

# 1



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**Istorijski osvrt**  
**Osobine biljaka**  
**Eukarioti vs. prokarioti**  
**Biljna ćelija**  
**Organizacija tijela biljke**

# Antički filozofi o biljkama



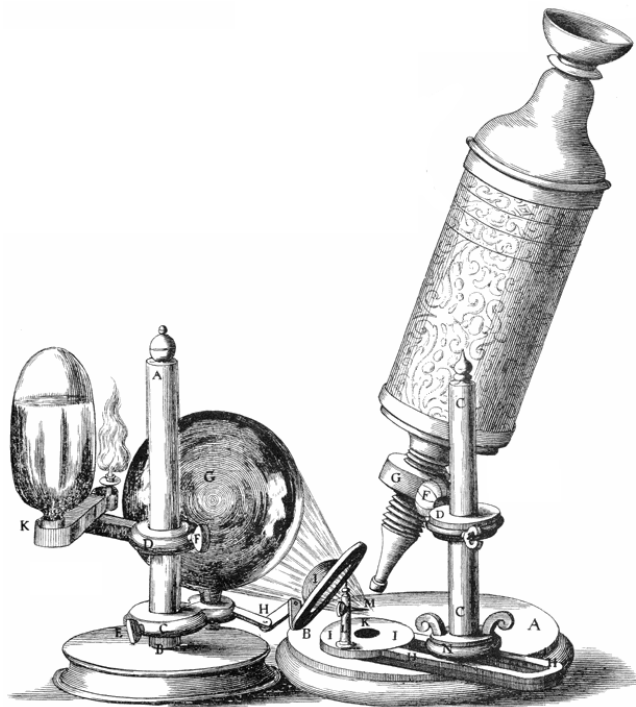
# Teofrast: otac botanike



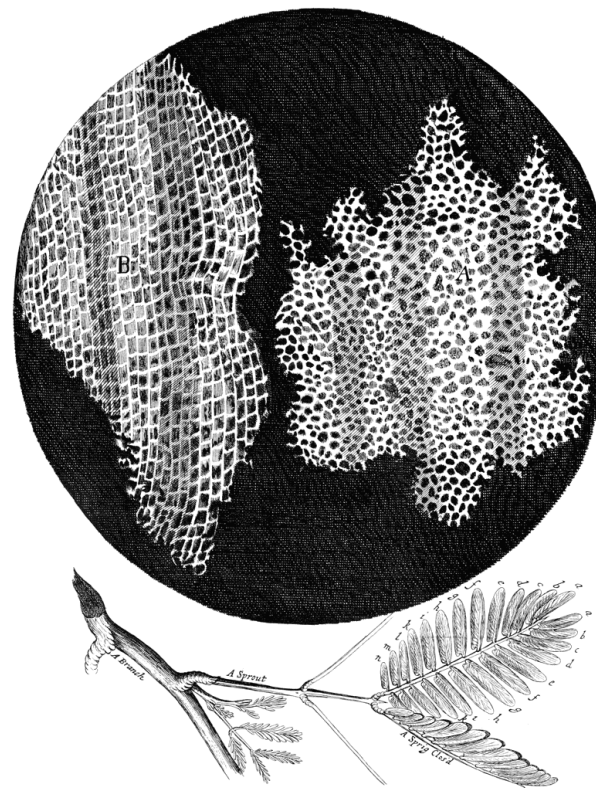
# Dioskoridova *De Materia Medica*



# Otkriće ćelije



Mikroskop Roberta Huka



Hukov prikaz ćelija plute

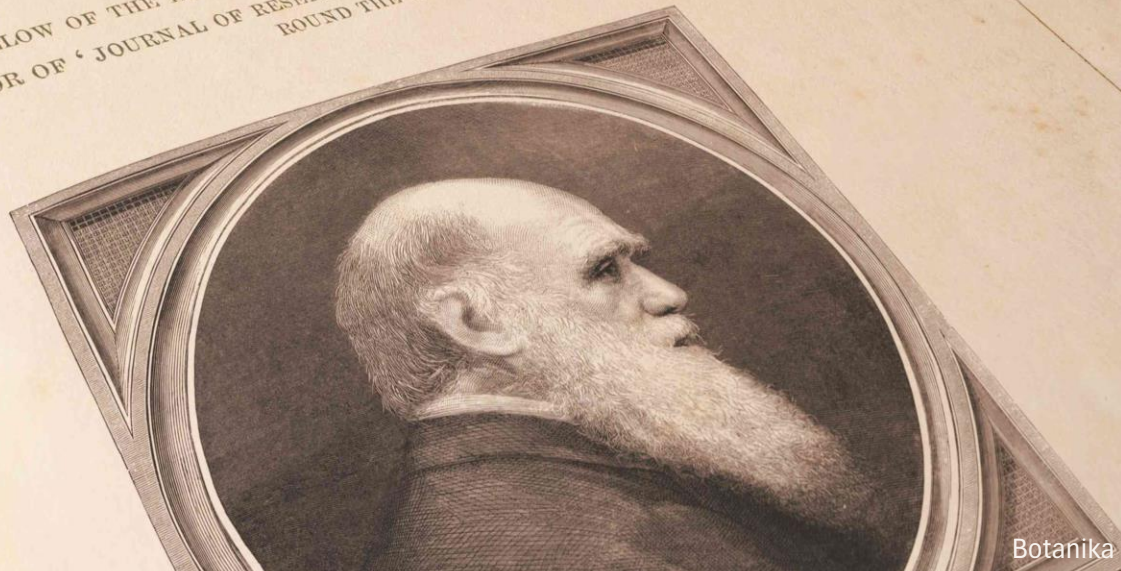
# Taksonomija i Karl Line



# Darvin i filogenetska sistematika

ON  
**THE ORIGIN OF SPECIES**  
BY MEANS OF NATURAL SELECTION,

By CHARLES DARWIN, M.A.,  
FELLOW OF THE ROYAL, GEOLOGICAL, LINNEAN, ETC., SOCIETIES;  
AUTHOR OF 'JOURNAL OF RESEARCHES DURING H. M. S. BEAGLE'S VOYAGE  
ROUND THE WORLD.'

