in 11 slamerjev

http://videolectures.net/live/

1. NENA MOČNIK
2. BOR KRAJNC
3. dr. ANA GANTAR
4. dr. ALJA ŽORŽ
5. ŠPELA ZUPANČIČ
6. SARA VIDMAR
7. dr. AJASJA LJUBETIČ
8. SABINA BEC
9. MAJA KOBLAR
10. LUKA SUHADOLNIK
11. MAŠA ČERNIČ

SATENA

Institut "Jožef Stefan" Ljubljana, Slovenija

Univerza v Ljubljani
Fakulteta za matematiko in fiziko

Seznam nastopajočih:

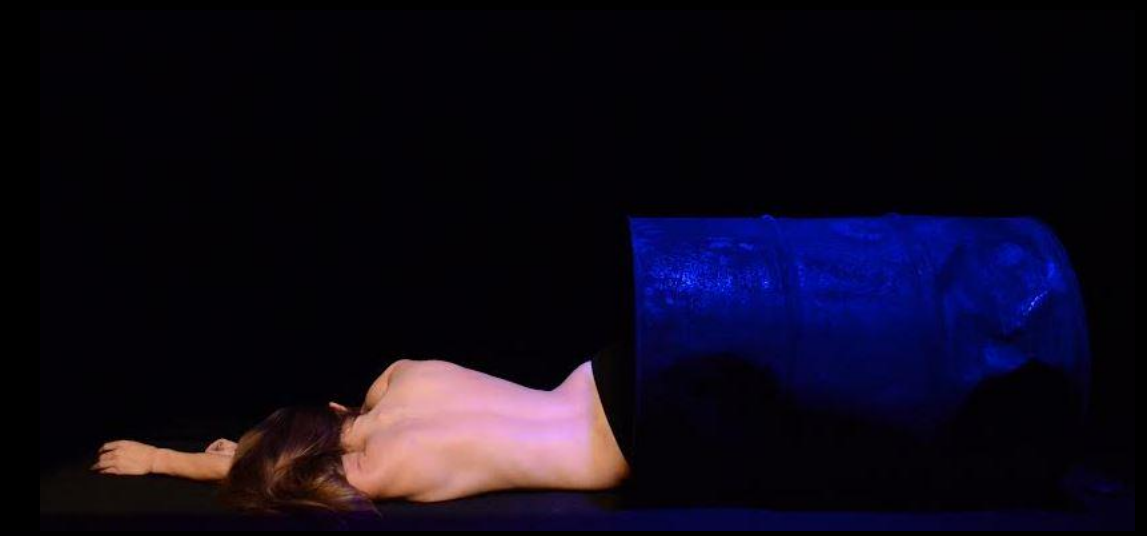
1. NENA MOČNIK: Zakaj sem znanost prevedla v teater?
2. BOR KRAJNC: Izotopi iz podzemlja
3. dr. ANA GANTAR: Zdravljenje kosti kot znanstvena fantastika
4. dr. ALJA ŽORŽ: Jamska detektivka o zakladu v Hudi luknji
5. ŠPELA ZUPANČIČ: Z nanovlakni proti zobu časa
6. SARA VIDMAR: Na kraju zločina: vinograd
7. dr. AJASJA LJUBETIČ: (Nano)piramide nekoč in danes
8. SABINA BEC: Kraljična na zrnu blata
9. MAJA KOBLAR: Elektrokemija znotraj presevnega elektronskega mikroskopa
10. LUKA SUHADOLNIK: Svetlobni čistilec
11. MAŠA ČERNIČ: Imunski sistem ali ko nas napadejo vesoljci

NENA MOČNIK

FAKULTETA ZA DRUŽBENE VEDE

KULTUROLOGIJA


MUSI
SMEL
BOSNIAN



KONZERVIRANO

PERFORMATIVNI ESEJ NENE MOČNIK

30.9. IN 1.10. OB 20:00

REZERVACIJE: INFO@POCKETEATER.COM

2.

Institut "Jožef Stefan" Ljubljana, Slovenija

GOZDARSKI INŠTITUT SLOVENIJE
SLOVENIAN FORESTRY INSTITUTE

POSTOJNSKA JAMA
CAVE-GROTTA-HÖHLE

Naložba v vašo prihodnost
OPERACIJO DELNO FINANCIRA EVROPSKA UNIJA
Evropski socialni sklad

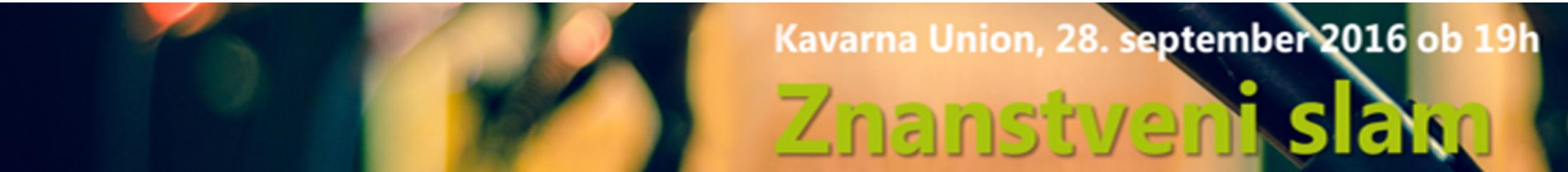
WORLD FEDERATION OF SCIENTISTS
Founded in Erice
Beijing Geneva Moscow New York

