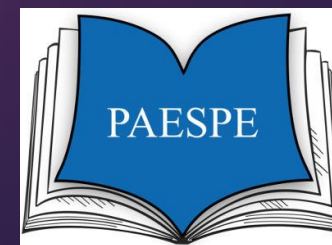




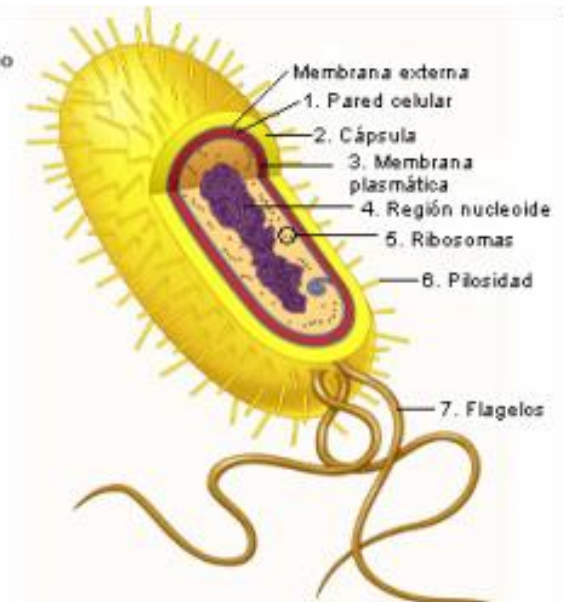
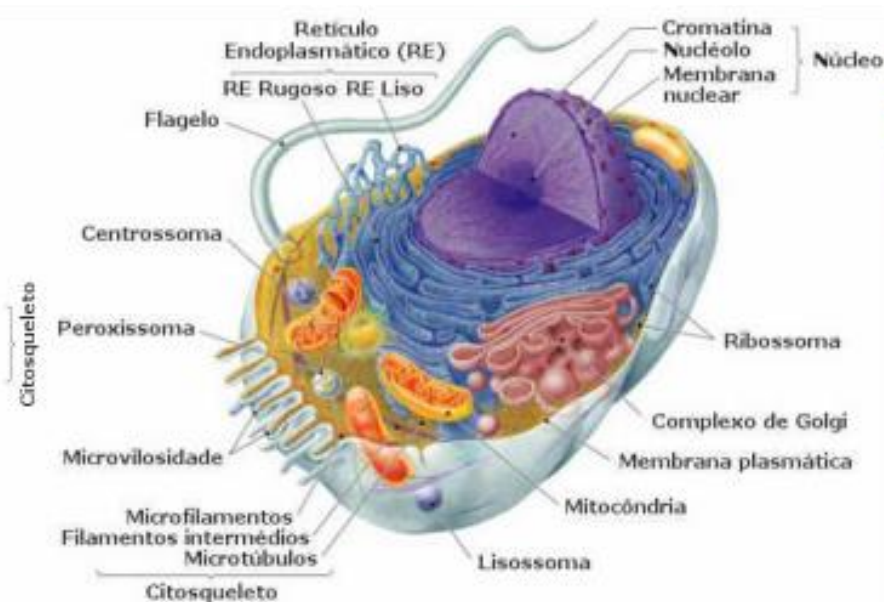
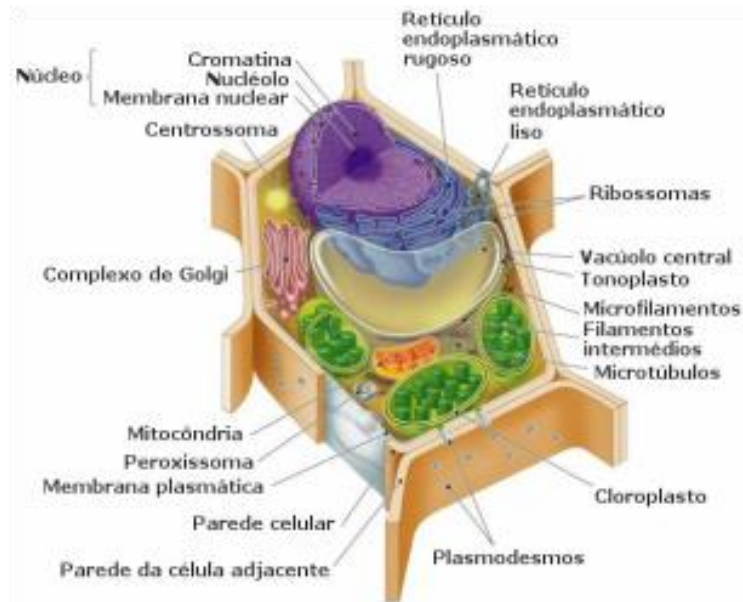
UNIVERSIDADE FEDERAL  
DE ALAGOAS

# Membrana Plasmática e Macromoléculas.

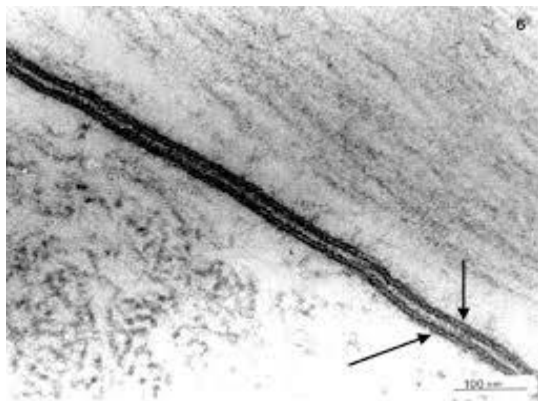
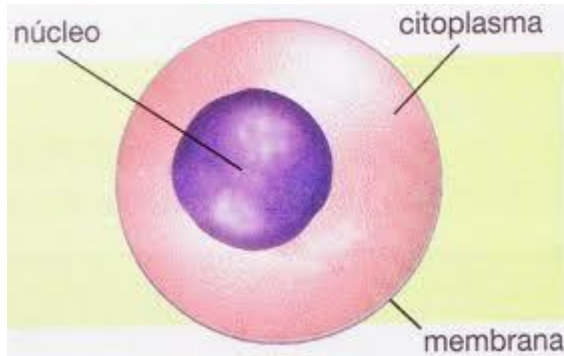
PROFESSOR: NERVESON SANTOS.



# O que é célula?



# Do que uma Membrana plasmática é feita?



Singer-Nicholson, Modelo mosaico fluido.

# Lipoproteica como assim?

Lipídios

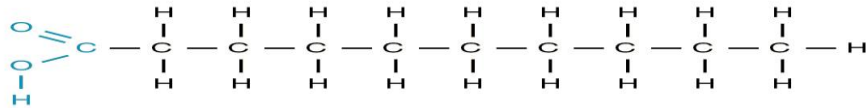
Lipoproteica

Proteína

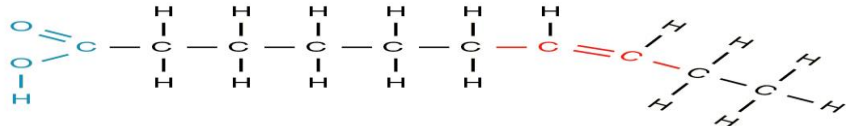
Gorduras, óleos e ceras essenciais para a o contexto da vida que se dividem em saturados e insaturados.

Macromoléculas formadas por ligações peptídicas entre aminoácidos.

