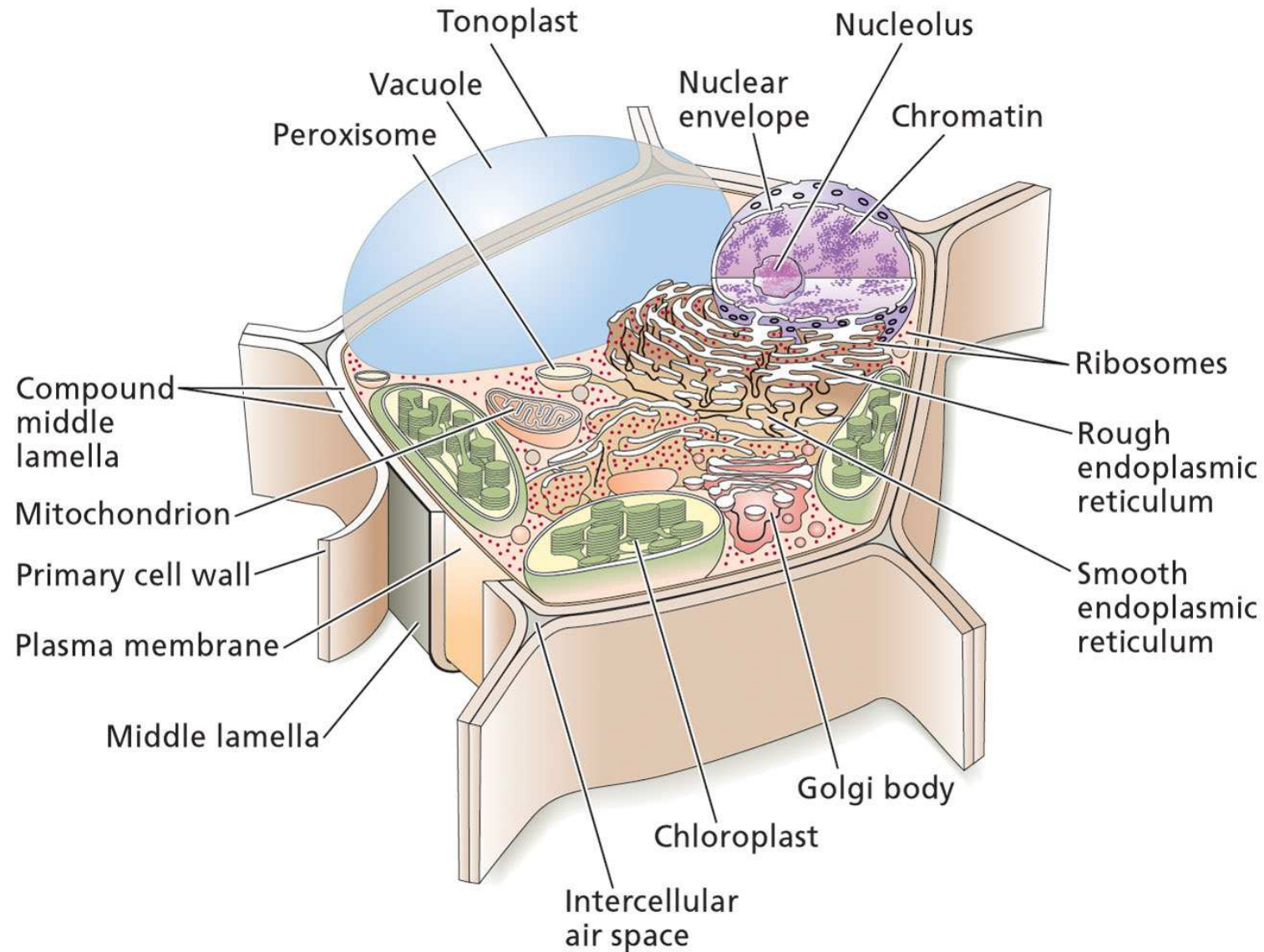
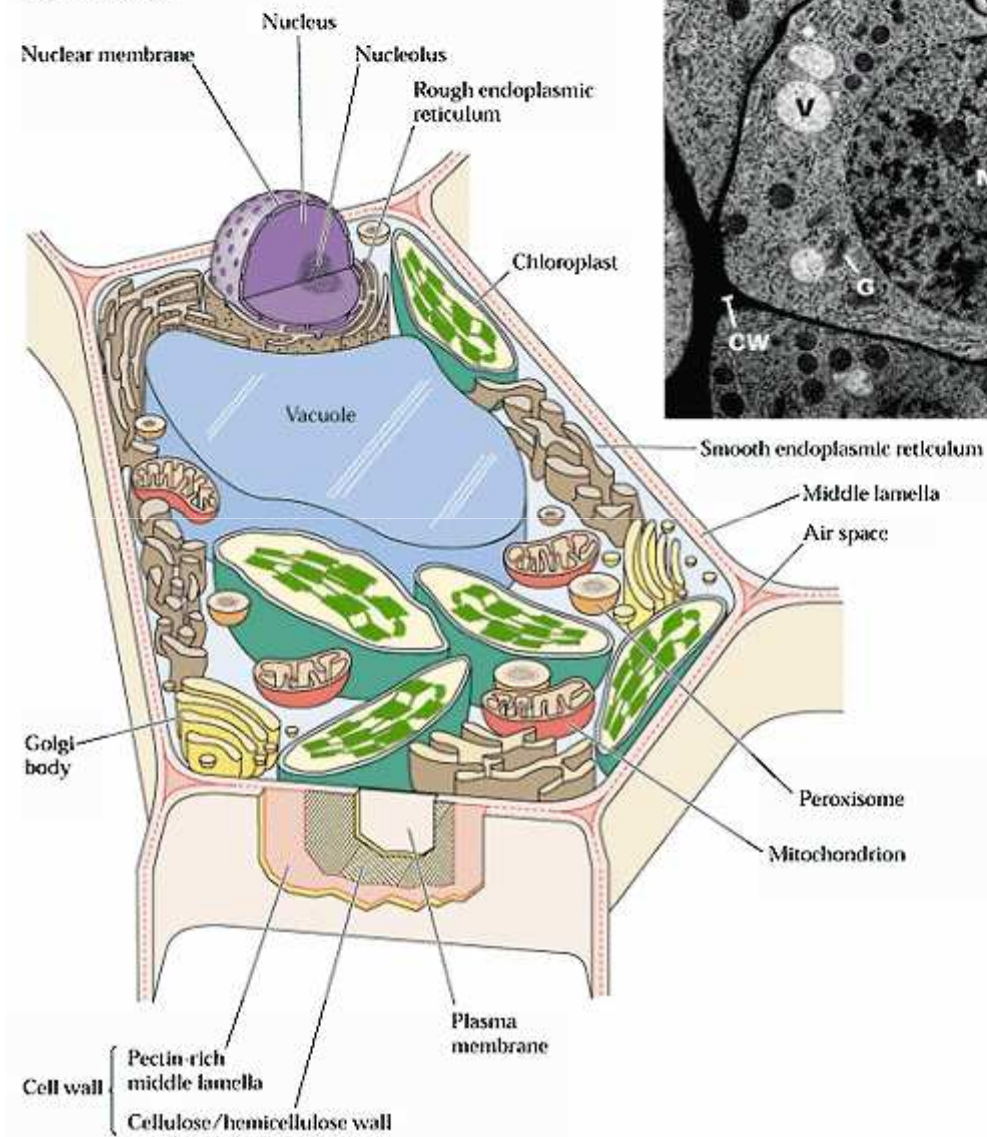