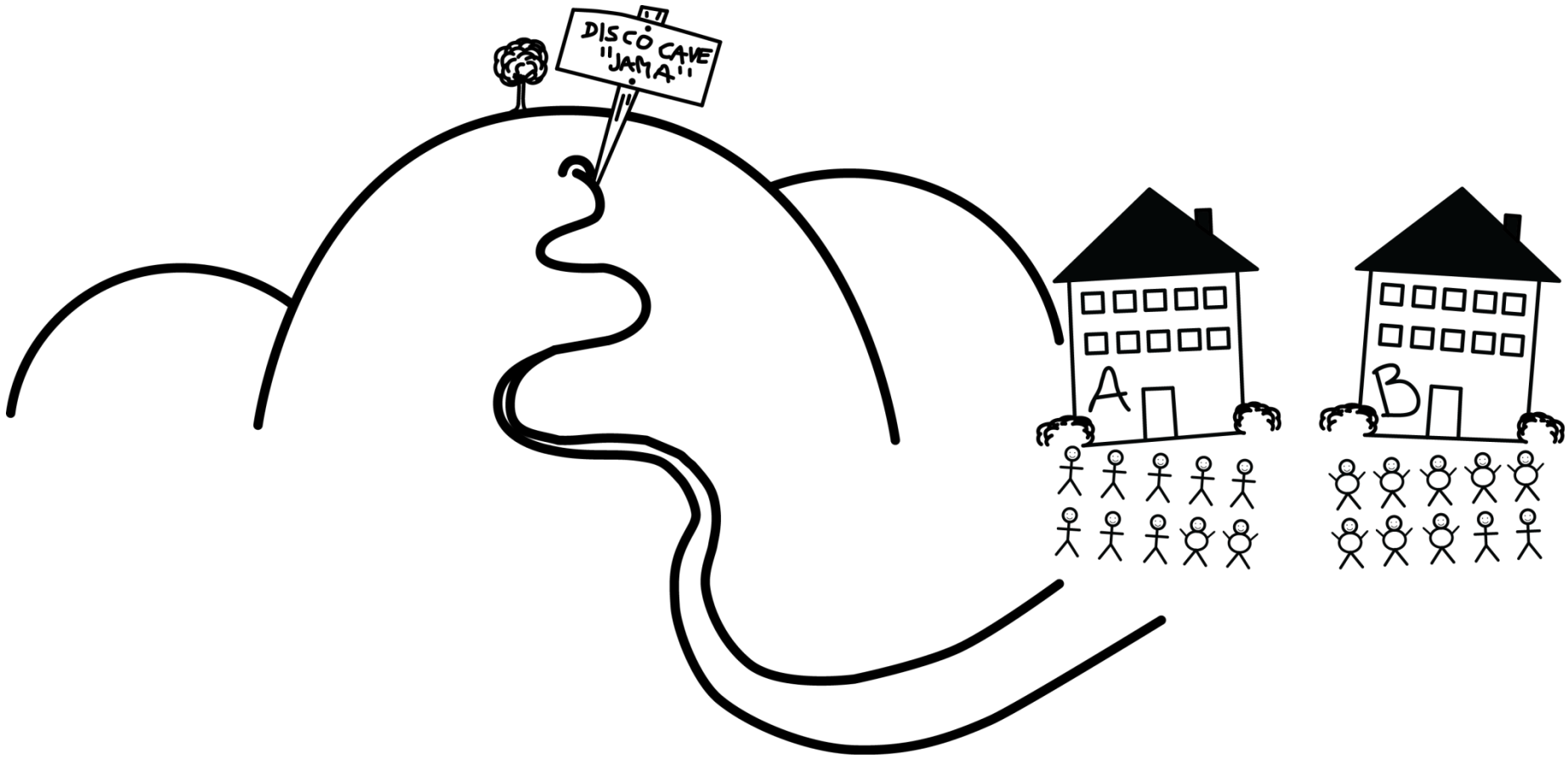
USTANOVA SLOVENSKA ZNANSTVENA FUNDACIJA

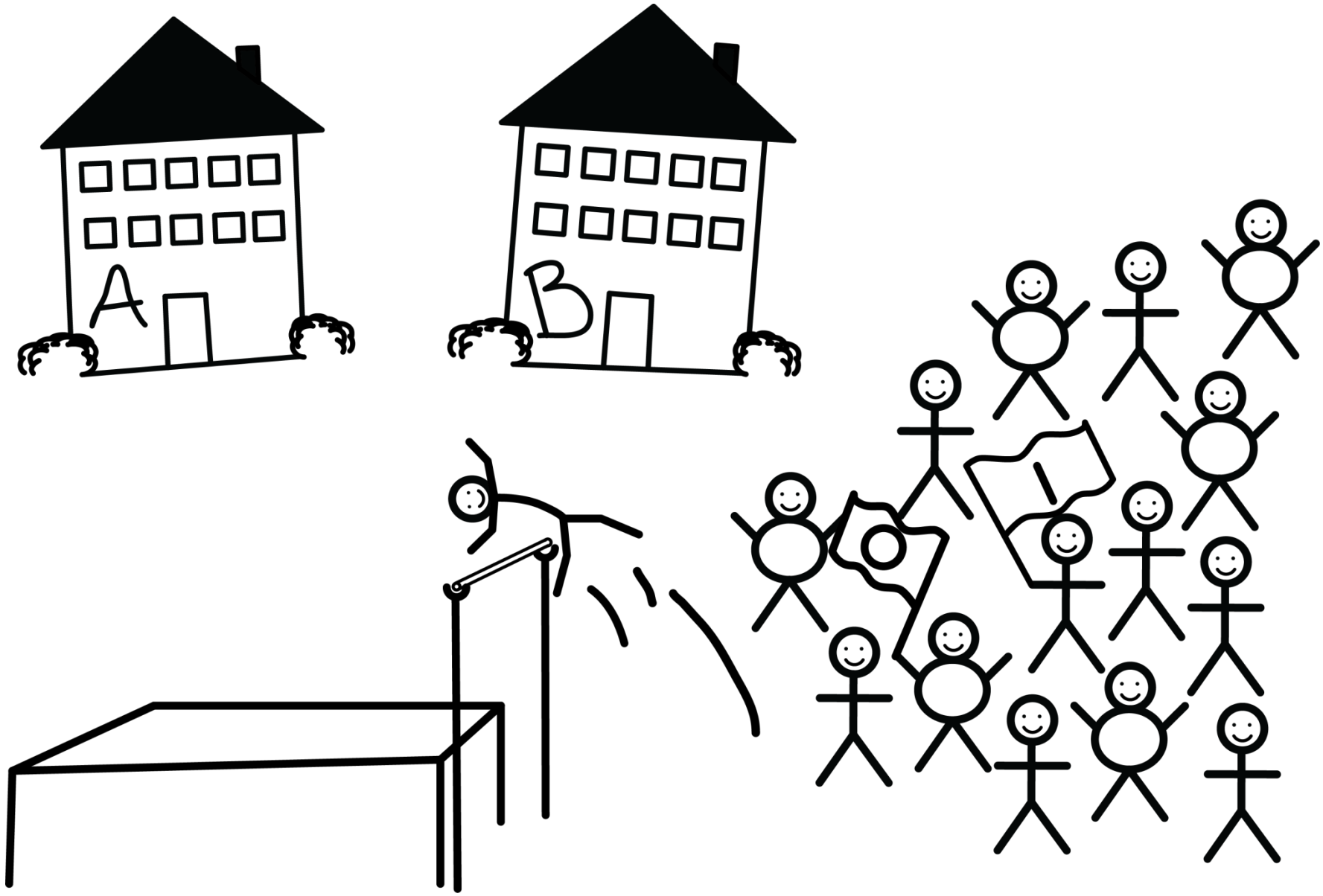
Izotopi iz podzemlja

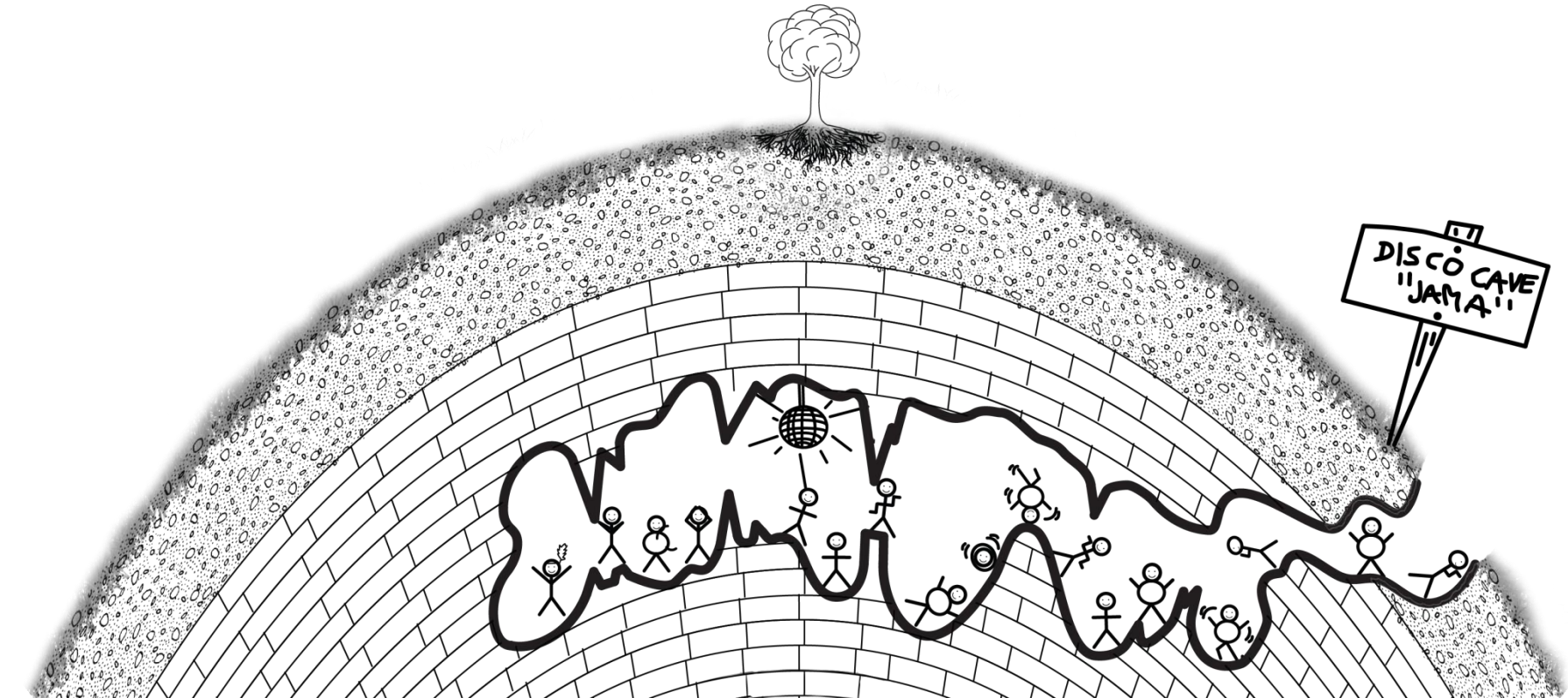
Bor Krajnc

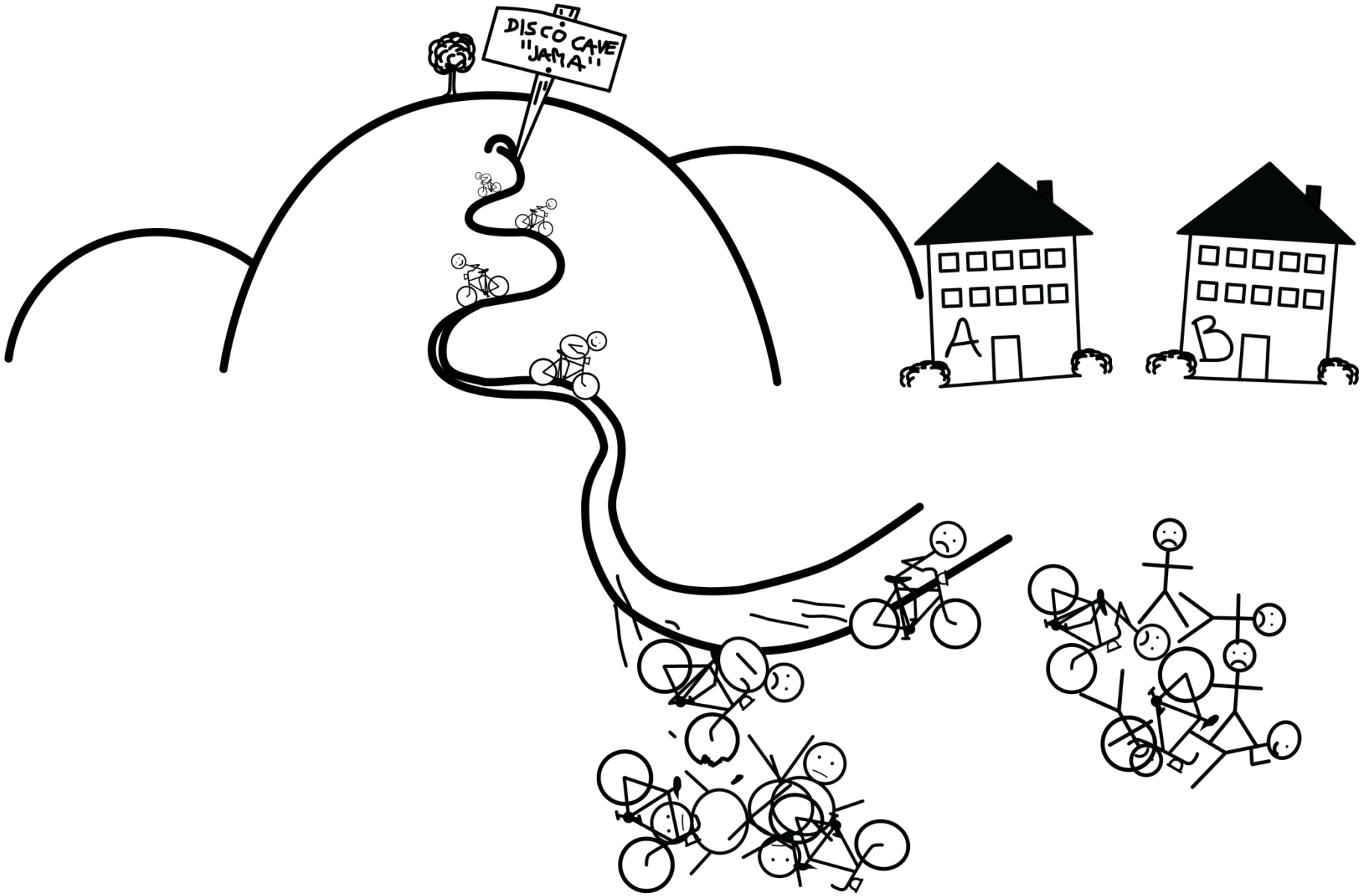
Mentorica:
Prof. dr. Nives Ogrinc

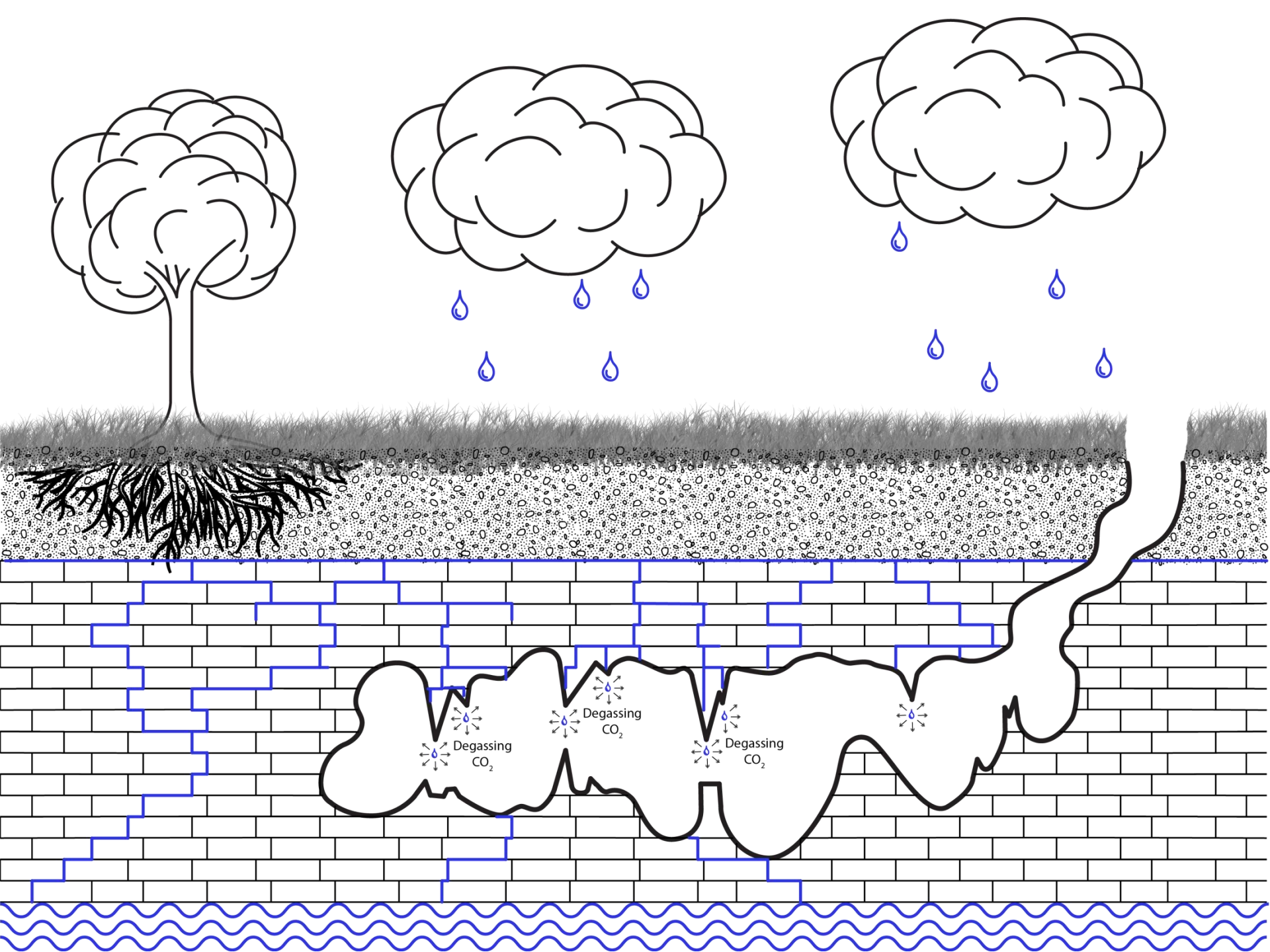


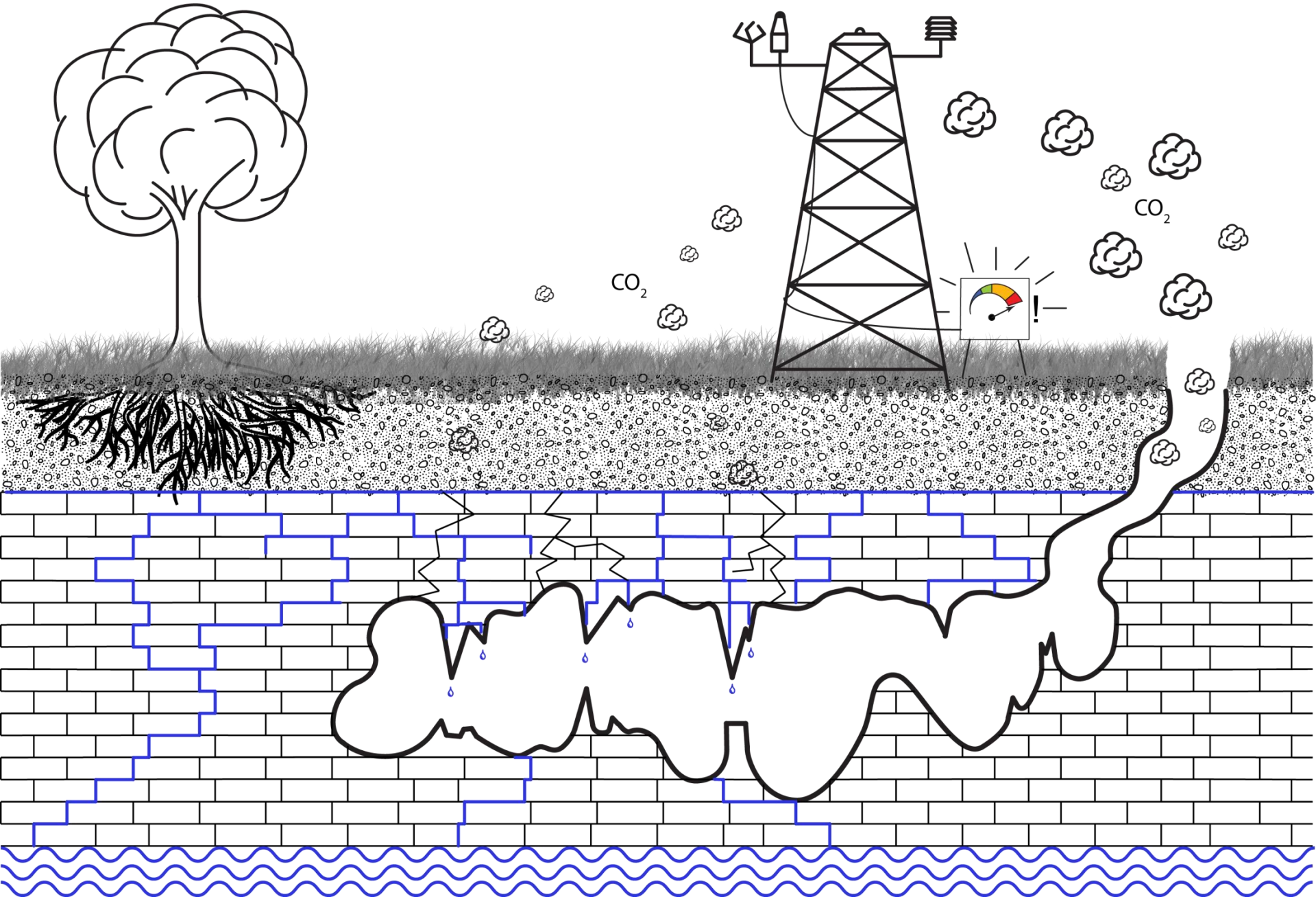

DISCO CAVE
"JAMA"
A
B

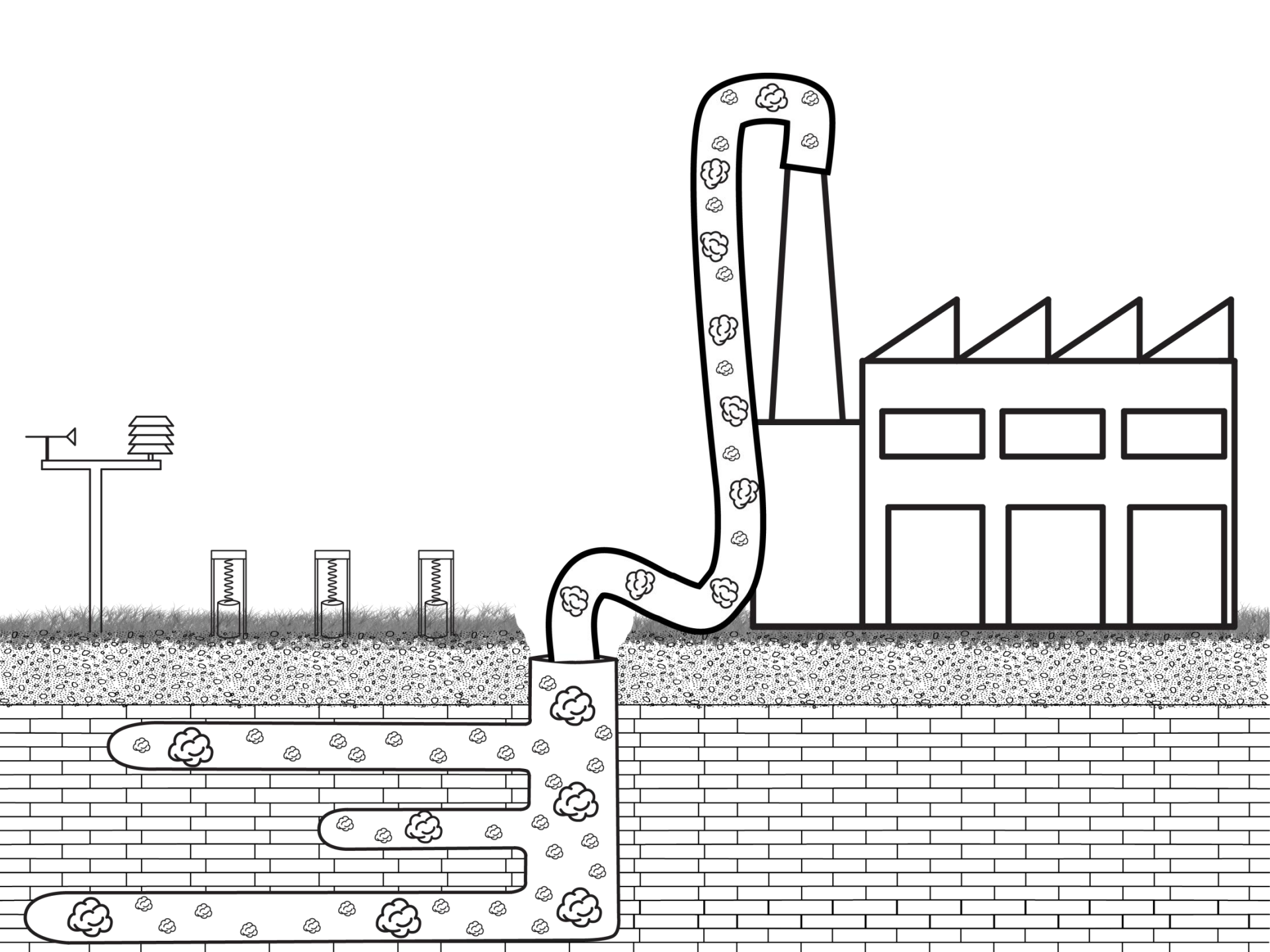

A
B


DISCO CAVE
"JAMA"


DISCO CAVE
"JAMA"
A
B


Degassing
CO_2
Degassing
CO_2
Degassing
CO_2


CO_2
CO_2
!




HVALA

ZDRAVLJENJE KOSTI

kot

znanstvena fantastika

Ana Gantar
Inštitut „Jožef Stefan“

PROBLEM

20.000 zlomov kosti dnevno

čas zdravljenja: do 6 mesecev

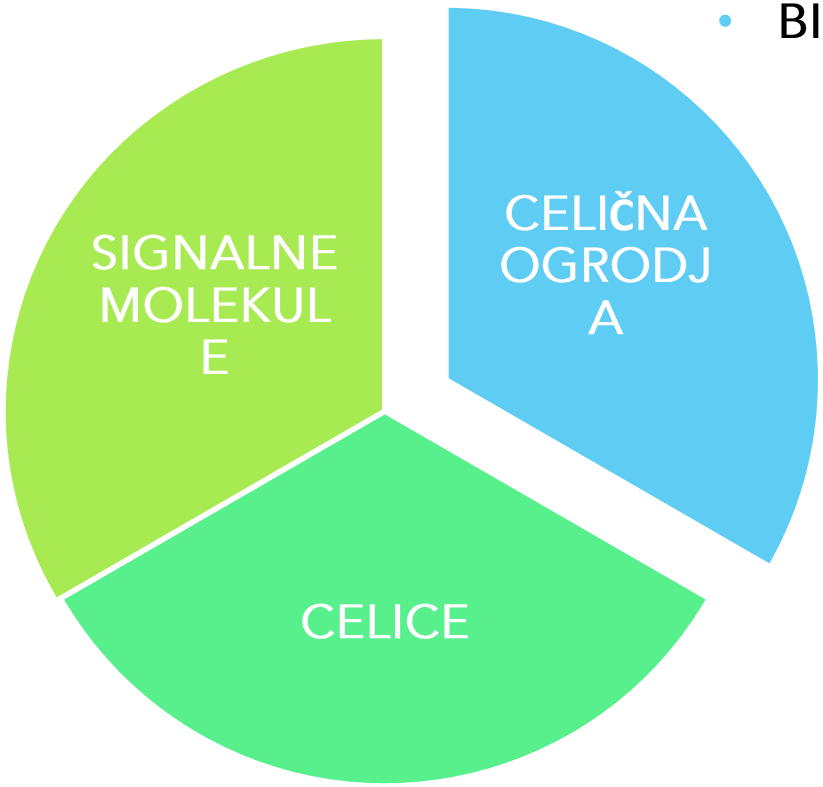
okužba → komplikacije

REŠITEV

POSNEMA TKIVO, KI GA ZDRAVI

TKIVNO INŽENIRSTVO

- BIOMATERIALI



BIOMATERIAL

I

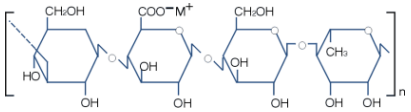
Kompozit

BIOAKTIVNO STEKLO

AMORFNO

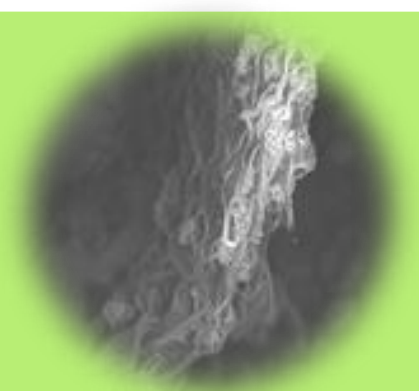
- se veže z mehkimi in trdimi tkivi

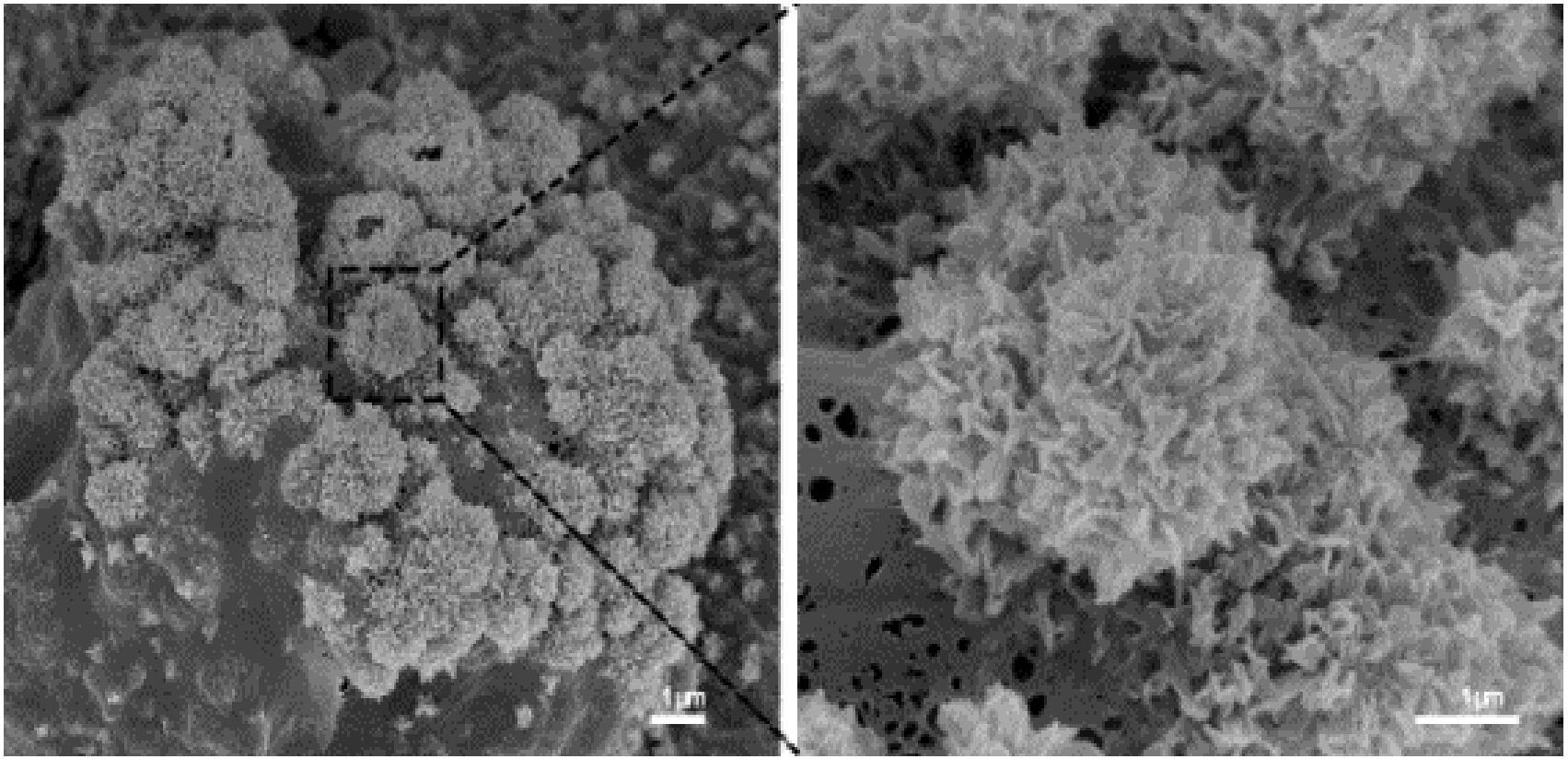
Gelanski gumi



- zadrži veliko količino vode

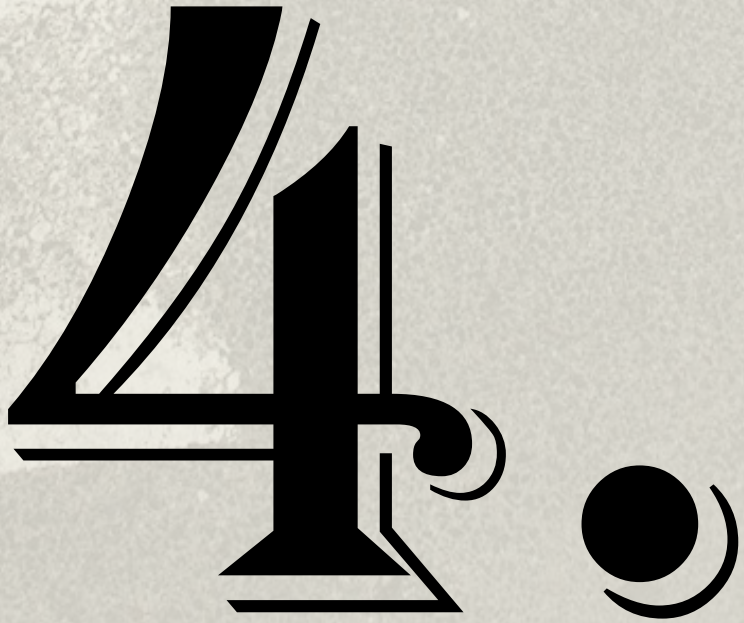
CELIČNO OGRODJE




1μm
1μm

- BIOMATERIALI so rešitev za bolj učinkovito zdravljenje poškodb tkiv
- so popolnoma BIORAZGRADLJIVI in posnemajo tkivo, ki ga obnavljajo
- predstavljajo IDEALNO OHIŠJE za celice ali aktivne učinkovine


DAVID




Jamska detektivka o zakladu v
Hudi luknji
dr. Alja Žorž


N
W
E
S
Tišnik
Soteska hudega luknja
Pečovnik
reka Reka
ČRNA SMRT

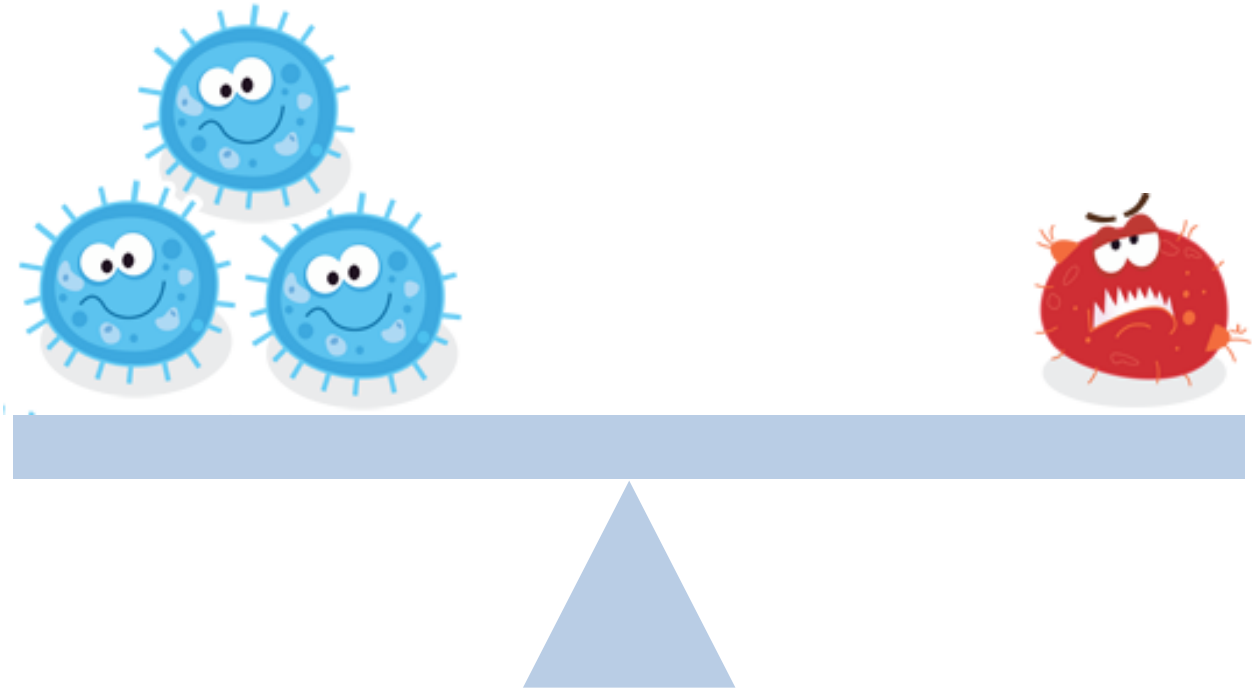
Univerza v Ljubljani
Fakulteta za farmacijo

Z nanovlakni proti zobu časa

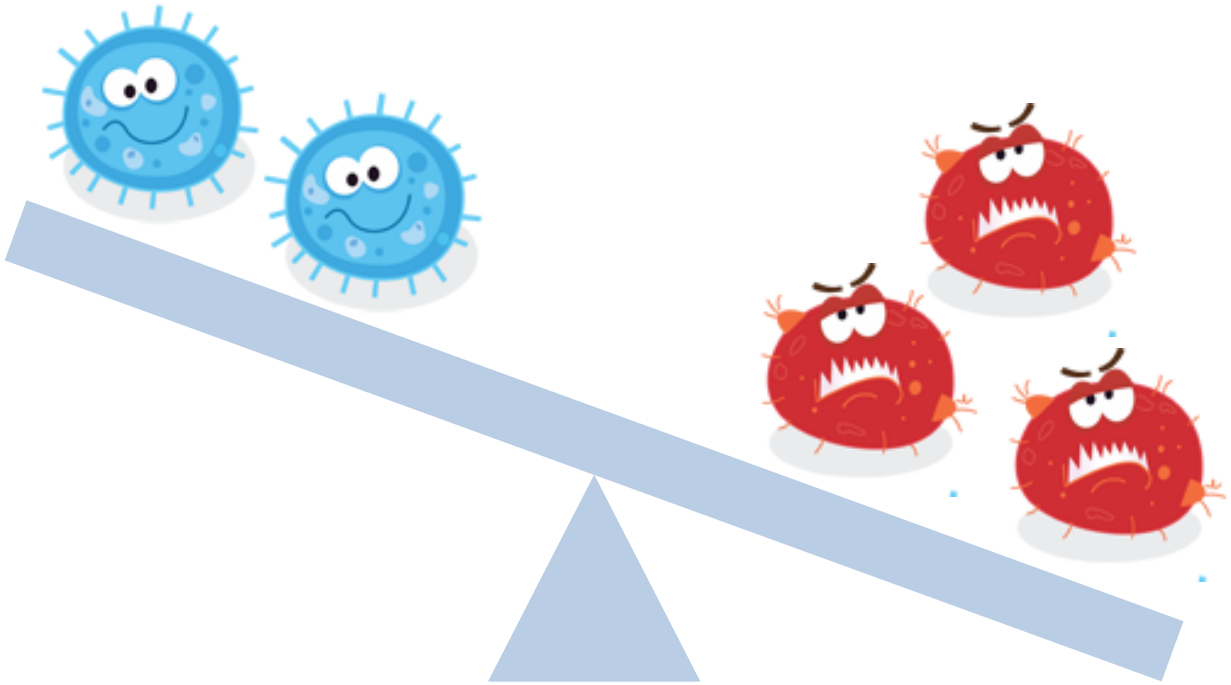
Špela Zupančič

Mentorica: prof. Julijana Kristl

Univerza v Ljubljani
Fakulteta za farmacijo



http://www.embracedentalhygiene.com/tag/tooth-decay/



http://www.embracedentalhygiene.com/tag/tooth-decay/

Univerza v Ljubljani
Fakulteta za farmacijo

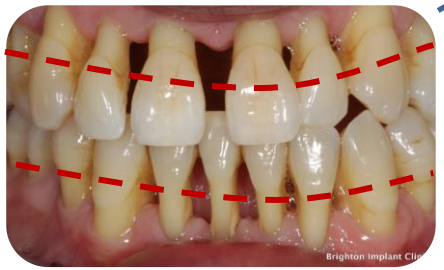
http://www.embracedentalhygiene.com/tag/tooth-decay/

zadah, krvaveče dlesni

47 % odraslih, 70 % starostnikov

razgradnja kosti in cementa

PARODONTALNA BOLEZEN

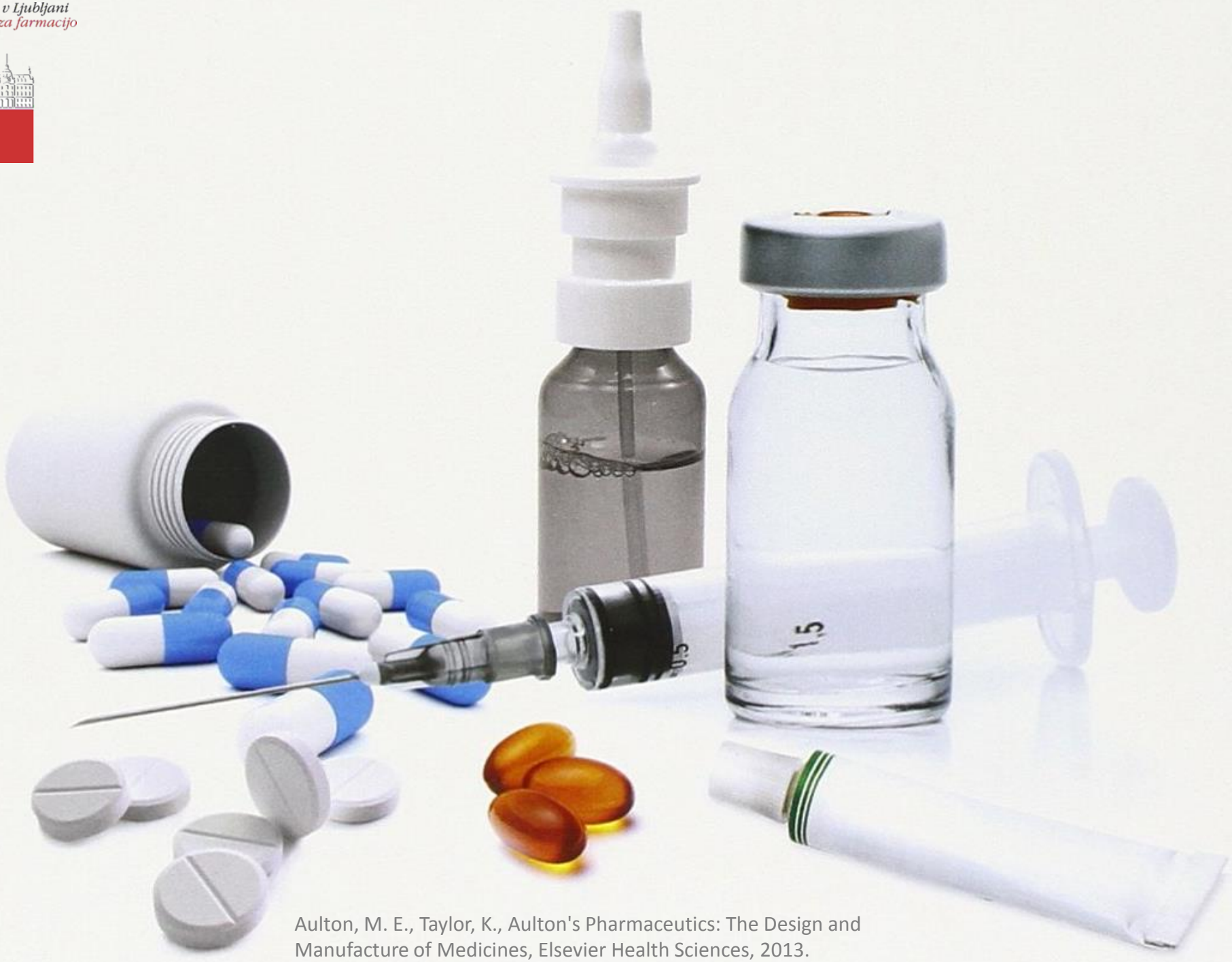


majavost in izguba zob

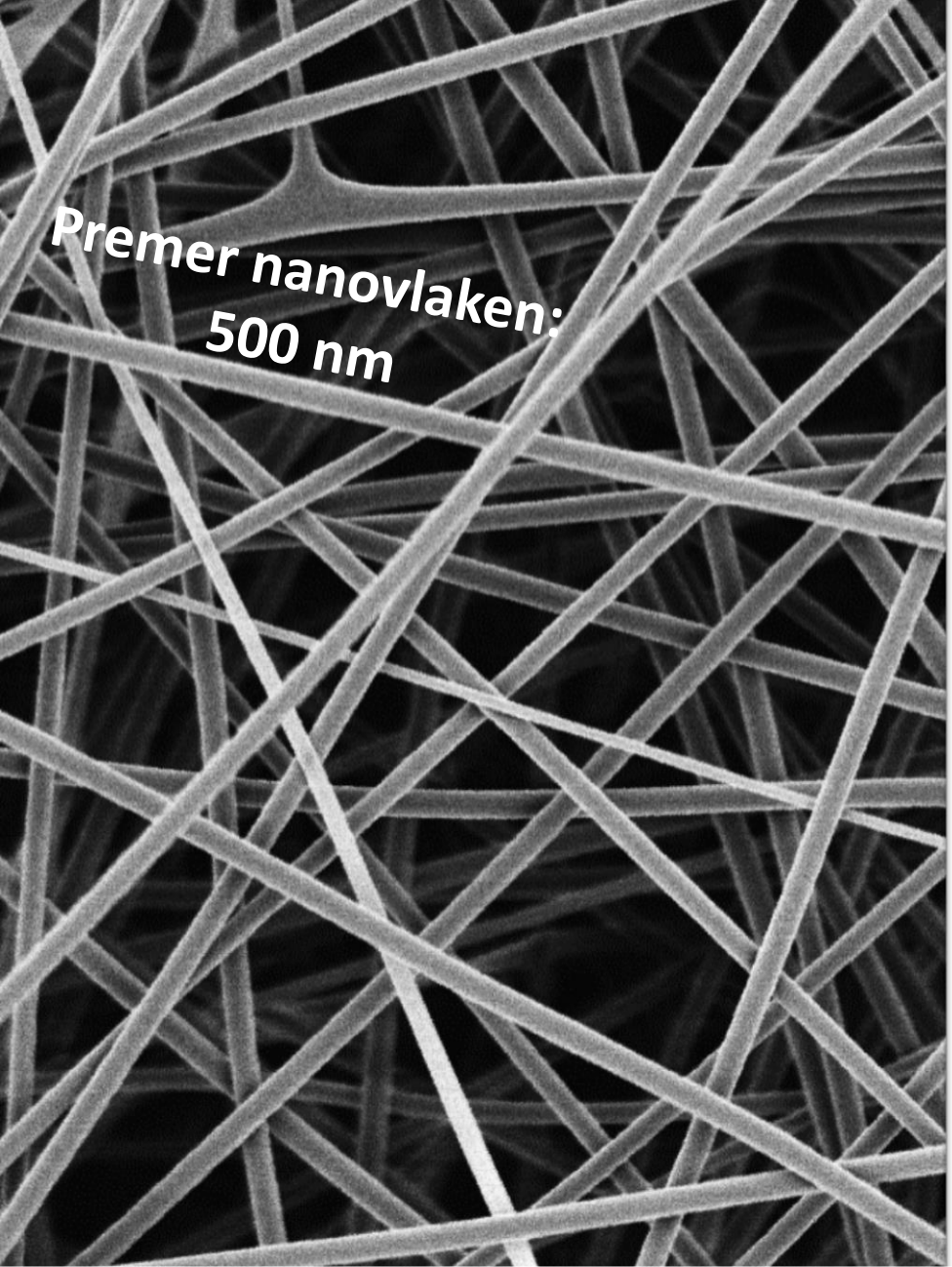
Zupančič, Š. et al. Curr Pharm Des. 2015;21(22):3257-71.
http://www.brightonimplantclinic.co.uk/gum-disease/
http://www.hermosadentaltx.com/periodontal-treatment.html