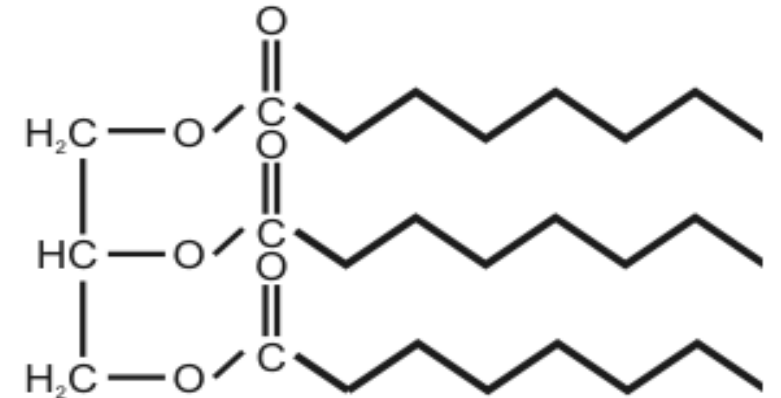
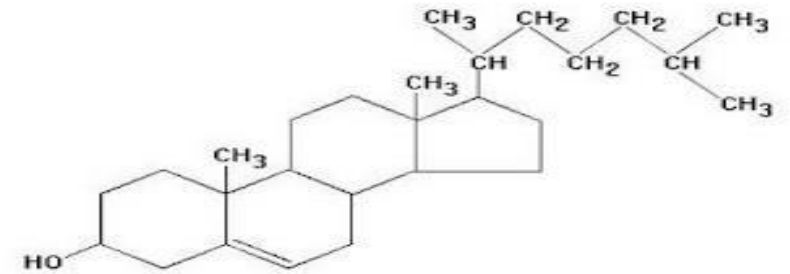
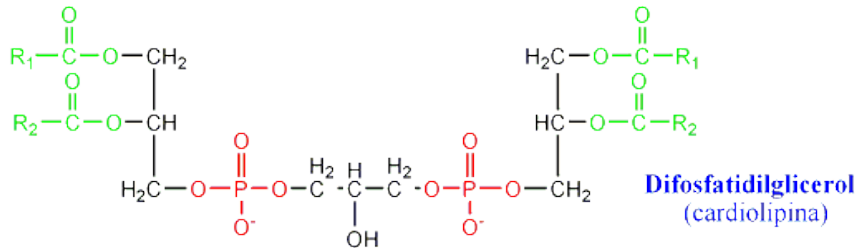
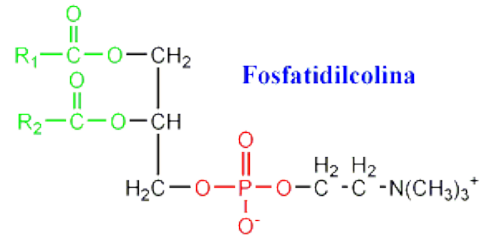
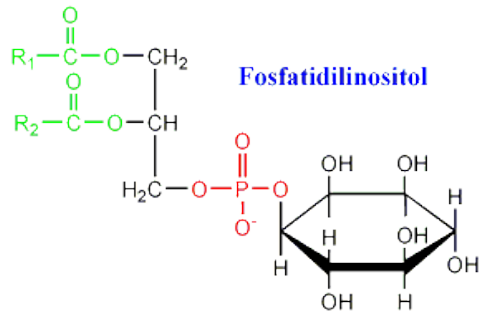
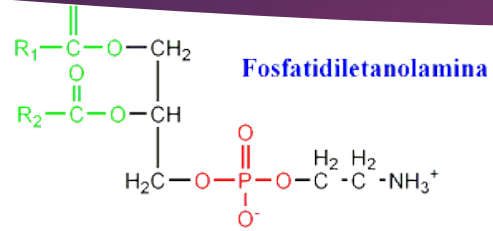
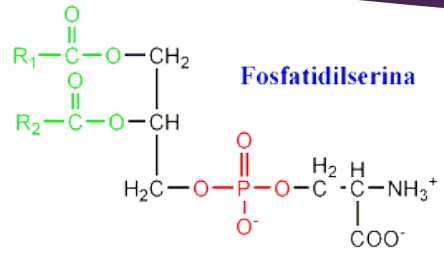
Saturado



Insaturado

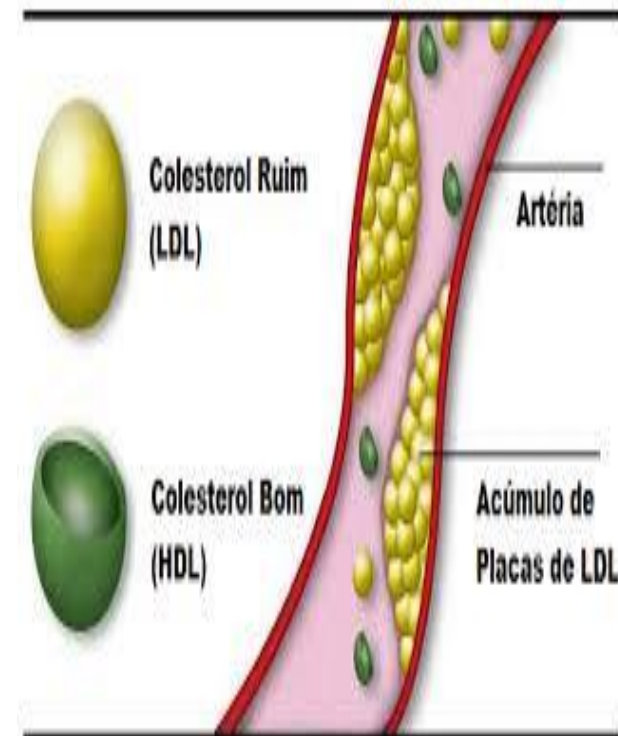
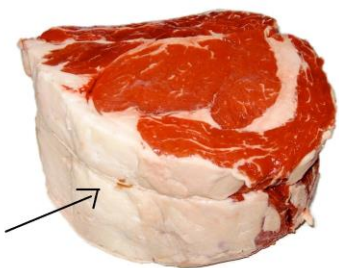


# Lipídios?





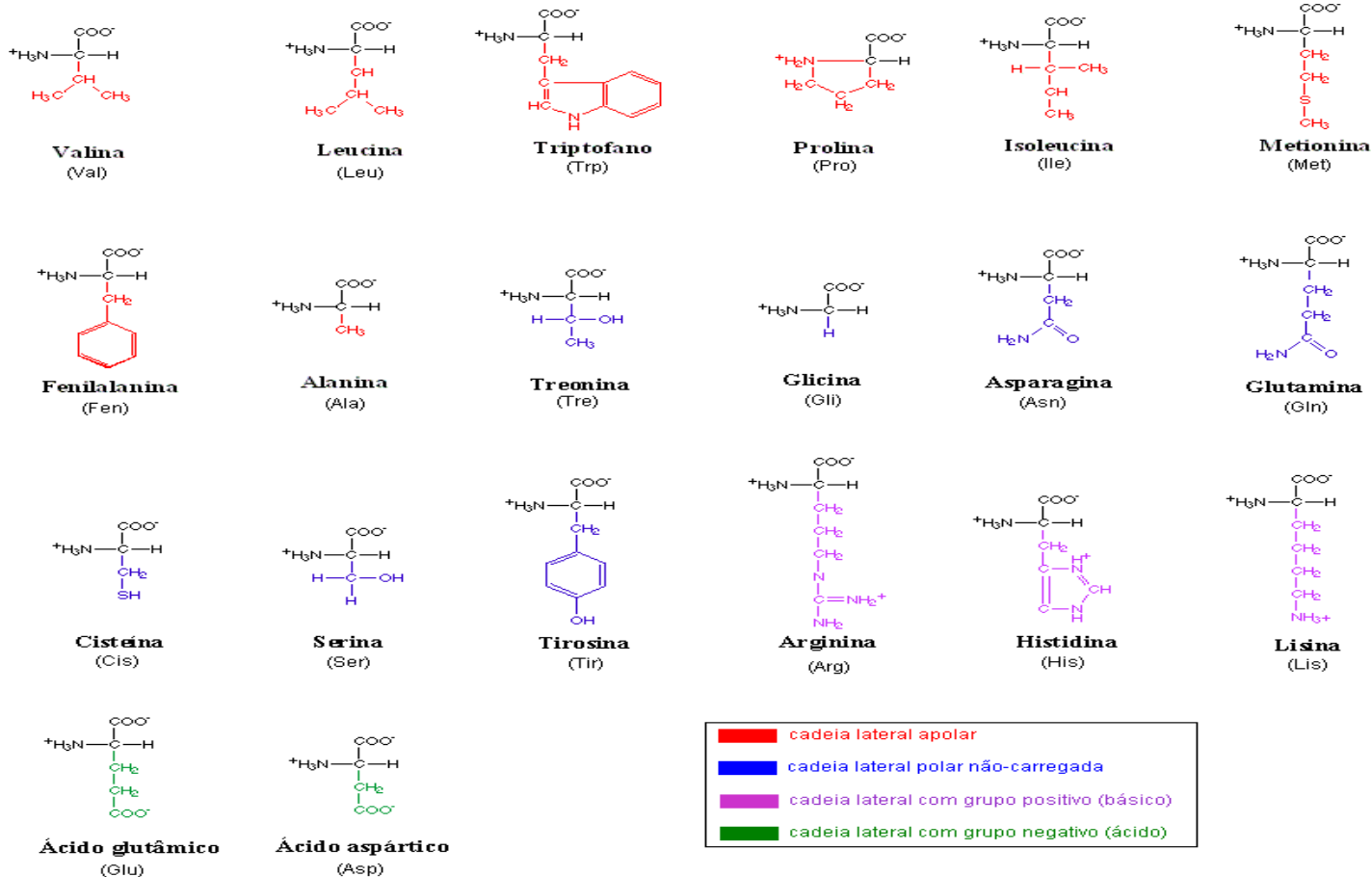
# Lipídios são ruins?