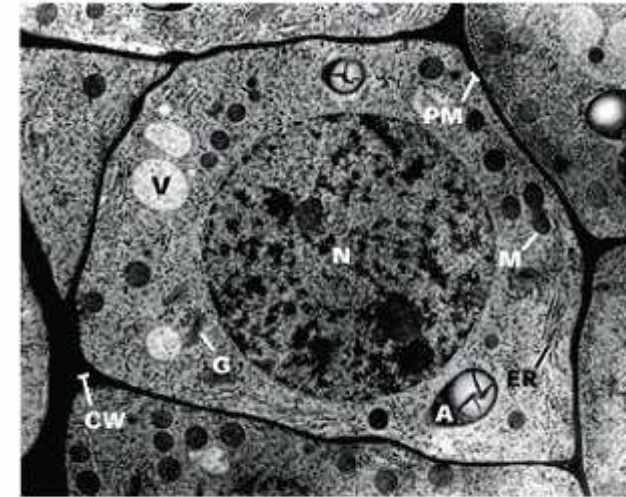
LA CELLULA VEGETALE



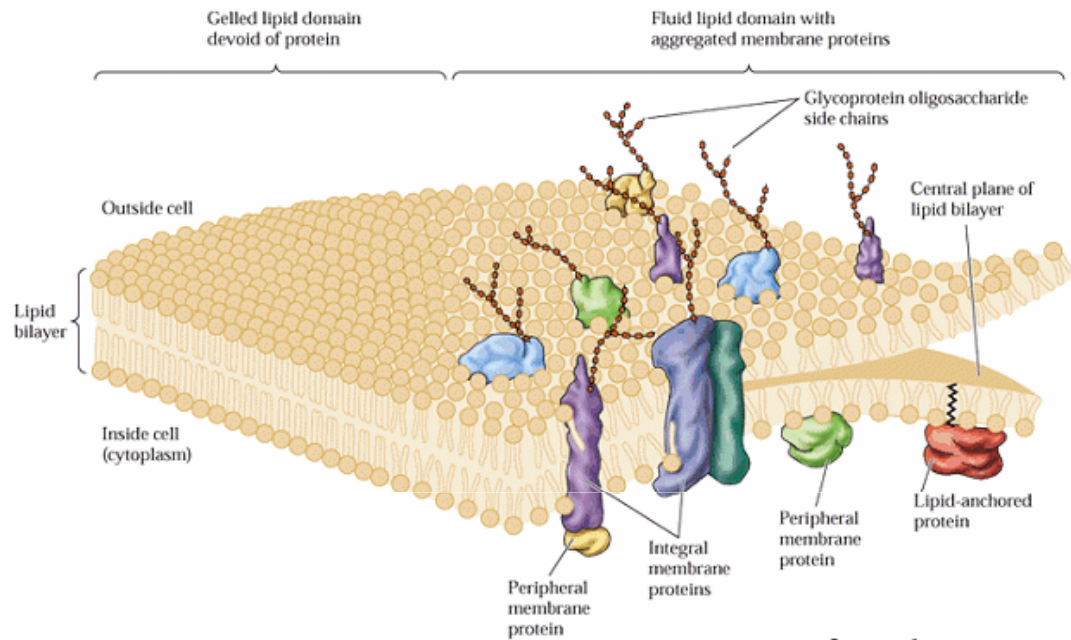
(A) Mesophyll



(B)



MEMBRANA PLASMATICA

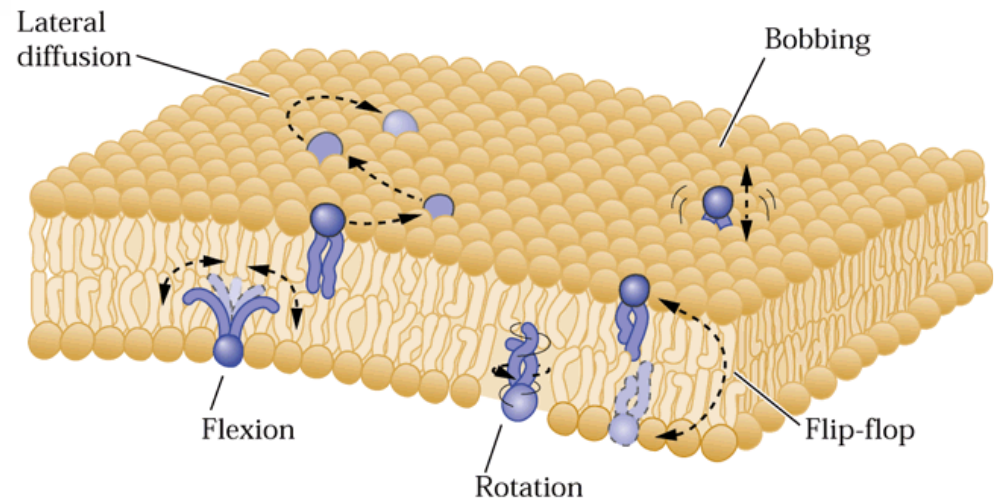


Mobilità dei fosfolipidi

Il flip-flop è energeticamente sfavorevole



FLIPPASI



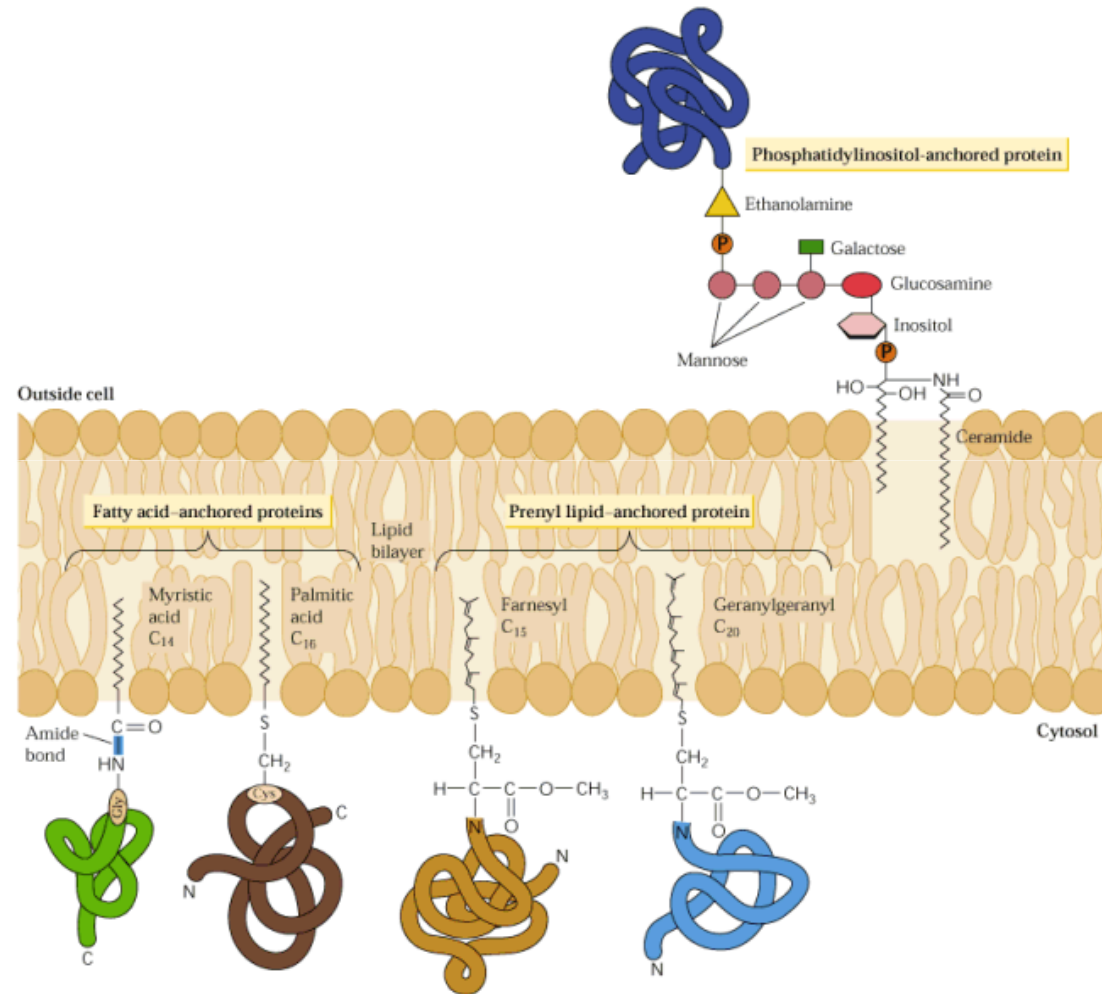
MEMBRANA PLASMATICA

PROTEINE DI MEMBRANA:

Estrinseche

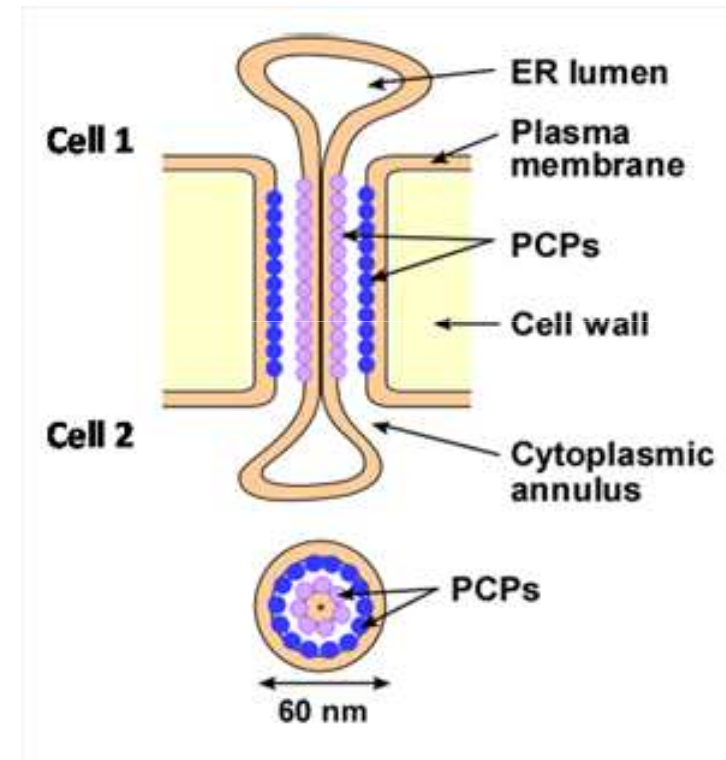
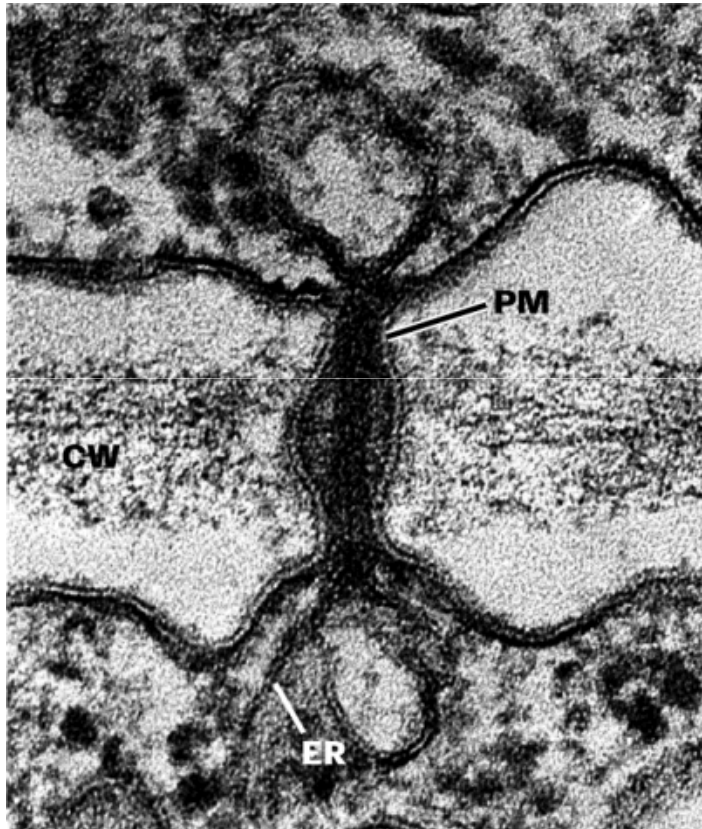
Intrinseche

Proteine ancorate
agli acidi grassi



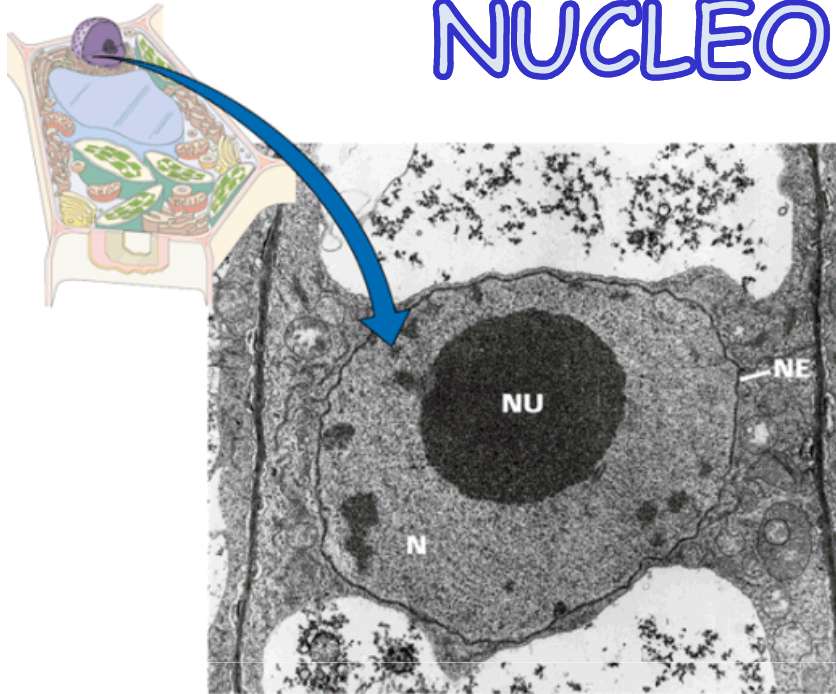
PLASMODESMI

Canali di comunicazione diretta tra cellule adiacenti

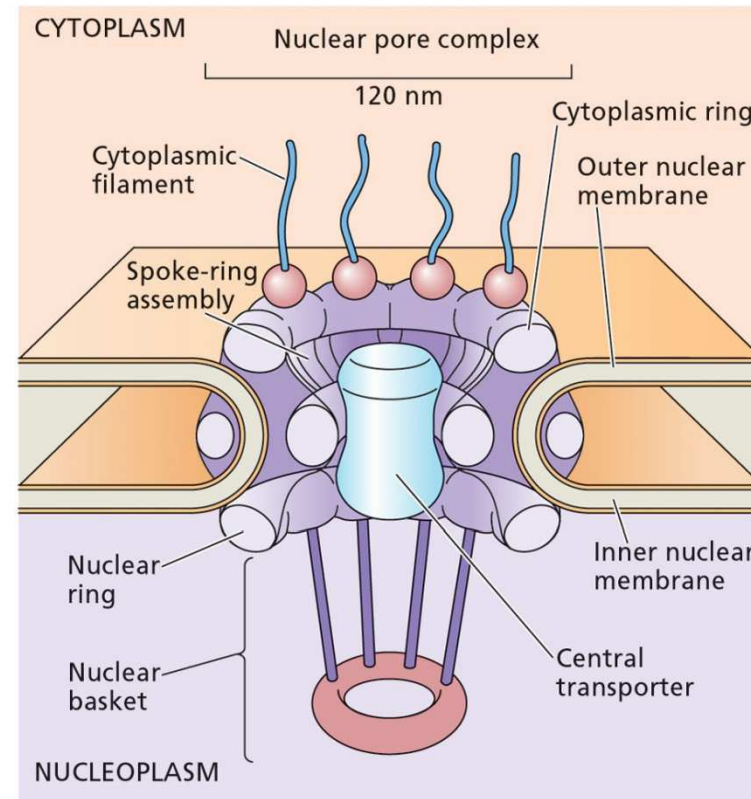


PCP, Plasmodesmal Channel Protein

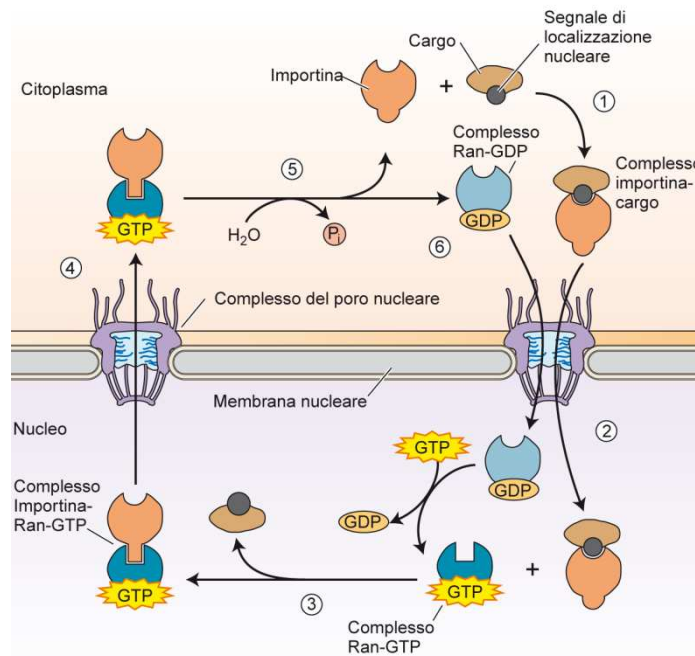
NUCLEO



Poro nucleare



PLANT PHYSIOLOGY, Third Edition, Figure 1.8 © 2002 Sinauer Associates, Inc.