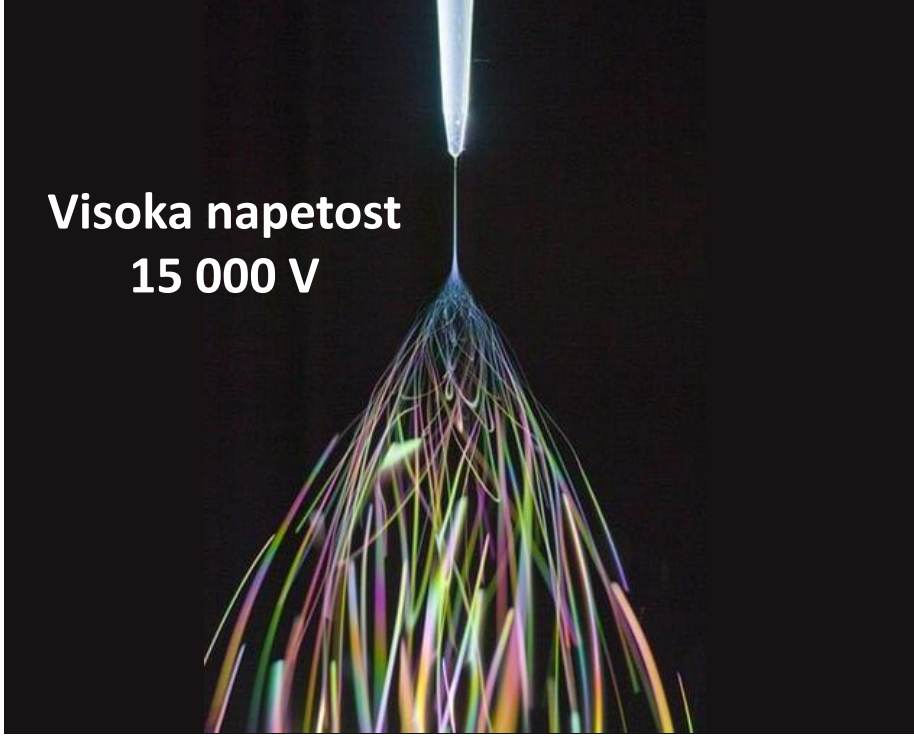
Zdravljenje parodontalne bolezni

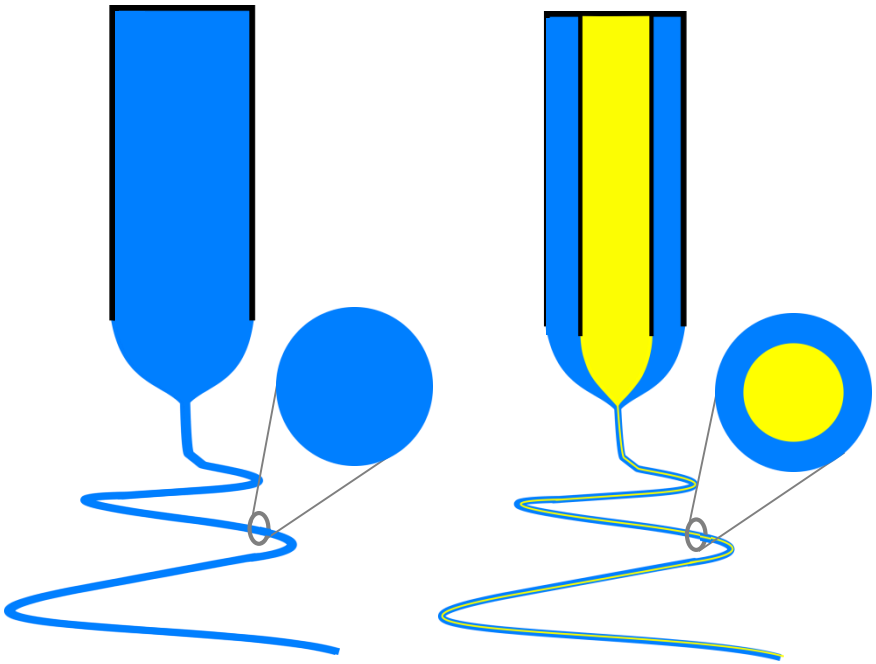
http://uttoppiya.blogspot.si/2015_05_01_archive.html
http://www.earthtimes.org/health/antibiotics-overuse-america/1629/



Aulton, M. E., Taylor, K., Aulton's Pharmaceutics: The Design and Manufacture of Medicines, Elsevier Health Sciences, 2013.

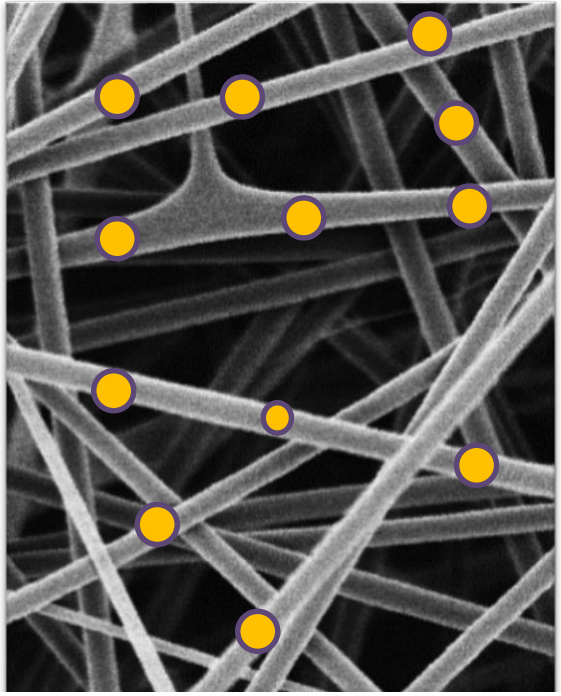




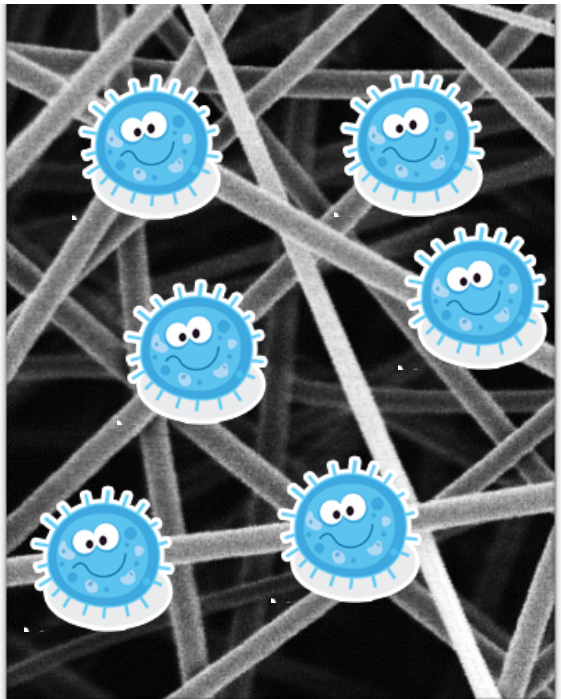


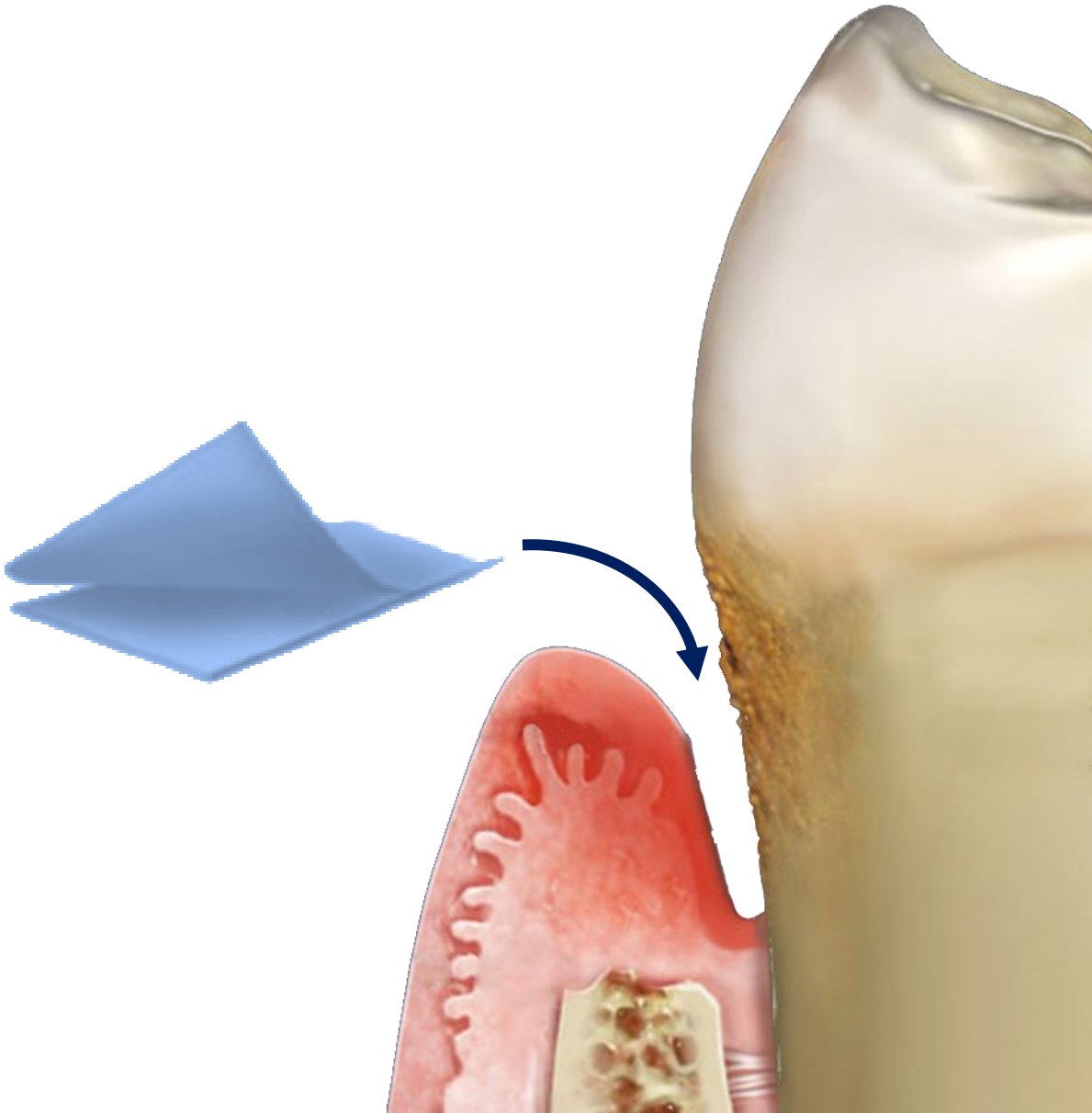
Zupančič, Š. et al. Mol Pharm. 2016 Apr 4;13(4):1393-404.
http://newatlas.com/electrospinning-nanofibers-health-food-supplements/38103/

ANTIBIOTIK

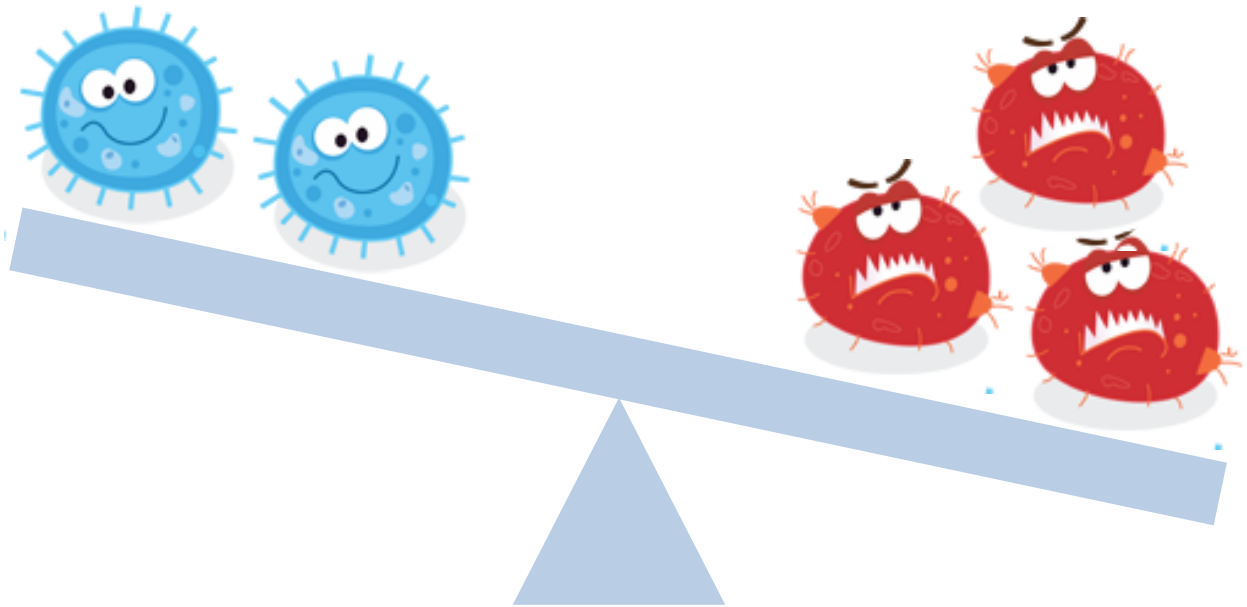


PROBIOTIK

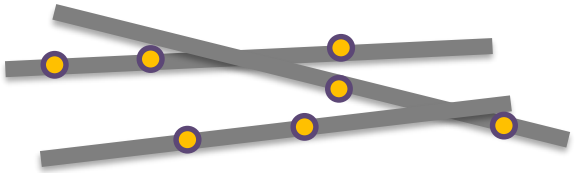


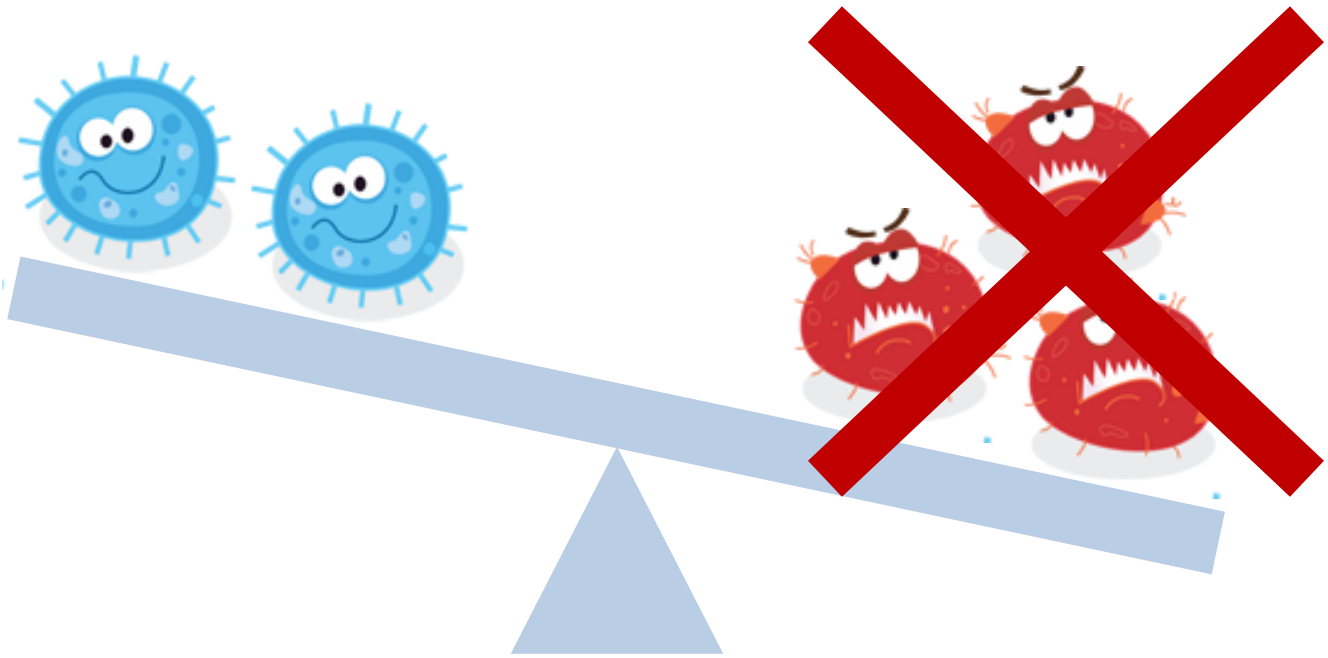


Zupančič, Š. et al. Mol Pharm. 2016 Jan 4;13(1):295-305.
Zupančič, Š. et al. Mol Pharm. 2016 Apr 4;13(4):1393-404.
http://www.krbdentistry.com/rosenberg-dentist-services/gum-disease-rosenberg/



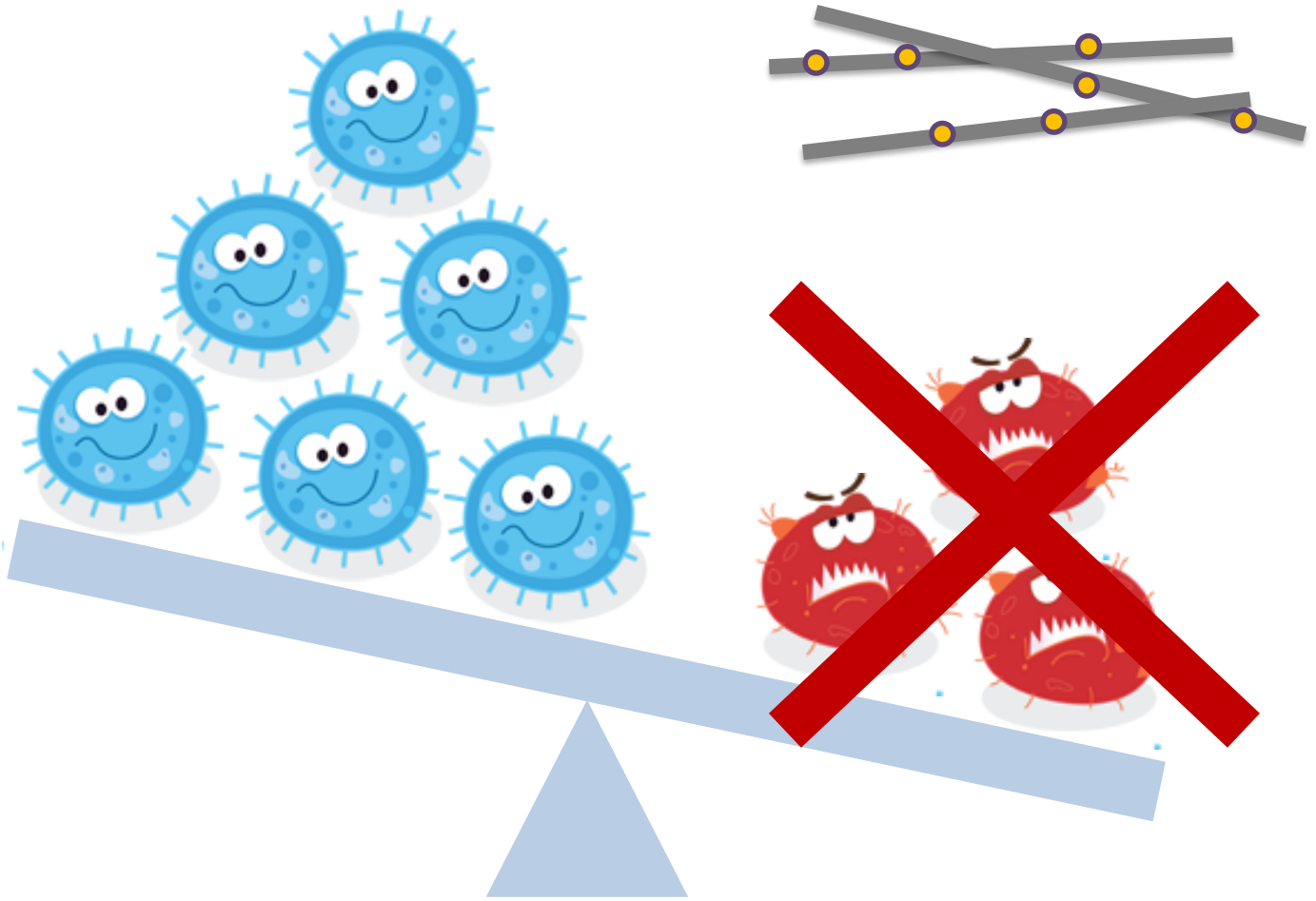
Antibiotiki

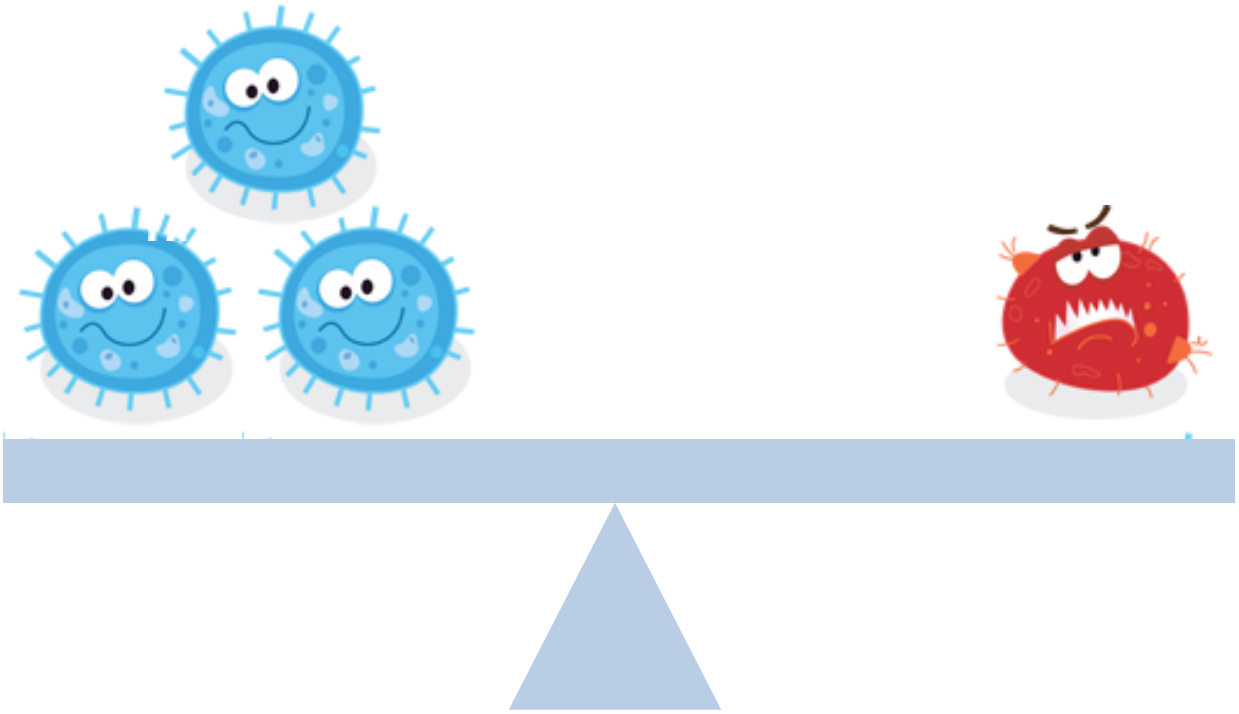




Probiotiki

Antibiotiki





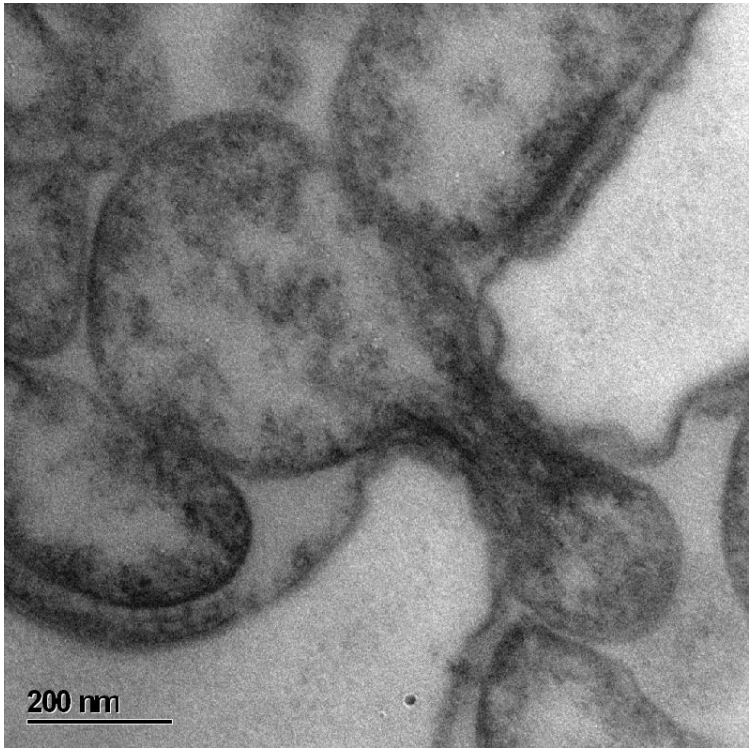
http://www.swedenrecycling.se/en/services/analysis-laboratory/
http://chianesedental.com/teeth-cleaning/

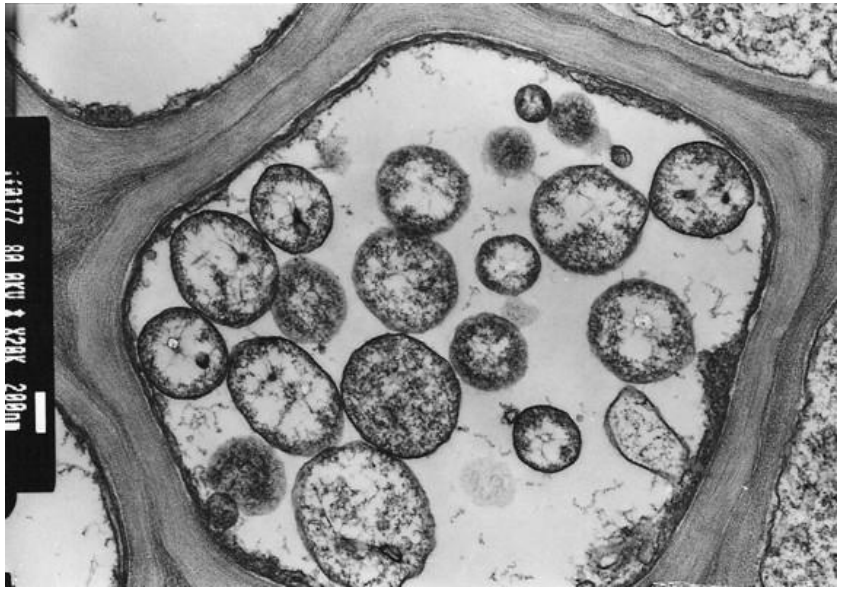
6.