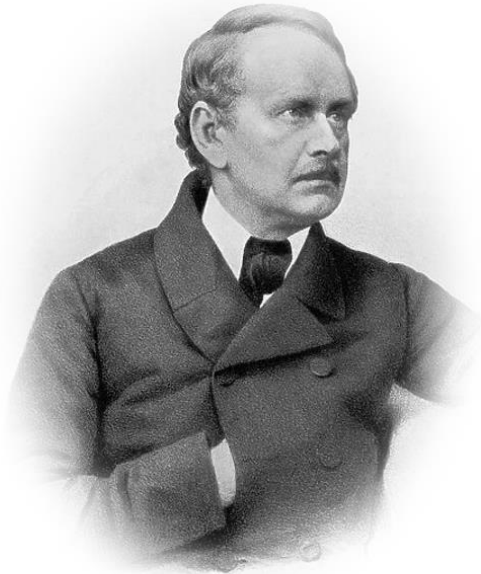


# Osobine biljaka





# Ćelijska teorija



**Matijas  
Šlajden**

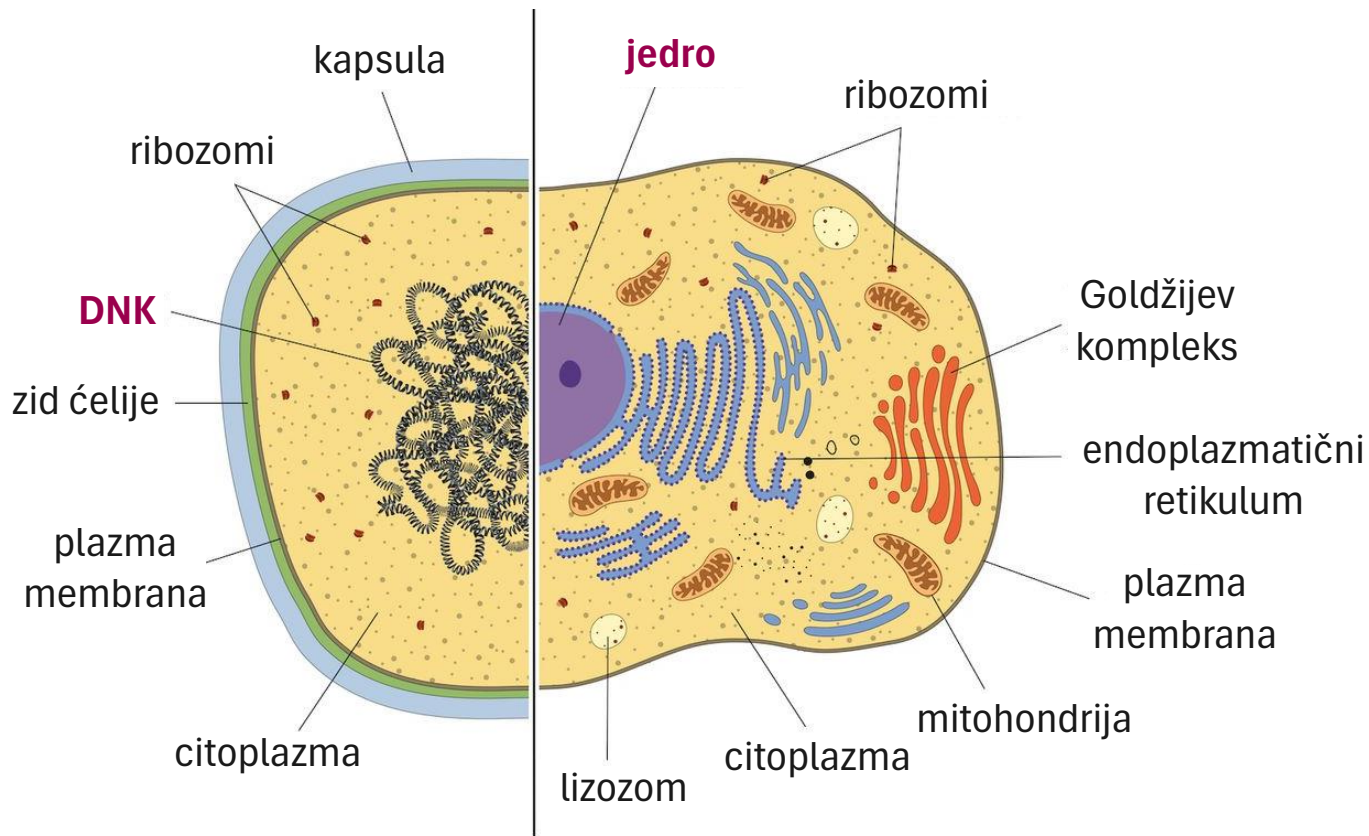


**Teodor  
Švan**

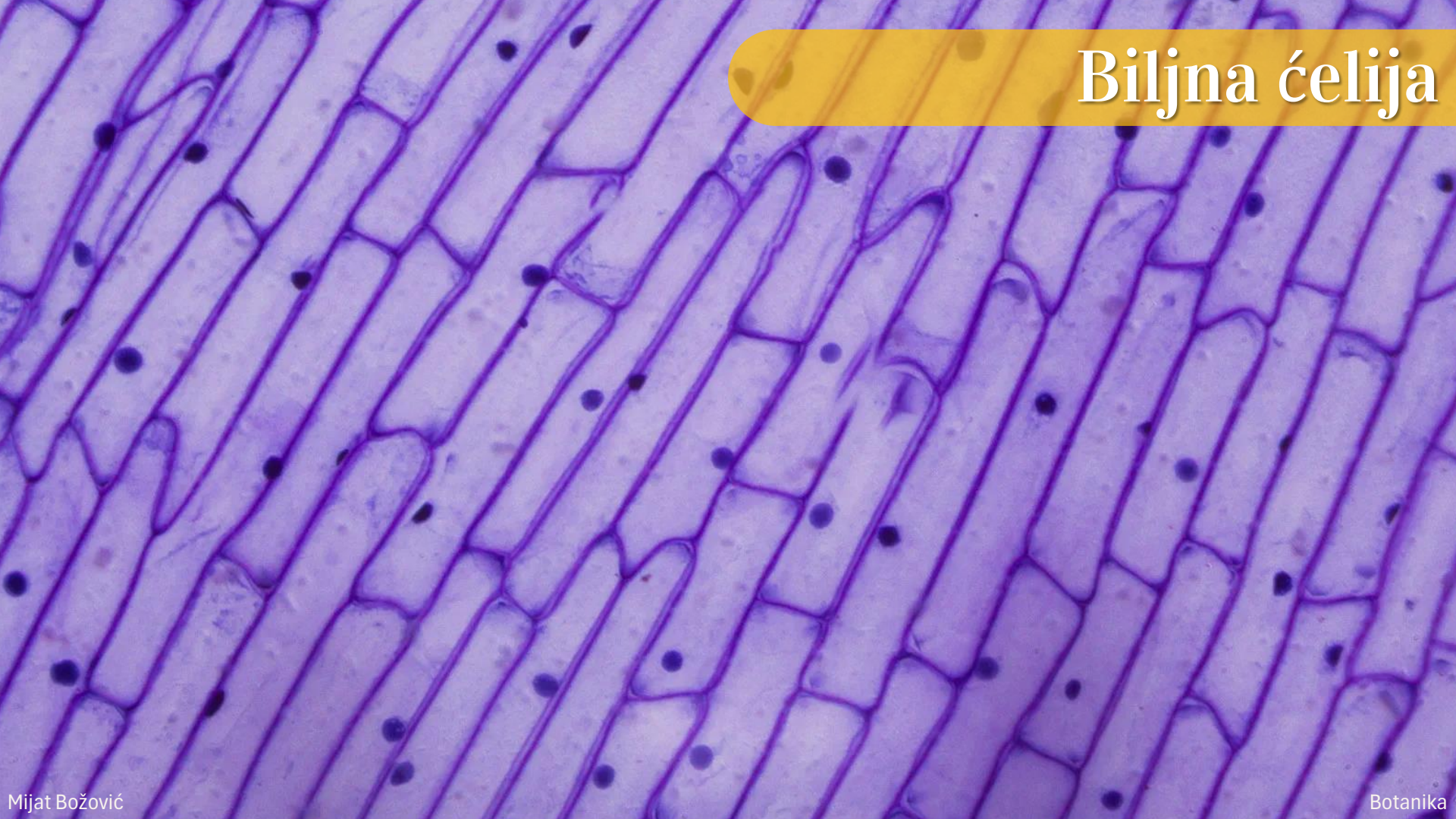


**Rudolf  
Virhov**

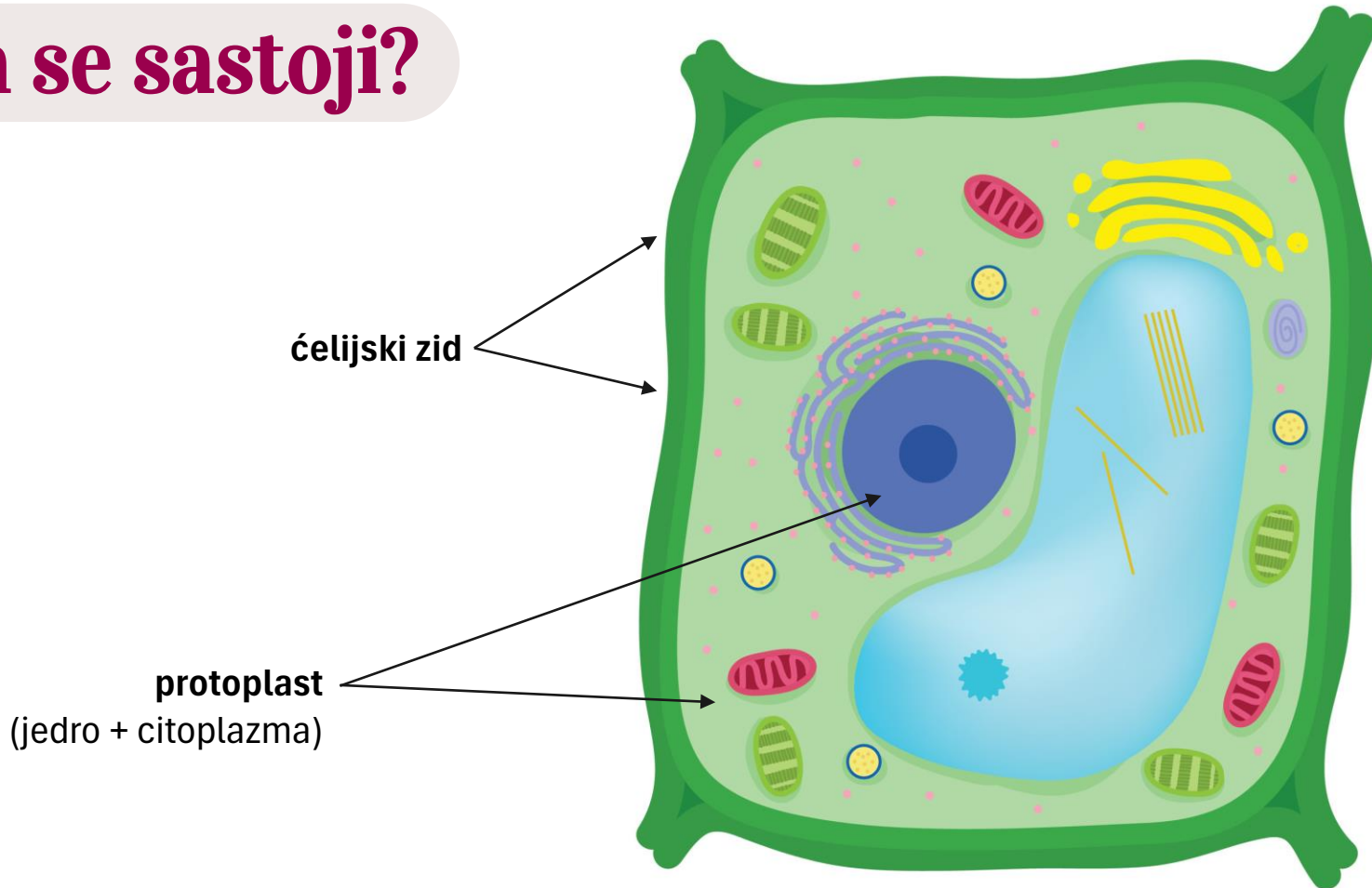
# Prokarioti vs. eukarioti



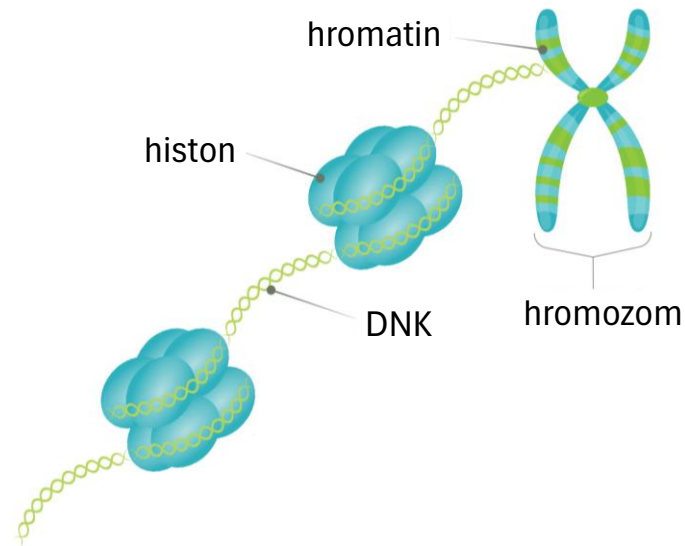
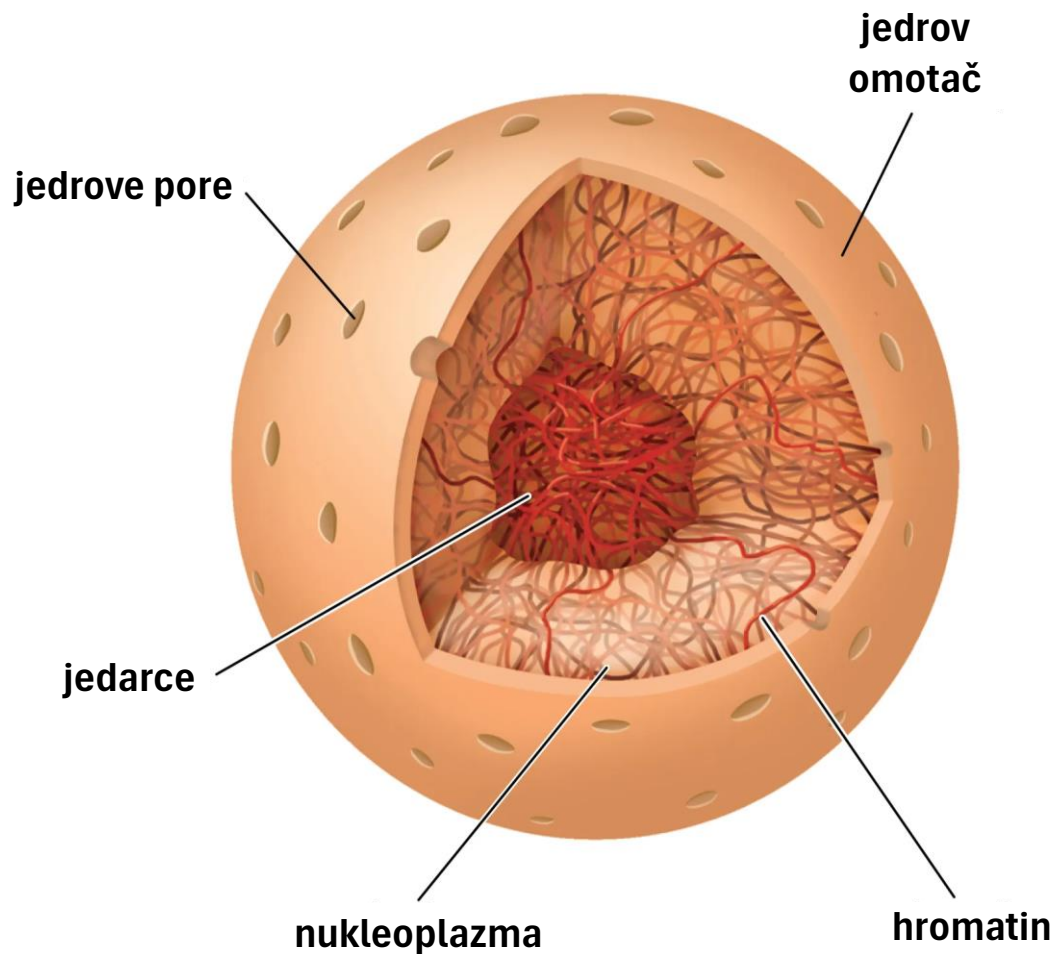
# Biljna ćelija



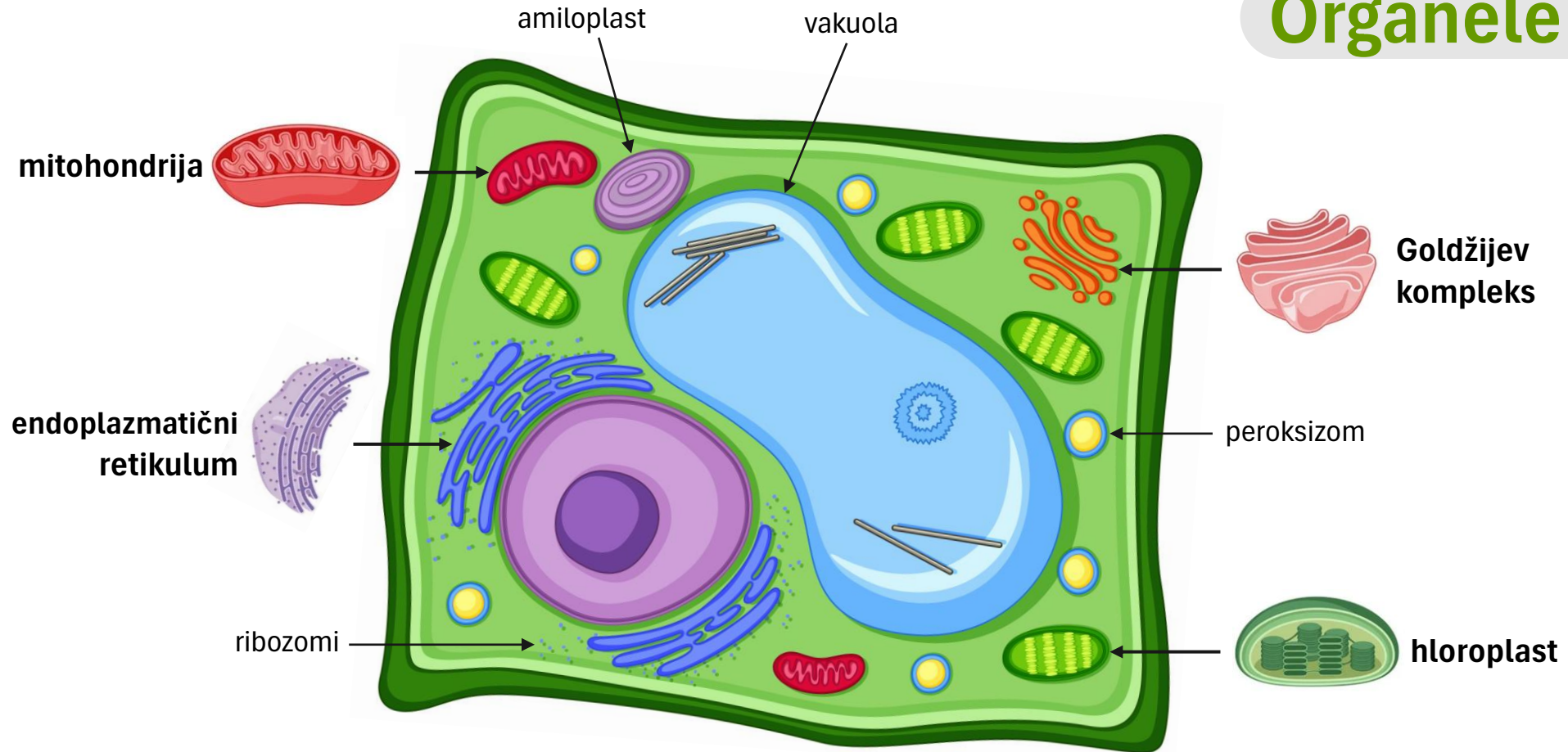
# Od čega se sastoji?