8 - 20% della
superficie

$\varnothing = 50 \text{ nm}$

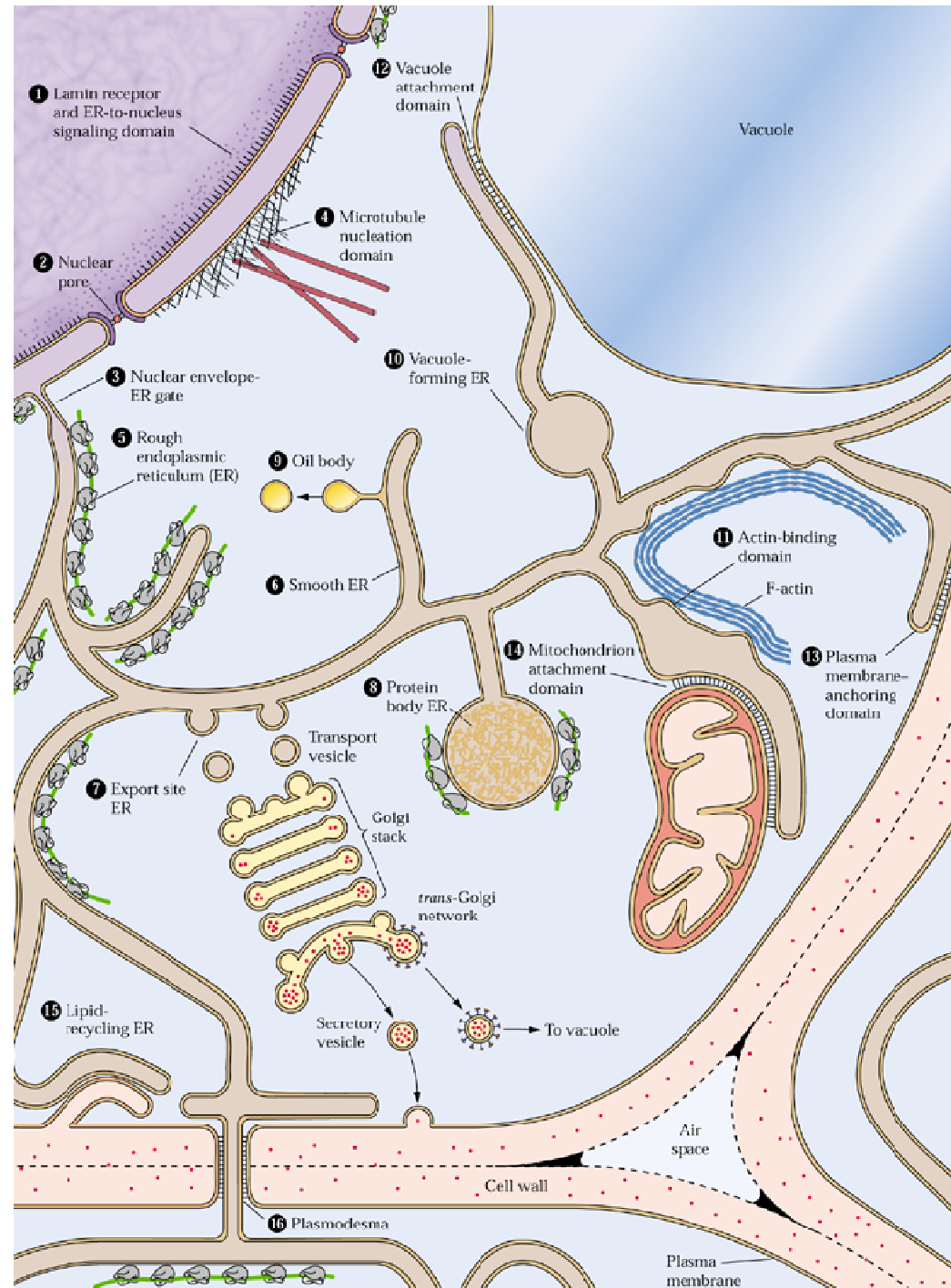
120 nucleoporine

RETICOLO ENDOPLASMATICO

Rugoso

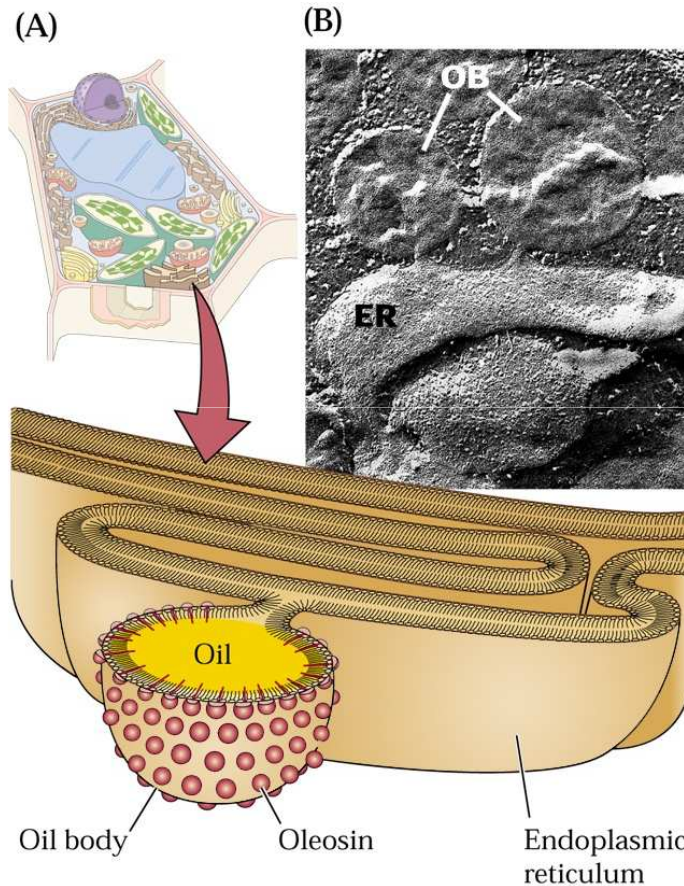
Liscio

Sintesi, processamento,
smistamento delle proteine
destinate alla membrana
plasmatica, alle vie di
secrezione, ai vacuoli



CORPI OLEOSI

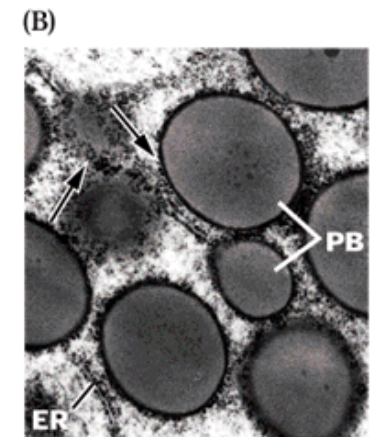
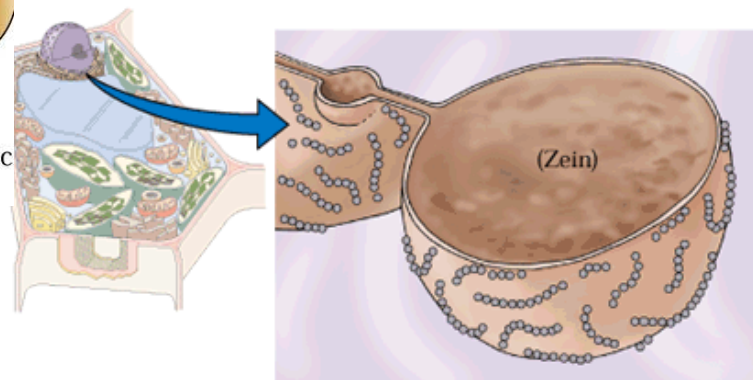
RETICOLO ENDOPLASMATICO