# Proteínas me deixam forte?

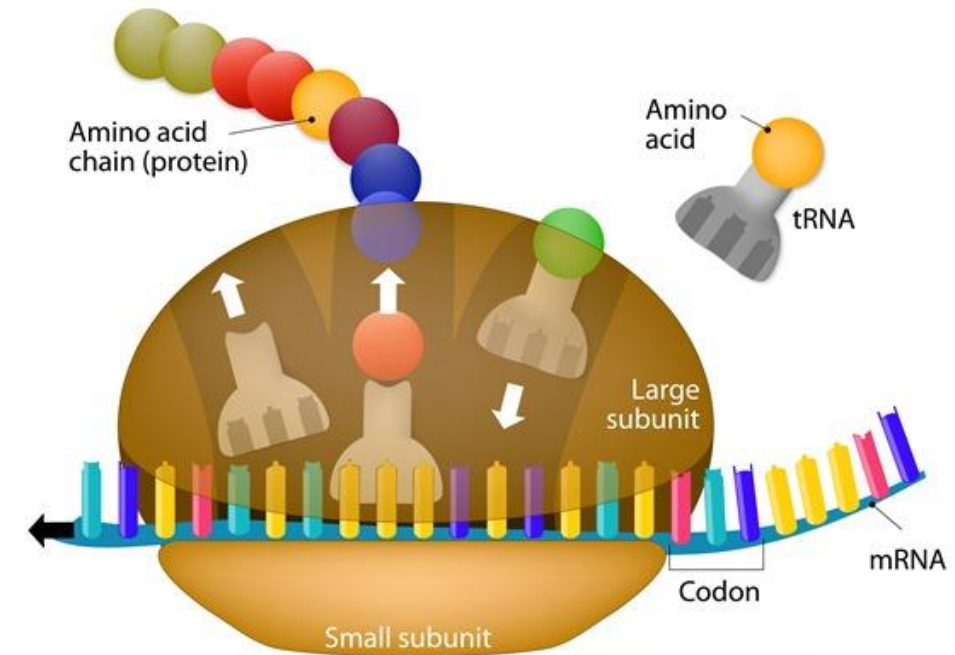


## Os vinte aminoácidos que compõe as proteínas



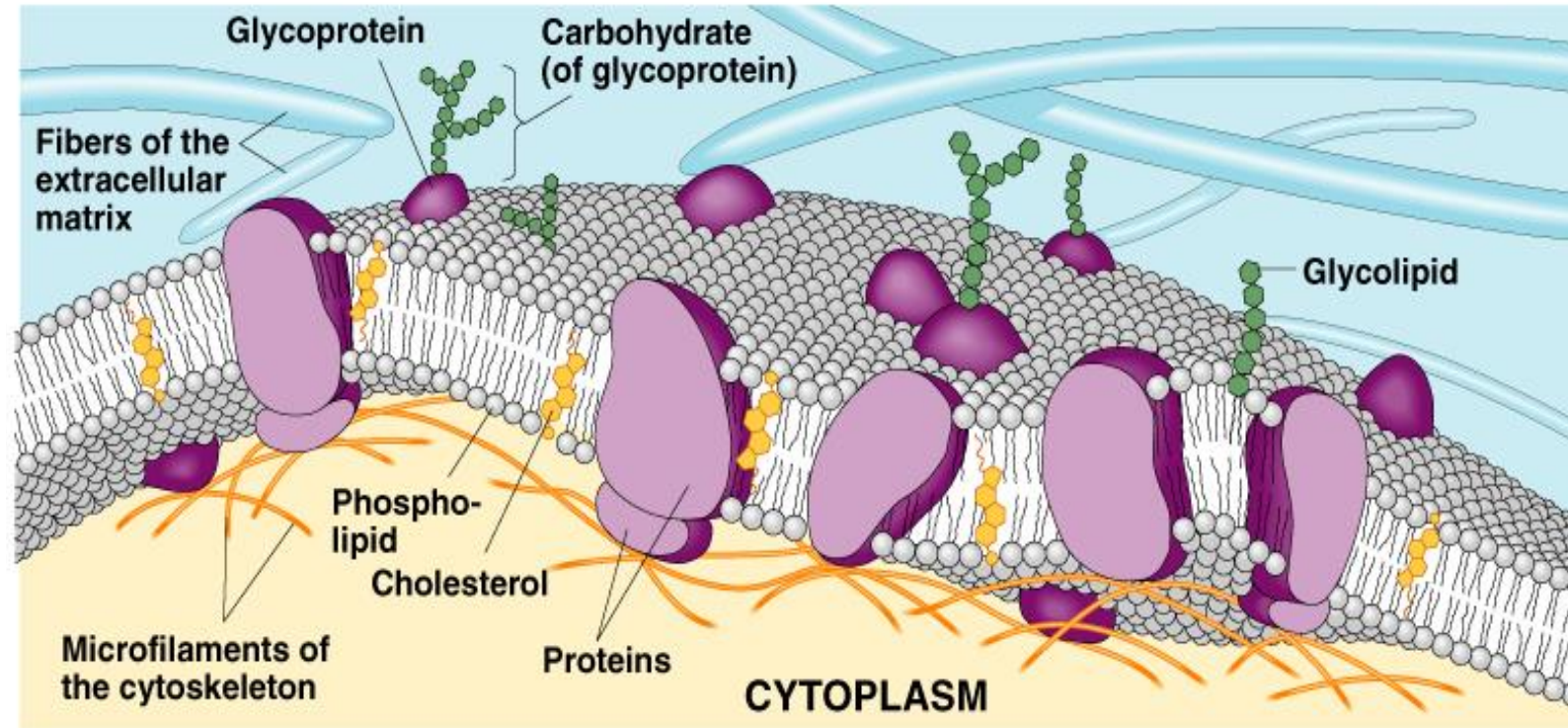
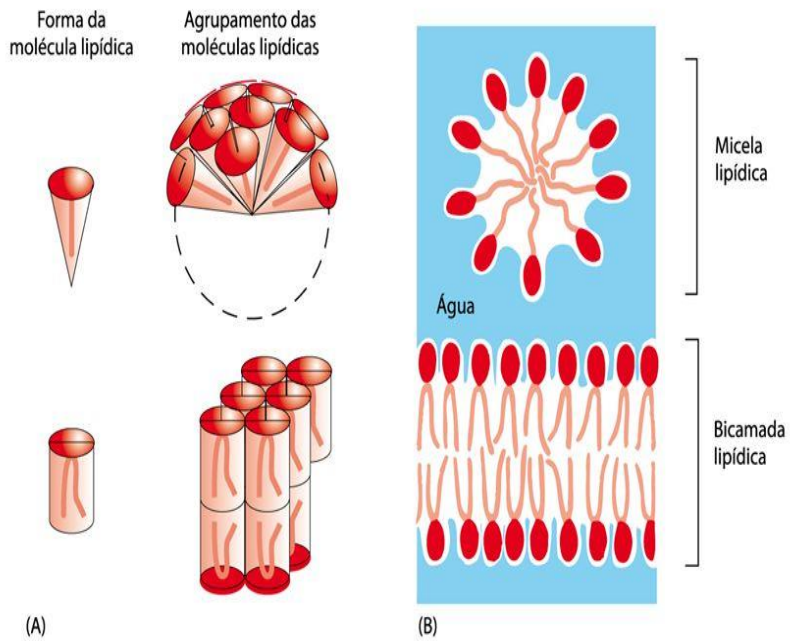
- cadeia lateral apolar
- cadeia lateral polar não-carregada
- cadeia lateral com grupo positivo (básico)
- cadeia lateral com grupo negativo (ácido)