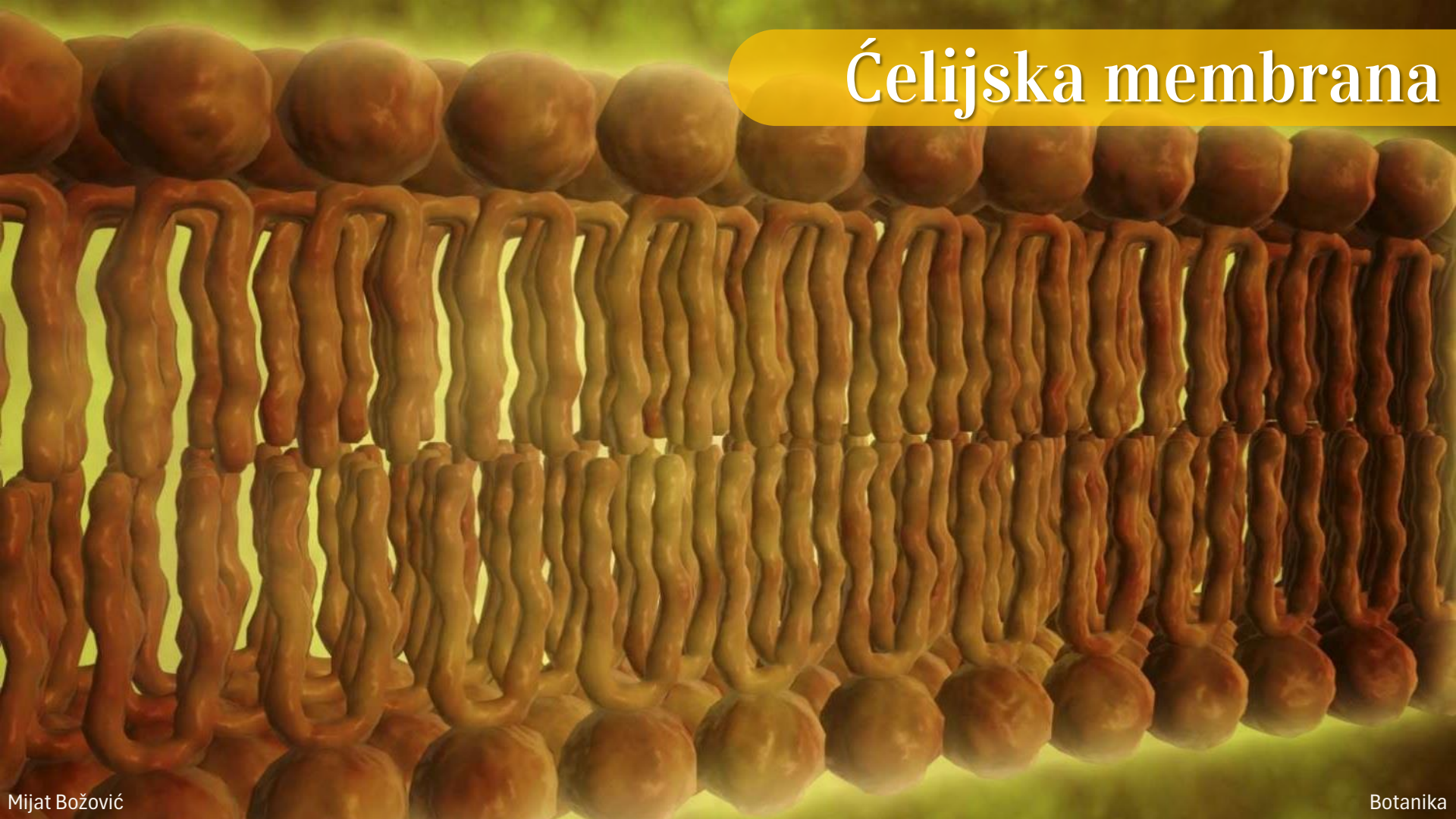
# Jedro



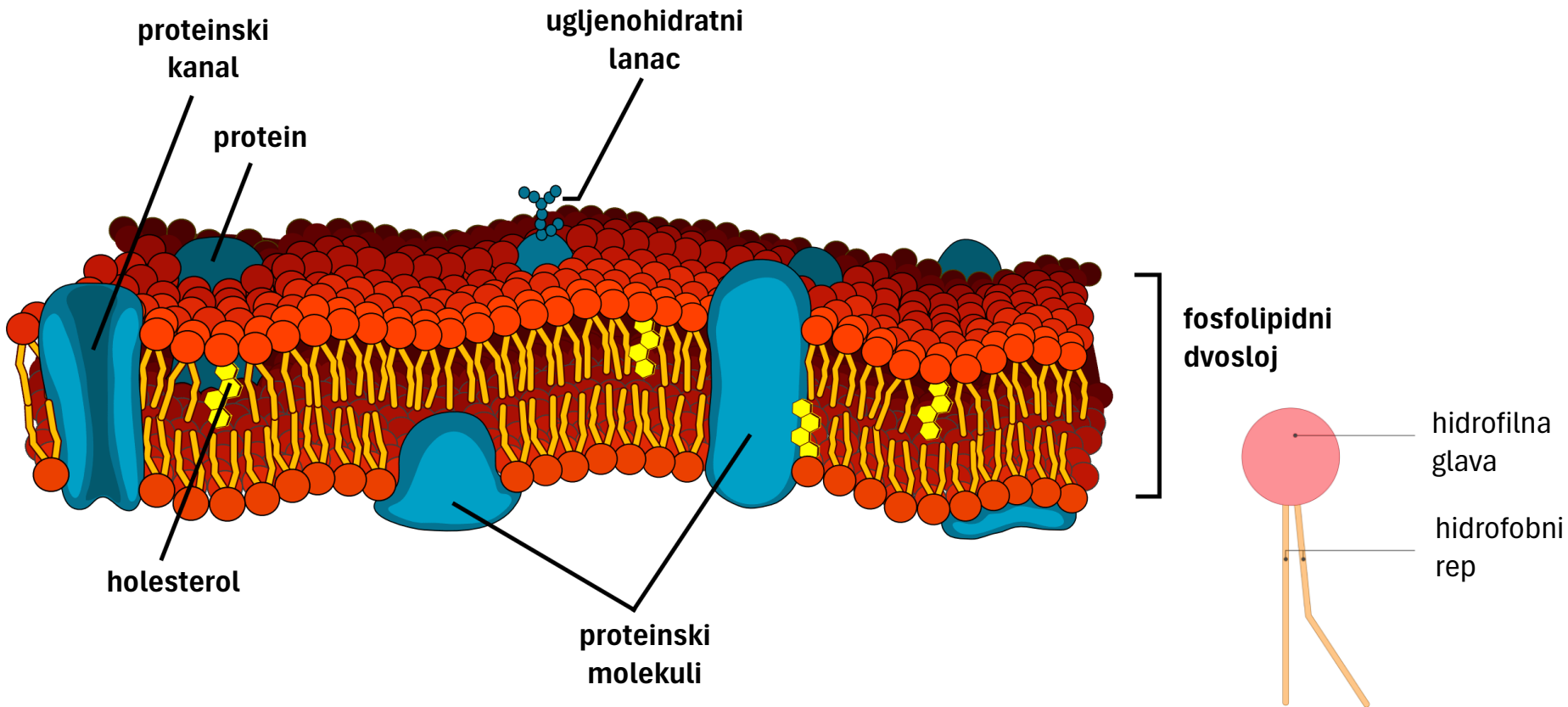
# Organele



# Ćelijska membrana

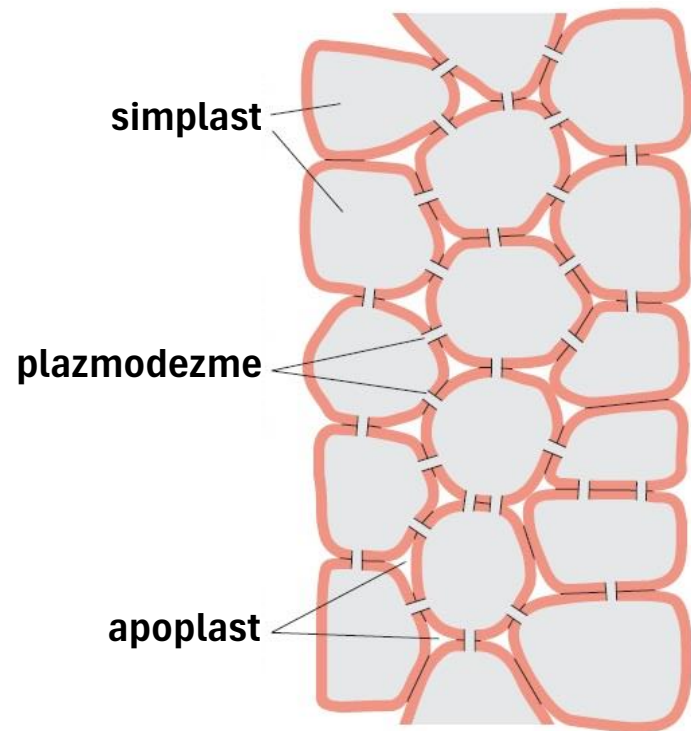
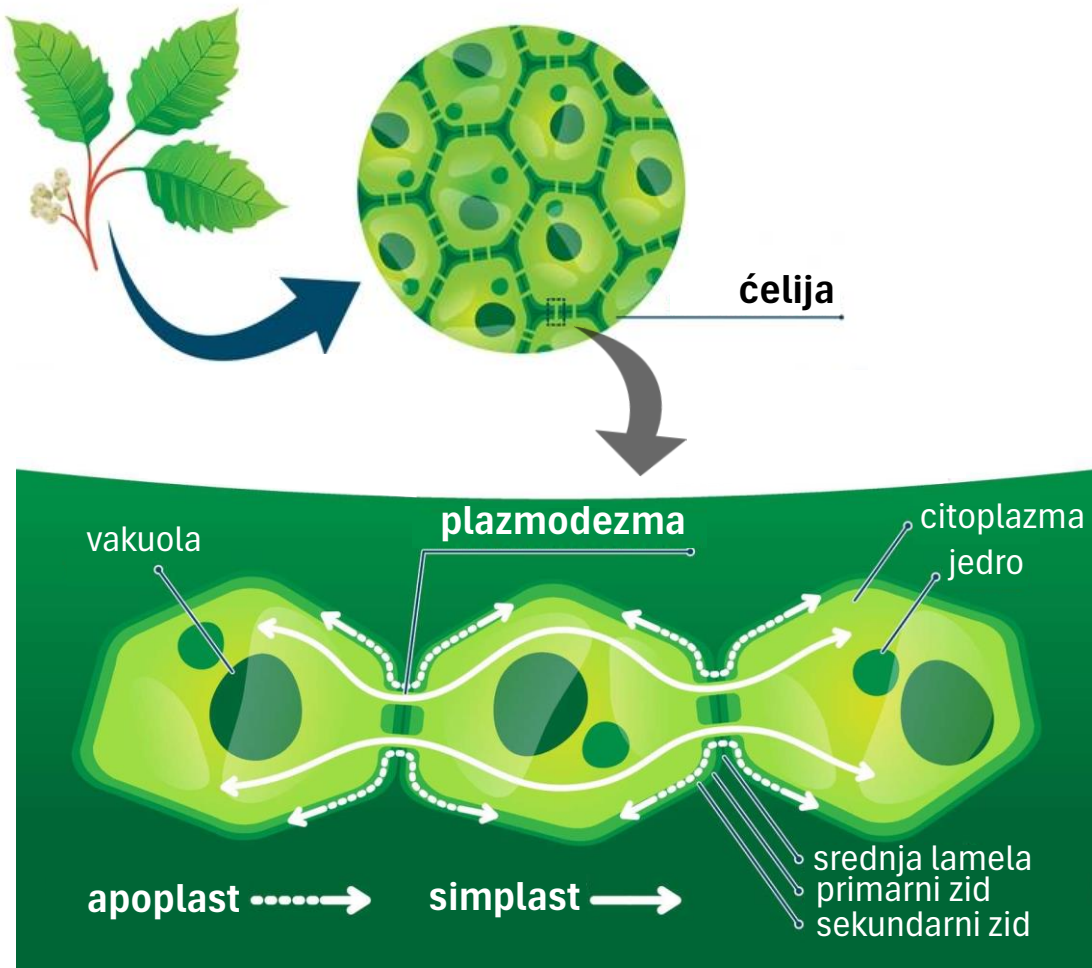