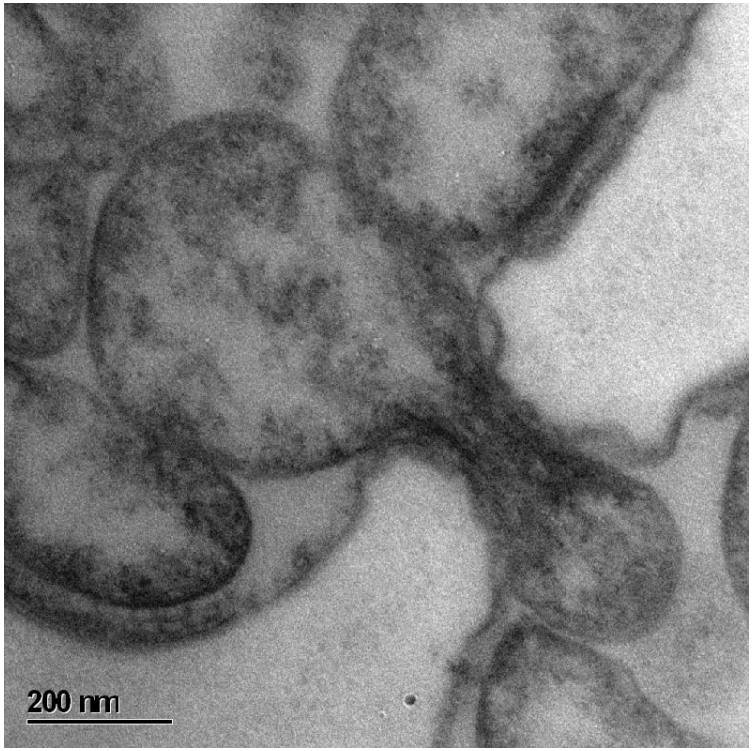
NA KRAJU ZLOČINA: VINOGRAD

Sara Vidmar, Nacionalni inštitut za biologijo

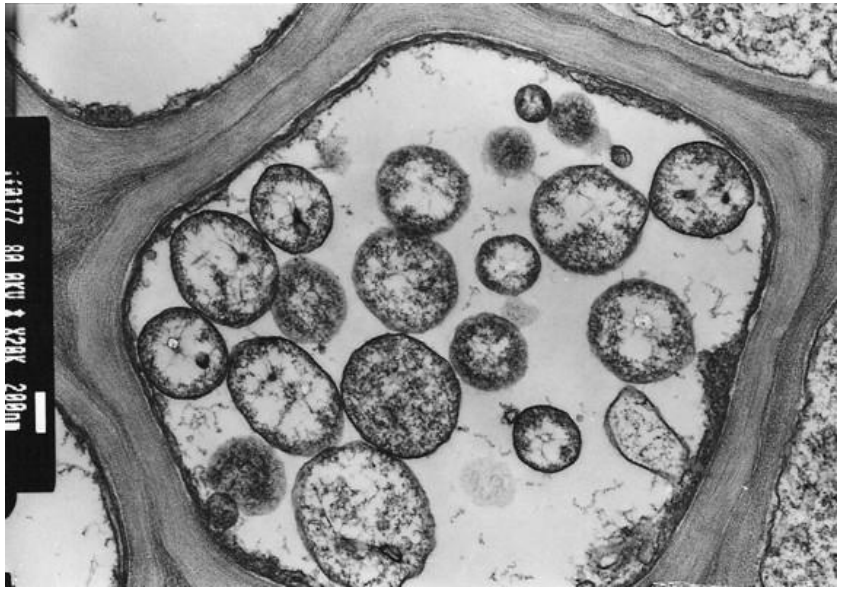
Debbie Woodcock | 365 photo | 2012

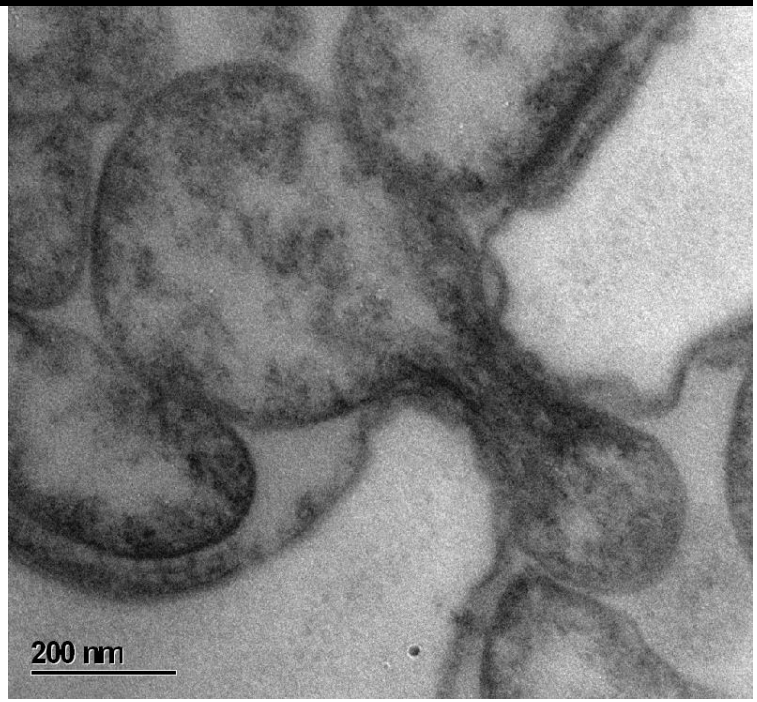

200 nm

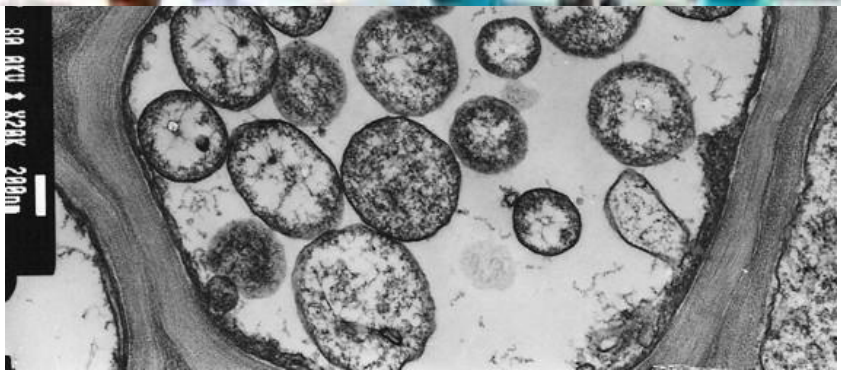

80 AKV X28K 200nm

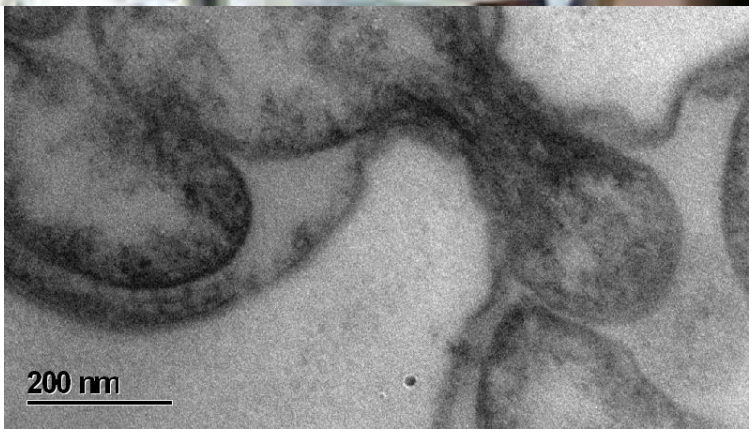

200 nm

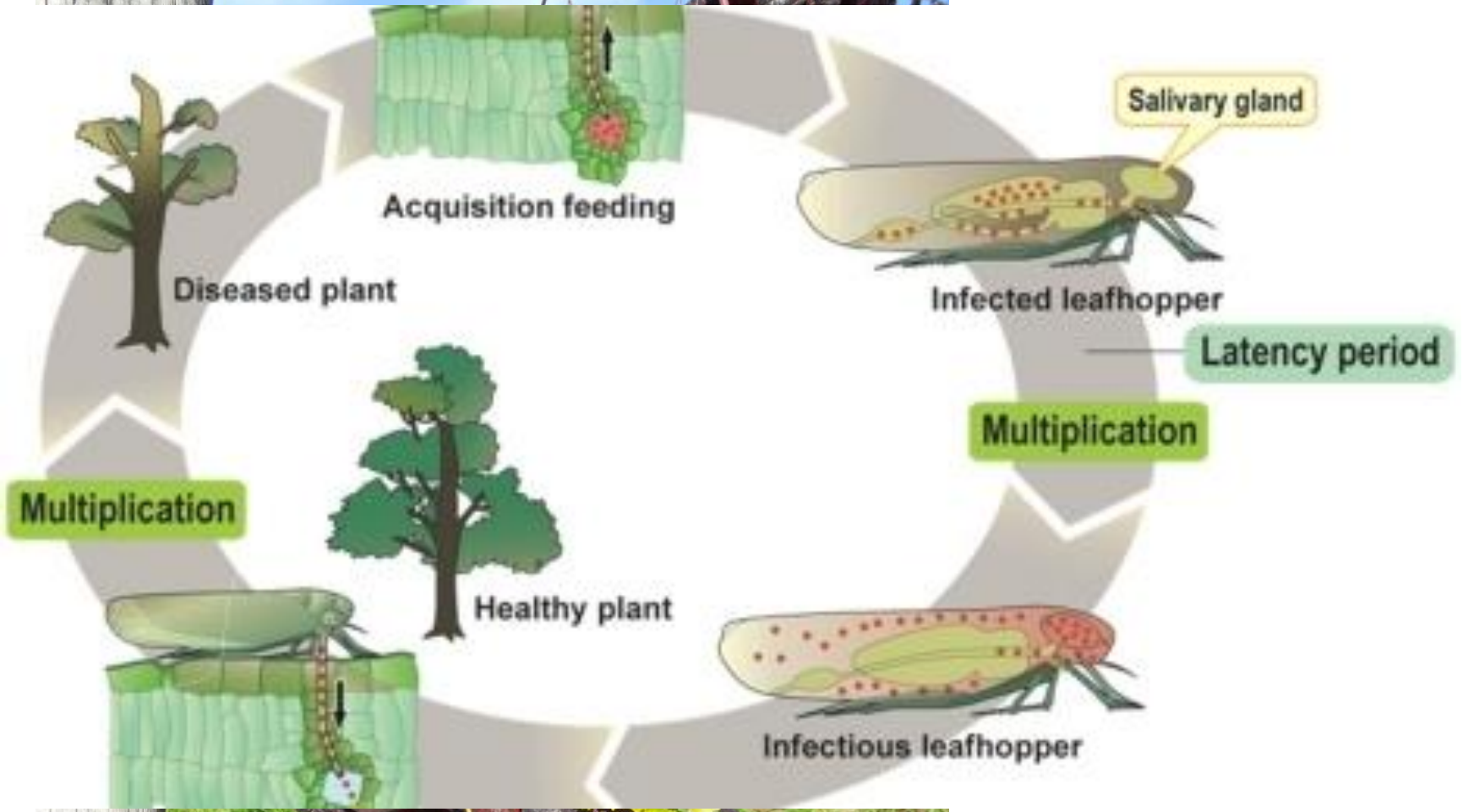

CSI:
CRIME SCENE INVESTIGATION




200 nm


80 AKV 4 X28K 200nm


200 nm


Acquisition feeding
Salivary gland
Diseased plant
Infected leafhopper
Latency period
Multiplication
Multiplication
Healthy plant
Infectious leafhopper

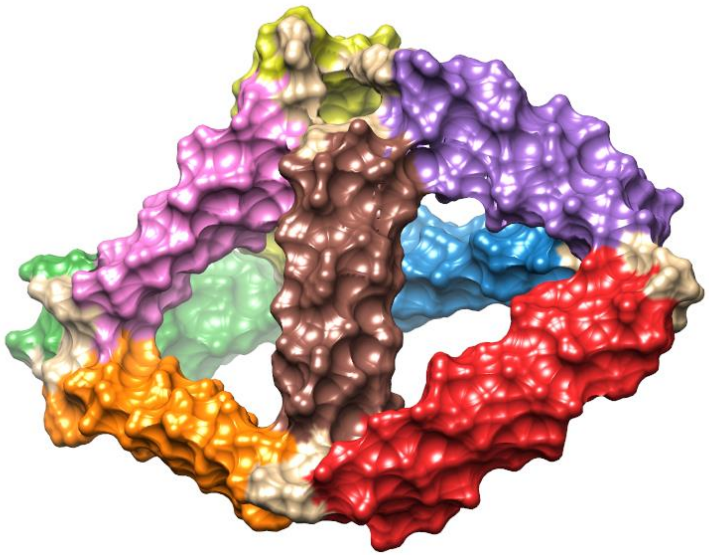
(Nano)piramide nekoč in danes

215 m

Dr. Ajasja Ljubetič, Odsek za sintezno biologijo in imunologijo, Kemijski inštitut

(Nano)piramide nekoč in danes

215 m

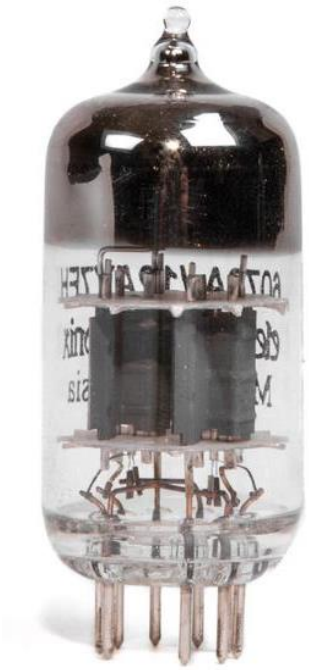


(43 000 000 000 krat manjša :)

5 nm

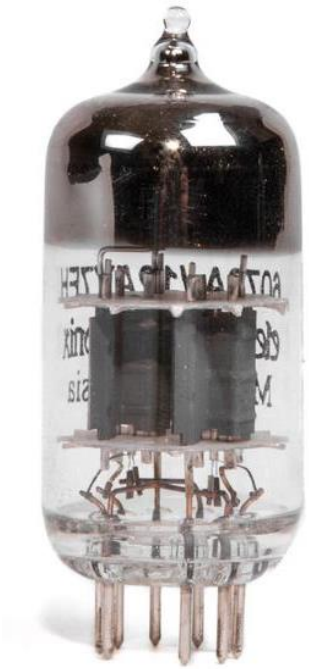
Dr. Ajasja Ljubetič, Odsek za sintezno biologijo in imunologijo, Kemijski inštitut

Motivacija: nanorevolucija

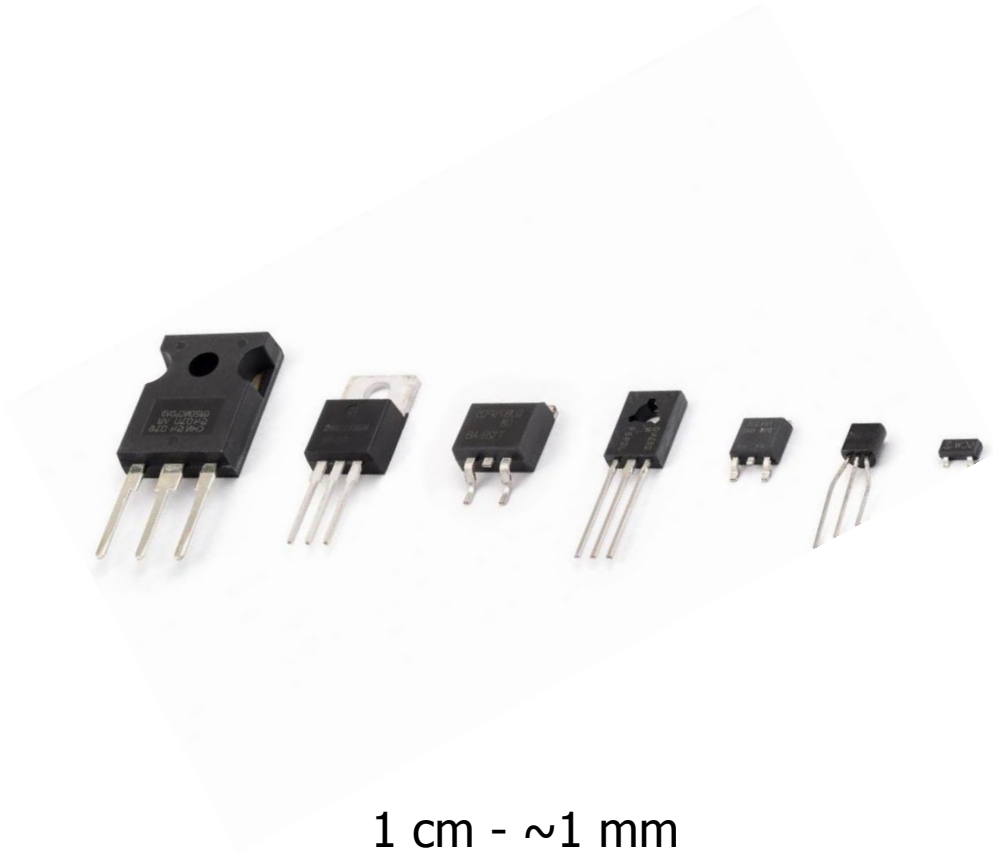


15 cm

Motivacija: nanorevolucija

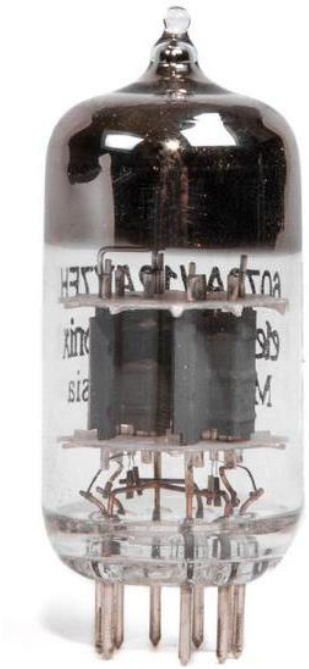


15 cm

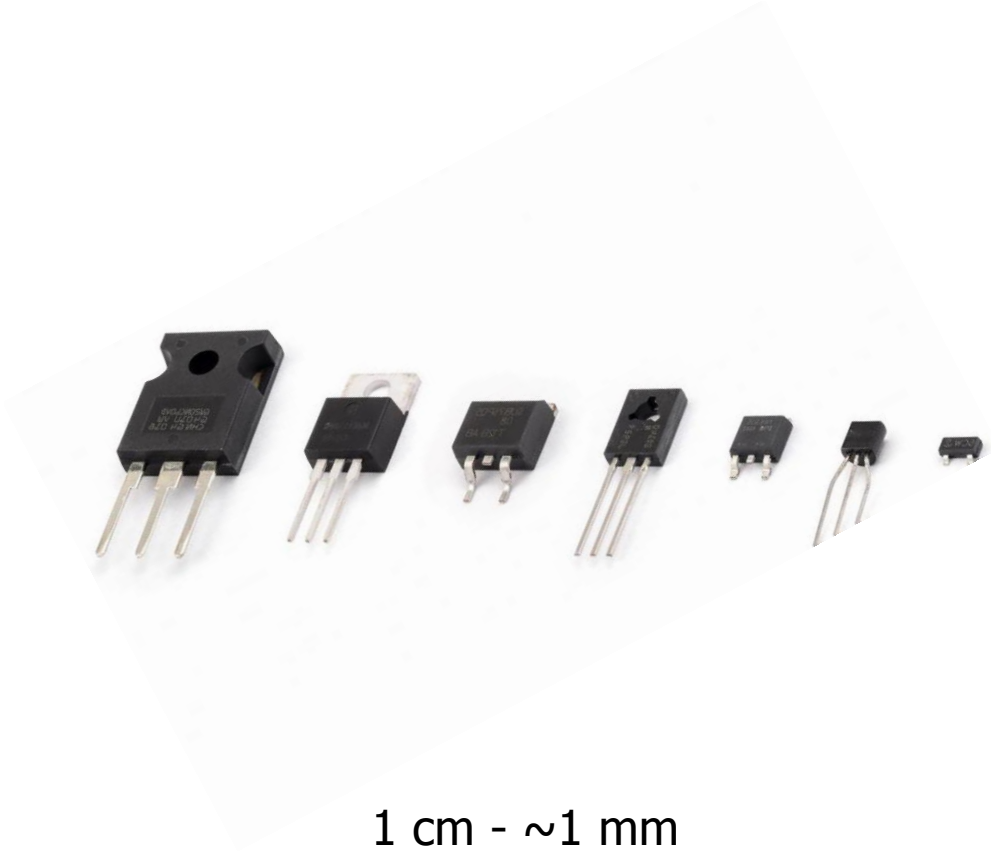


1 cm - ~1 mm

Motivacija: nanorevolucija



15 cm



1 cm - ~1 mm

14 nm !

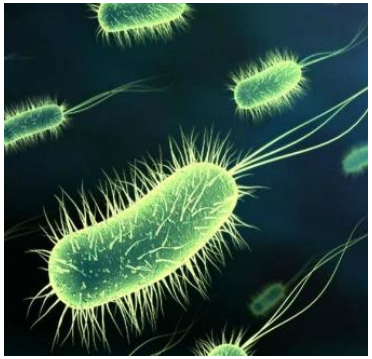
Motivacija: nanorevolucija

Motivacija: nanoroboti!

1 m

Motivacija: nanoroboti!

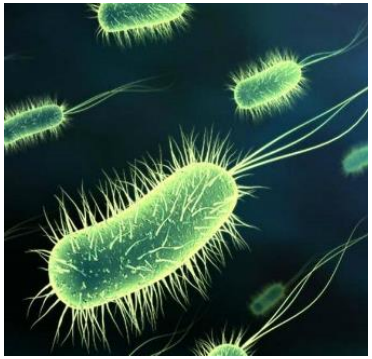
1 m



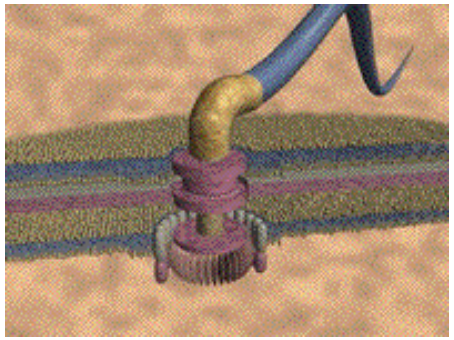
1 μm

Motivacija: nanoroboti!

1 m



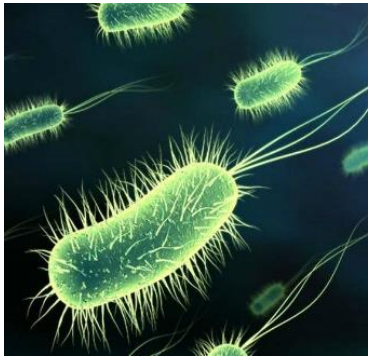
1 μm



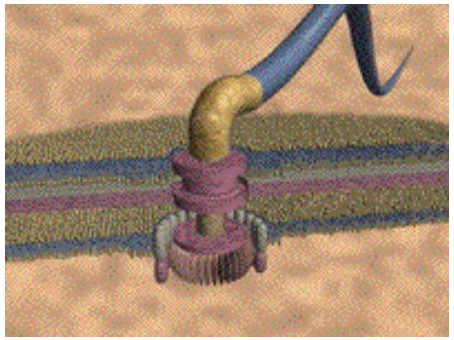
100 nm

Motivacija: nanoroboti!