## RIBOSOME



# E na célula?

## Lipídeos agregam espontaneamente

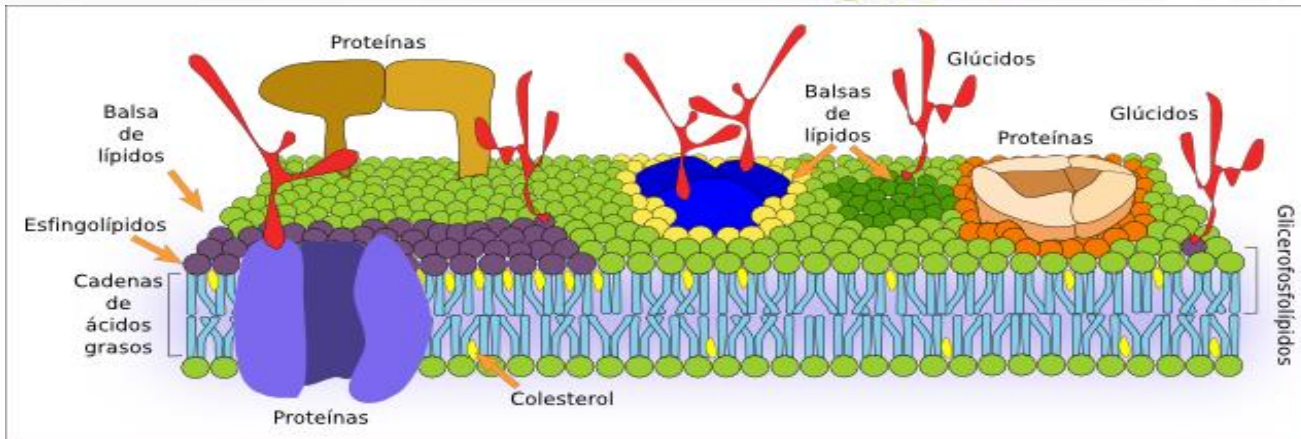
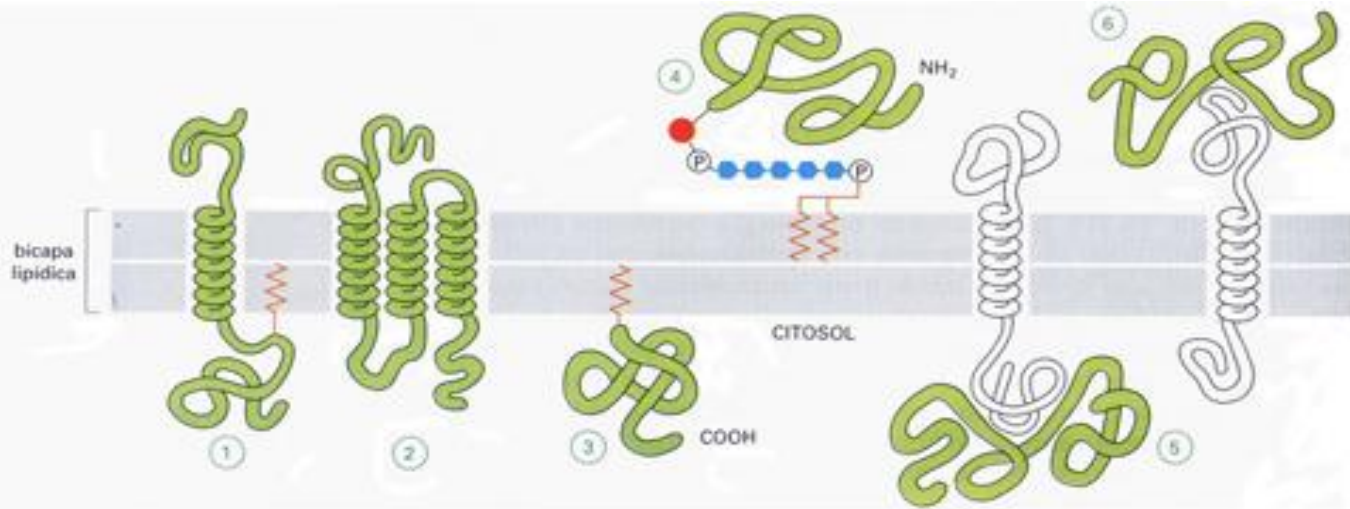


©Addison Wesley Longman, Inc.

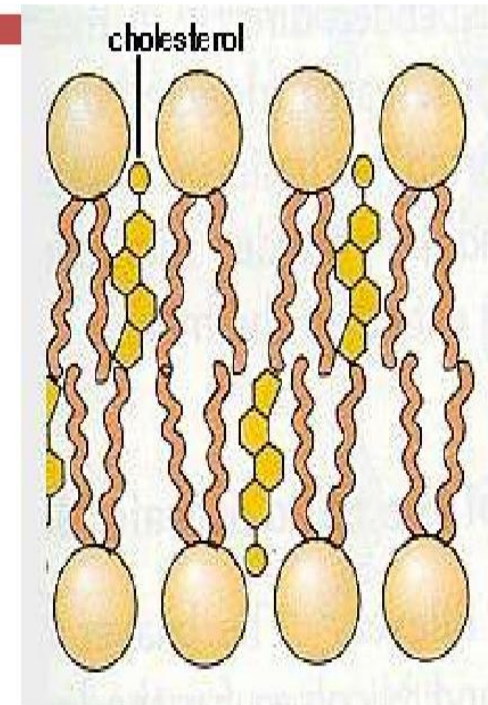
**Figura 10-7** Arranjo do agrupamento das moléculas de lipídeos em um ambiente aquoso. (A) Moléculas lipídicas em forma de cunha (*acima*) formam micelas, enquanto moléculas fosfolipídicas em forma cilíndrica (*abaixo*) formam bicamadas. (B) Uma micela lipídica e uma bicamada lipídica observadas em uma secção transversal. As moléculas lipídicas formam espontaneamente uma ou outra dessas estruturas em água, dependendo de sua forma.



# O que acontece na membrana?



## Colesterol – Estabiliza la membrana



Papel en  
fluidez de  
membrana

Alberts et al. *Molecular Biology of the Cell*, Garland Publishing, N.Y., 1994, Third Edition, Figure 10-9; or Wolfe S.L., *Molecular and Cellular Biology*, Wadsworth Publishing Company, 1993

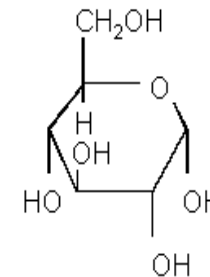
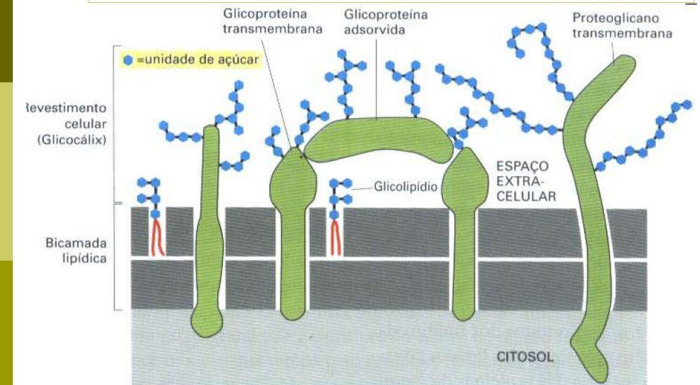
# Açúcares ou carboidratos o que são?

Carboidratos

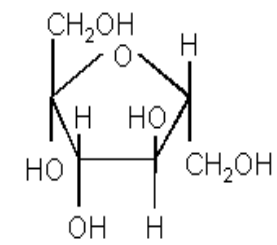


Constituídas por 3 elementos em comum C,H,O esse carboidratos formam polissacarídeos com funções essenciais para a célula ( Energia, estrutura, DNA,RNA, Sinalização).