# Grada plazmaleme

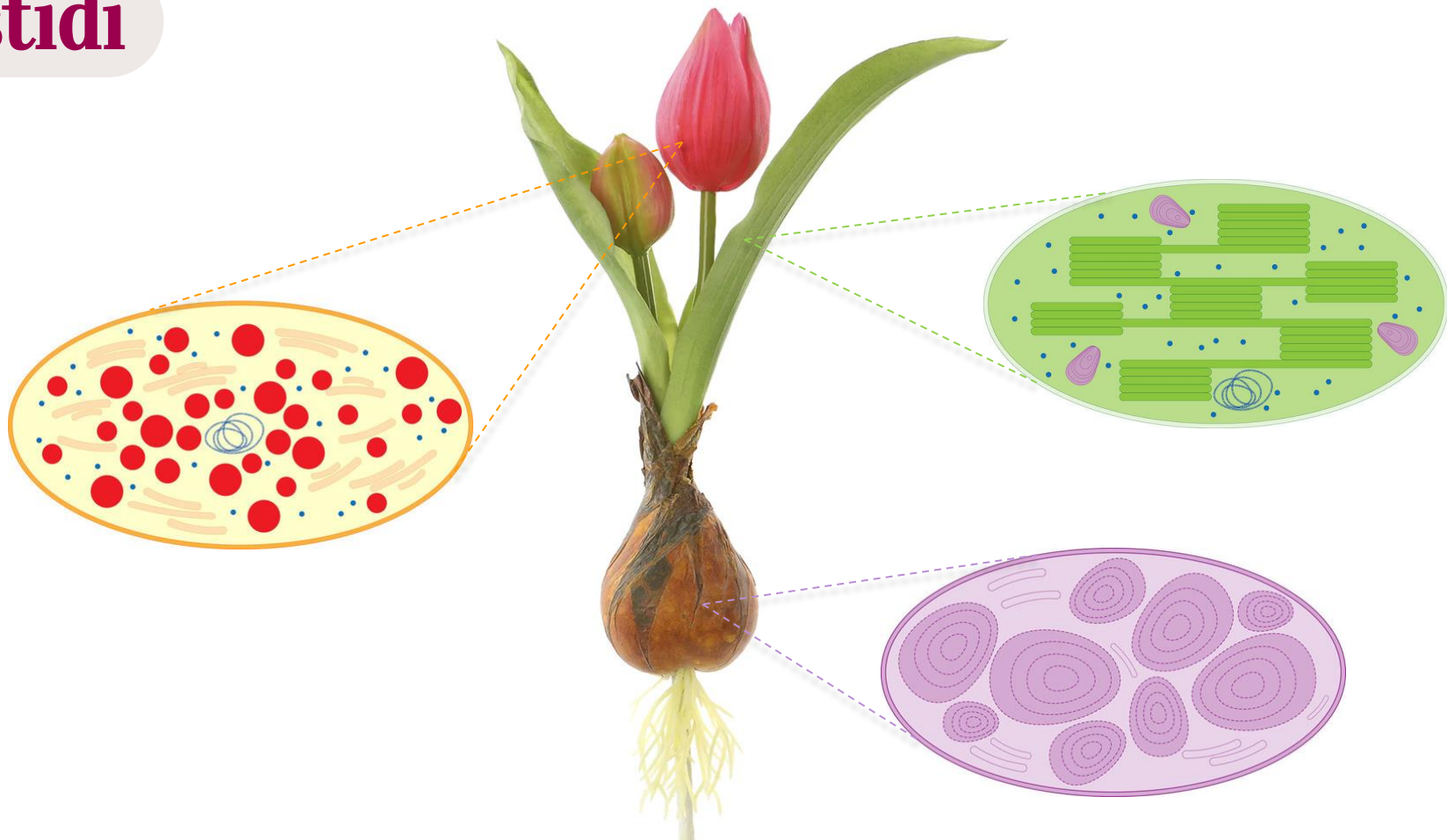




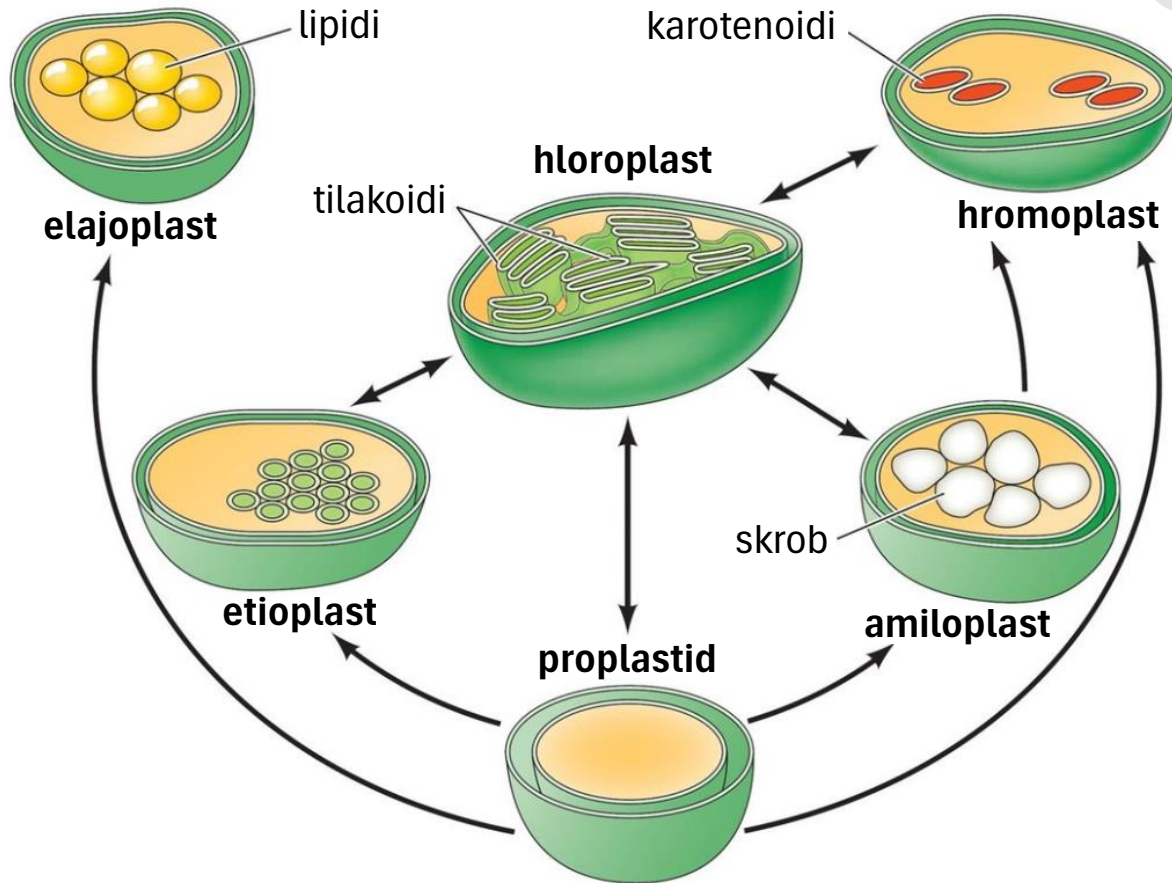
# Plazmodezme



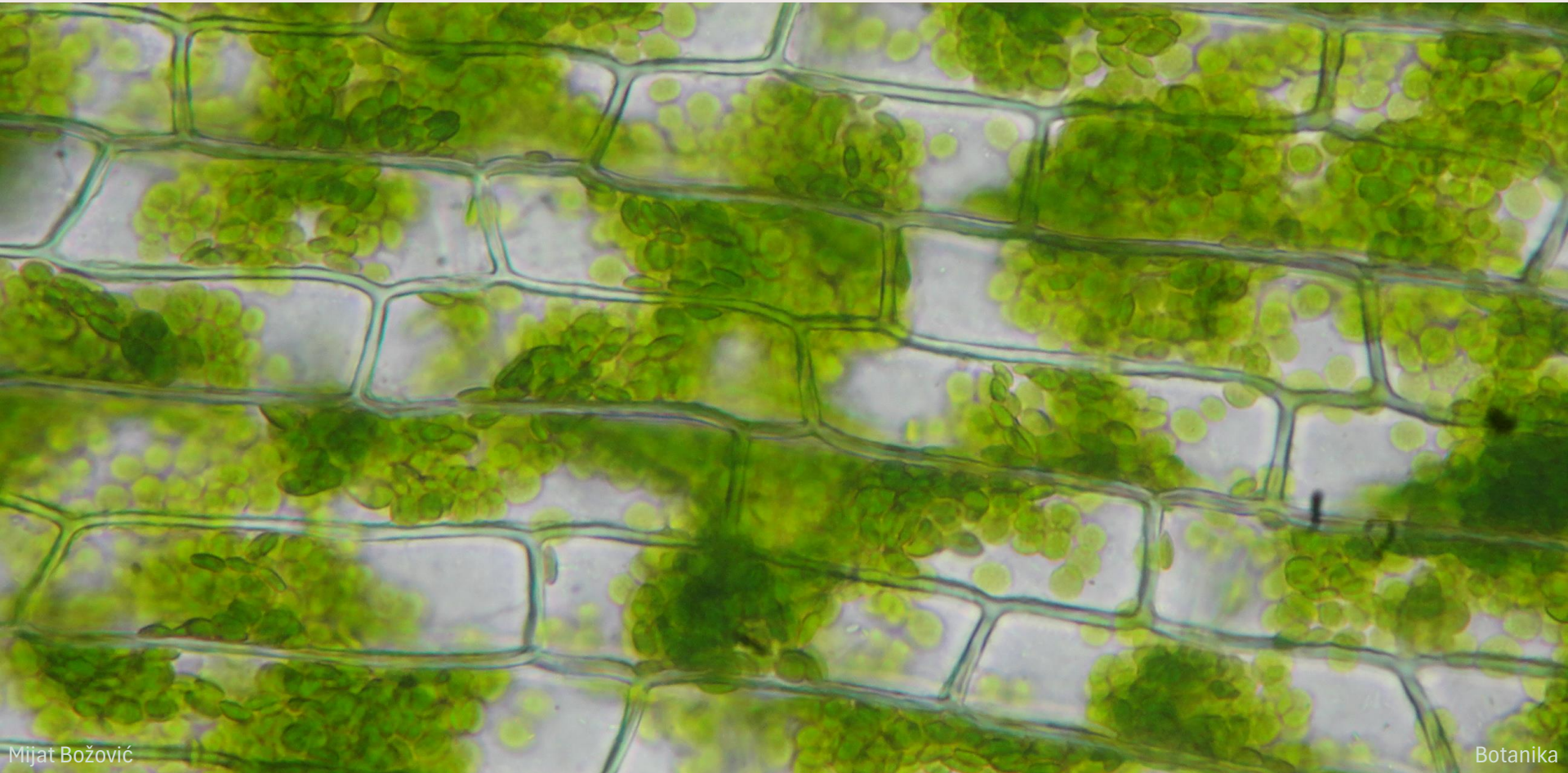
# Plastidi



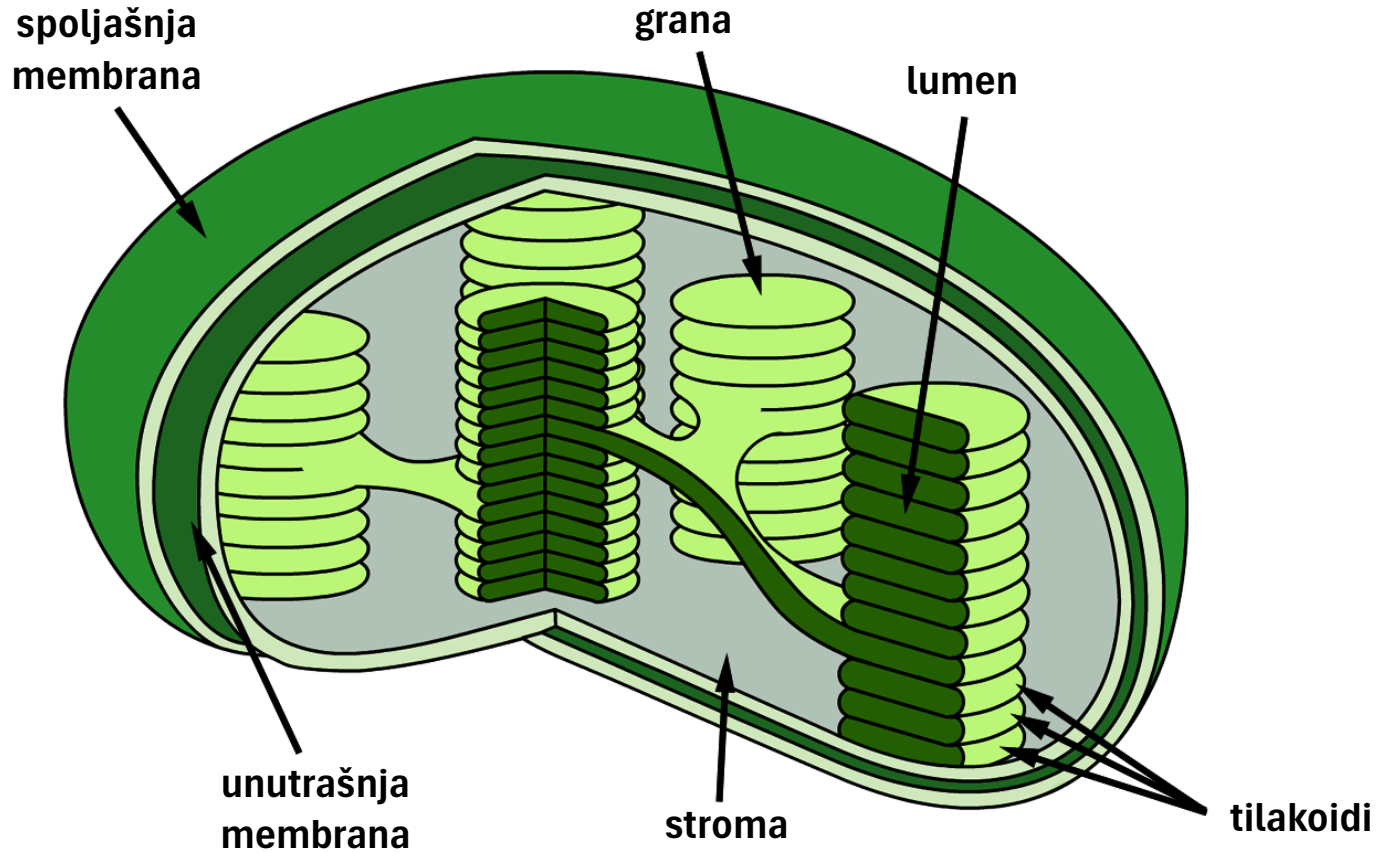
# Nastanak plastida



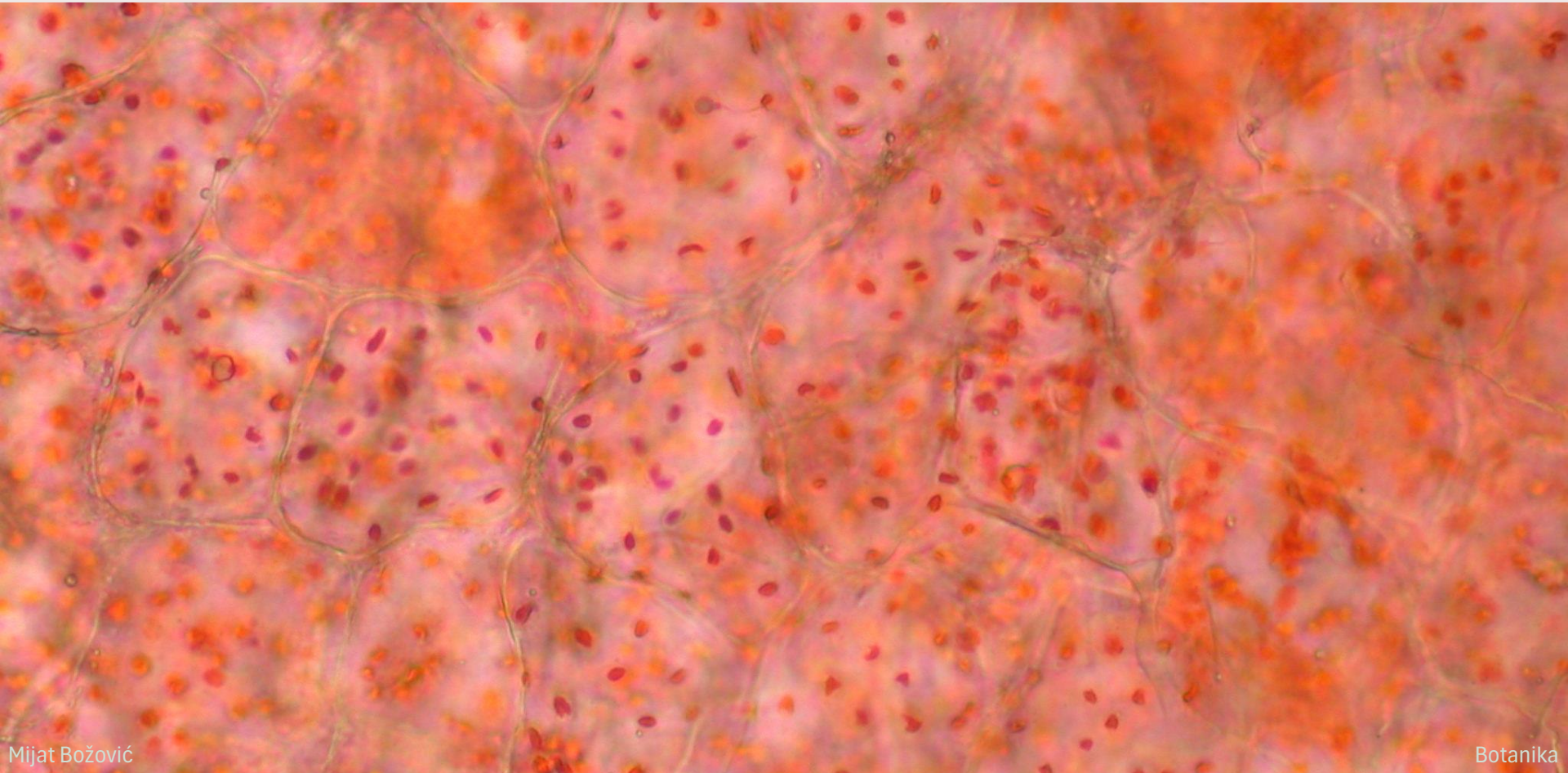
# Hloroplasti



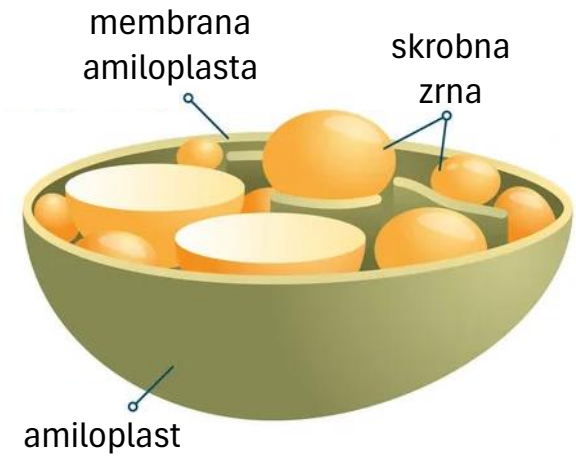