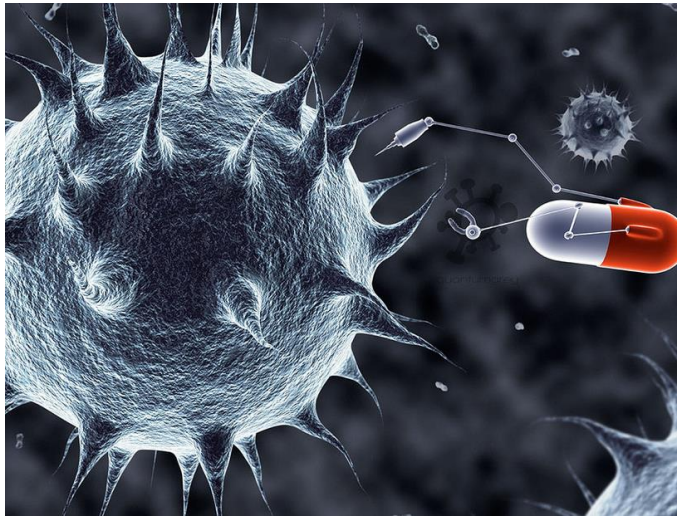
1 m



1 μm



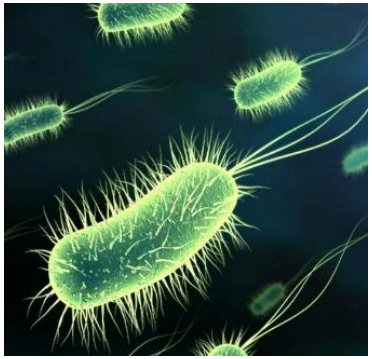
100 nm



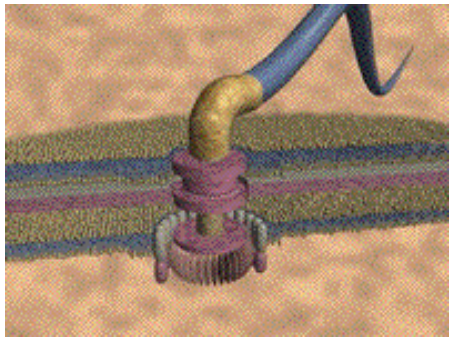
5 μm

Motivacija: nanoroboti!

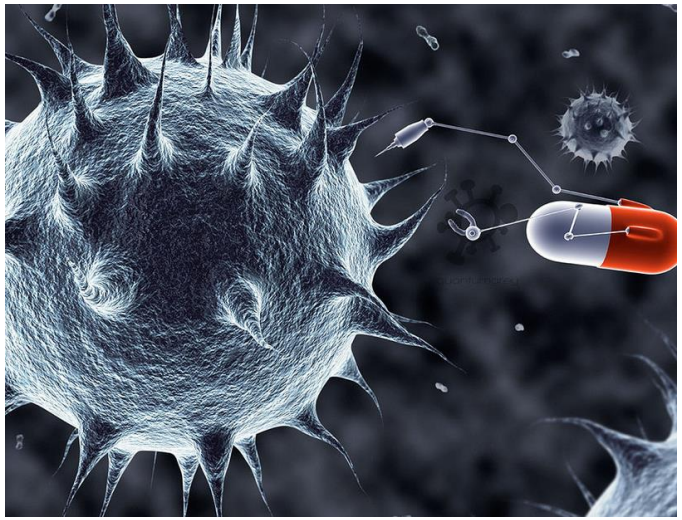
1 m



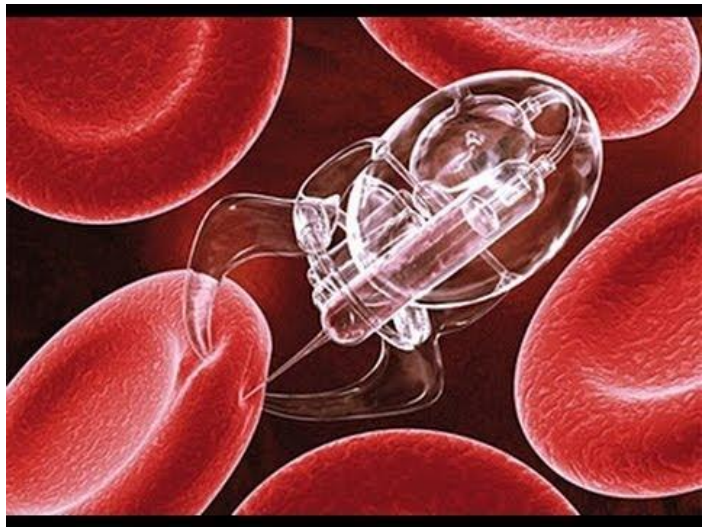
1 μm



100 nm



5 μm



1 μm

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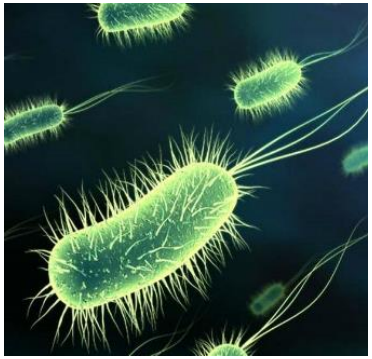
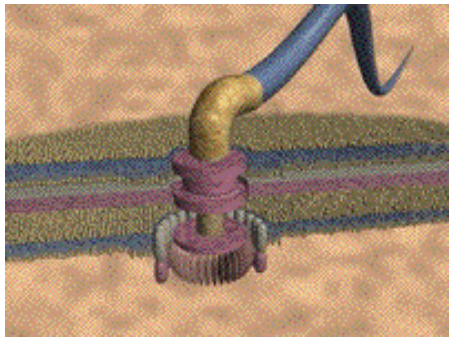
1 m

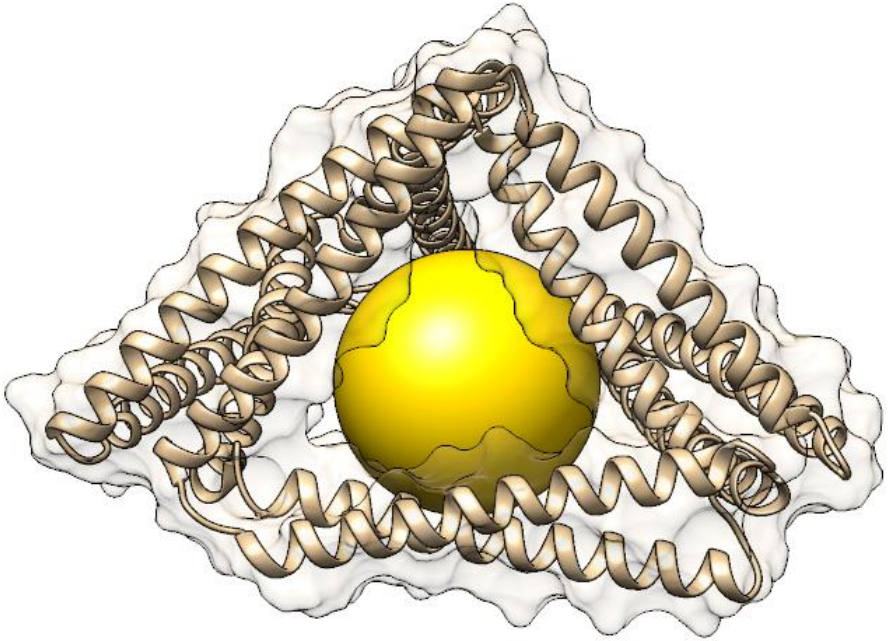


1 µm

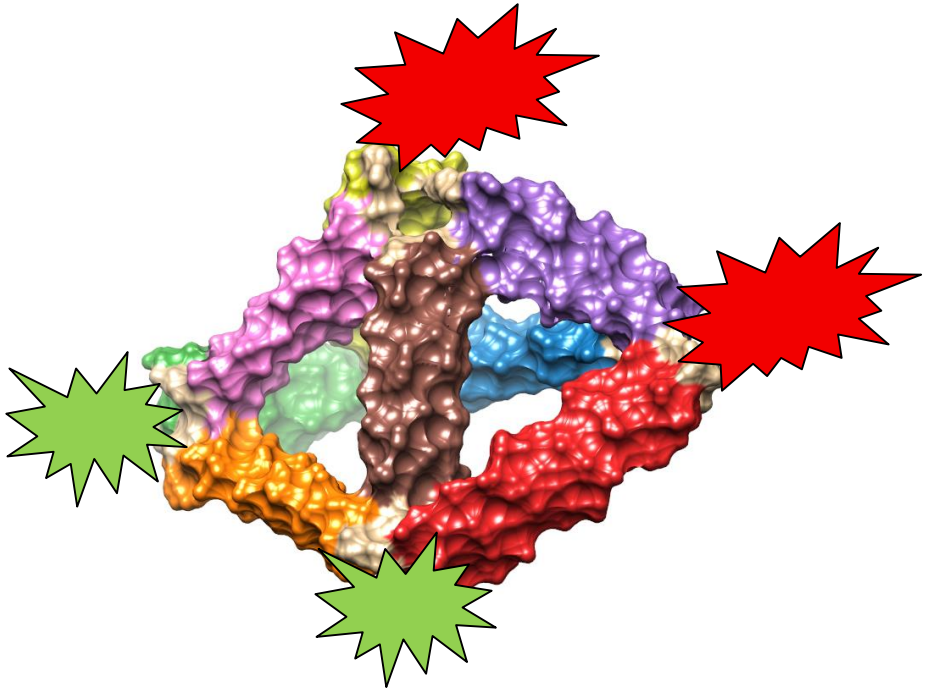


100 nm

DOSTAVA ZDRAVIL



NOVA CEPIVA



Kako **zgraditi** nanopiramido?

- Uporabimo proteine!

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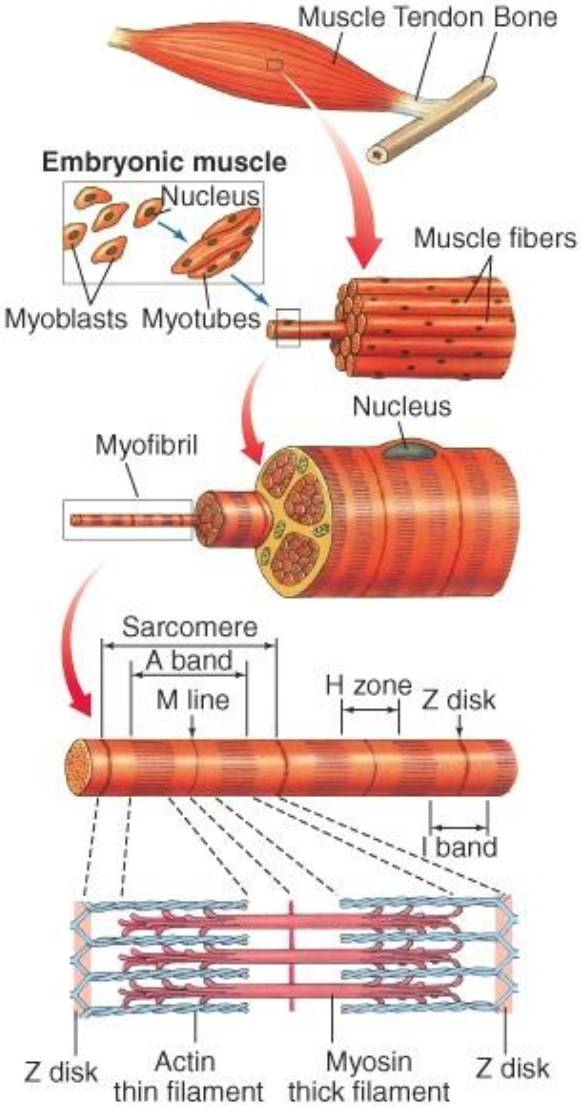
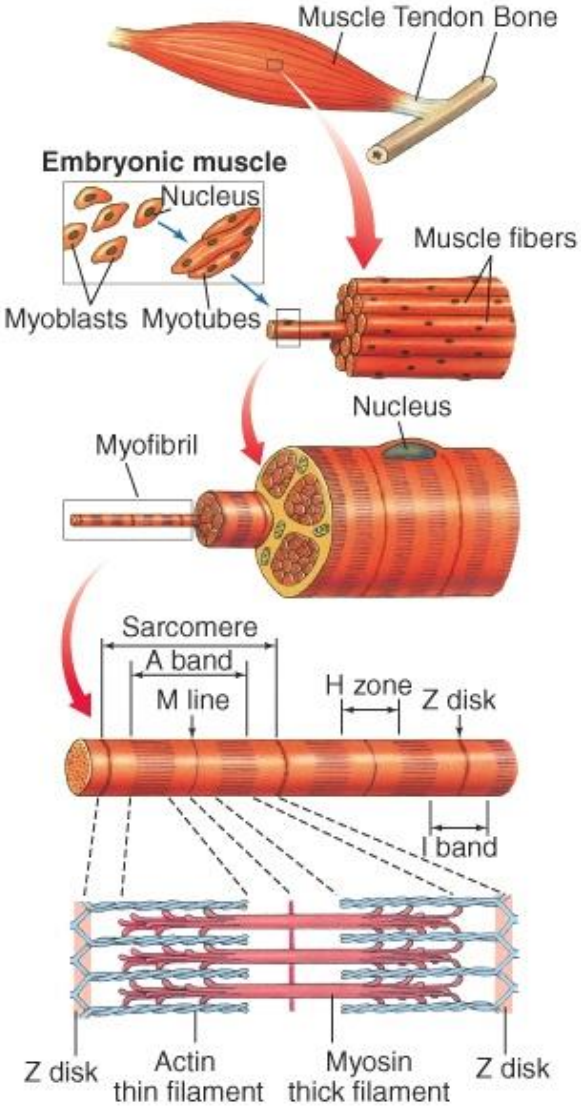
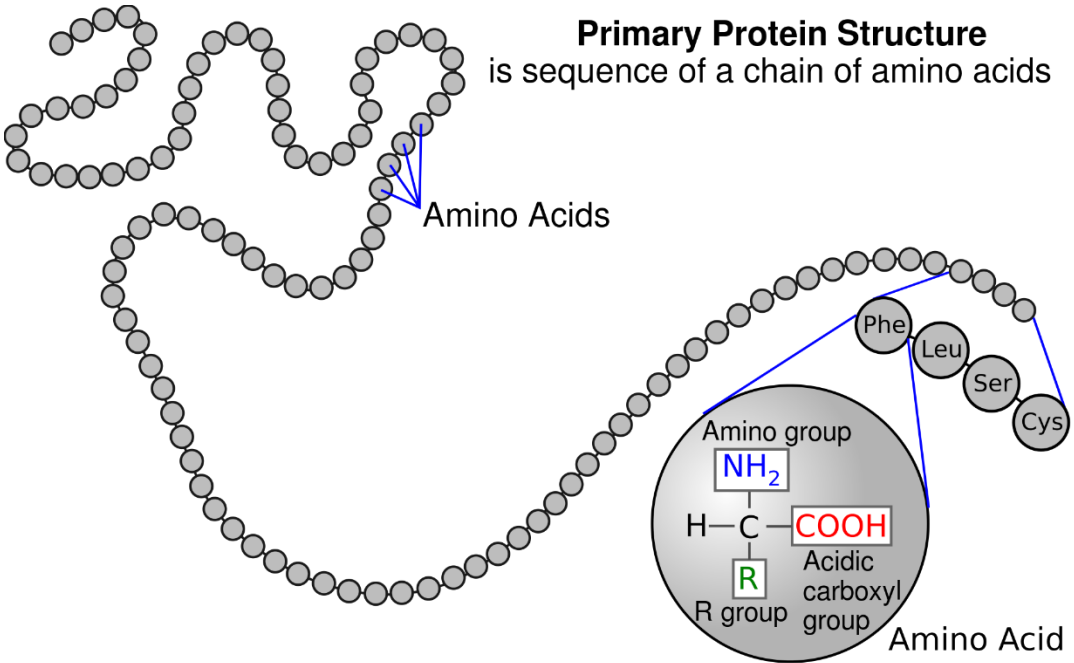


Kako **zgraditi** nanopiramido?

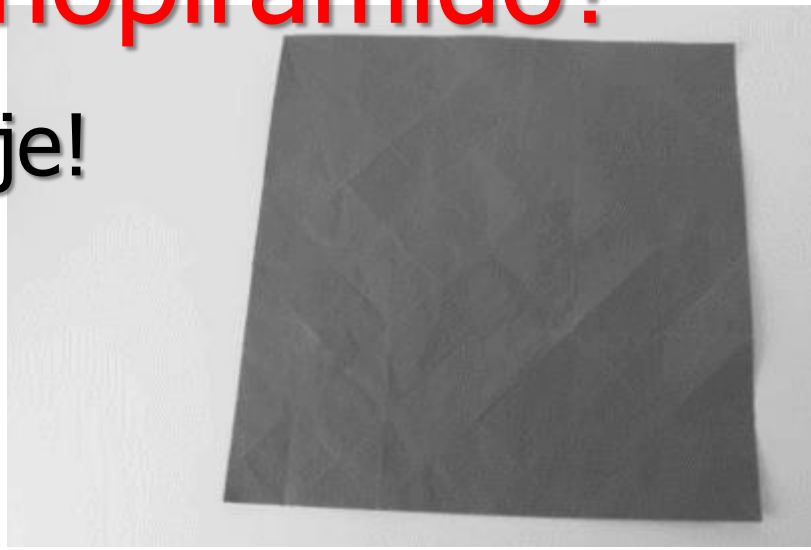
- Uporabimo proteine!





Kako **zgraditi** nanopiramido?

- Uporabimo samosestavljanje!



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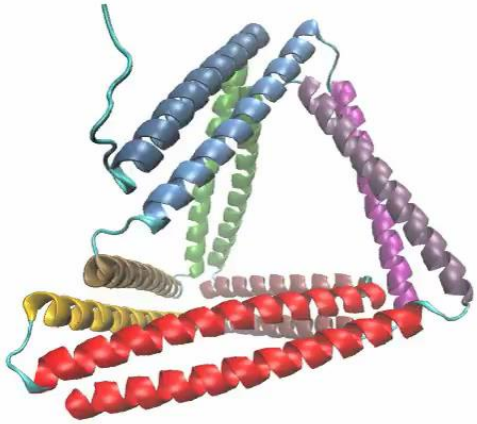
- Uporabimo samosestavljanje!

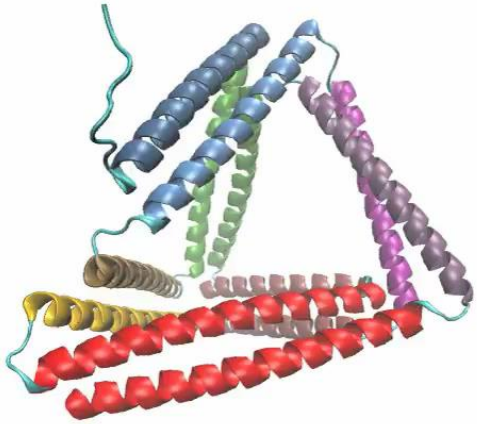
Samosestavljanje



Kako **zgraditi** nanopiramido?

- Uporabimo samosestavljanje!

Samosestavljanje



Kako **zgraditi** nanopiramido?

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- Uporabimo bakterijske sužnje!

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- Uporabimo bakterijske ~~sužnje!~~ pomagače!

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- Uporabimo bakterijske ~~sužnje!~~ pomagače!

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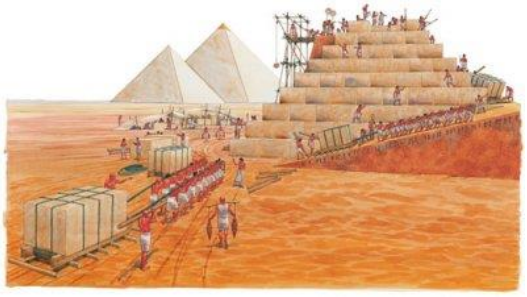

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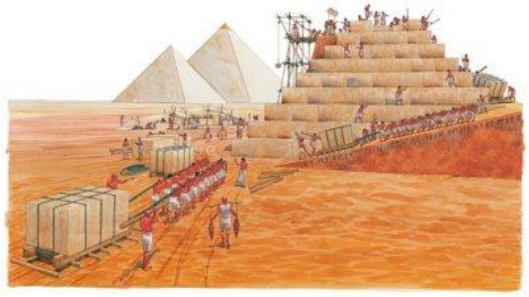
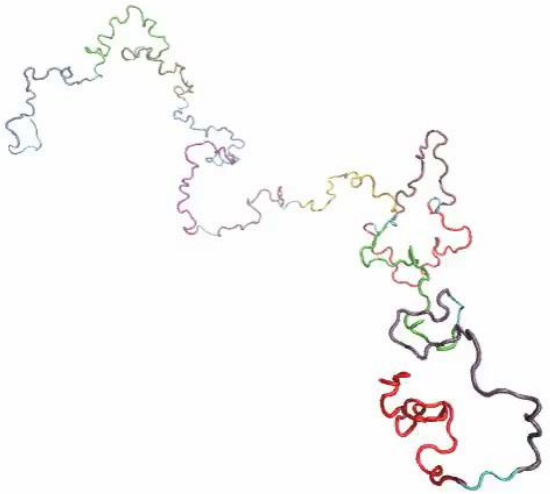
- Uporabimo bakterijske ~~sužnje!~~ pomagače!





Kako **načrtovati** nanopiramido?

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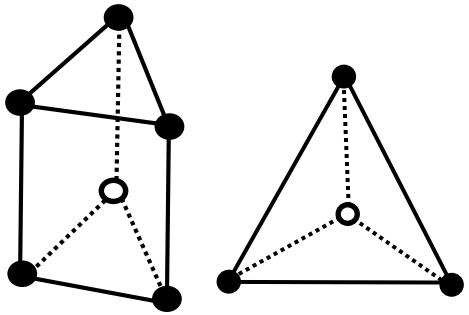
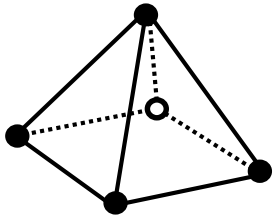
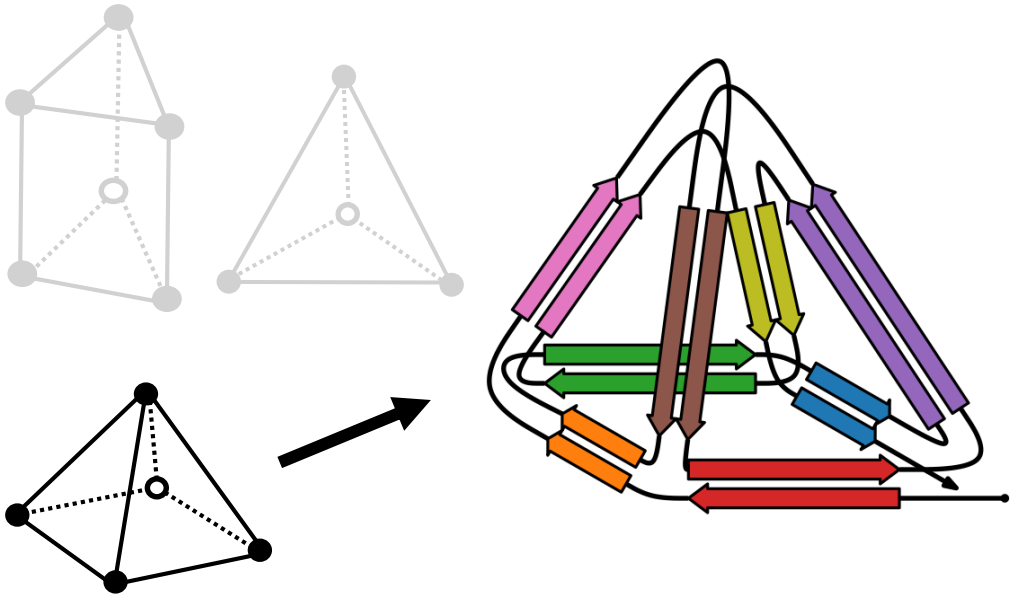




Kako **načrtovati** nanopiramido?