## O glicocálix ou glicocálice



Glicose



Frutose

# Os açúcares são comuns em todas as células?

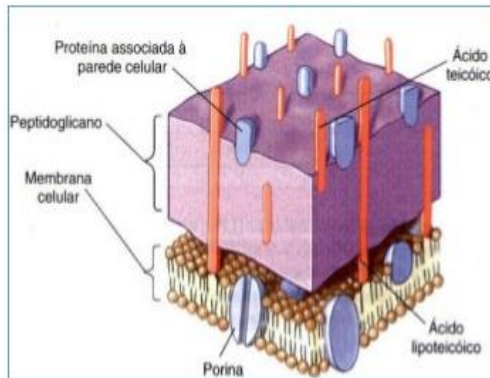
## Parede Celular

### Parede Celular Bacteriana

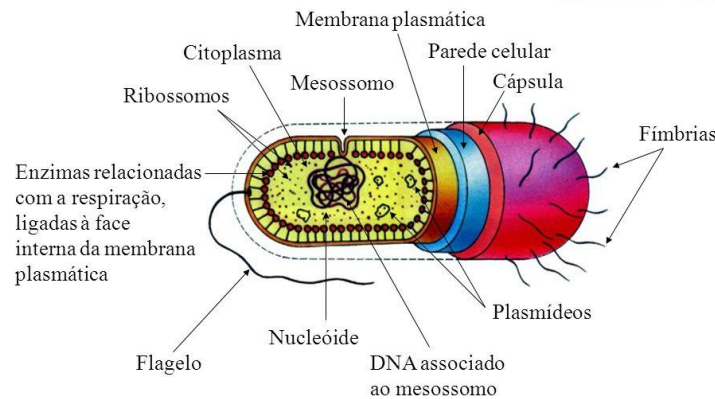
#### Bactérias Gram-positivas

60% → peptideoglicano

40% → ácidos tecóicos e lipotecóicos, proteínas e polissacaríde

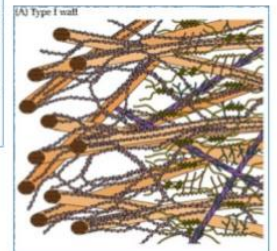
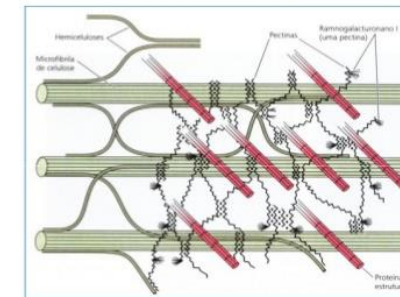


## Célula bacteriana



## Parede Celular

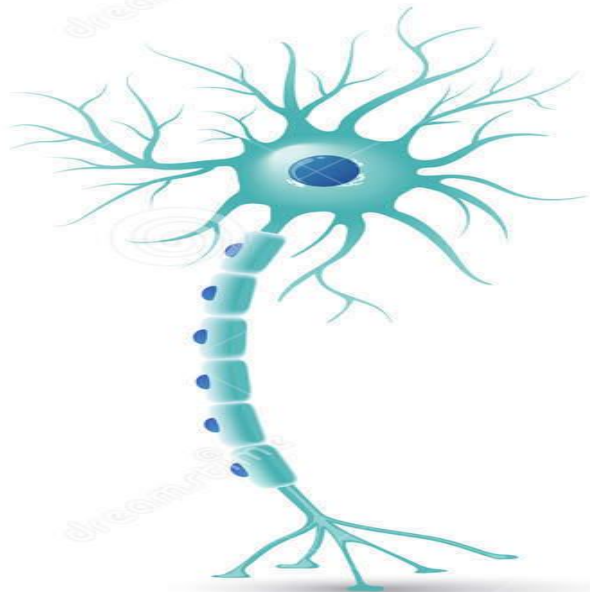
### Parede Celular Vegetal





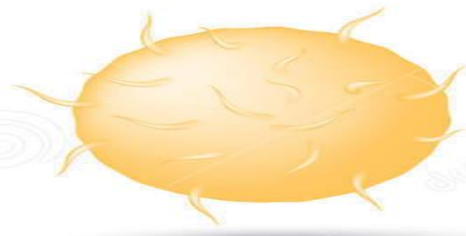
# Tipos de células?

## Human cell



Motor neuron

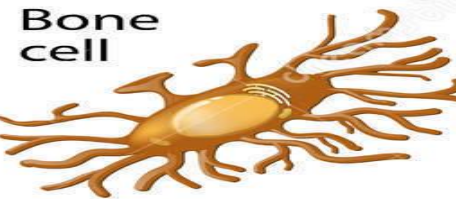
Red blood cell



White blood cell



Cells in the inner lining of the intestine



Bone cell



Sperm cell

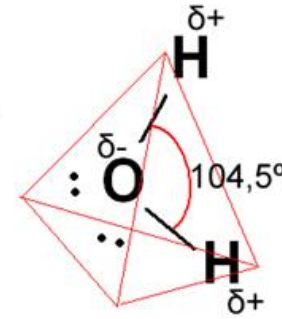
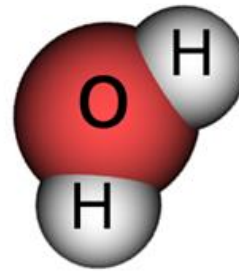


Ovum





# Molécula da água!



## BEBA MUITA ÁGUA VEJA OS BENEFÍCIOS!

Ajuda a transportar nutrientes e oxigênio para as células

Regula a temperatura corporal

Ajuda no bom funcionamento do intestino

Lubrifica as articulações

Compõe em torno de 75% dos músculos

Compõe em torno de 75% do cérebro

Umidifica o oxigênio para a respiração

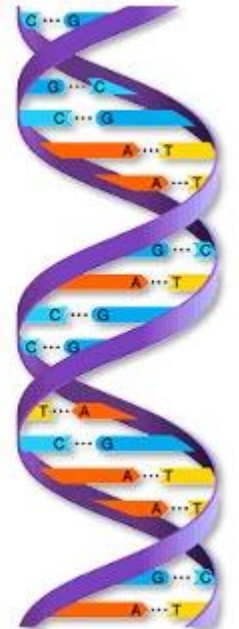
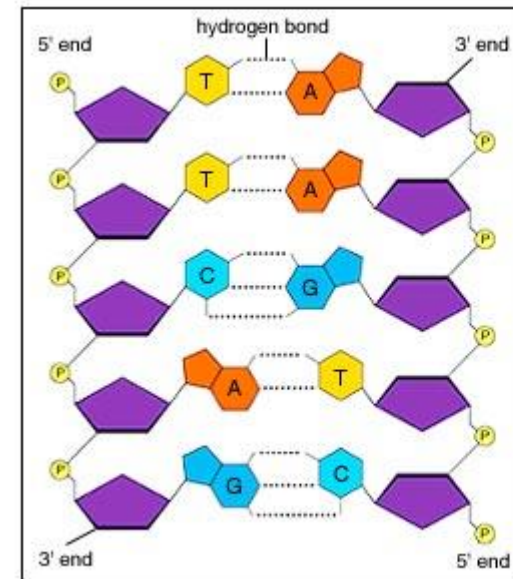
Ajuda a transformar comida em energia

Proteje órgãos vitais

Ajuda na absorção de nutrientes

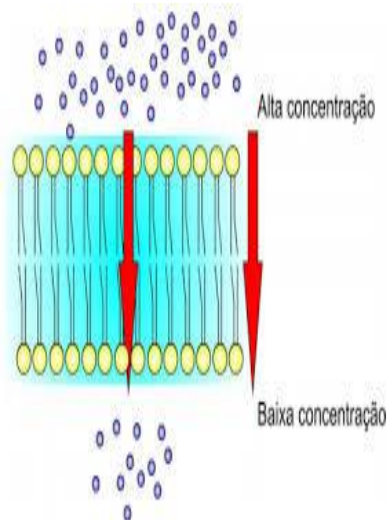
Compõe em torno de 88% do sangue

[fb.com/juventudesustentavel.oficial](http://fb.com/juventudesustentavel.oficial)