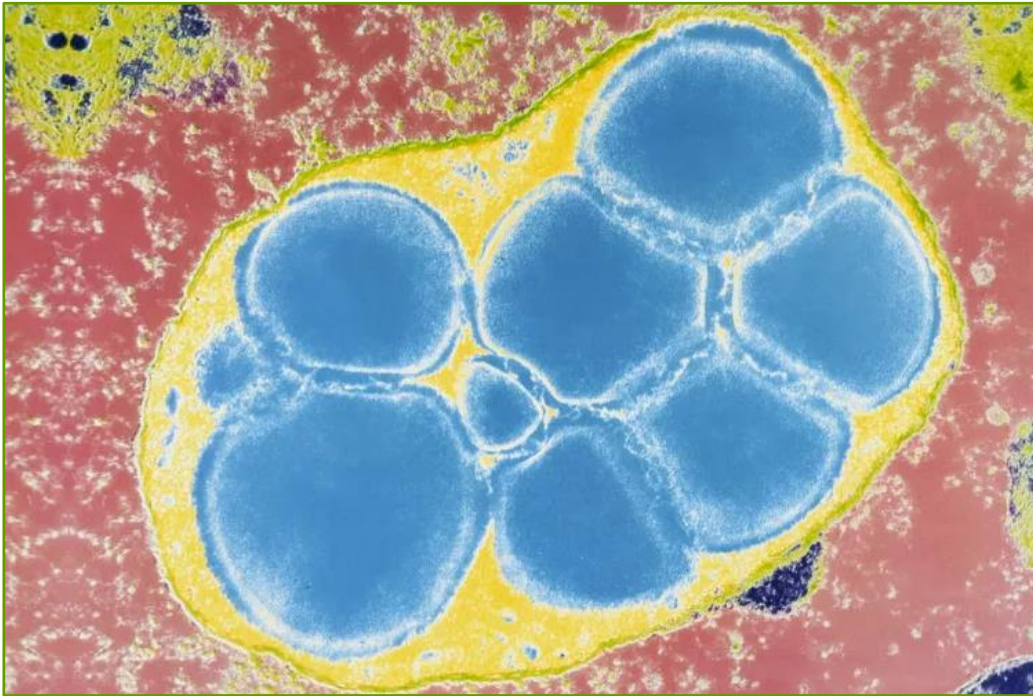
# Model hloroplasta



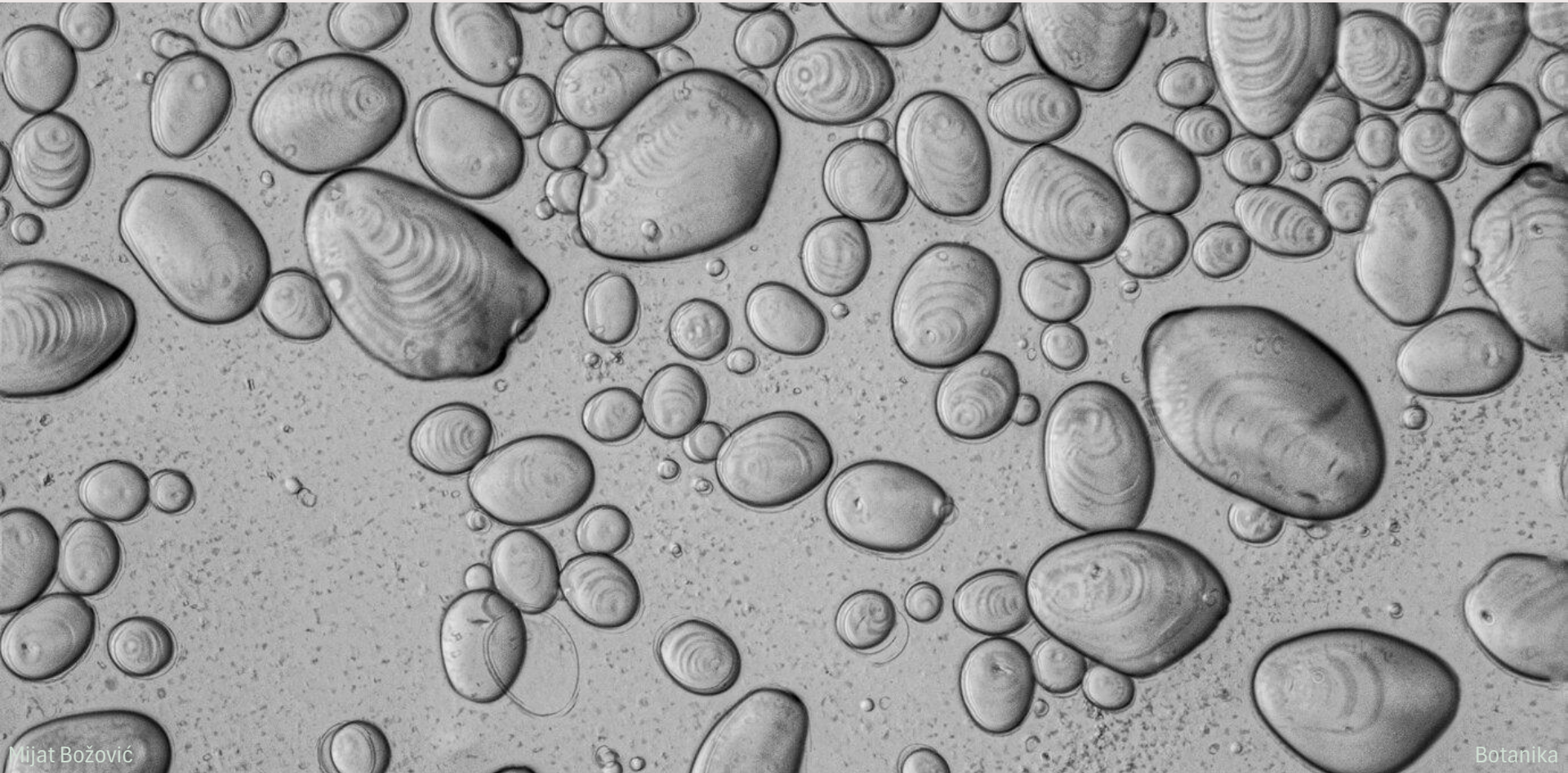
# Hromoplasti



# Amiloplasti

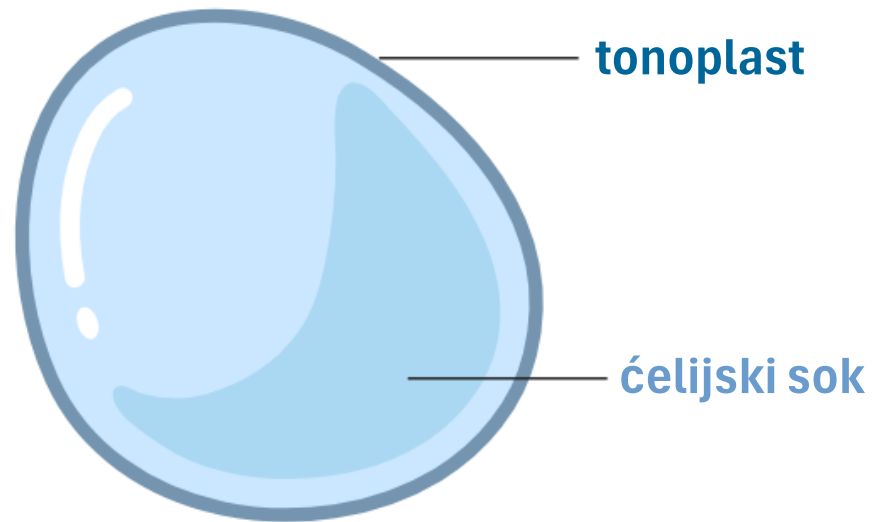
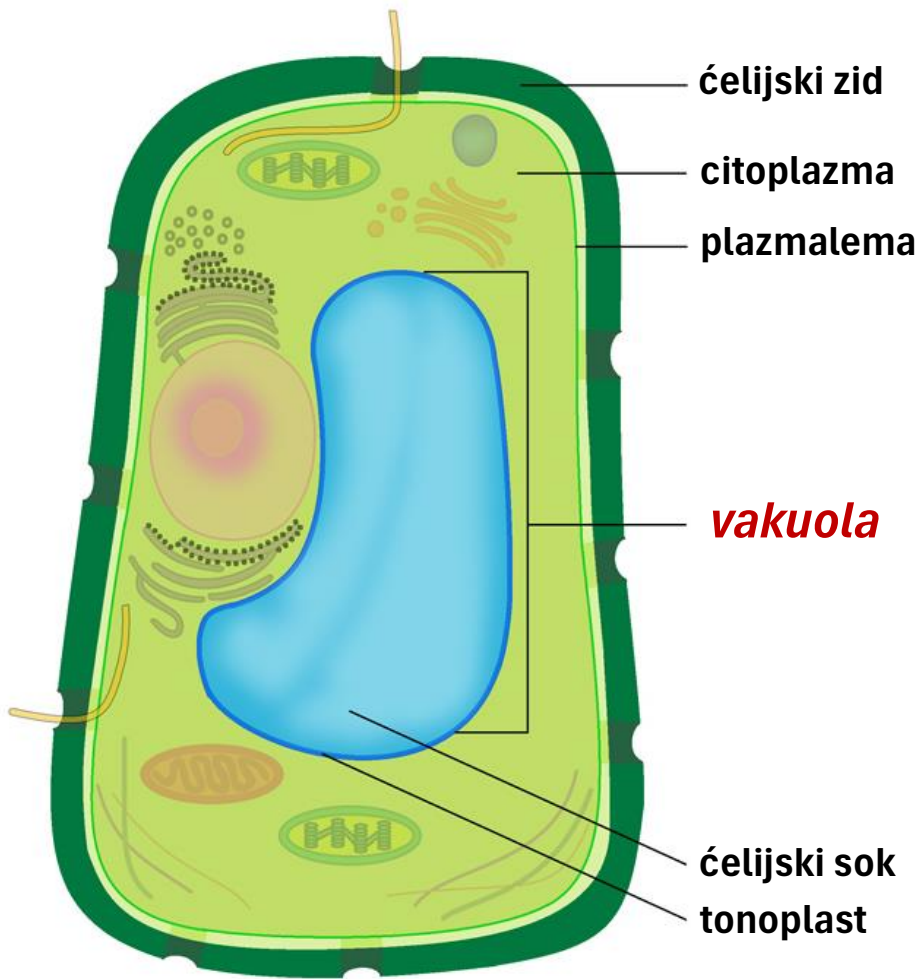


# Skrobna zrna

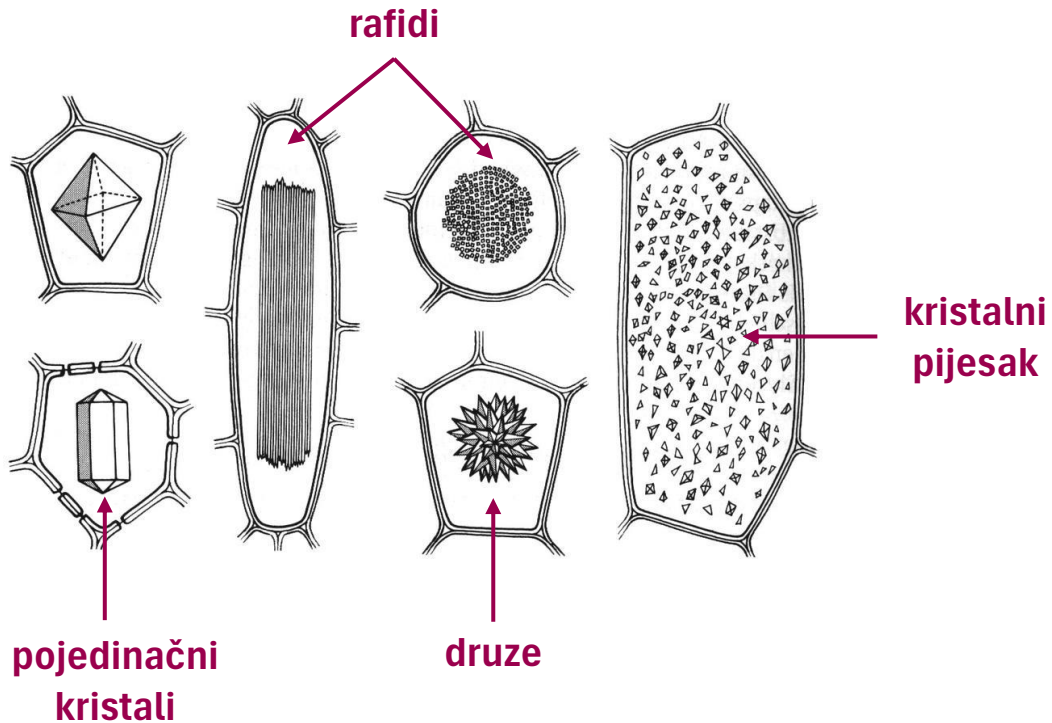
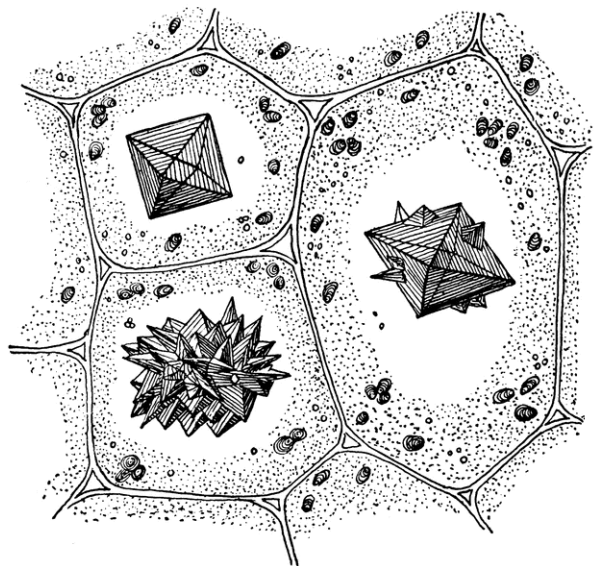