Strutture di accumulo
dei trigliceridi

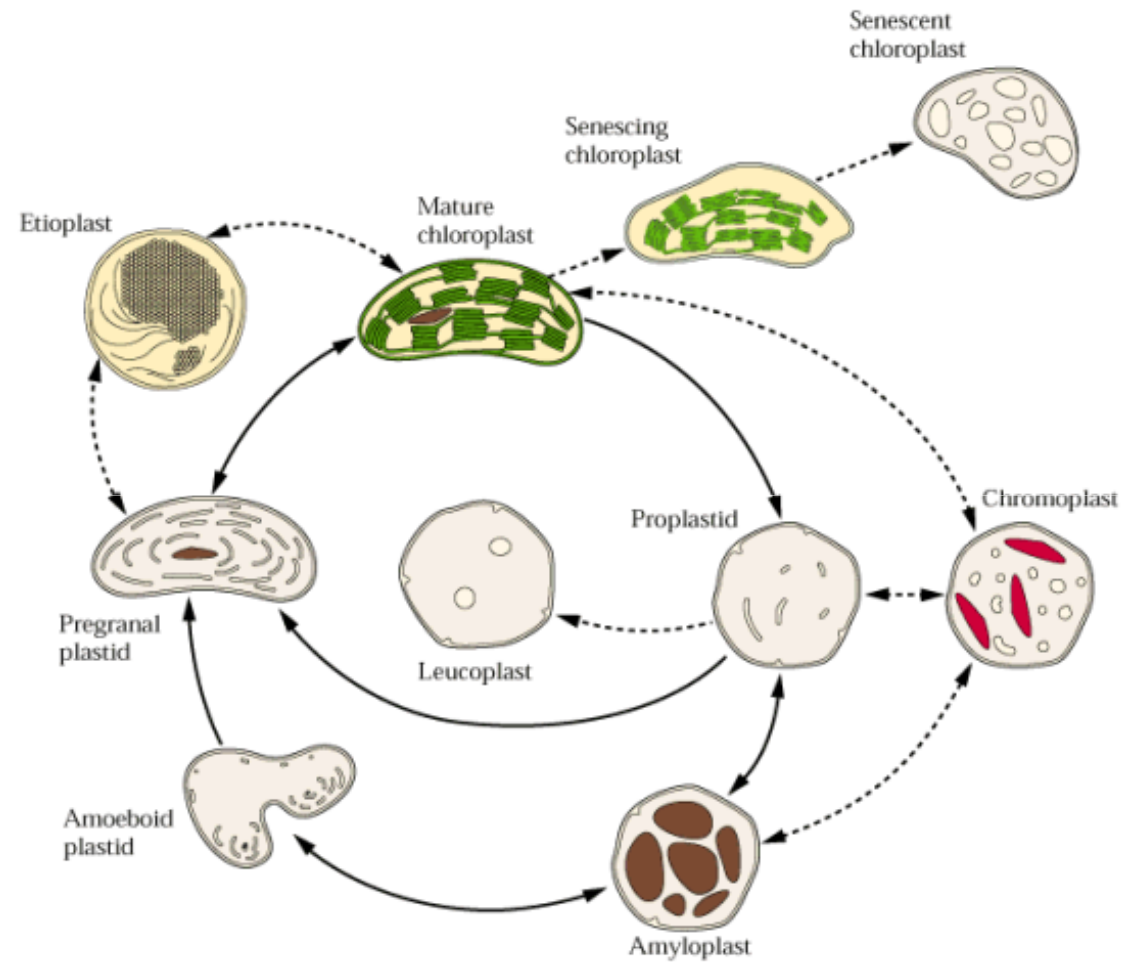
PROTEINE DI RISERVA DEL SEME

- GLOBULINE
- PROLAMMINE



PLASTIDI

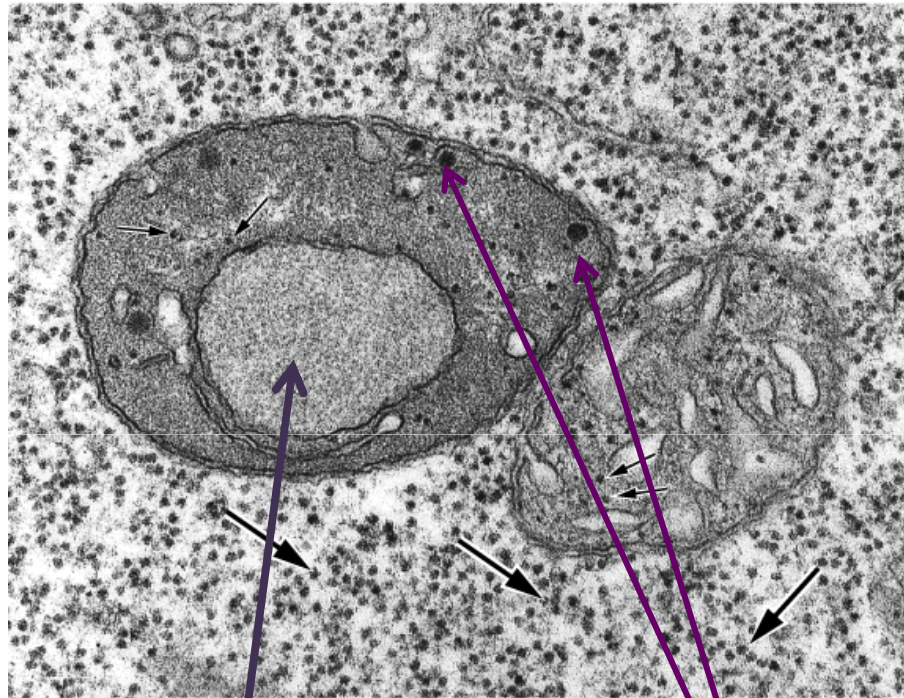
- Fotosintesi
- Riserva di prodotti
- Sintesi molecole



PLASTIDI

PROPLASTIDI

Precursori dei plastidi (meristemi)