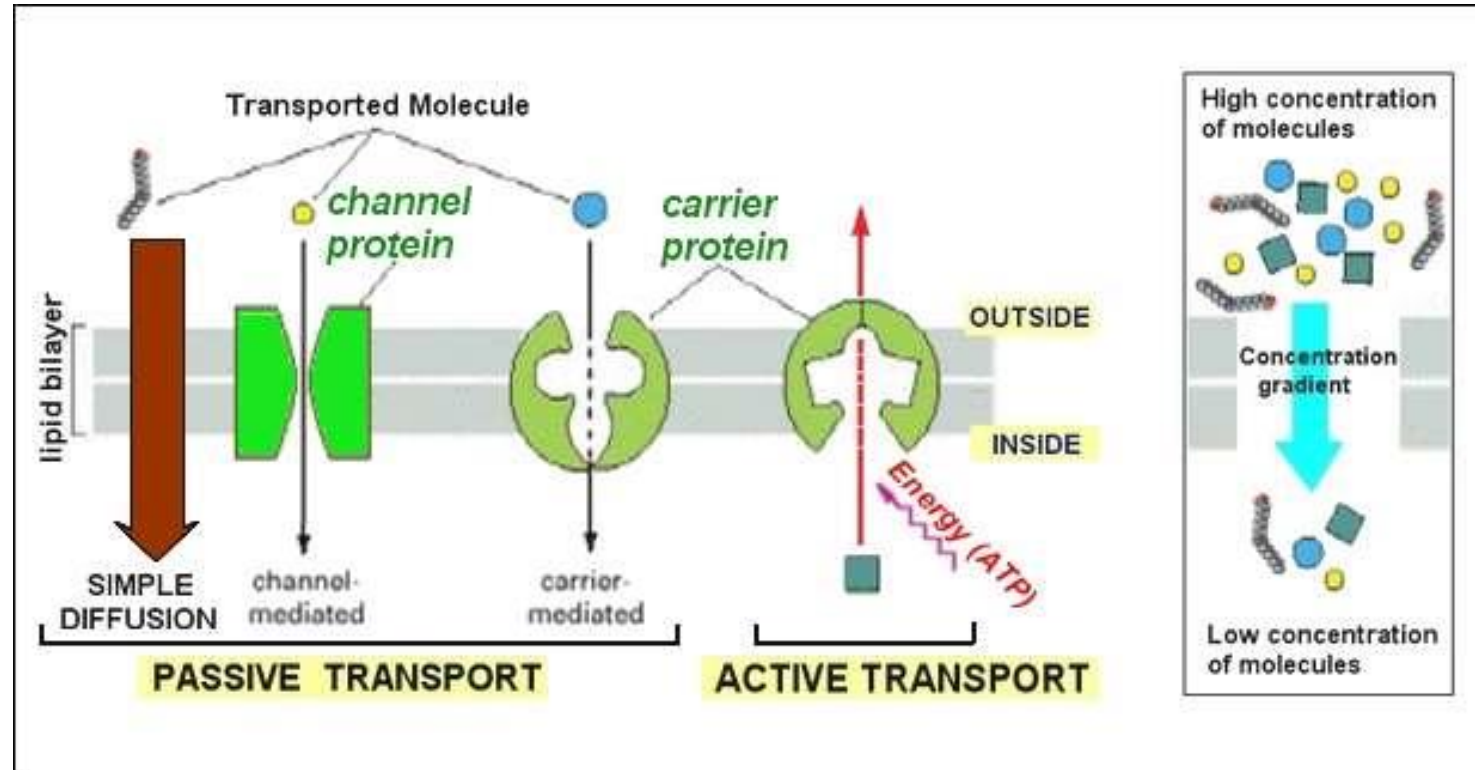


# Transporte passivo X Transporte ativo.

Difusão simples : é a passagem de soluto do lugar mais concentrado pro menos concentrado, através da bicamada lipídica (O, Co2).  
Hematoese!



	Intracelular	Extracelular
Potássio	155	5
Sódio	12	145
Magnésio	15	2
Cálcio	2	2
Cloro	8	110
Fosfatos	90	2
Proteínas	60	15



# Vitaminas?

- ▶ Lipossolúveis e hidrossolúveis.
- ▶ A,D,E, K.
- ▶ B,C,P.



Retinol



Calciferol



Transporte de cálcio para os ossos.

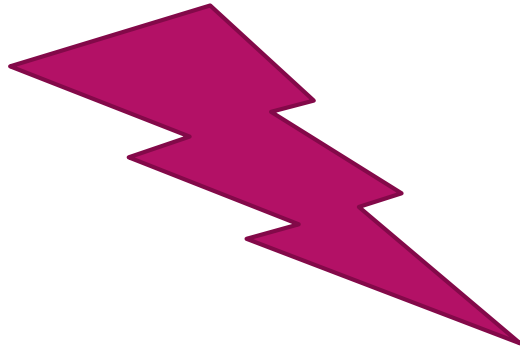




# Vitaminas

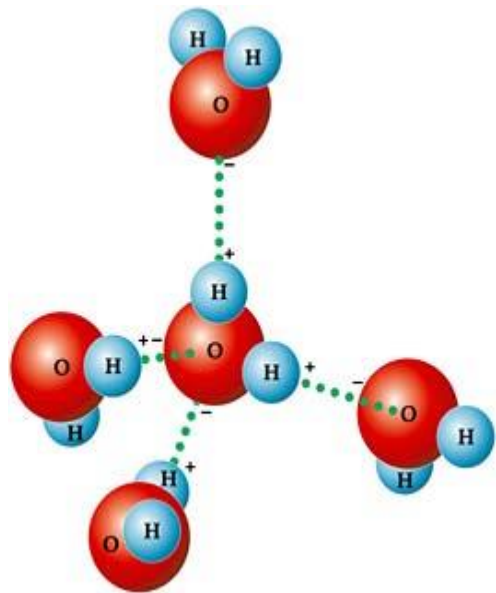
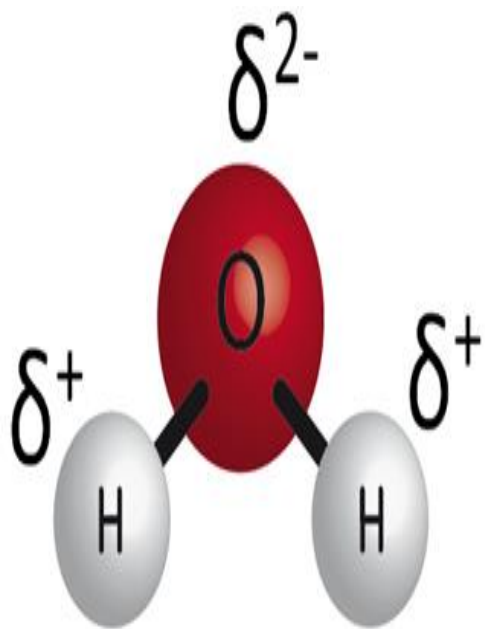
## ▶ Vitamina E : Tocoferol

Radicais Livres





# Revisando!



# Revisando!



## Concentração

$C_X = 16/10 \rightarrow 1,6 \text{ g/ml}$        $C_A = 10/10 \rightarrow 1,0 \text{ g/ml}$        $C_Y = 6/10 \rightarrow 0,6 \text{ g/ml}$

"X"      Referencial "A"      "Y"

16g      10g      6g

10 ml      10 ml      10 ml

**HIPERTONICO**           **HIPOTONICO**

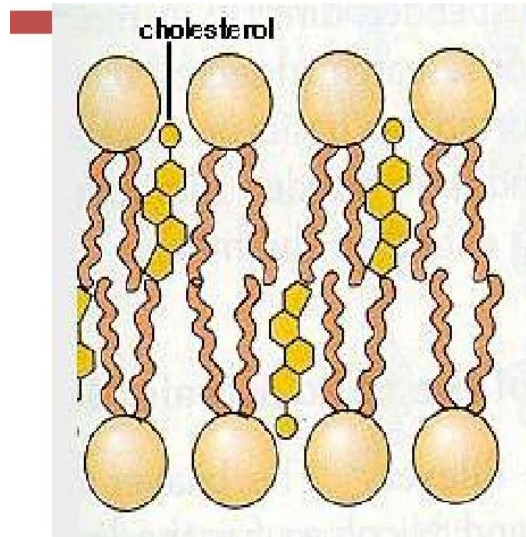
$C = (\text{massa do soluto}) / (\text{volume do solvente})$