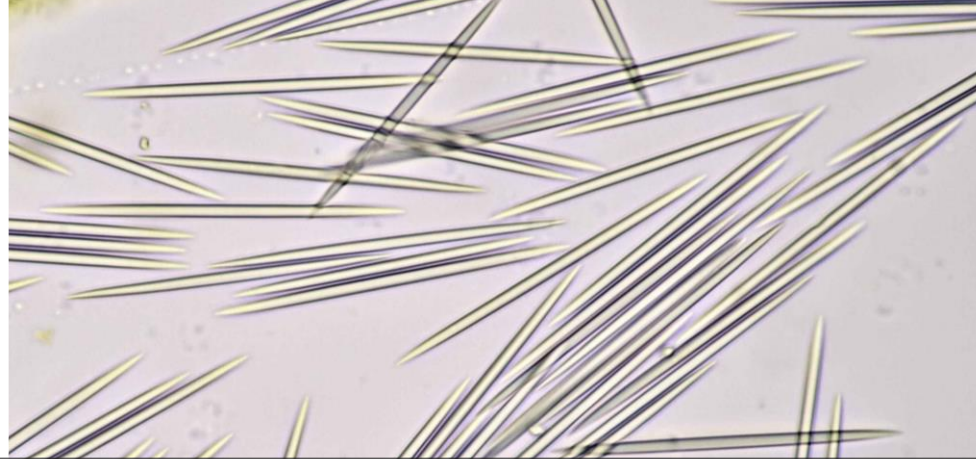
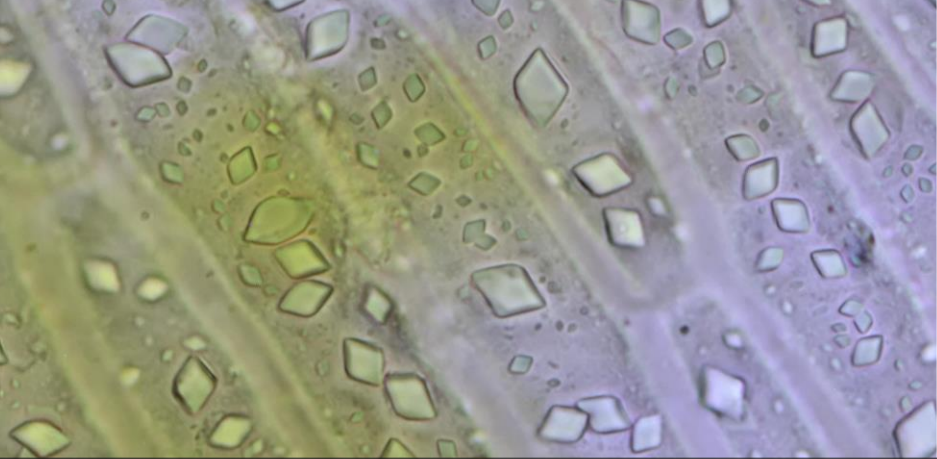


# Vakuola



# Kristali Ca-oksalata

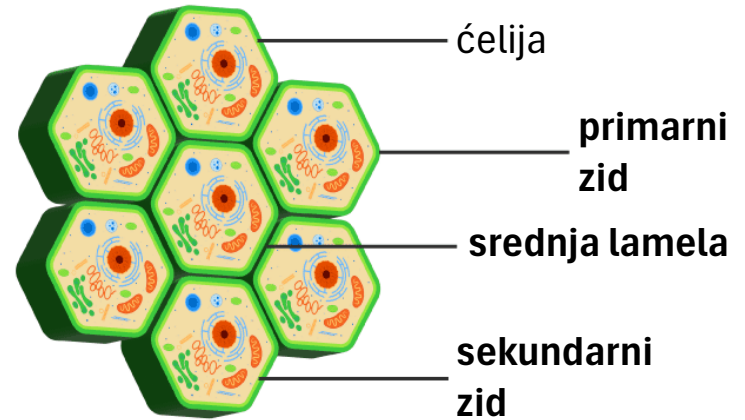
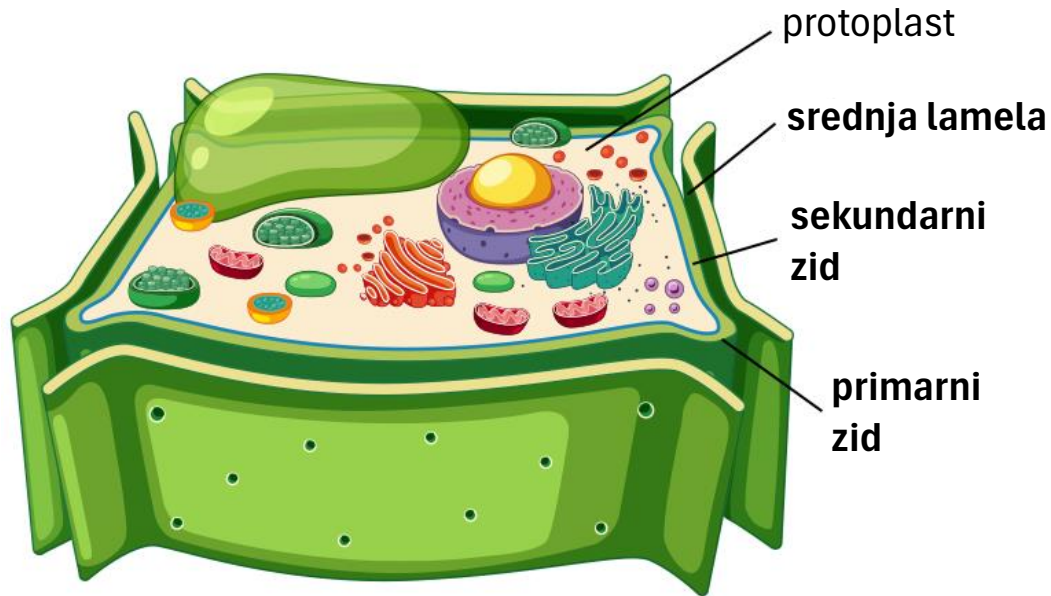