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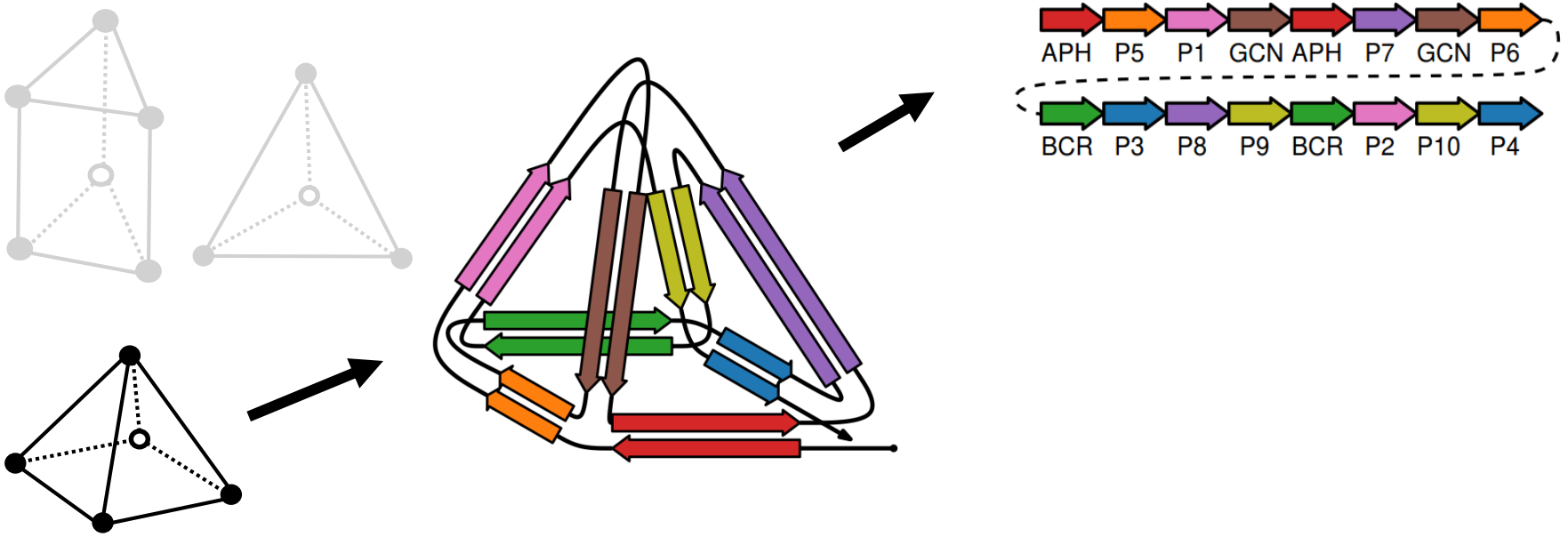

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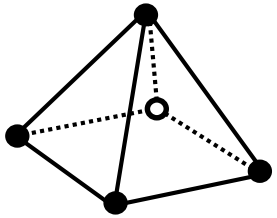

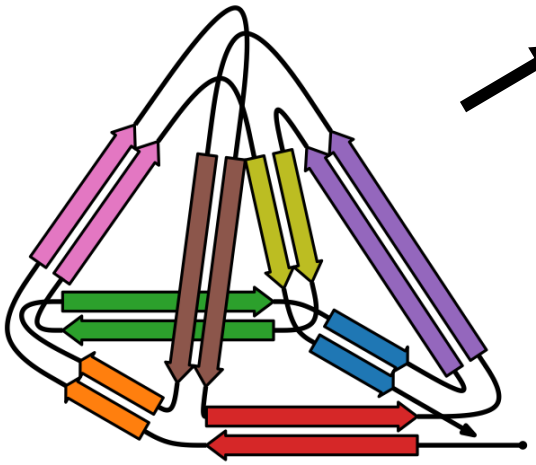

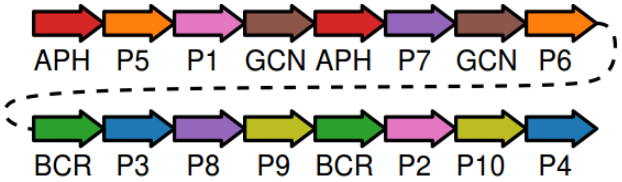

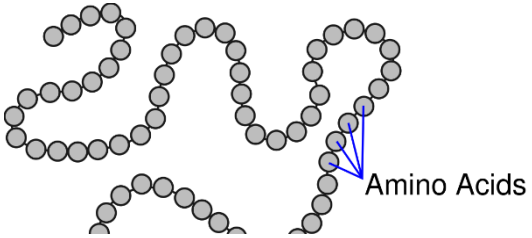

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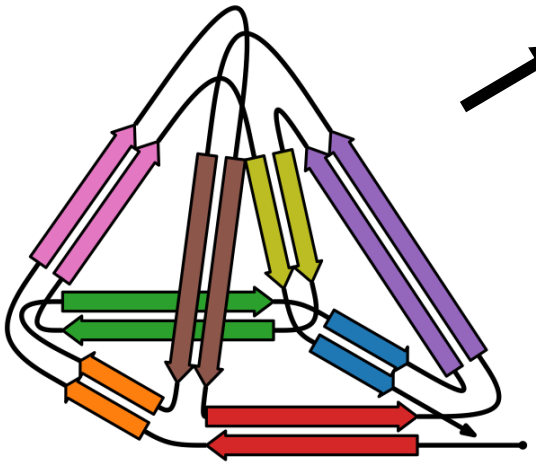

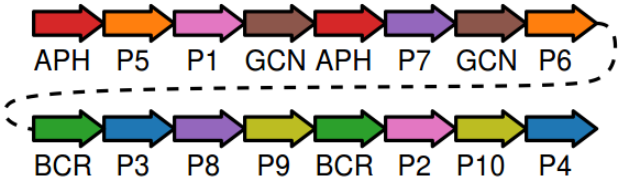

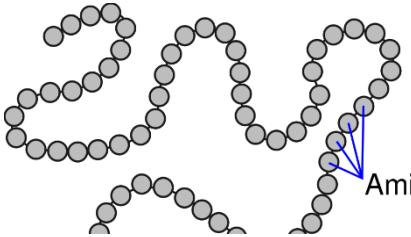

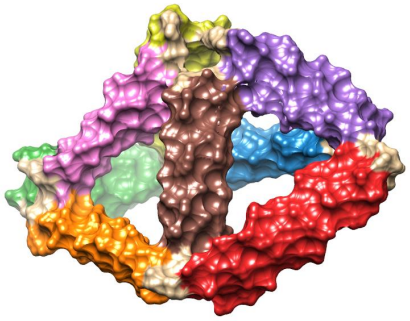

5 nm

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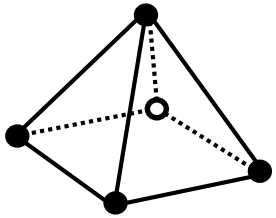
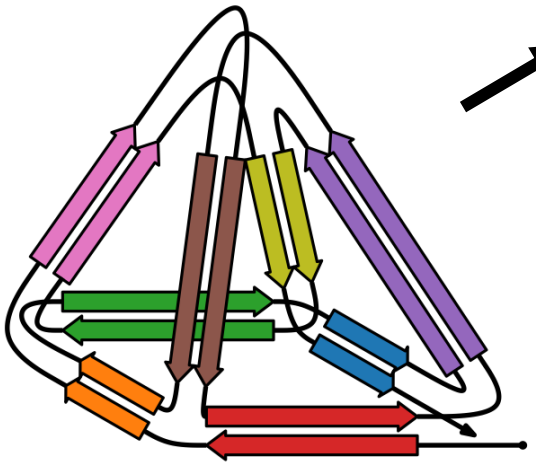
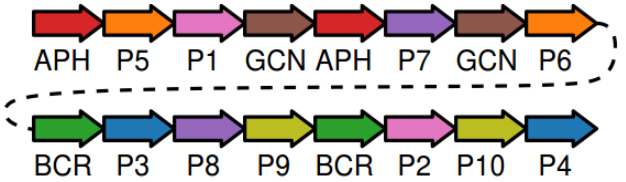
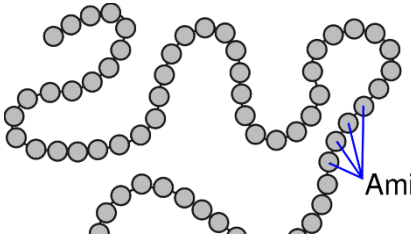
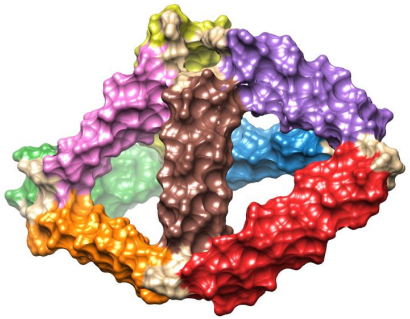


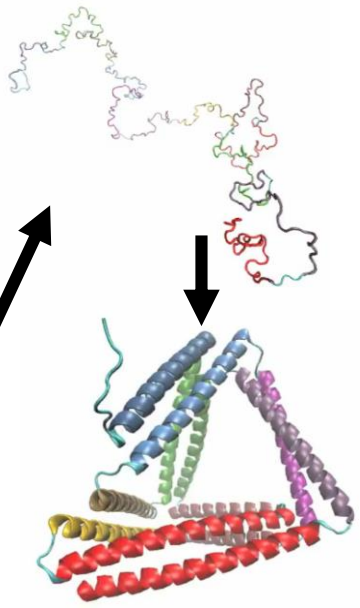








5 nm



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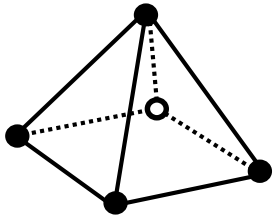

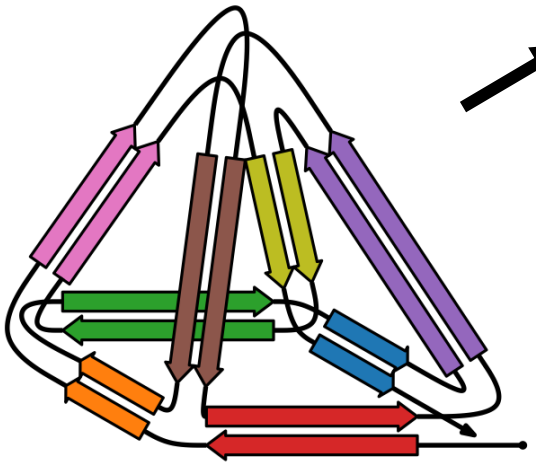

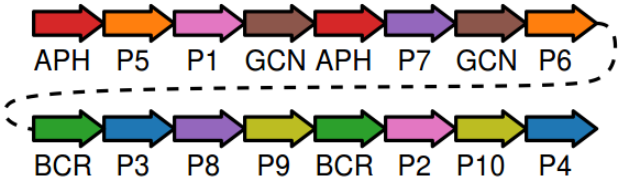

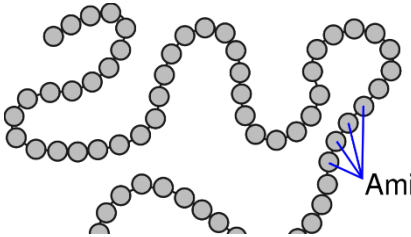

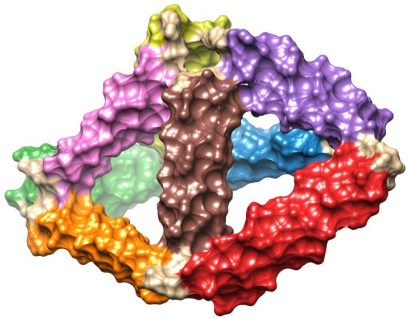

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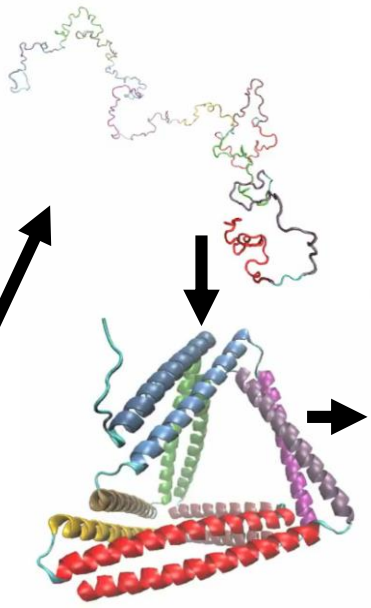
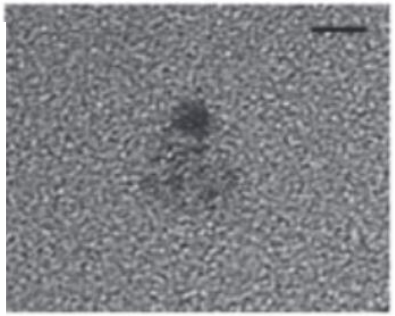




Nanopiramide so zakon!

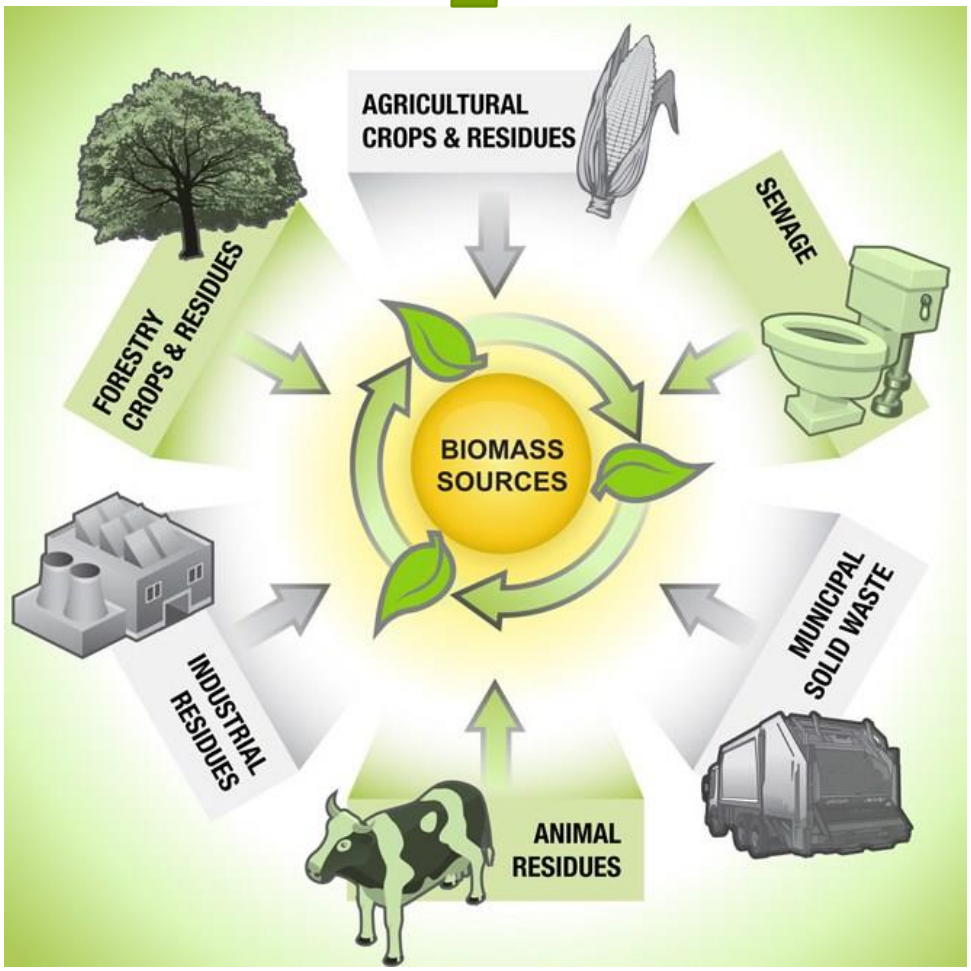

Thermo
Aluminium-Folie

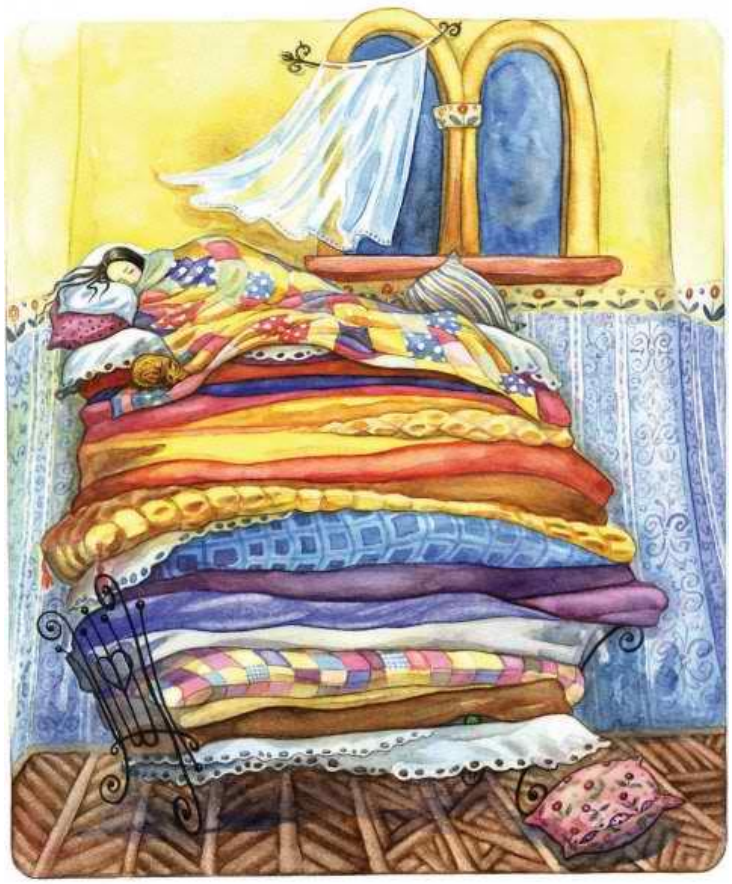
SABINA BEC
Magistrski študij Biotehnologije
Biotehniška fakulteta

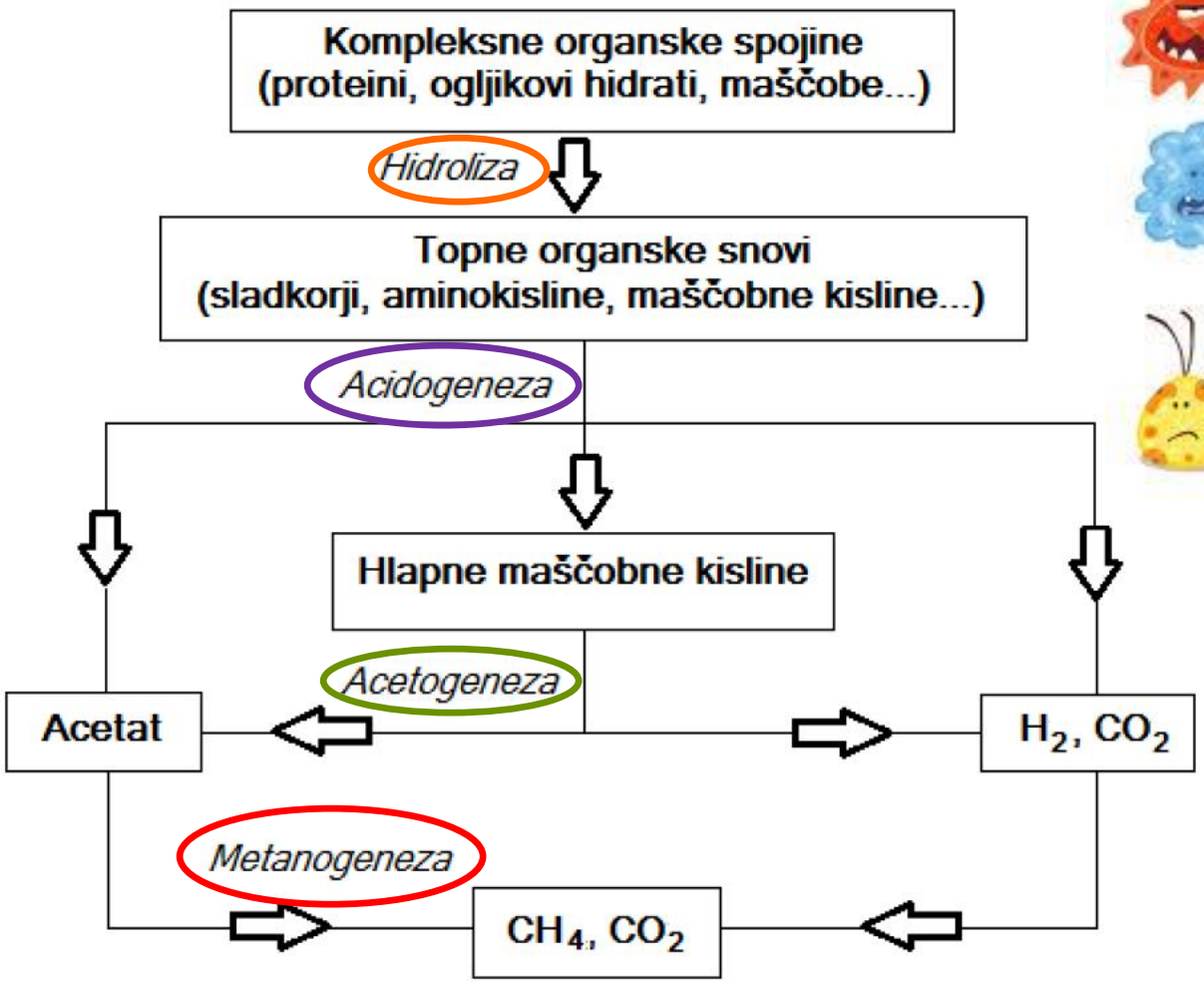
KRALJIČNA NA ZRNU BLATA

Znanstveni Slam
28. 9. 2016

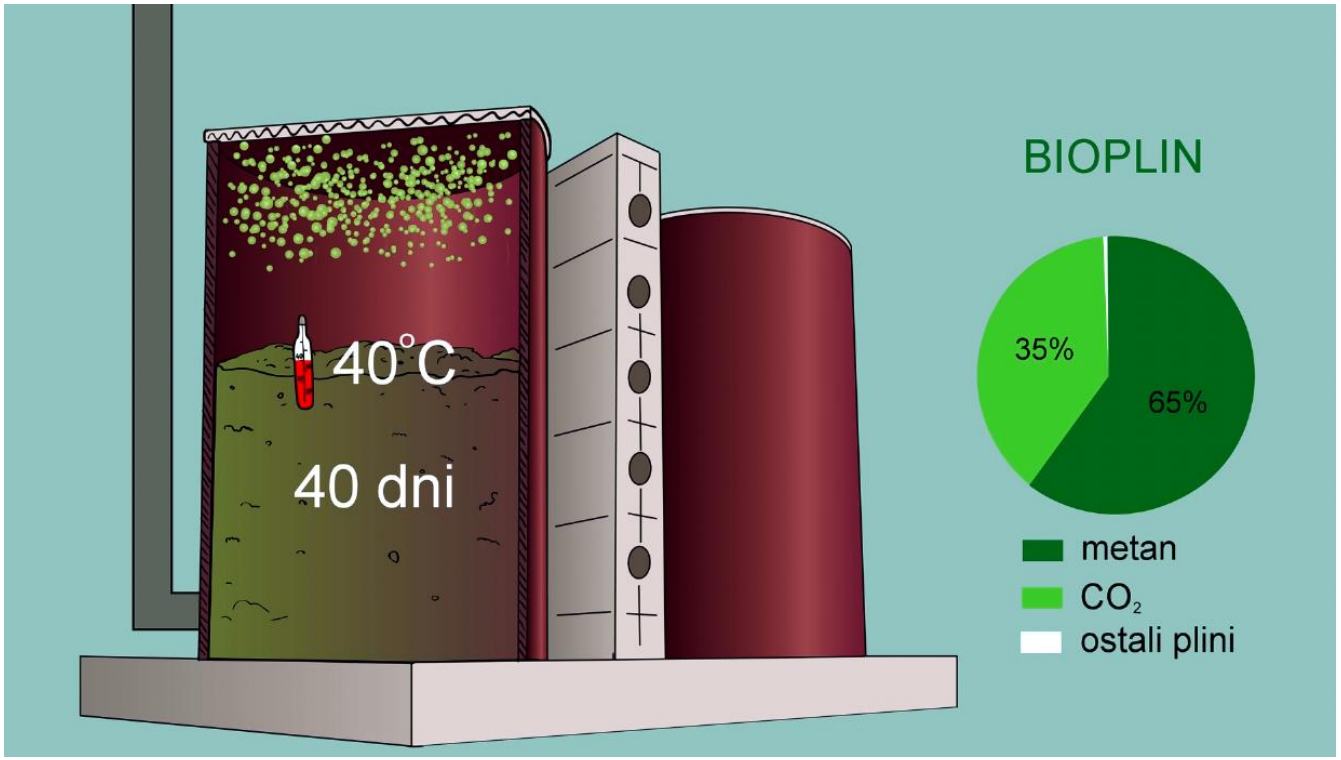
Vpliv dodatkov in predhodne obdelave zgoščenega sekundarnega blata na produkcijo bioplina

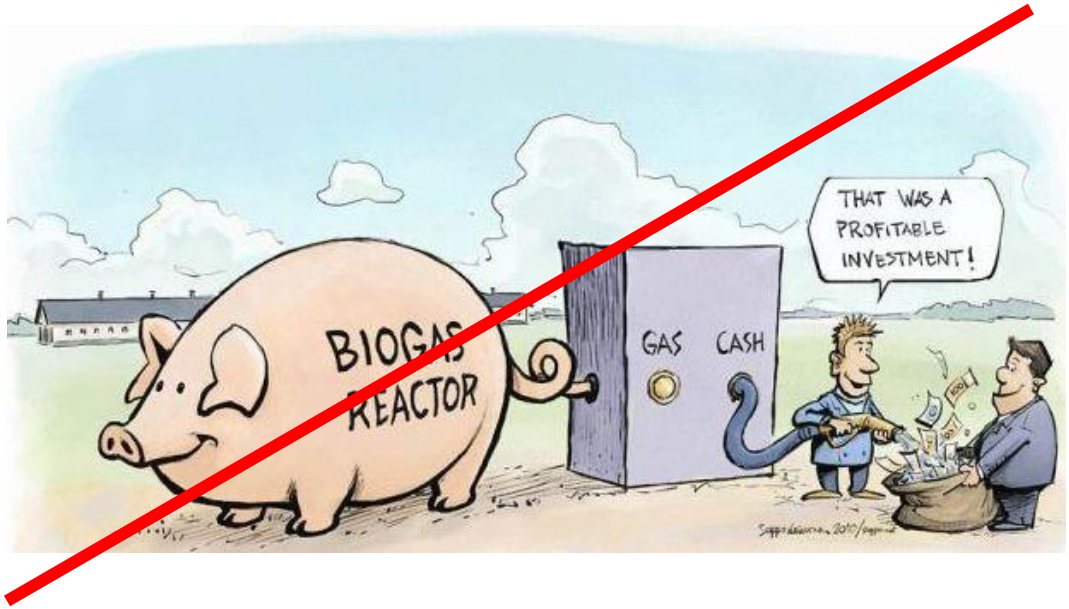

AGRICULTURAL
CROPS & RESIDUES
SEWAGE
FORESTRY
CROPS & RESIDUES
BIOMASS
SOURCES
INDUSTRIAL
RESIDUES
MUNICIPAL
SOLID WASTE
ANIMAL
RESIDUES




Kompleksne organske spojine
(proteini, ogljikovi hidrati, maščobe...)
Hidroliza
Topne organske snovi
(sladkorji, aminokisline, maščobne kisline...)
Acidogeneza
Hlapne maščobne kisline
Acetogeneza
Acetat
H_2, CO_2
Metanogeneza
CH_4, CO_2

SEKUNDARNO ali AKTIVNO BLATO = odmrla biomasa, ki nastane pri čiščenju odpadnih voda





‘’Bioplinarna ne more biti v prvi vrsti proizvajalka energije, ampak reševalka problemov z odpadki.’’