*Prof. Elisa*

# Revisando!

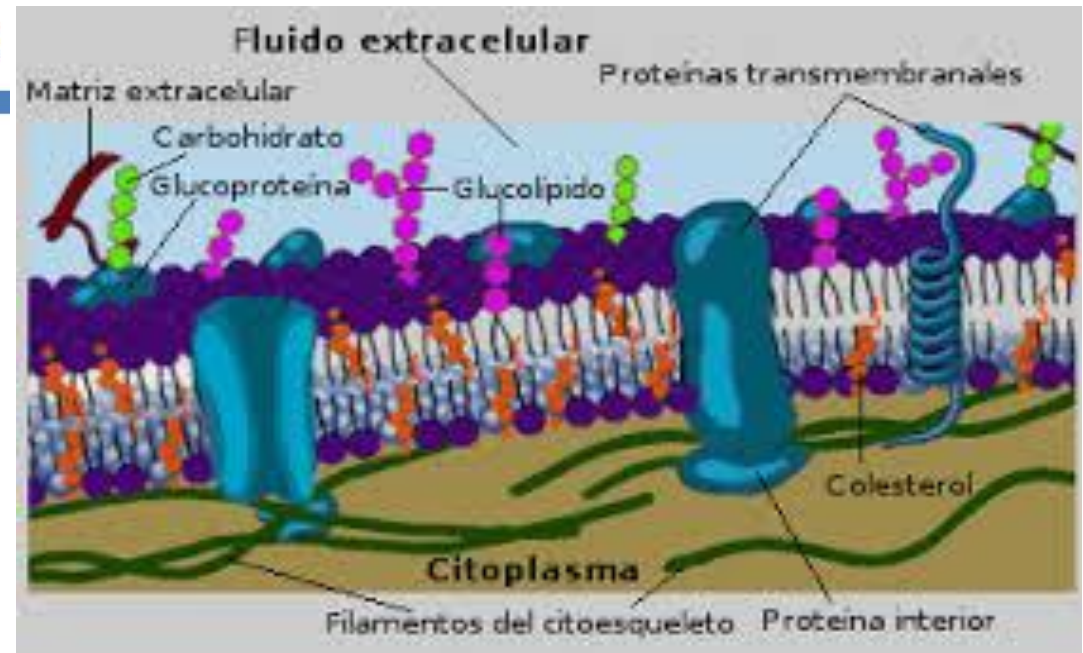


## Colesterol – Estabiliza la membrana



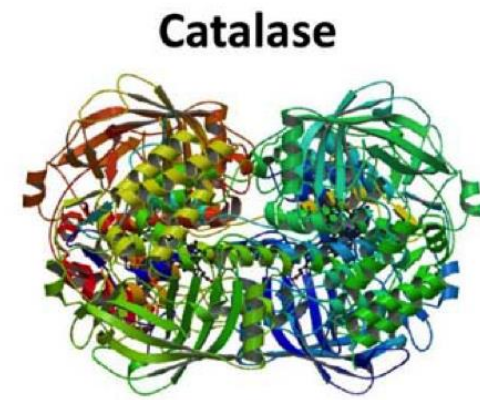
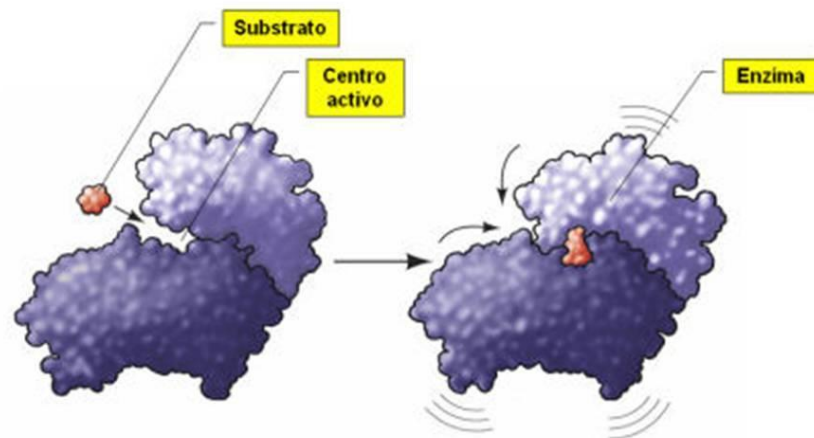
### Papel en fluidez de membrana

*Alberts et al. Molecular Biology of the Cell, Garland Publishing, N.Y., 1994, Third Edition, Figure 10-9; or Wolfe S.L., Molecular and Cellular Biology, Wadsworth Publishing Company, 1993*

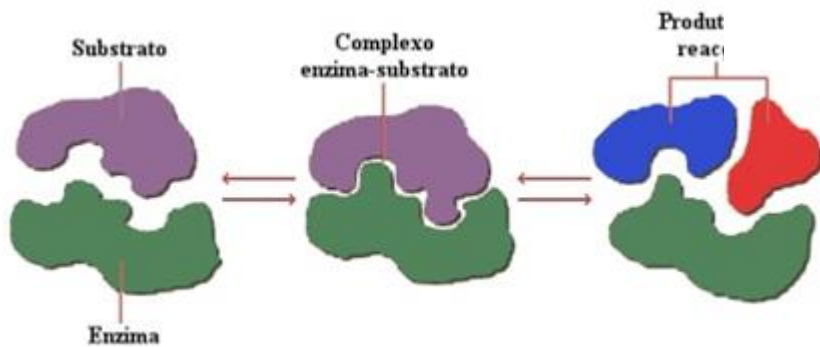




# Revisando!

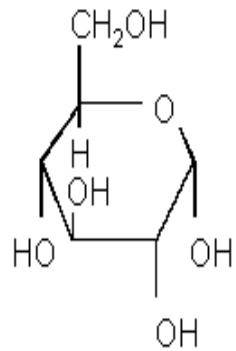
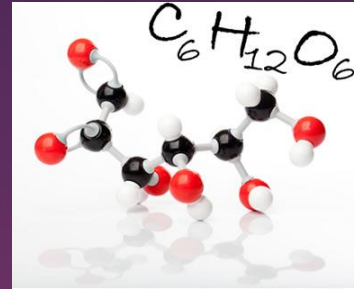


Indução, pelo substrato, da modificação do centro activo da enzima

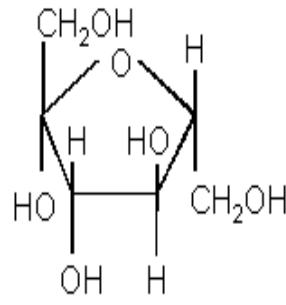




# Revisando!

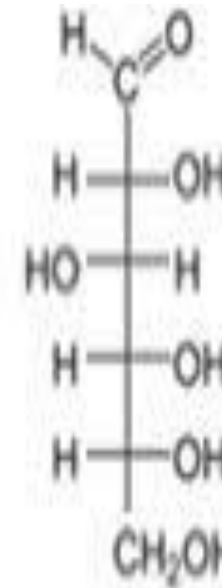
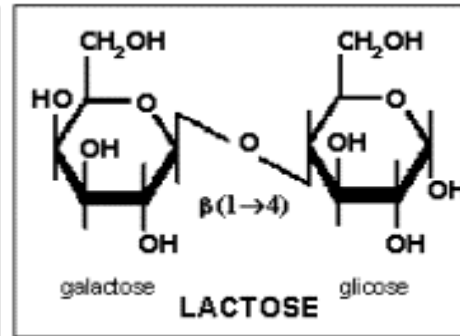
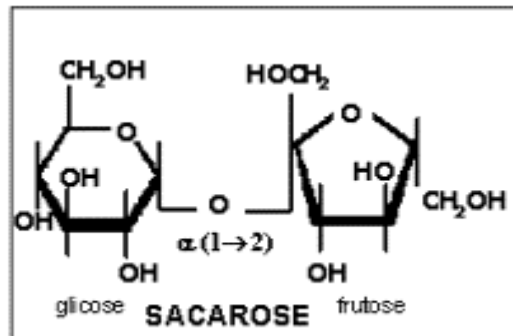
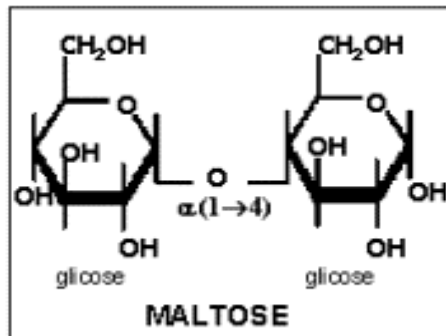
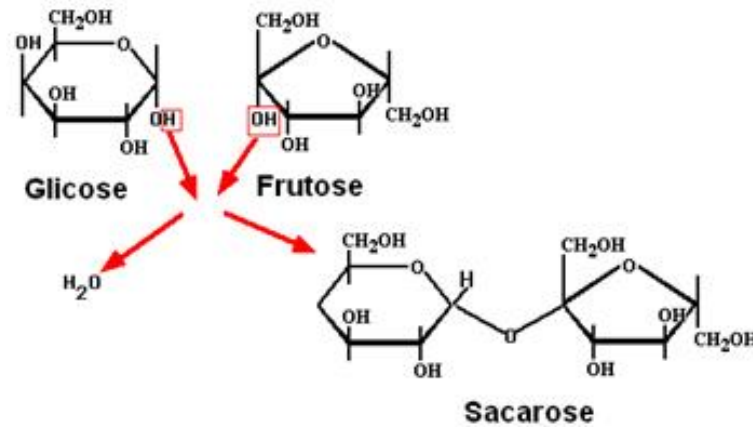