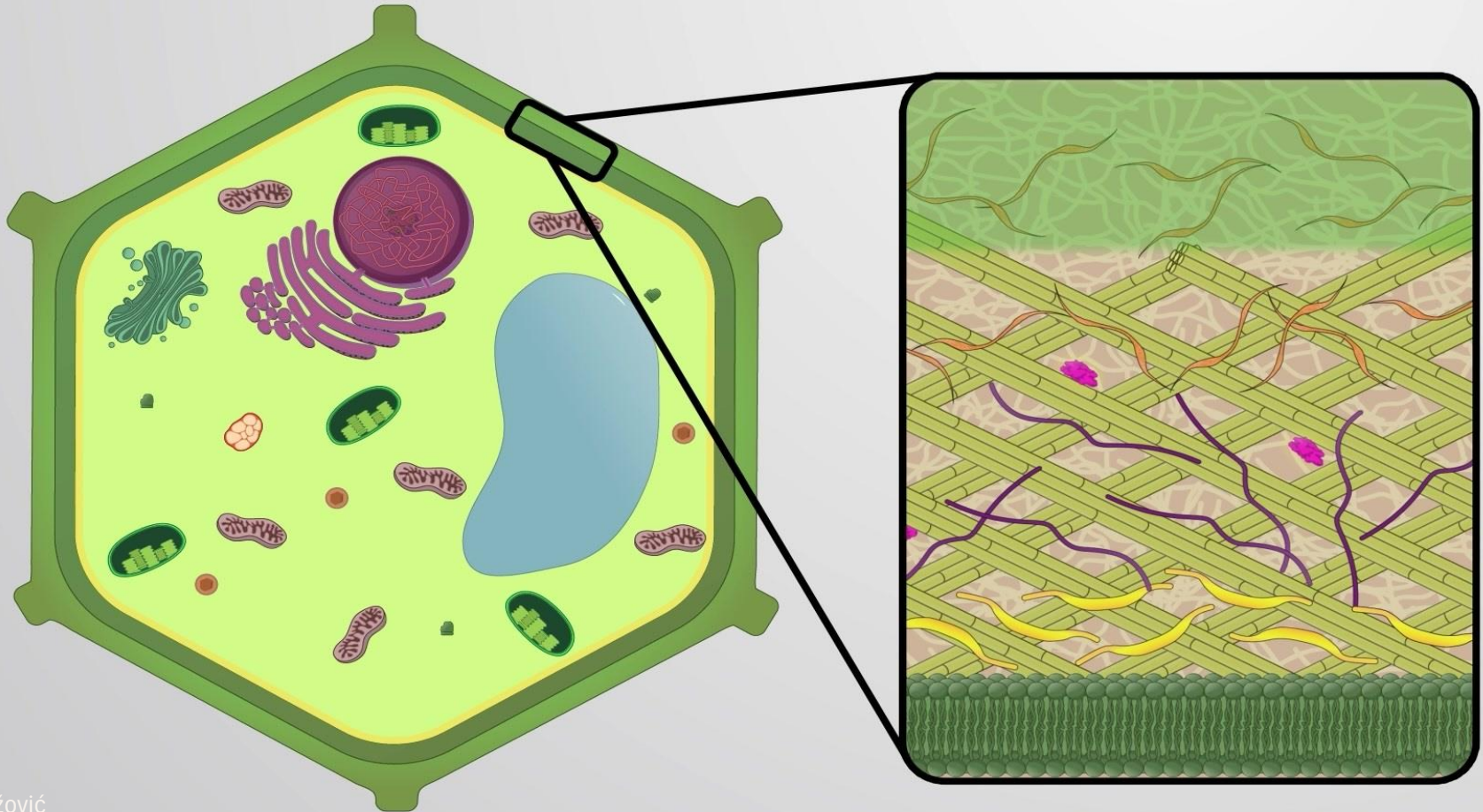
# Ćelije sa kristalima Ca-oksalata



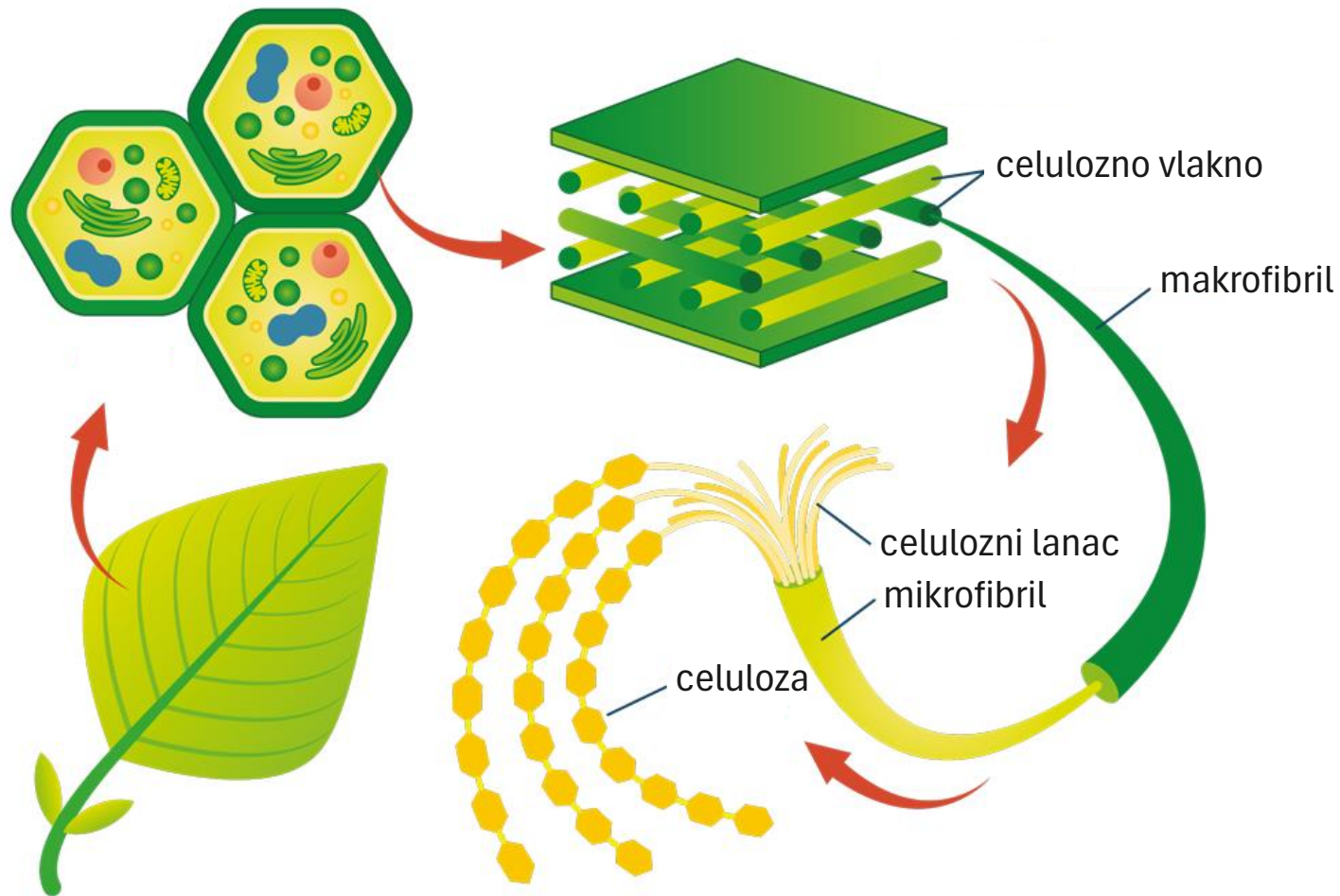
# Ćelijski zid



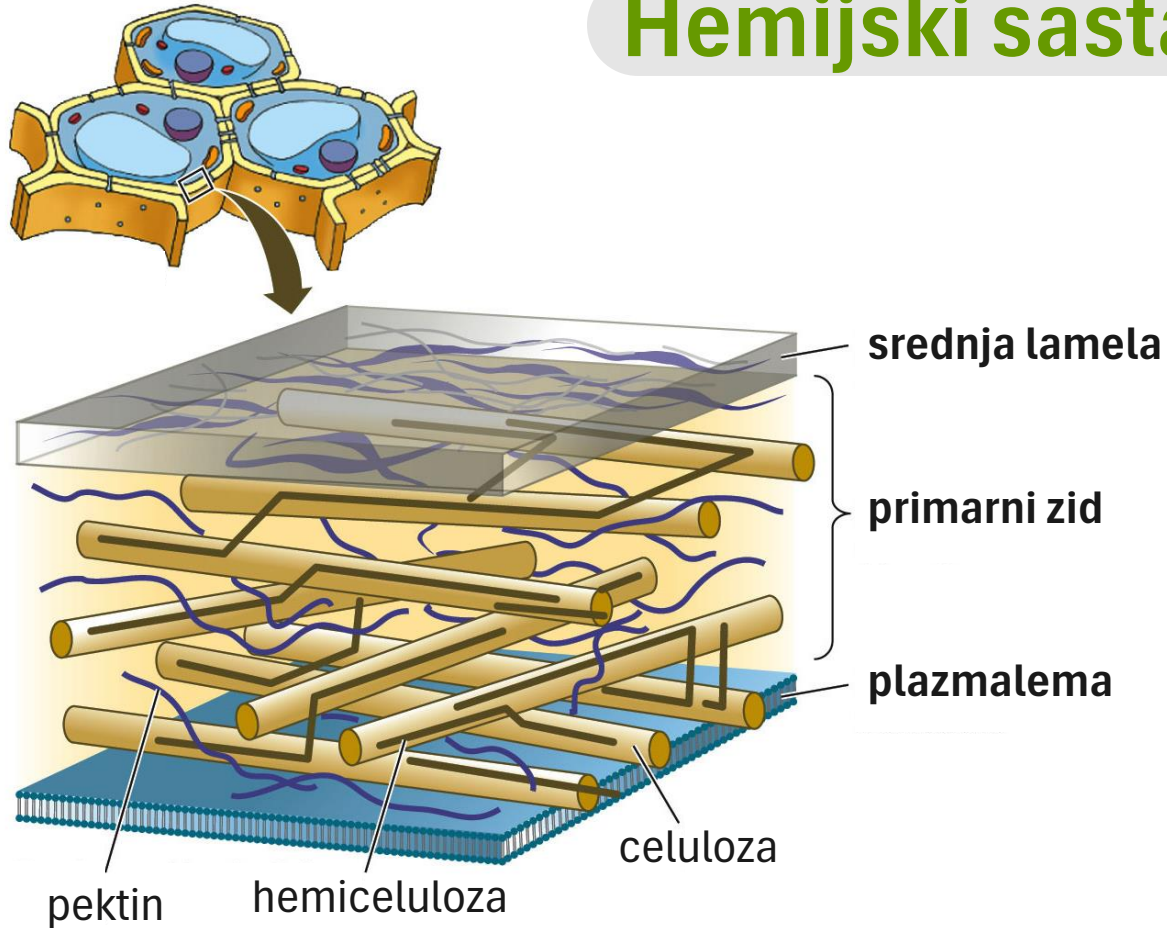
# Zid je holopermeabilan



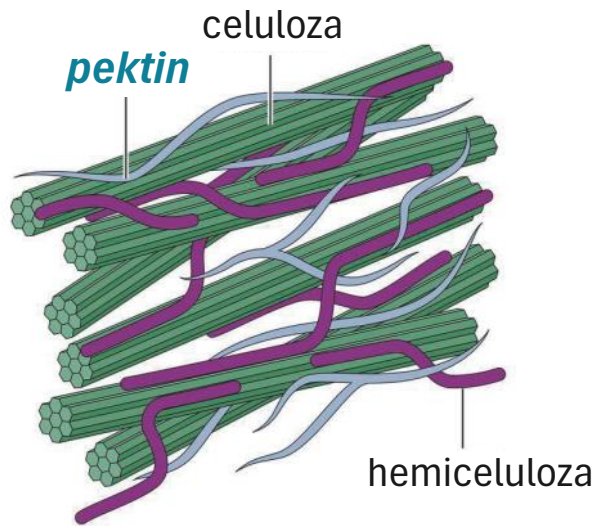
# Celuloza



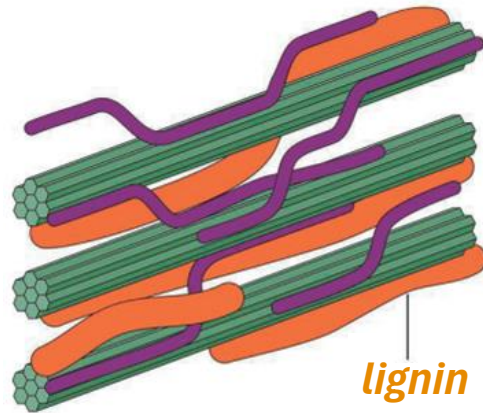
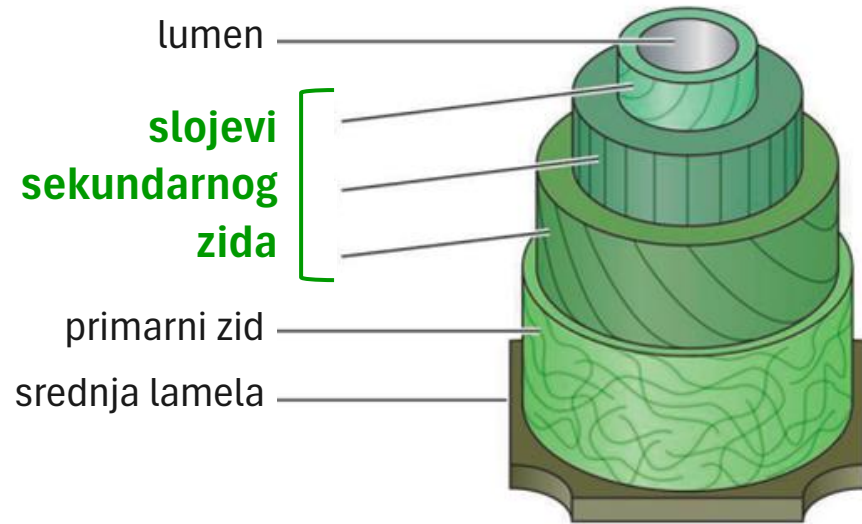
# Hemijski sastav i slojevitost



# Sekundarni zid



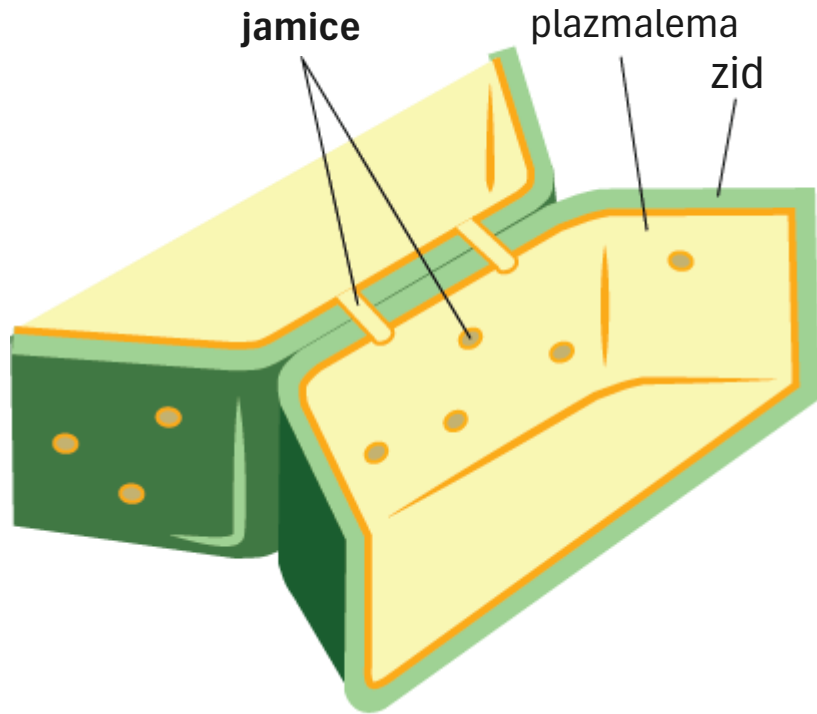
*primarni zid*



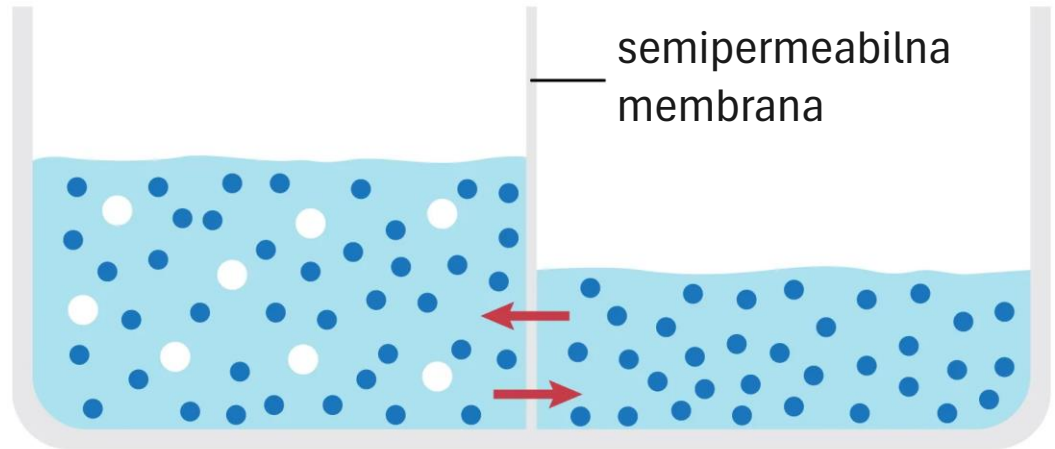
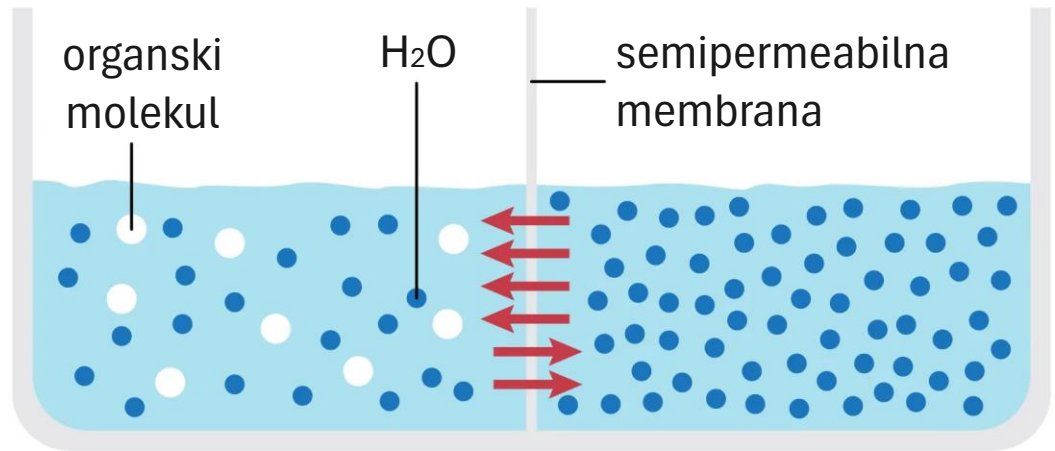
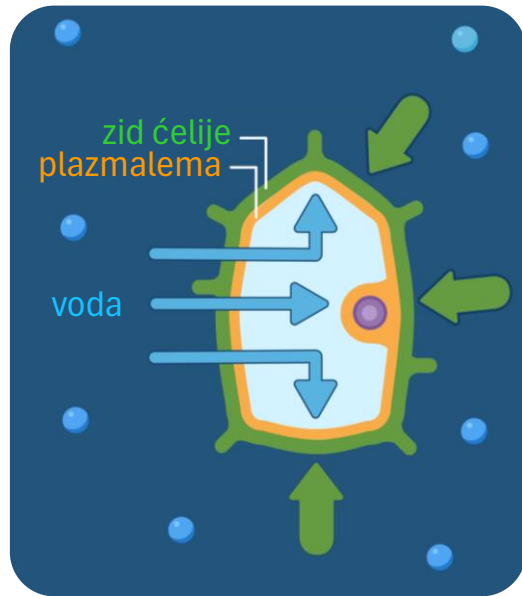
*sekundarni zid*