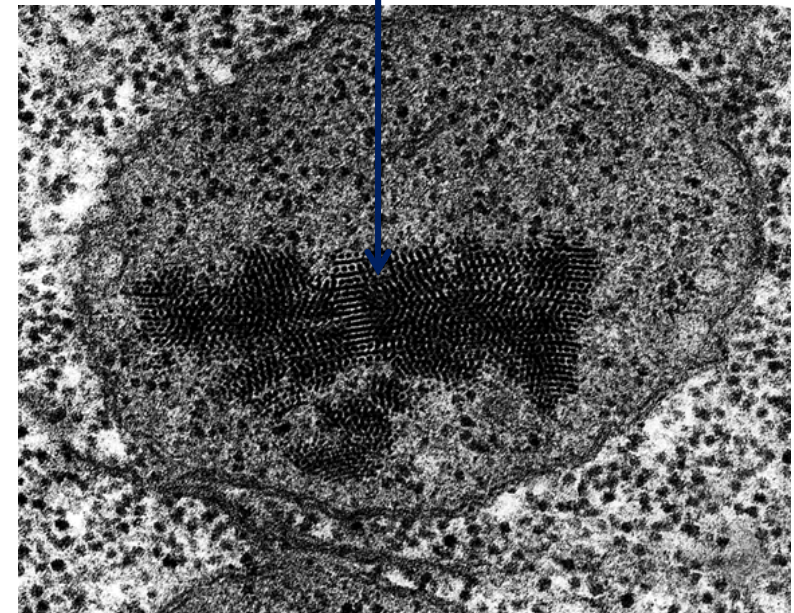


Deposito di proteine

Gocce lipidiche

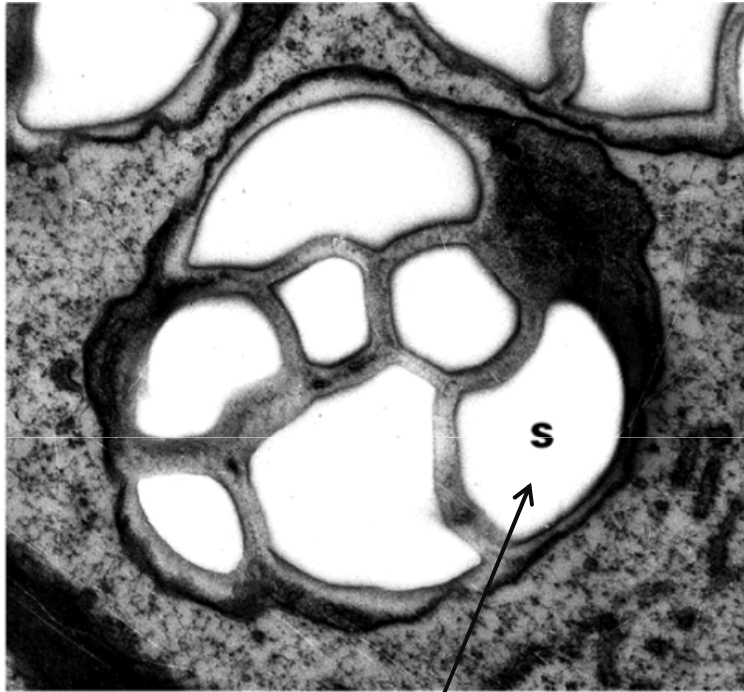
FITOFERRITINA

Cellula dell'apice radicale di soia



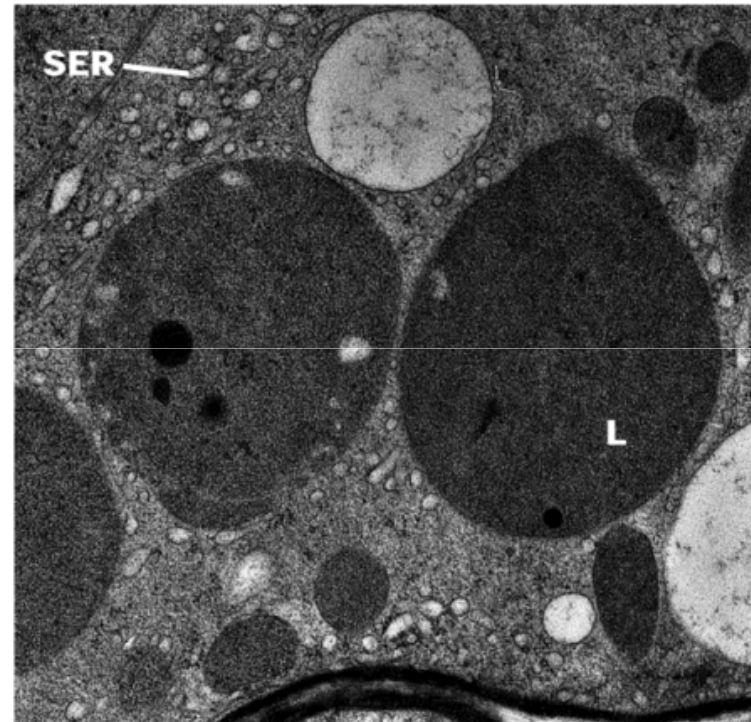
PLASTIDI

AMILOPLASTI



Granuli di amido

LEUCOPLASTI

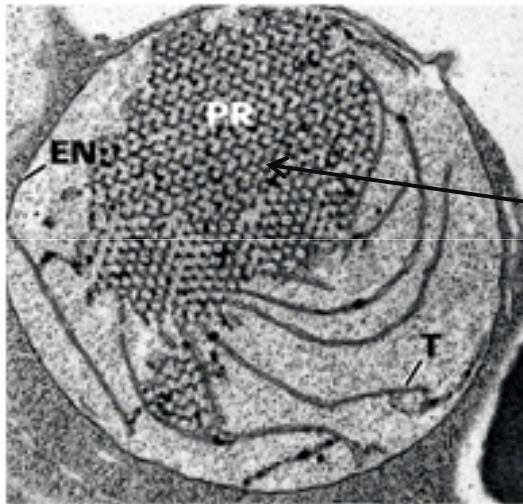


**Sintesi di monoterpeni presenti
negli oli essenziali**

Ghiandole di secrezione associate
ai tricomi

EZIOPLASTI

Plastidi per i quali lo sviluppo da proplastidi a cloroplasti è stato bloccato dall'assenza di luce



Corpo prolamellare

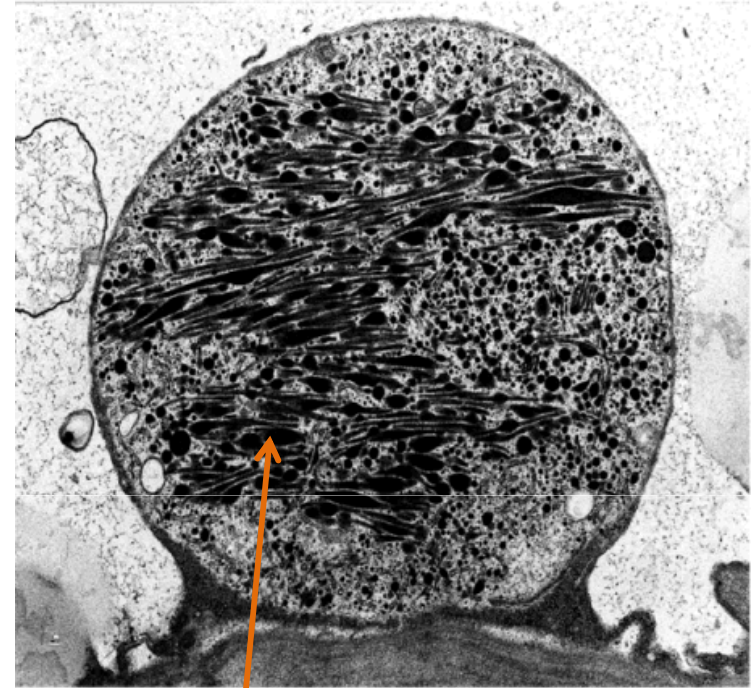
PROTOCLOROFILLIDE



CLOROFILLA

PLASTIDI

CROMOPLASTI



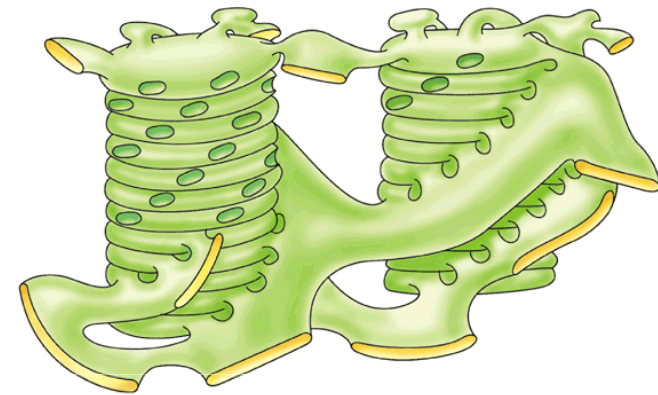
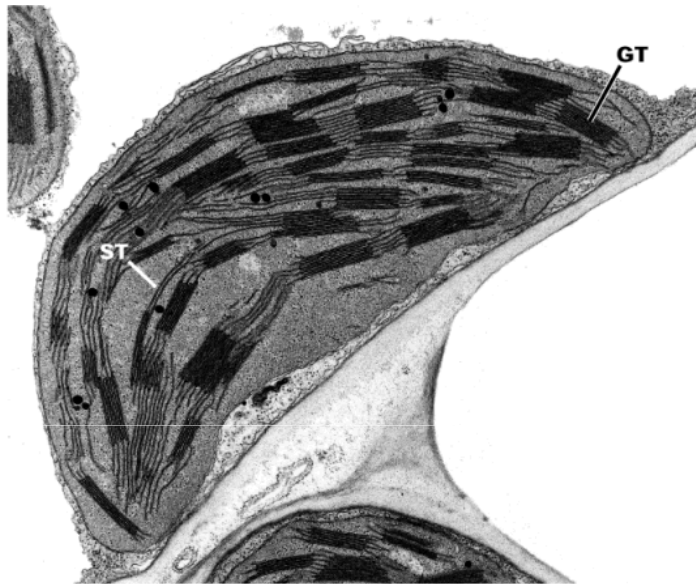
Ricchi di carotenoidi e xantofille

Responsabili della colorazione di molti frutti

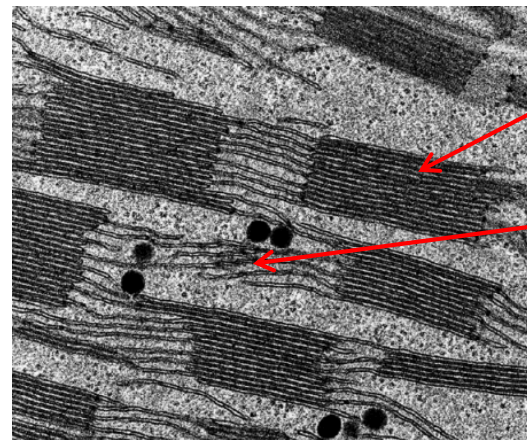
Si sviluppano dai proplastidi o per ridifferenziamento dai cloroplasti durante la maturazione