Lučka Kajfež Bogataj, Nedeljski Dnevnik (9.12. 2015)

ANAEROBNA RAZGRADNJA

BIOPLIN

(KOMPOSTIRANJE)
GNOJENJE

(PREDELAVA)
UPORABA

MEDNARODNA PODIPLOMSKA ŠOLA JOŽEFA STEFANA

CENTER ZA ELEKTRONSKO MIKROSKOPIJO IN MIKROANALIZO

Elektrokemija znotraj presevnega elektronskega mikroskopa

Maja Koblar

Zgodovina elektrike

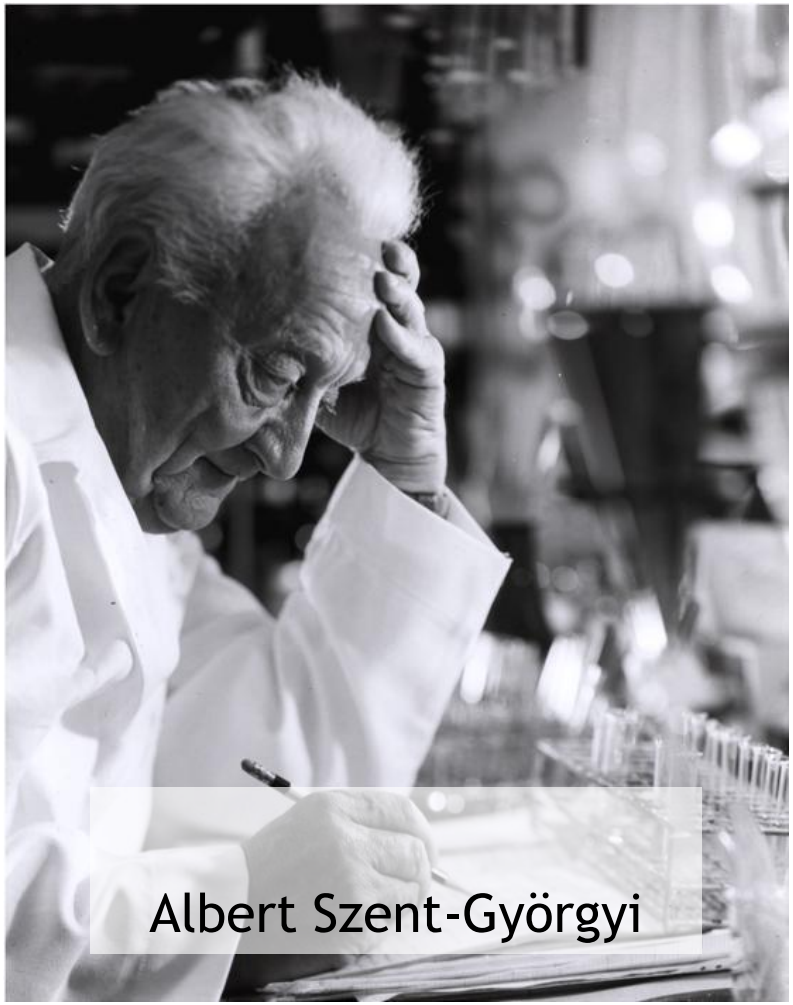
Luigi Galvani

Alessandro Volta

Slike: Wikipedija

Uporaba elektrokemije

Slika: Thewirecutter



Slika: Research Avemar

Presevni elektronski mikroskop

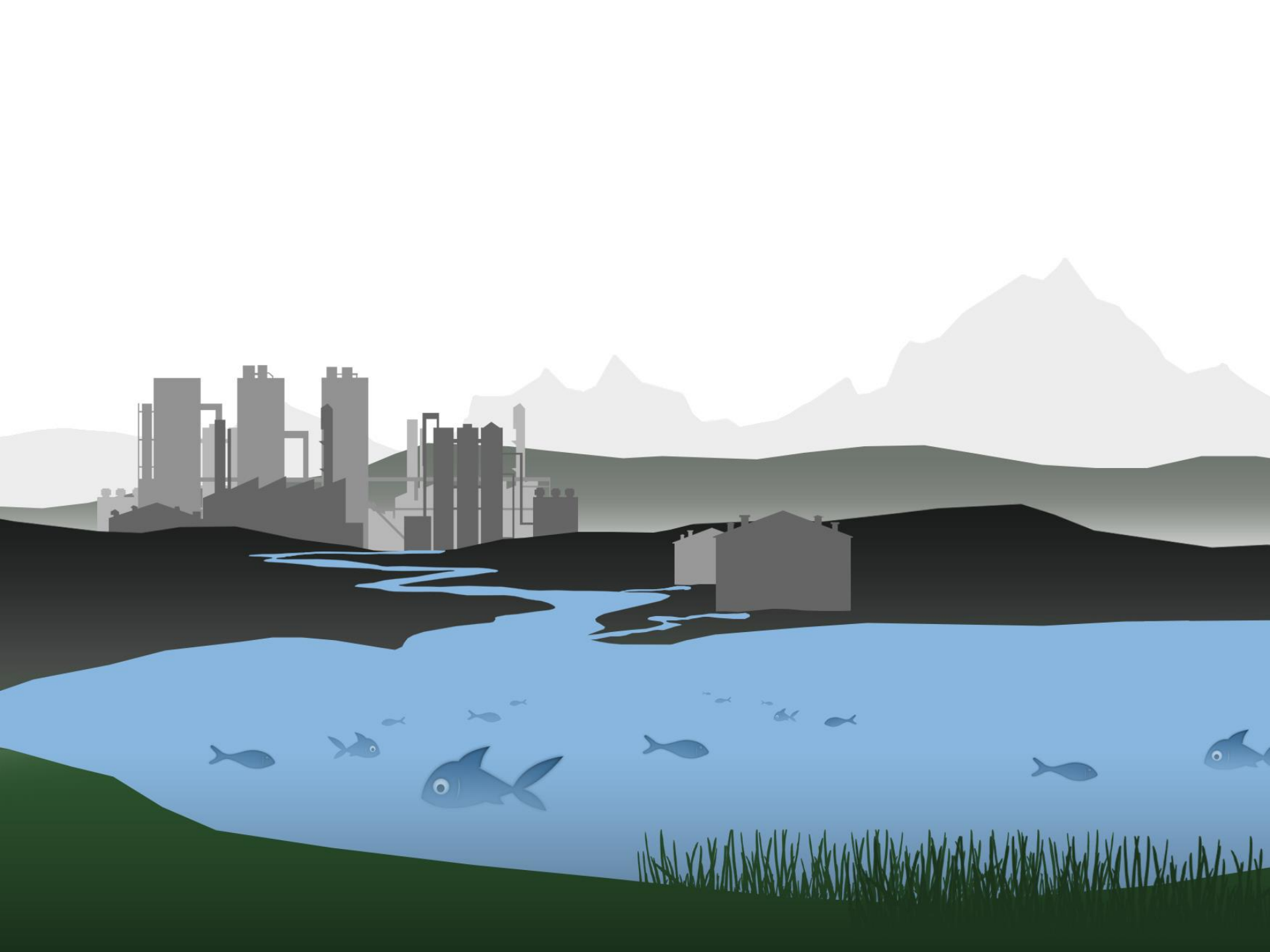
Slika: The Science Asylum

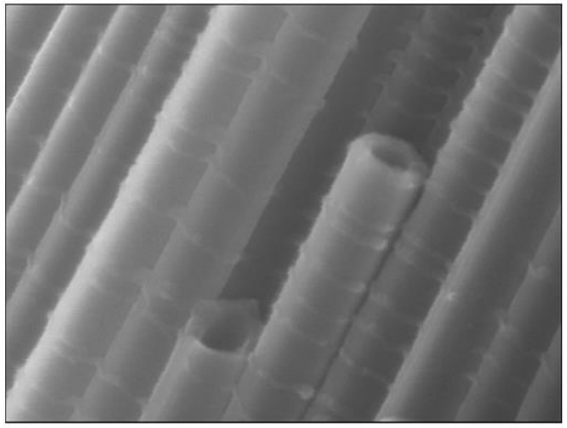
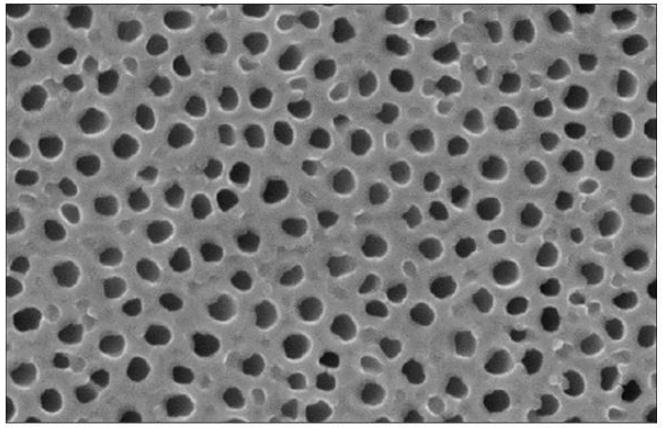
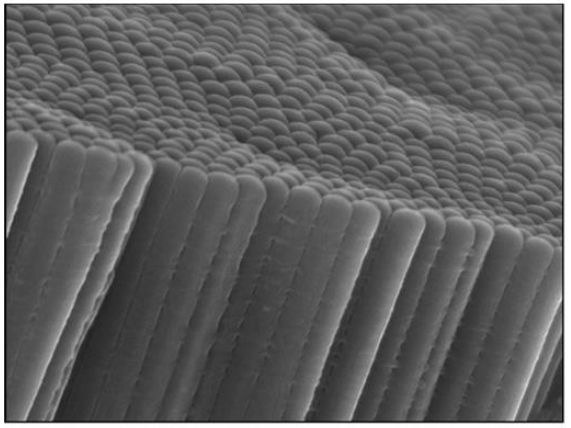
Slika: Jeol

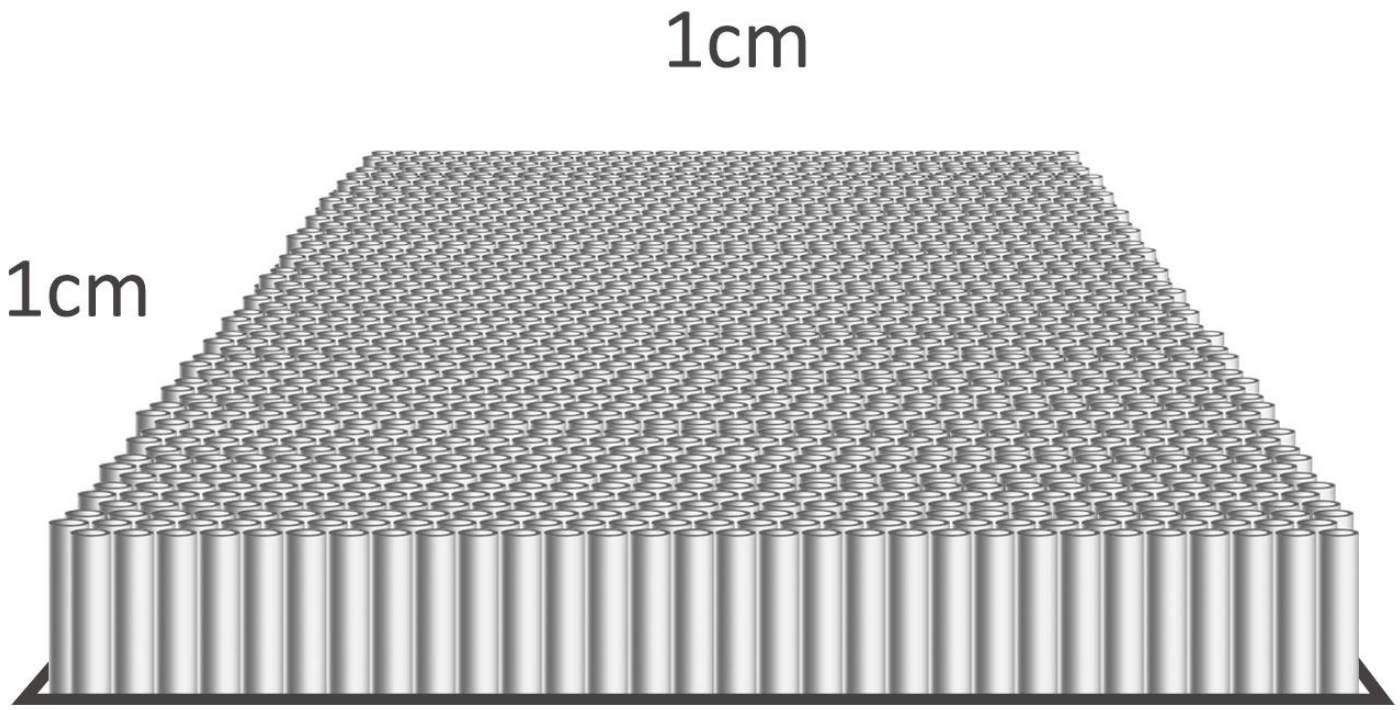
Slika: Photigy

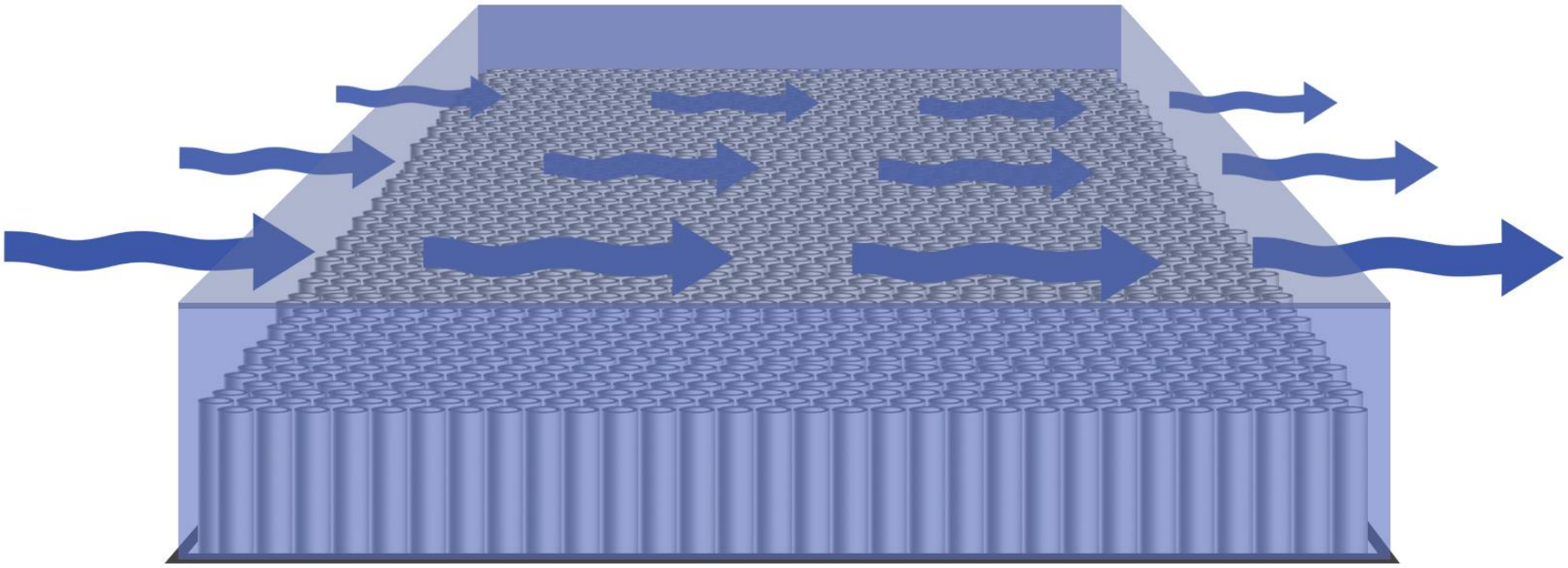
10.

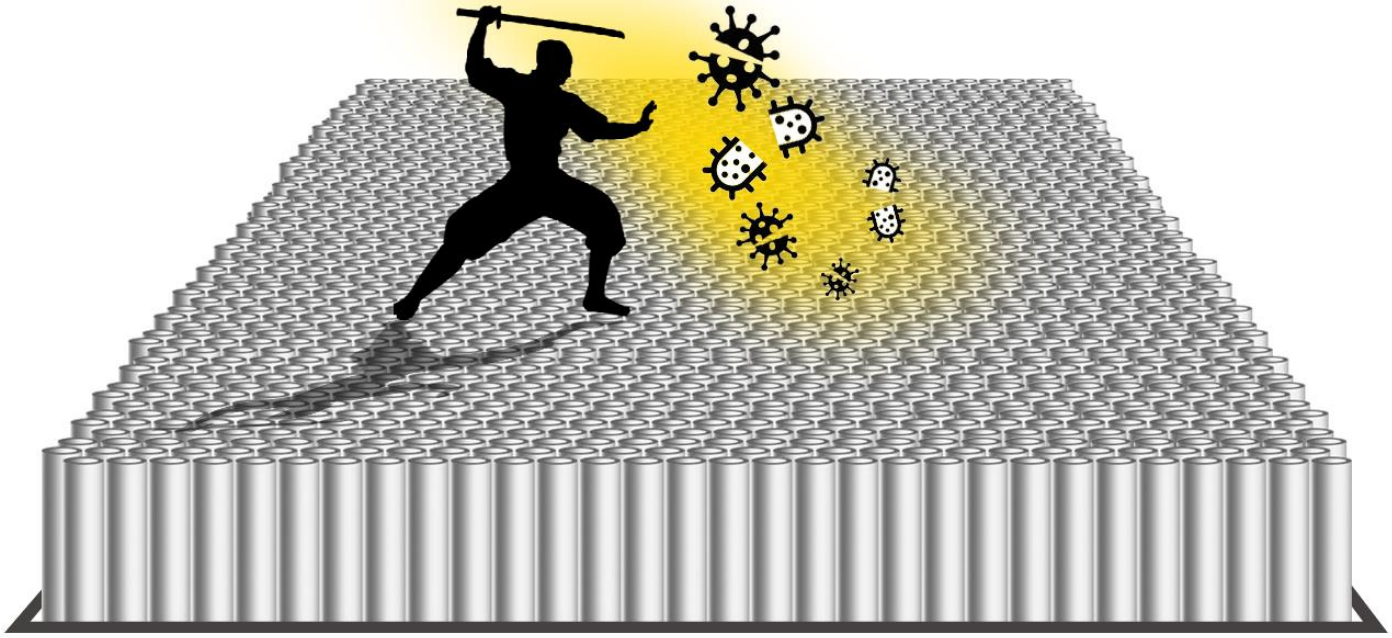
Svetlobni čistilec




1cm
1cm





11.

IMUNSKI SISTEM ALI KO NAS NAPADEJO VESOLJCI

MAŠA ČERNIČ, UNI. DIPL. KEM.

ZNANSTVENI SLAM, 28.9.2016

Virus Zloba

Bakterija Hudoba

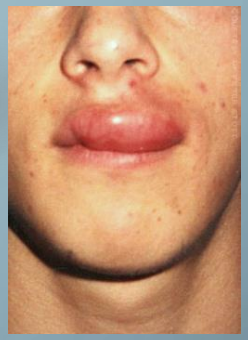
Virus Zloba

Bakterija Hudoba

Virus Zloba

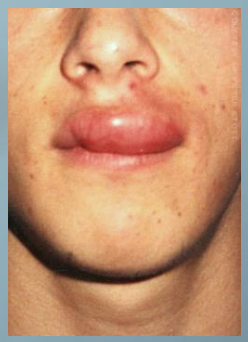
Bakterija Hudoba

Virus Zloba



Bakterija Hudoba

Virus Zloba



-nespecifičen imunski odziv

Bakterija Hudoba

Virus Zloba

Bakterija Hudoba

Virus Zloba

Bakterija Hudoba

Virus Zloba

UFOs???

POLICIJA

Bakterija Hudoba

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UFOs???

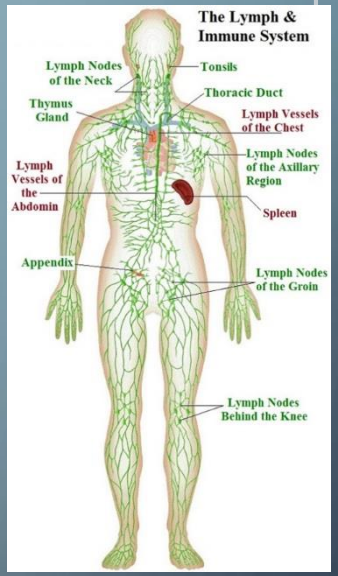
POLICIJA

Virus Zloba

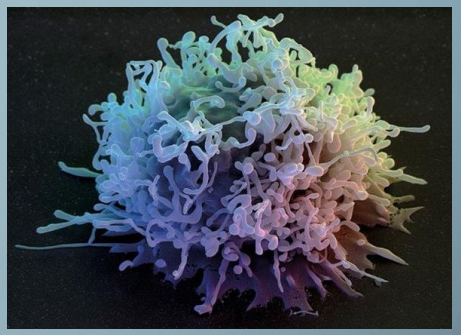
Bakterija Hudoba

UFOs???