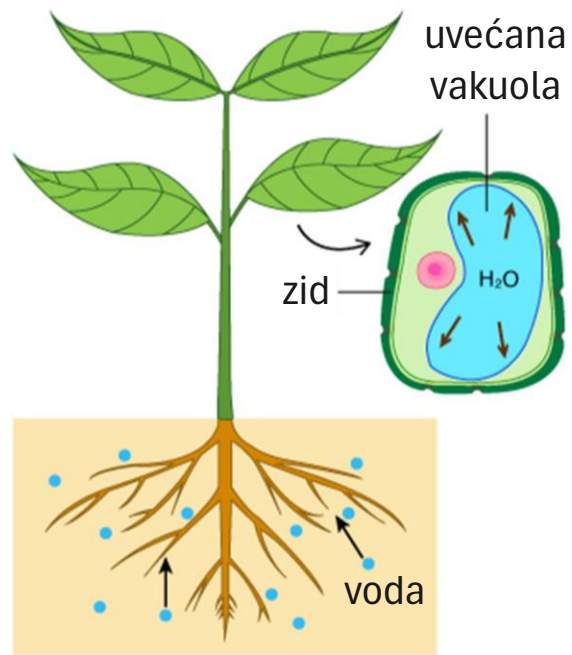


# Jamice u zidu

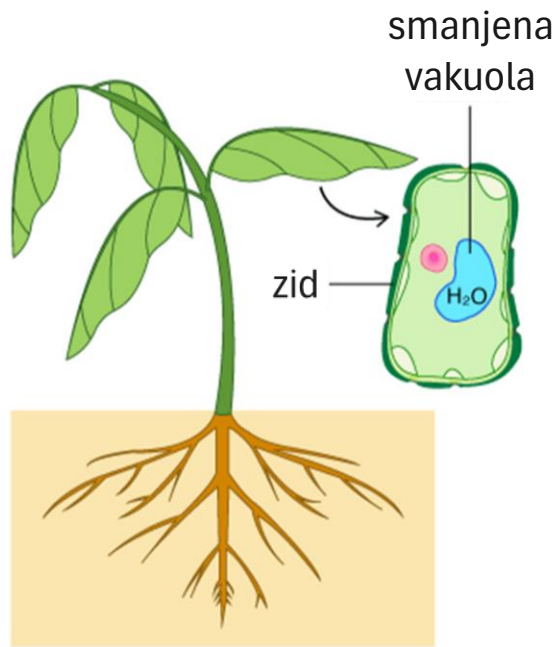


# Šta je osmoza?



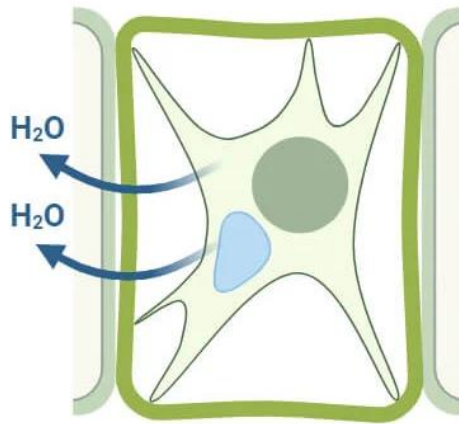


visok turgorov pritisak

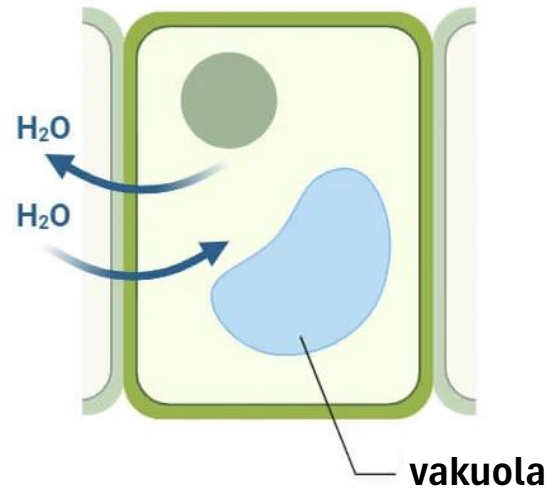


nizak turgorov pritisak

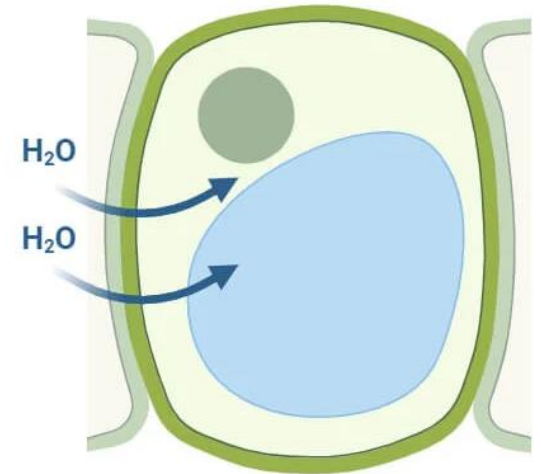
# Osmoza radi u oba pravca



u hipertoničnim uslovima:  
**plazmoliza**



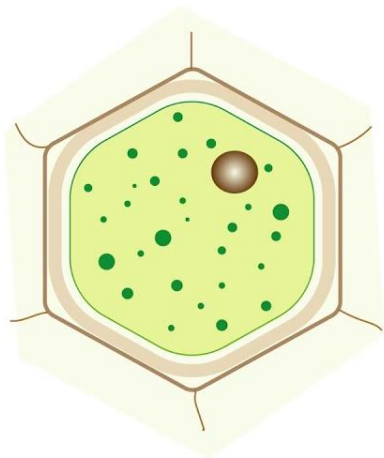
u izotoničnim uslovima



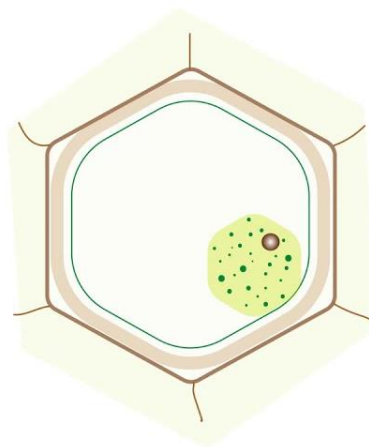
u hipotoničnim uslovima:  
**turgor**

# Plazmoliza

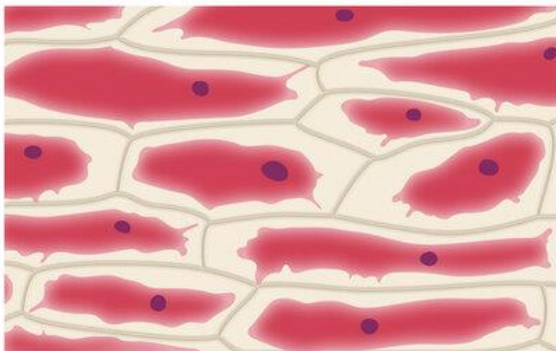
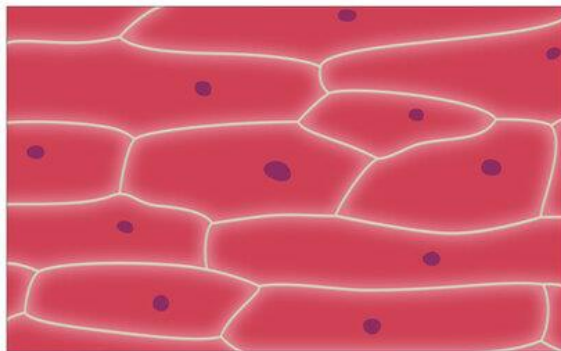
normalna ćelija



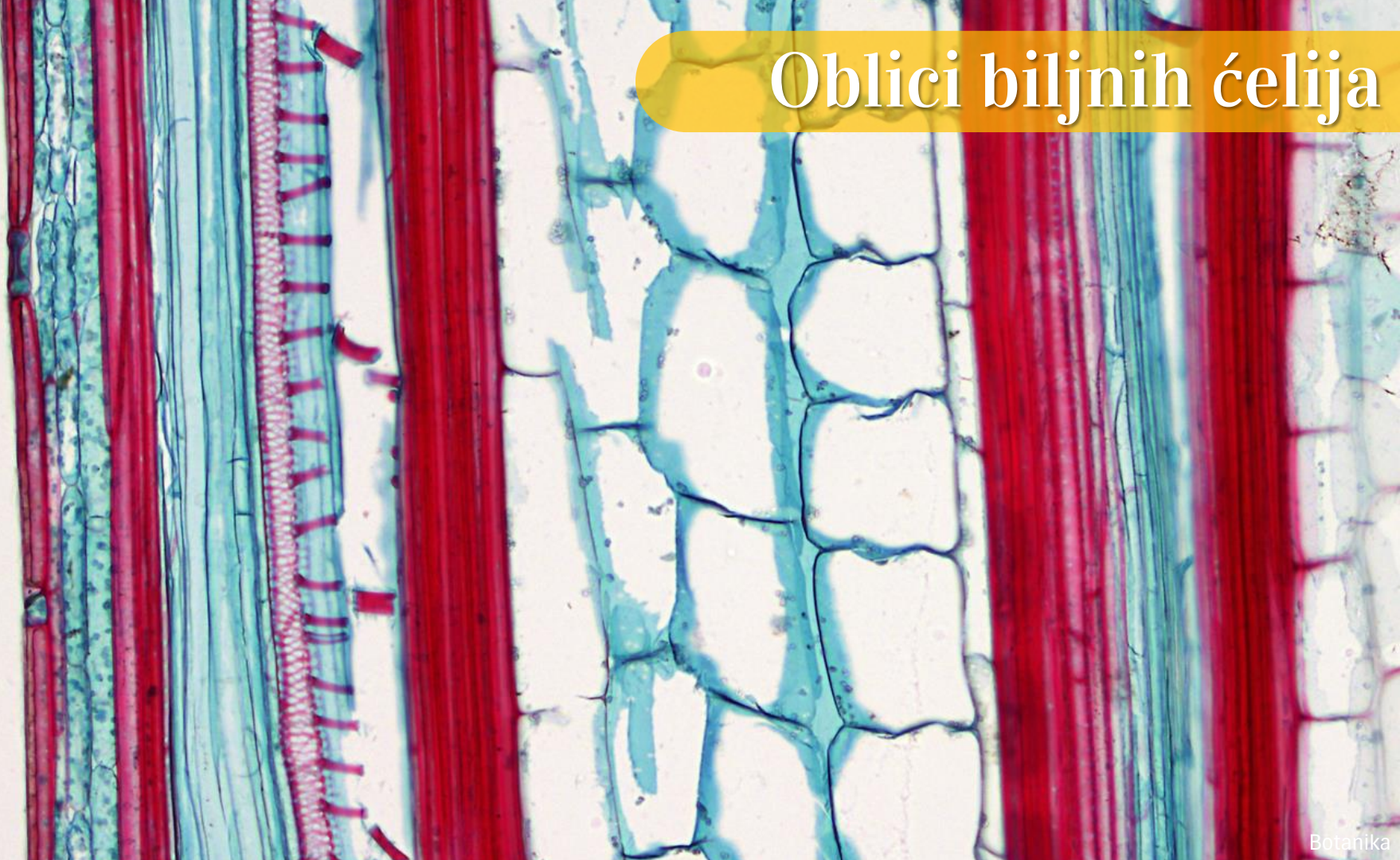
plazmolizirana ćelija



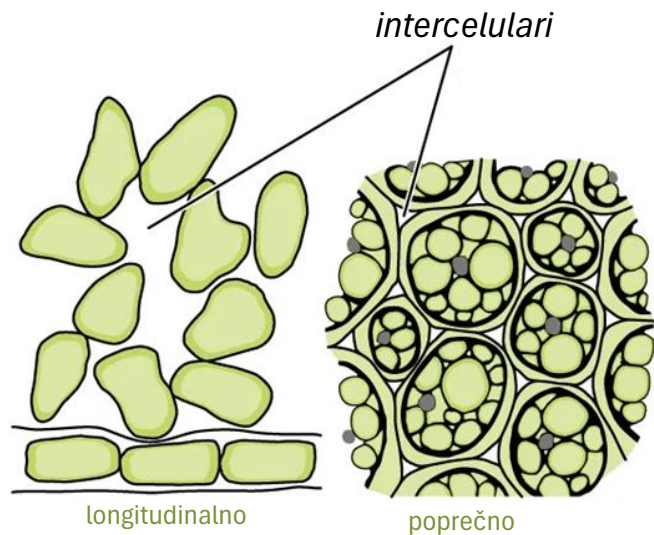
kada se stavi u hipertoničan rastvor



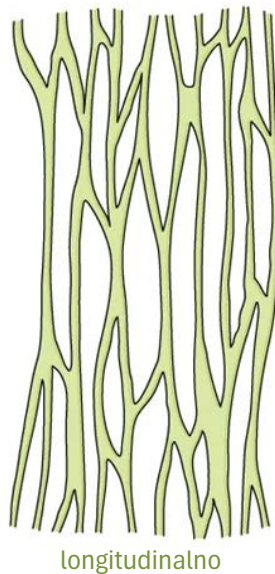
# Oblici biljnih ćelija



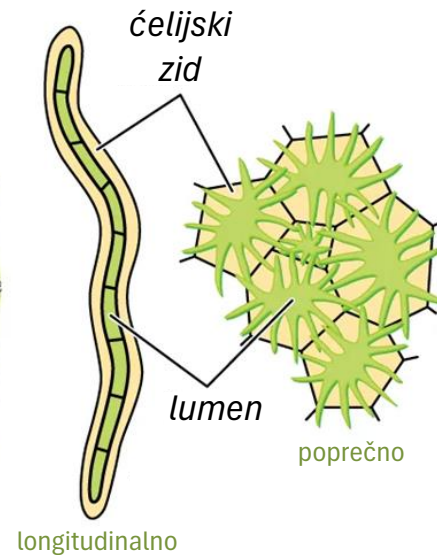
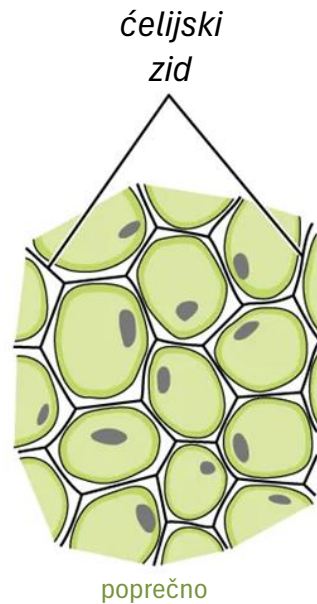
# Parenhimska i prozenhimska ćelija



**parenhim**



**kolenhim**

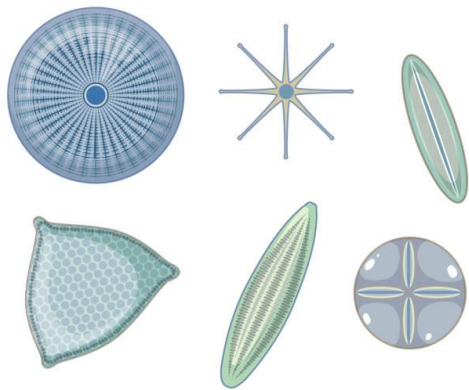


**sklerenhim**

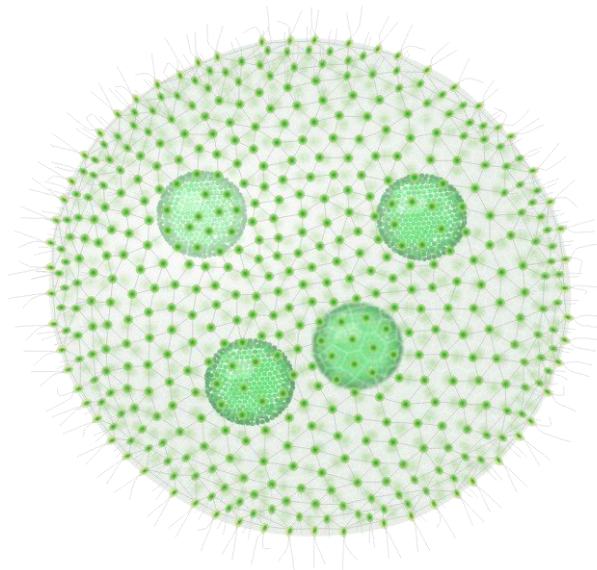
# Organizacija tijela biljke



# Talus



**jednoćelijska  
organizacija**

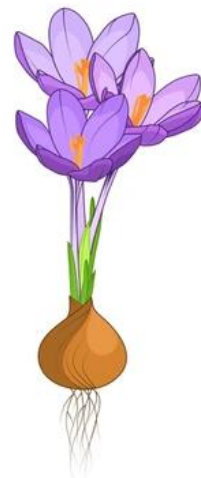
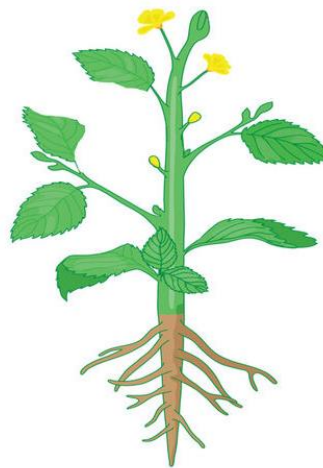
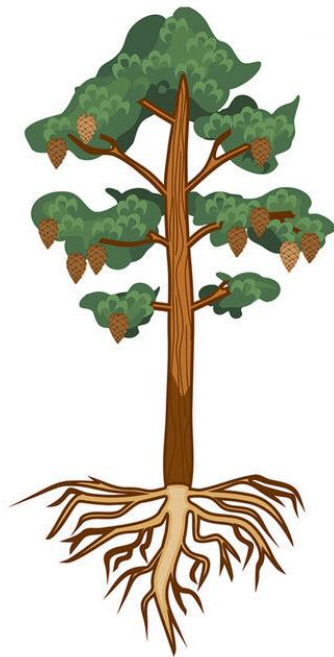


**kolonijalna  
organizacija**



**višećelijska  
organizacija**

# Kormus



Botanika

Mijat BOŽOVIĆ

# Pitanja?