PLASTIDI

CLOROPLASTI



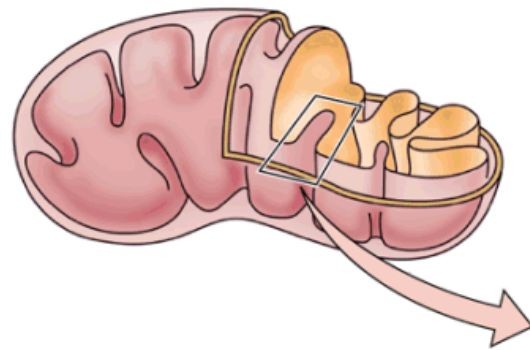
Tilacoidi impilati dei grana



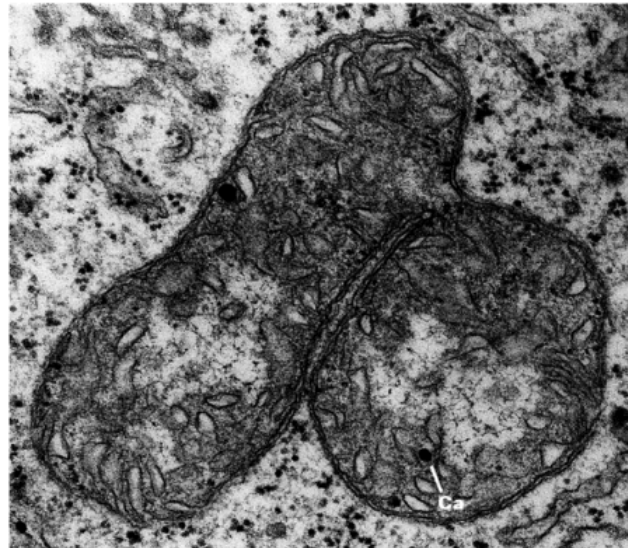
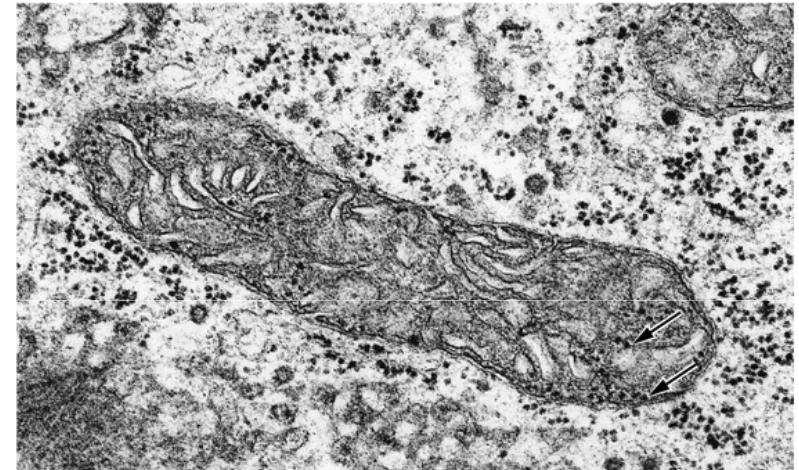
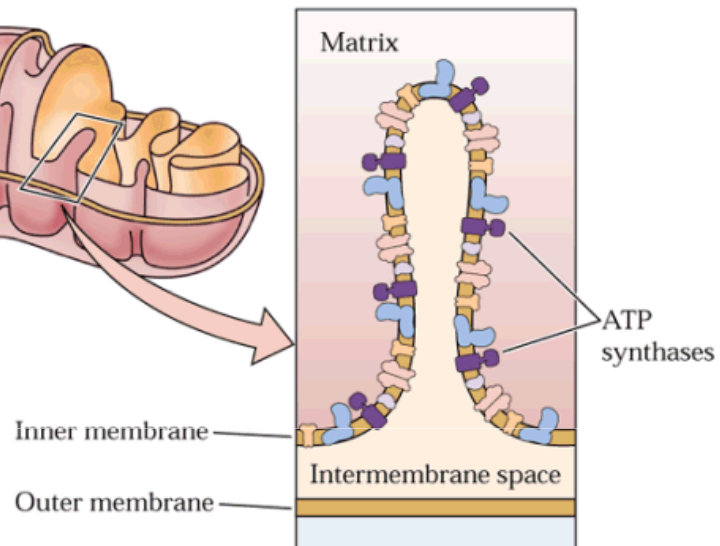
Tilacoidi non impilati
dello stroma

MITOCHONDRI

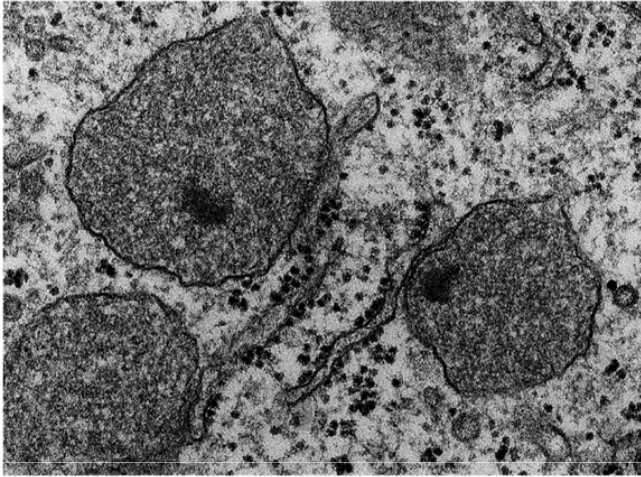
A mitochondrion



Cross-sectional diagram of a crista



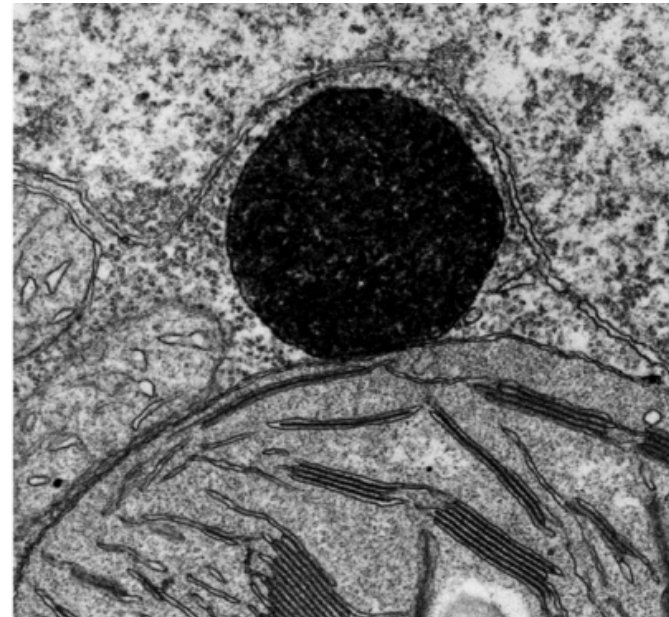
PEROSSISOMI



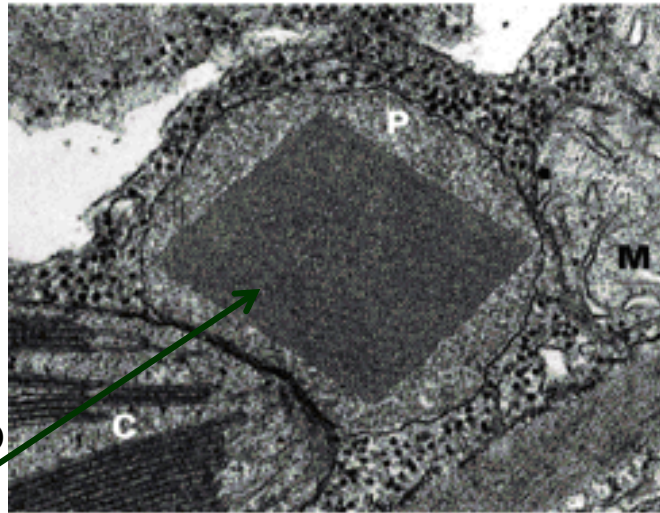
le ossidasi dei perossisomi sono flavoproteine che producono perossido di idrogeno

CATALASI

Perossisoma colorato con DAB per evidenziare la catalasi



PEROSSISOMI



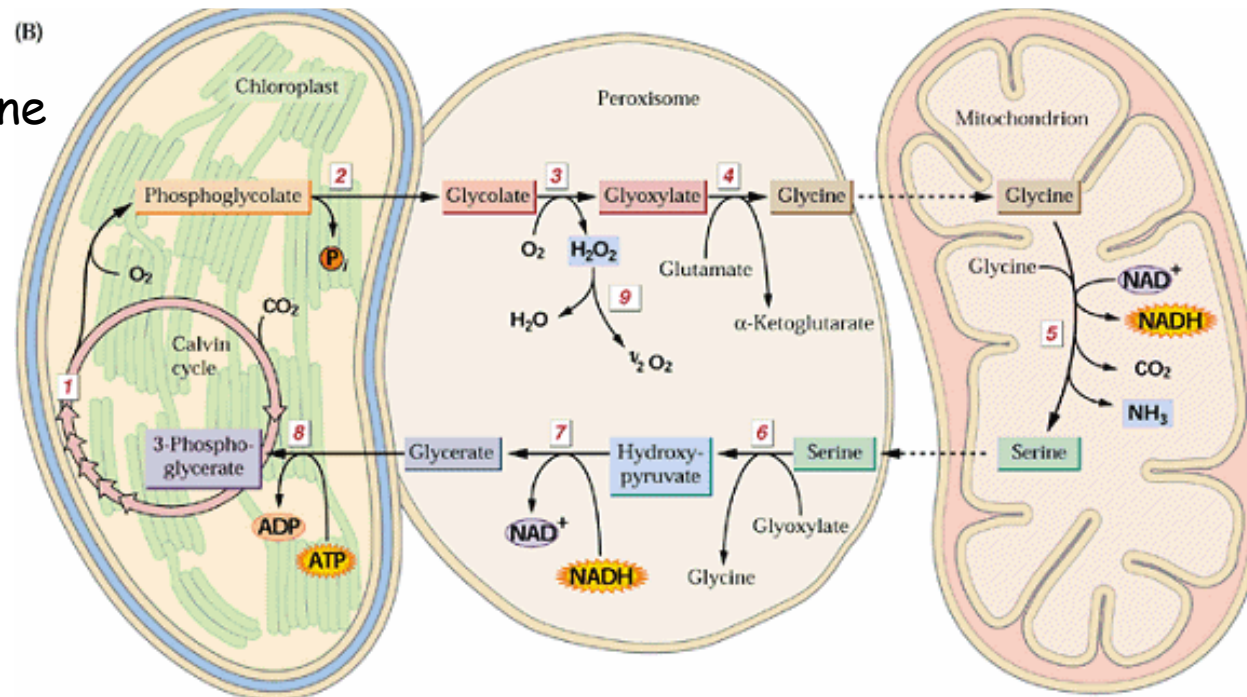
Cristallo
di
catalasi

Key

- 1 Ribulose-1,5-bisphosphate carboxylase/oxygenase
- 2 Phosphoglycolate phosphatase
- 3 Glycolate oxidase
- 4 Glutamate:glyoxylate aminotransferase
- 5 Glycine decarboxylase and serine hydroxymethyl transferase
- 6 Serine:glyoxylate aminotransferase
- 7 Hydroxypyruvate reductase
- 8 Glycerate kinase
- 9 Catalase