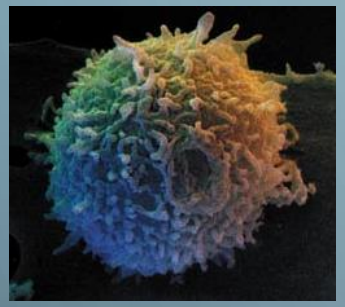
-specifičen imunski odziv



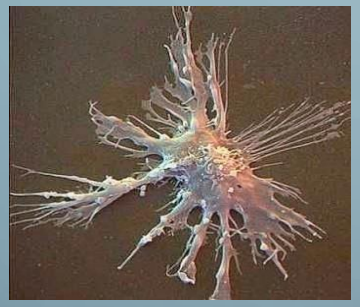
NAŠI „VOJAKI“



Celice ubijalke



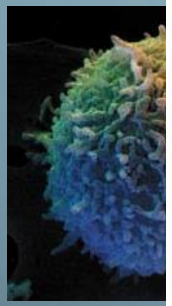
B-celice



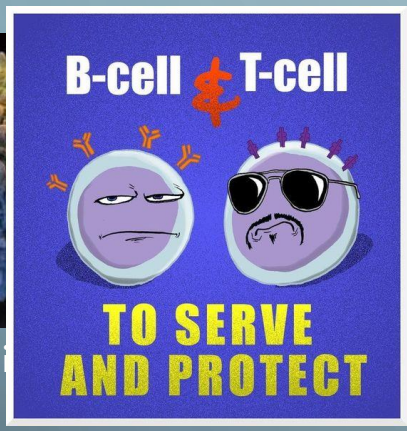
Dentritične celice

Makrofagi

NAŠI „VOJAKI“

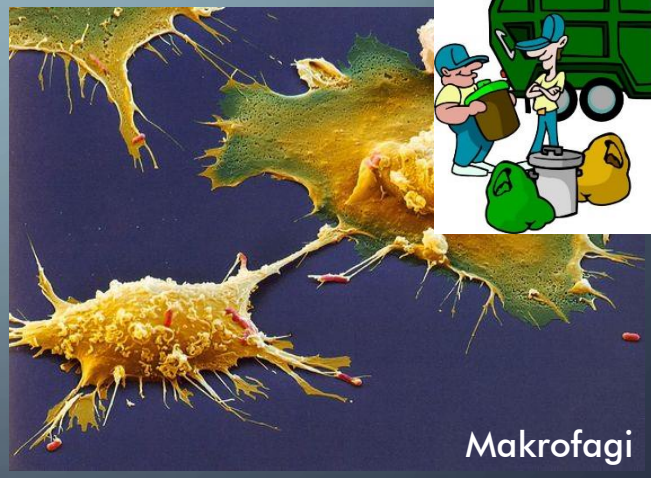


B-celi



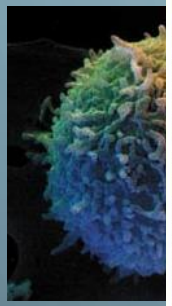
ične celice

Celice ubijalke

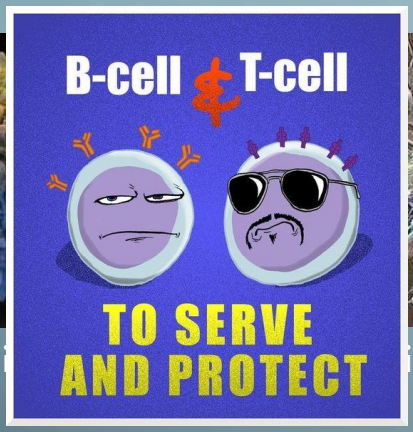


Makrofagi

NAŠI „VOJAKI“



B-celi

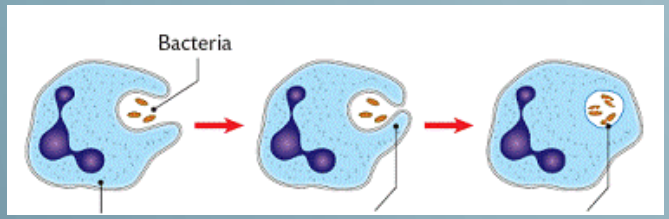


ične celice

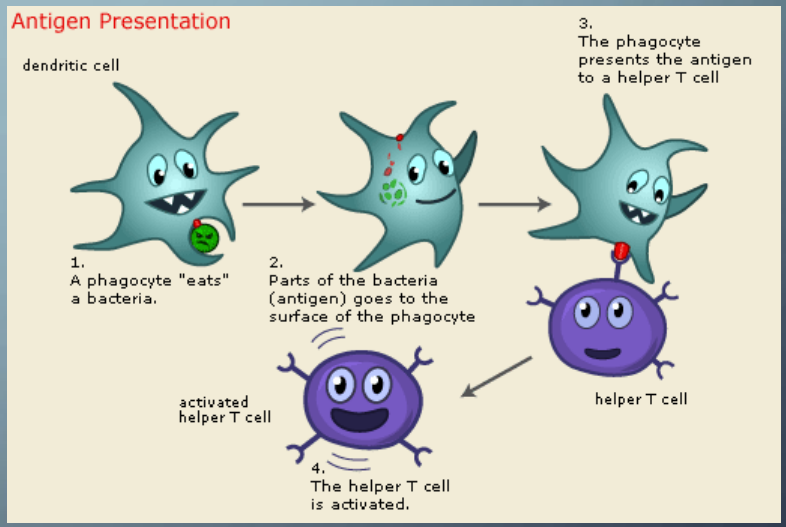
Celice ubijalke

bakterija

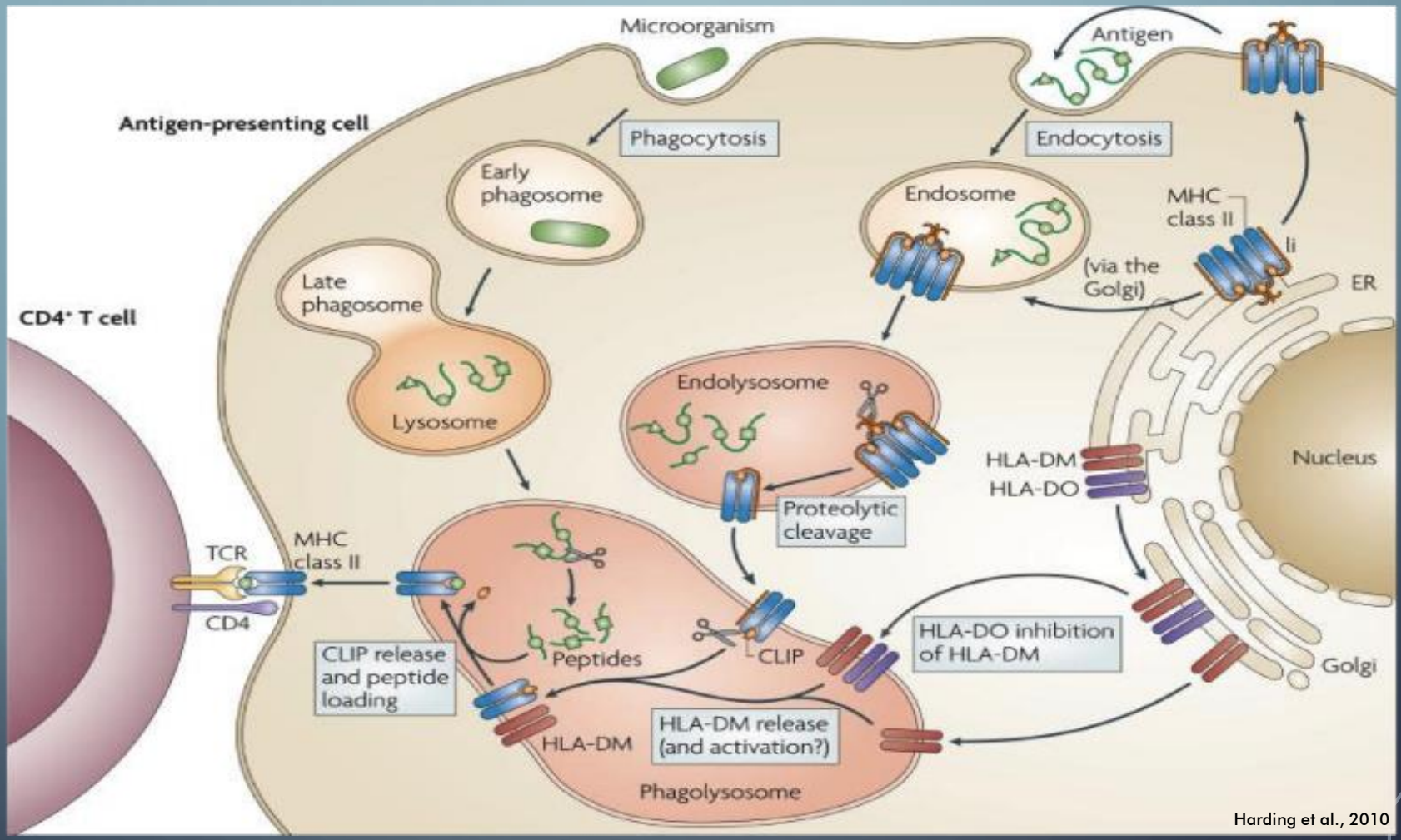
Makrofagi



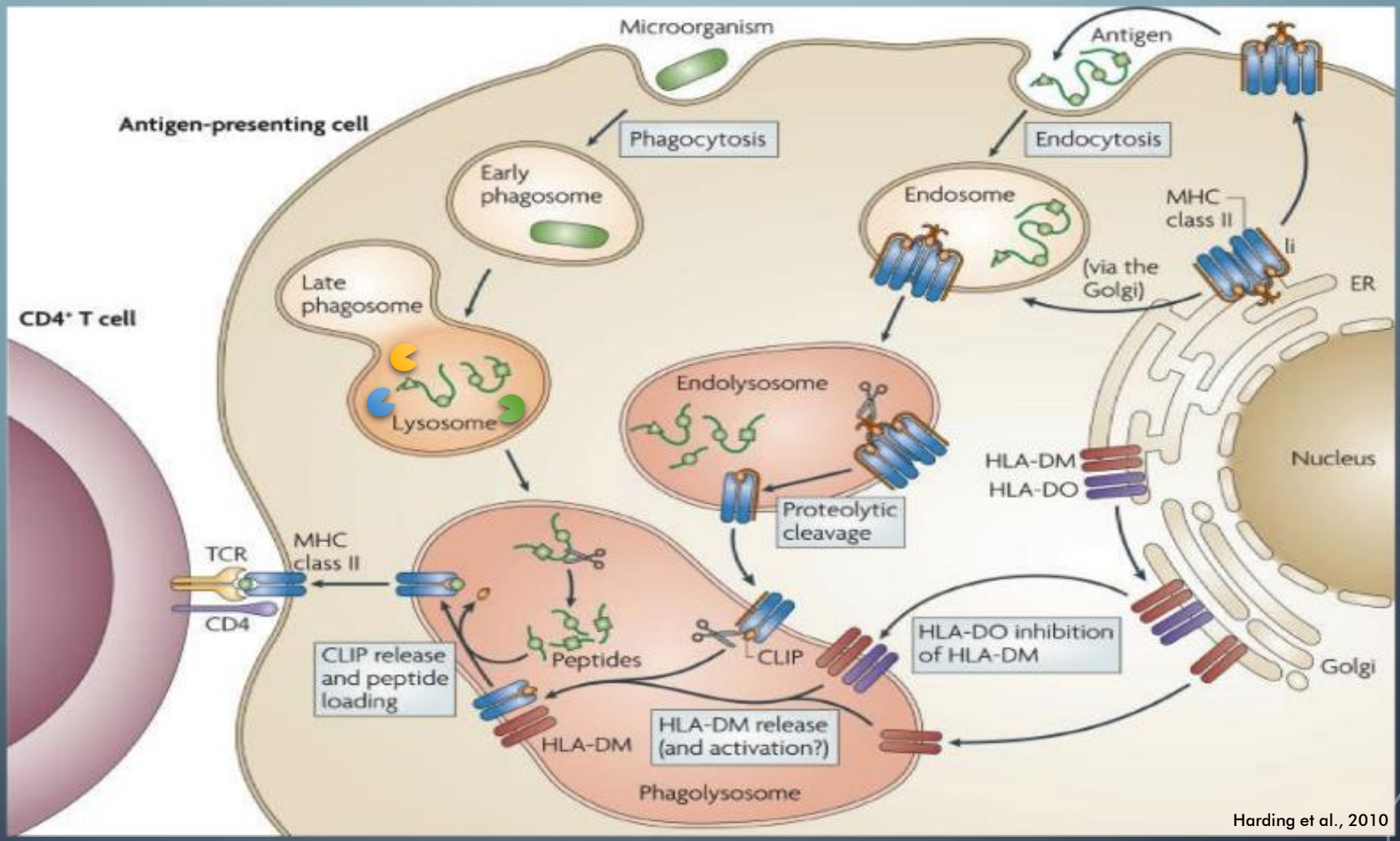
B celica „poje“ bakterije



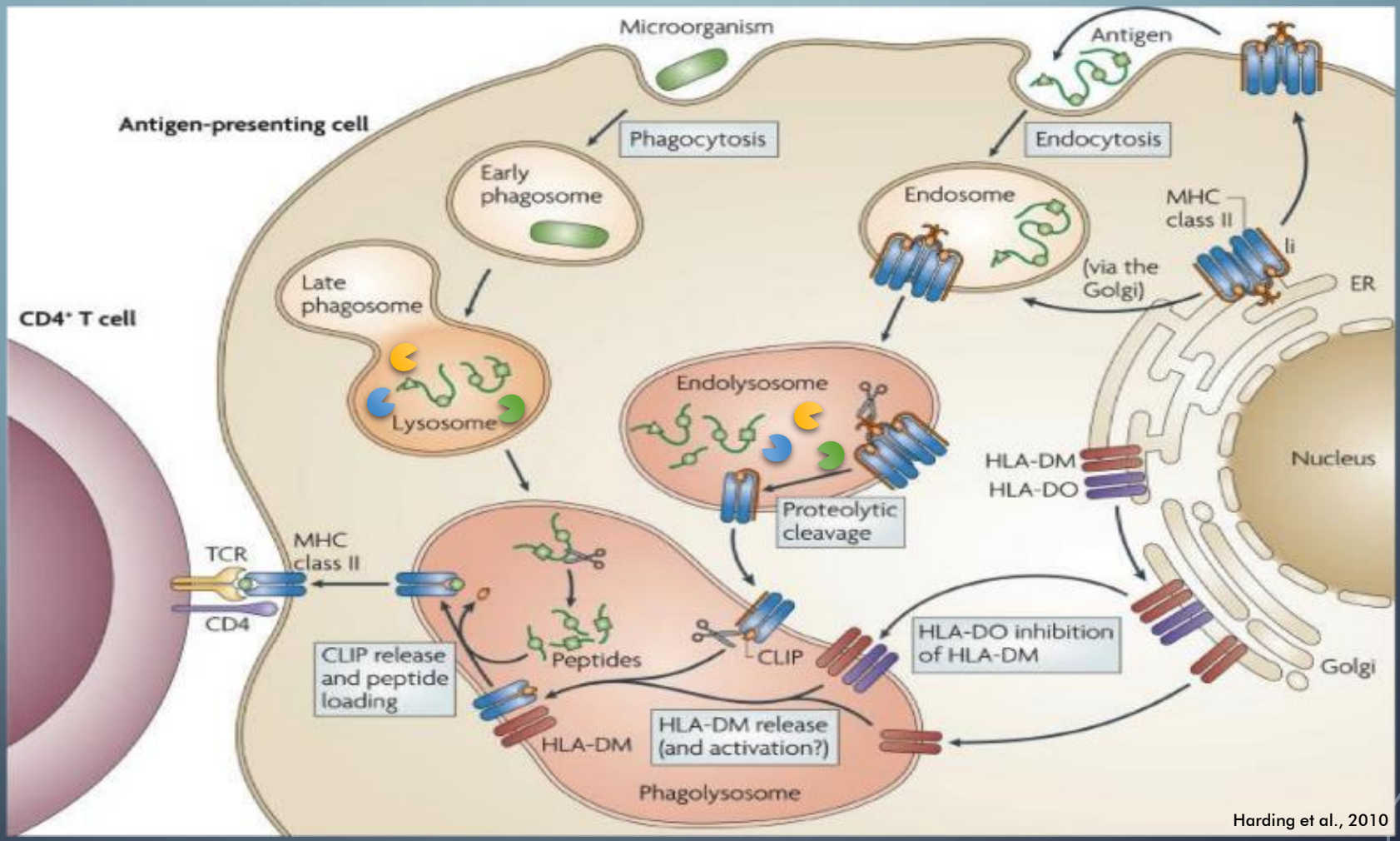
Harding et al., 2010



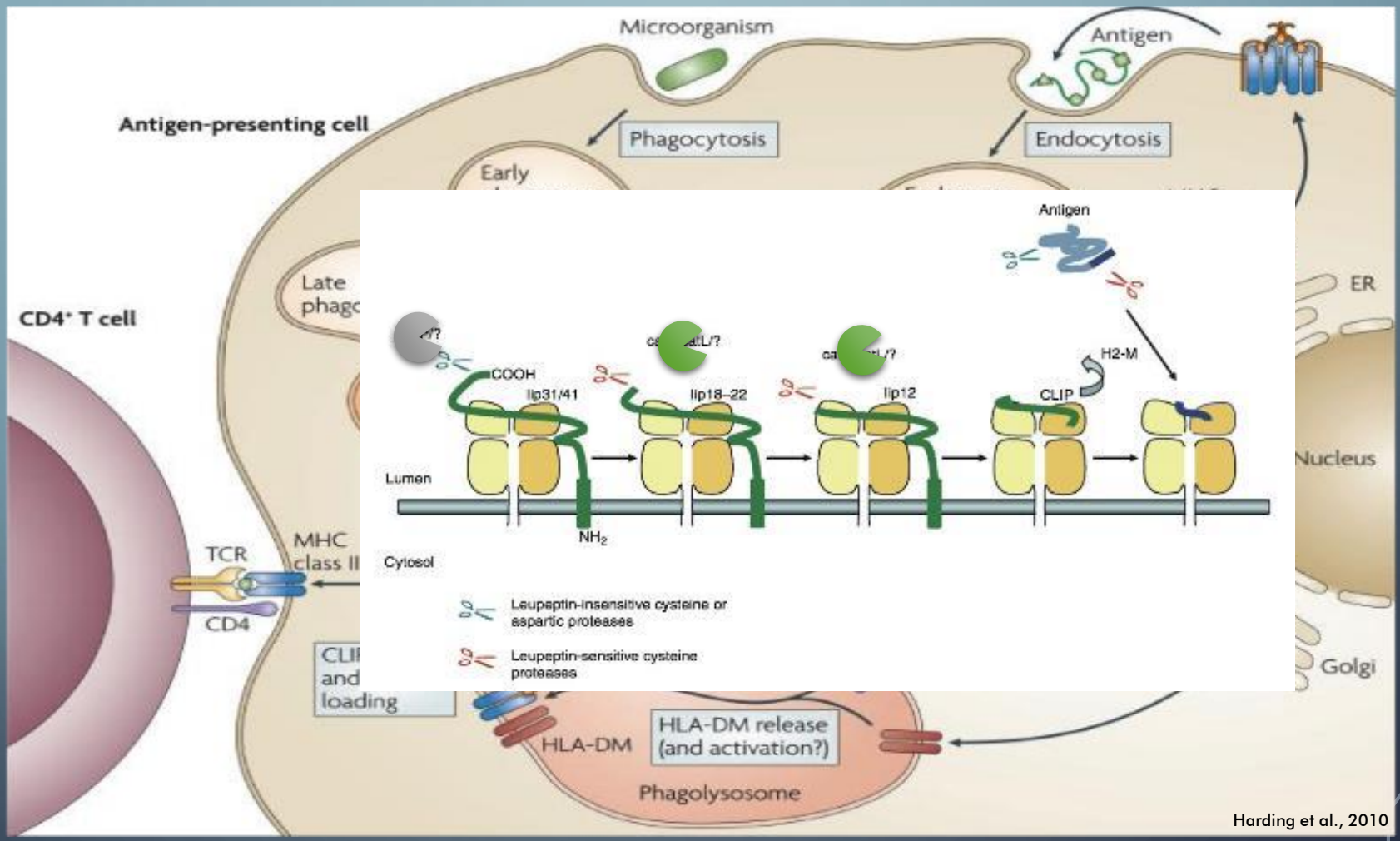
Harding et al., 2010



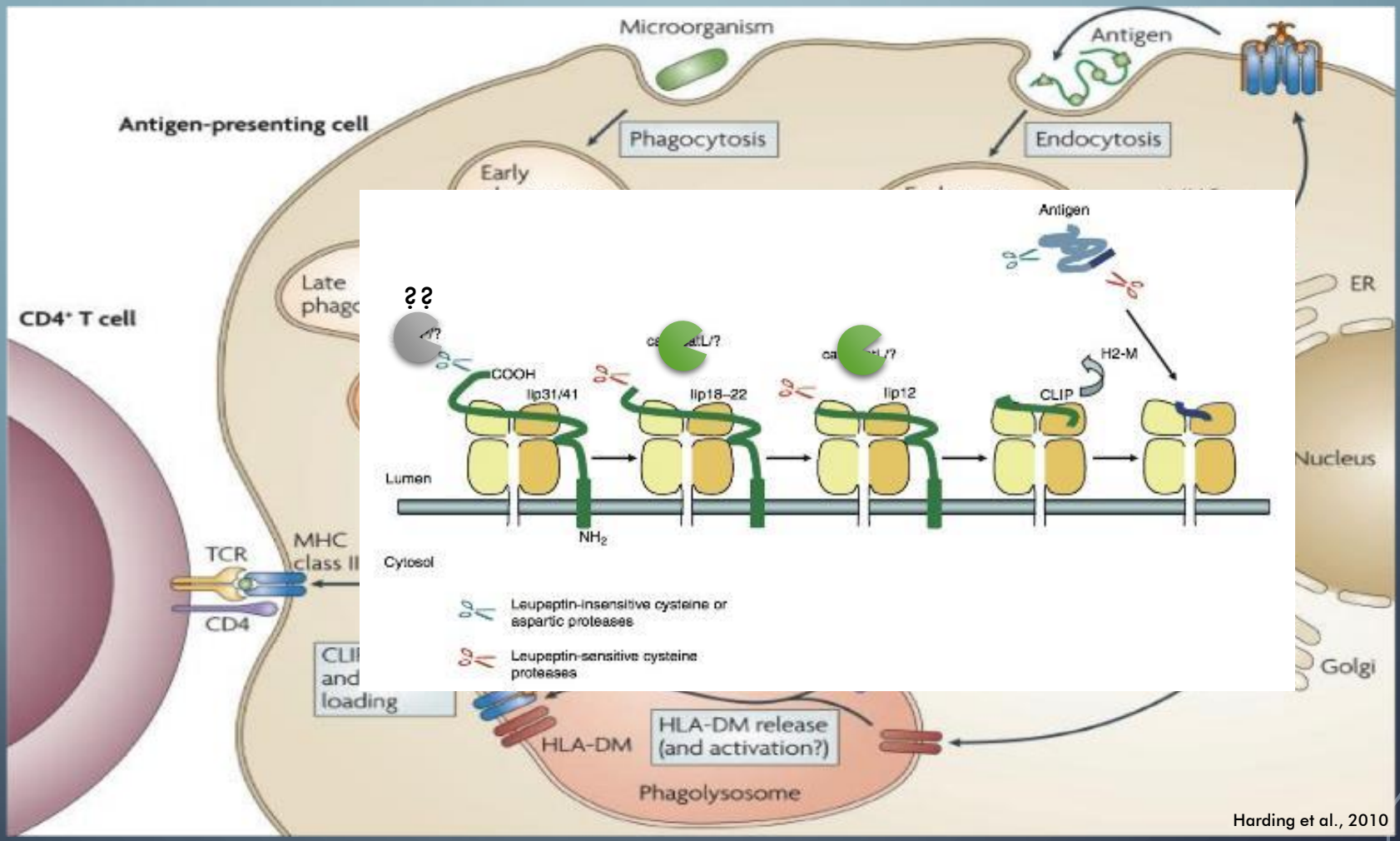
Harding et al., 2010



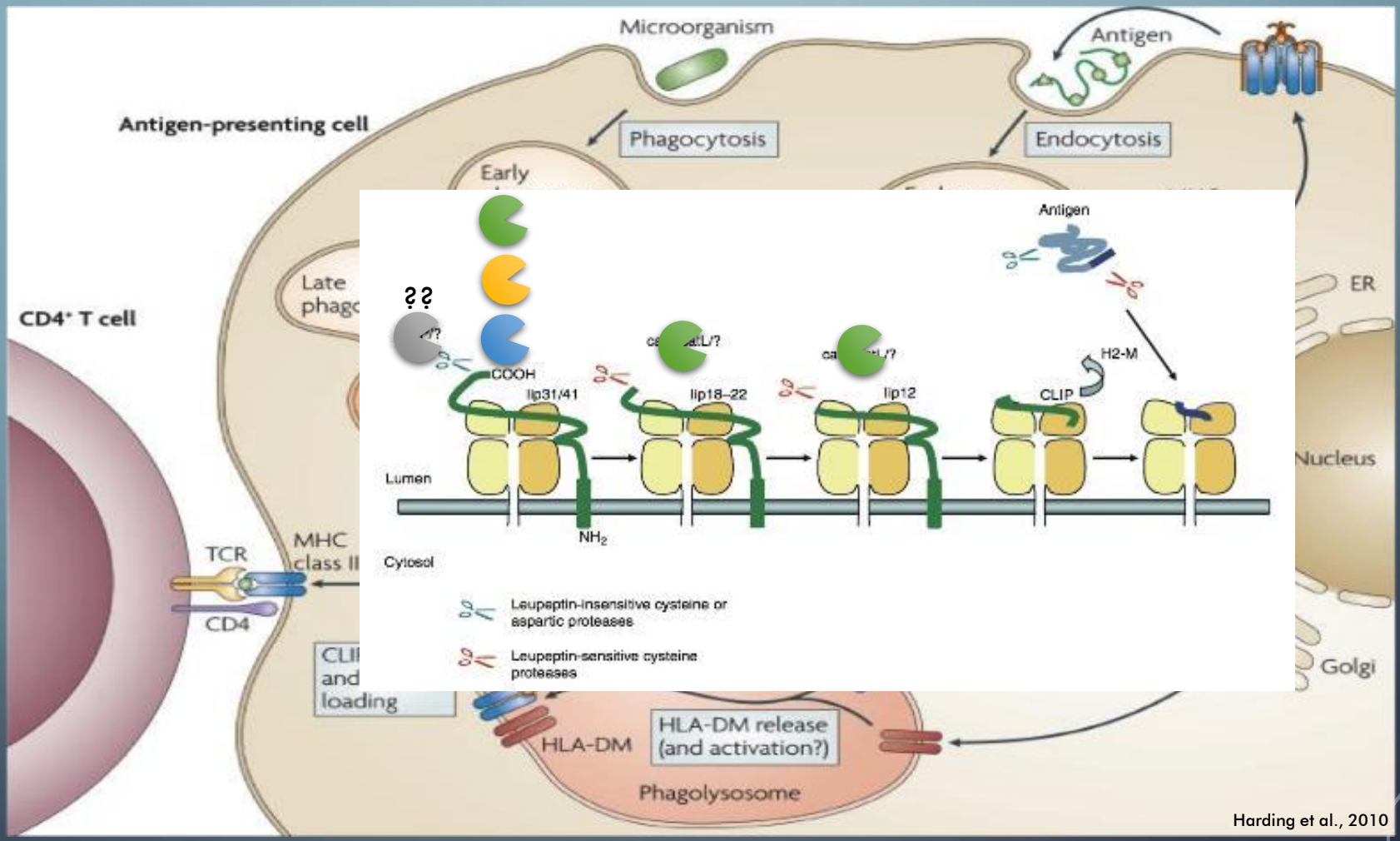
Harding et al., 2010



Harding et al., 2010



Harding et al., 2010



Harding et al., 2010

AVTOIMUNSKE BOLEZNI IN ALERGIJE

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-urjenje preživi le ¼ „vojakov“
-napake pri urjenju vodijo v avtoimuske bolezni

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-pretiran odziv imunskega sistema

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≠

-pretiran odziv imunskega sistema

„TAKE HOME“ SPOROČILO

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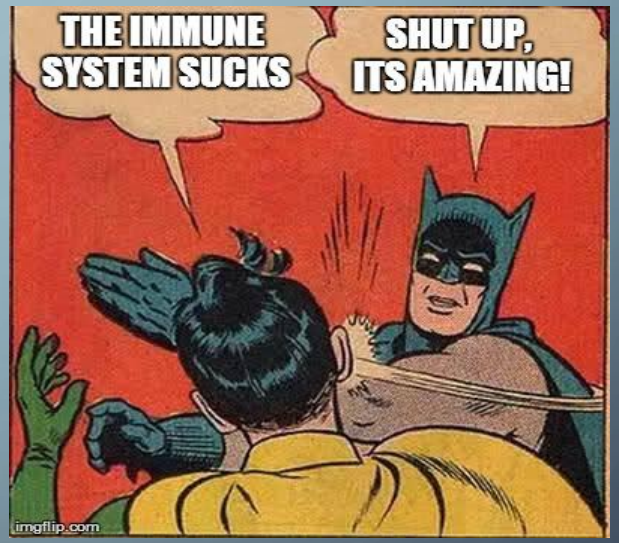


Hvala za pozornost ☺

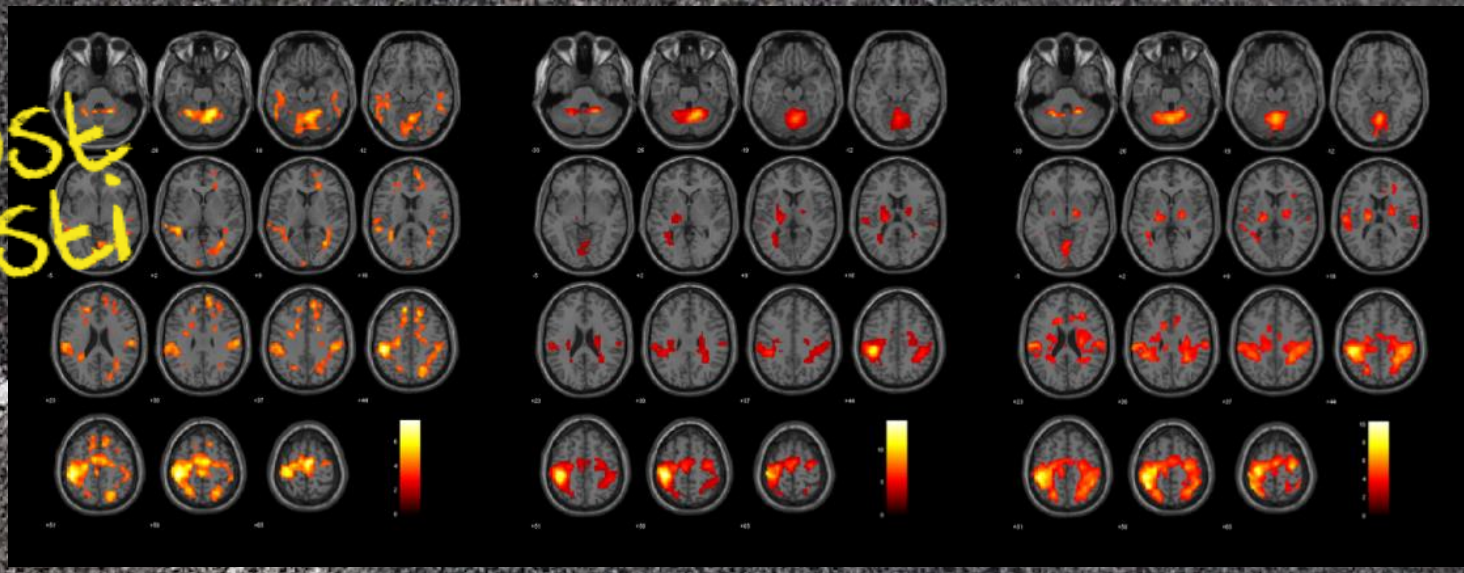
…kako bo potekalo glasovanje…

- Na črte vpišite **tri** najboljše tekmovalce samo z zaporedno številko
- Glasovnice poberemo in preštejemo
- Komisija oceni tekmovalce

…

Določimo zmagovalca!

Znanost na cesti



5. oktober 2016 ob 19h, Kavarna Union

Bolezni možganov: izziv za družbo in znanost

doc. dr. Blaž Koritnik, UKC
Renata Dacinger, TV Slovenija

SATENA

Institut "Jožef Stefan" Ljubljana, Slovenija

Univerza v Ljubljani
Fakulteta za matematiko in fiziko

UstnaMedicina

KAVARNA UNION

vsak prvi **četrtek** v mesecu v Knjigarni Konzorcij

6. oktober 2016 ob 18h

O zdravljenju živali z matičnimi celicami

Luka Mohorič, Animacel d.o.o.
Renata Dacinger, TV Slovenija

SATENA