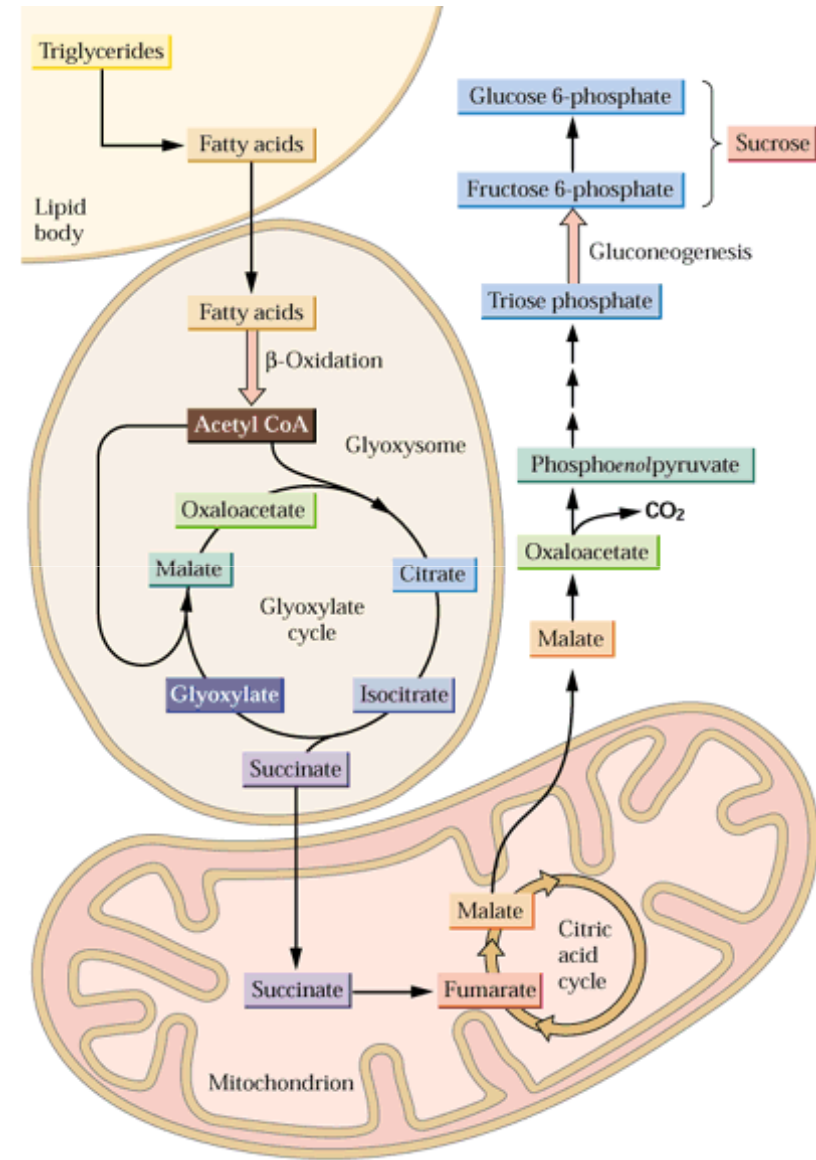
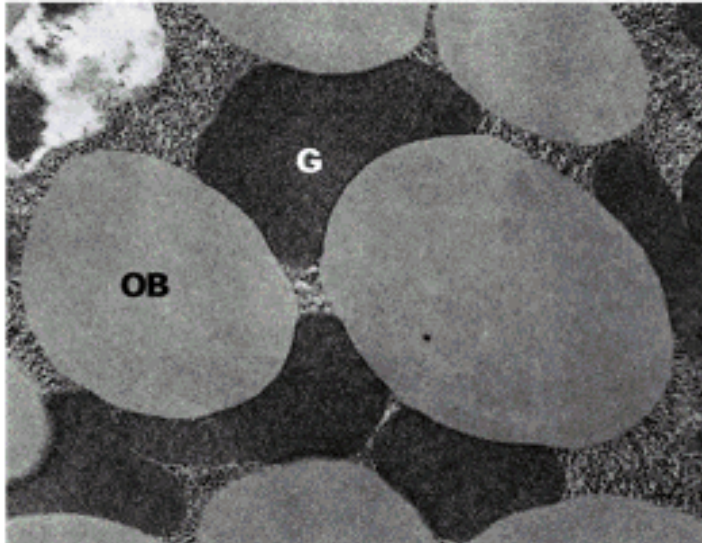
(B)

fotorespirazione



GLIOSSISOMI

Perossisomi specializzati che assistono la degradazione degli acidi grassi durante la germinazione di semi oleaginosi



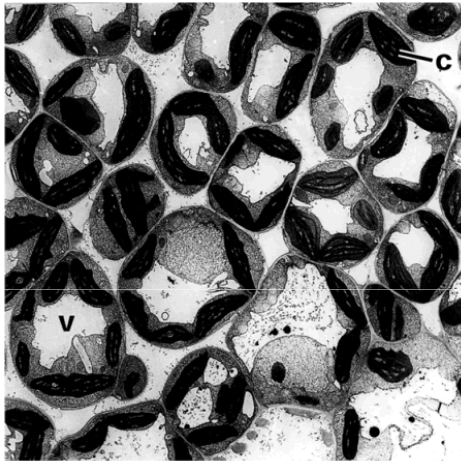
Ciclo del GLIOSSILATO

VACUOLO

Avvolto da una membrana detta TONOPLASTO

Occupa più del 30% del volume cellulare, ma può arrivare al 90%

FUNZIONI



Riserva: ioni, zuccheri, amminoacidi, acidi organici, proteine

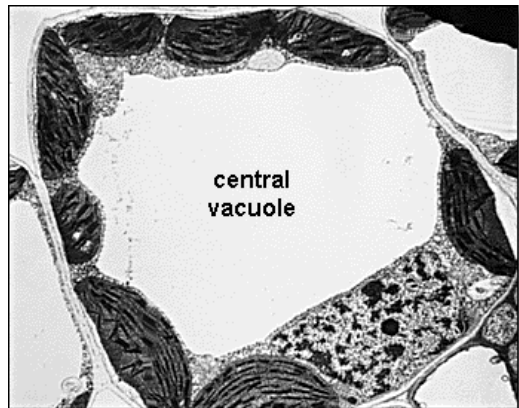
Digestione: enzimi idrolitici quali nucleasi, proteasi, glicosidasi, lipasi

pH e omeostasi ionica: controllano il rilascio di protoni e altri ioni nel citosol

Difesa da patogeni ed erbivori:
accumulano composti tossici

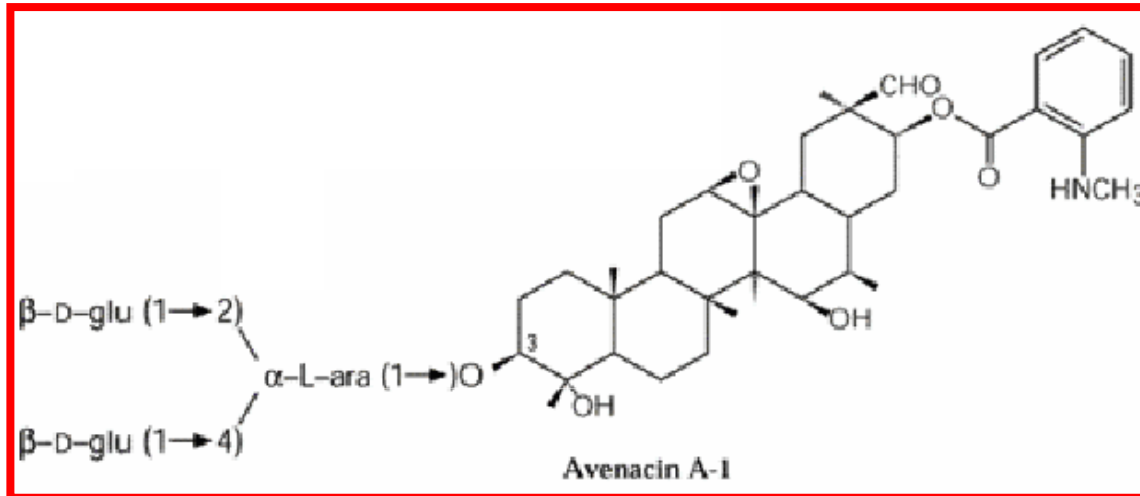
Sequestrano composti tossici per la pianta: metalli pesanti, ossalato

Pigmentazione: contengono antocianine che conferiscono la colorazione a fiori e frutti



Molecole di difesa accumulate nel vacuolo

saponine



glucosidi cianogenici