Glicose

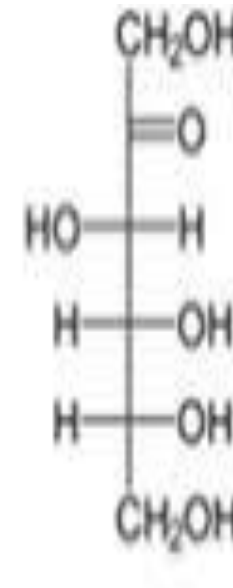


Frutose

## Síntese de desidratação da sacarose



Glicose

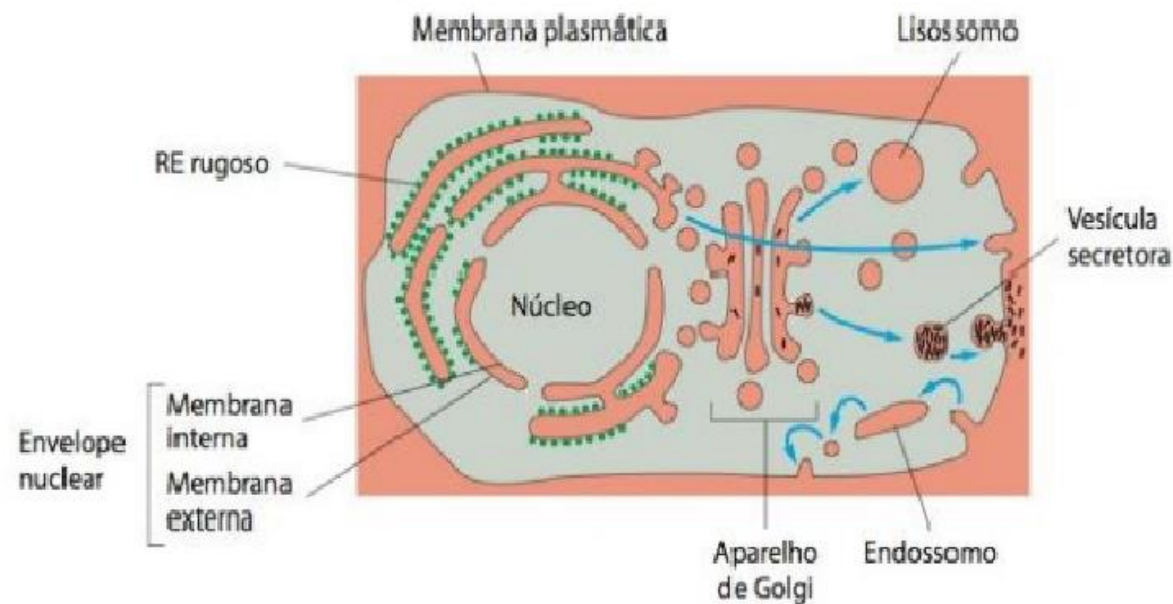
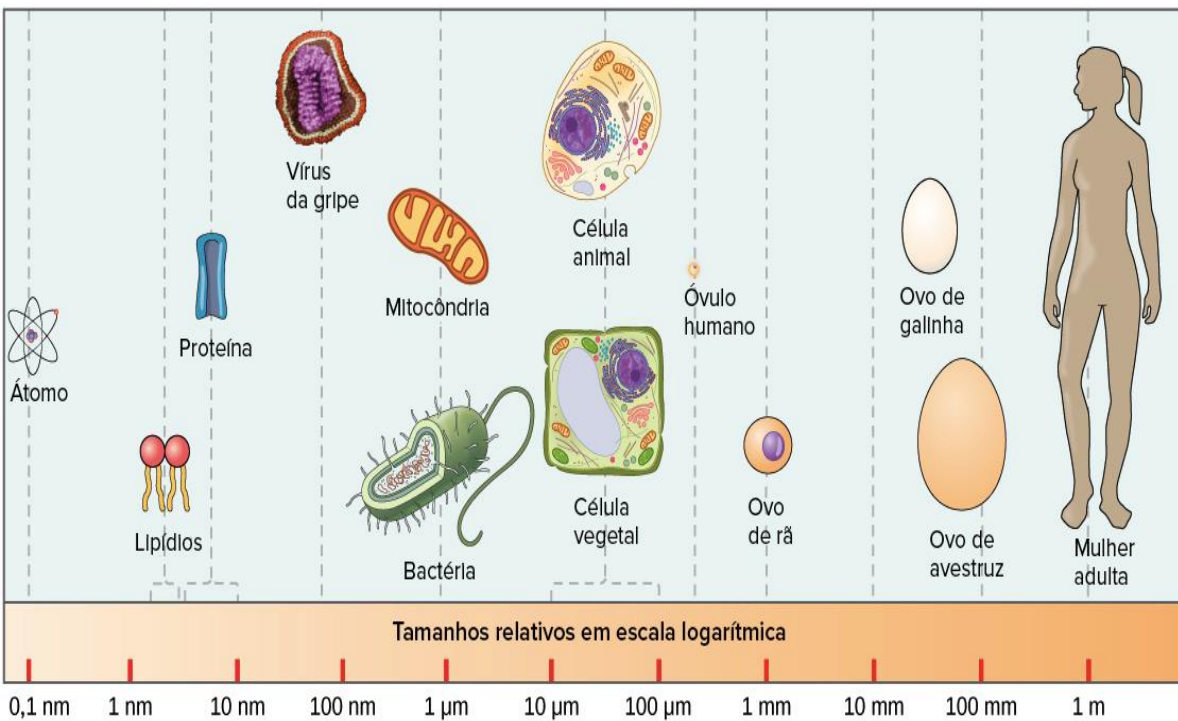


Frutose

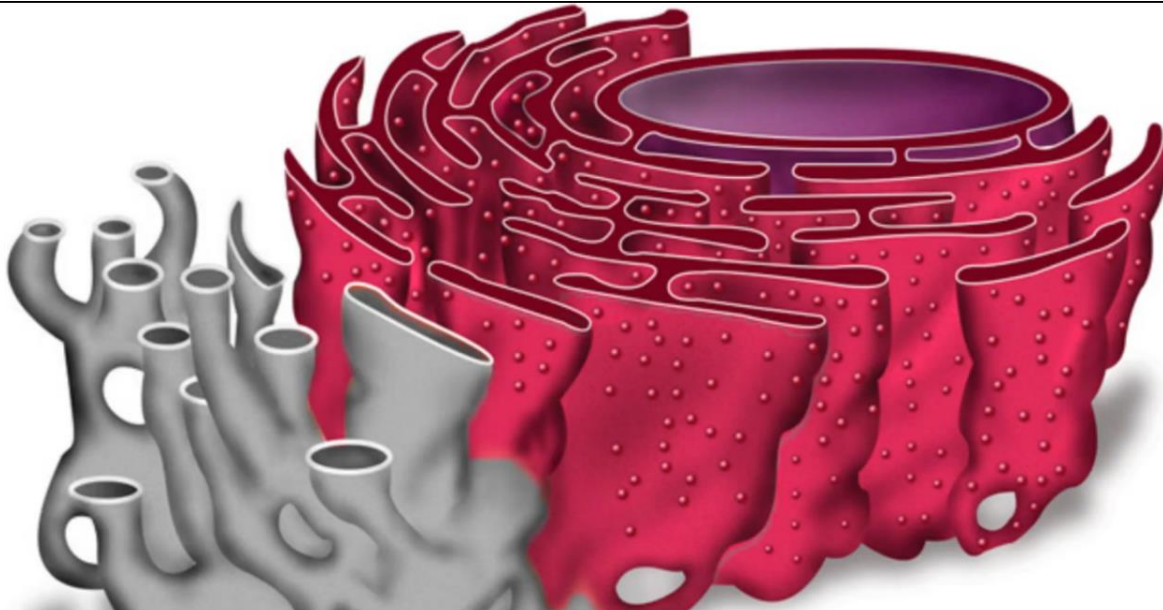
Revisando!



# Organelas Membranosas



# Reticulo endoplasmático.



- Apenas um só com duas funções que se em regiões por suas funções.
- Unido com o Núcleo.
- Síntese de proteínas externas, em maior numero.
- Quebra de moléculas tóxicas, ao organismo.
- Síntese de lipídios.

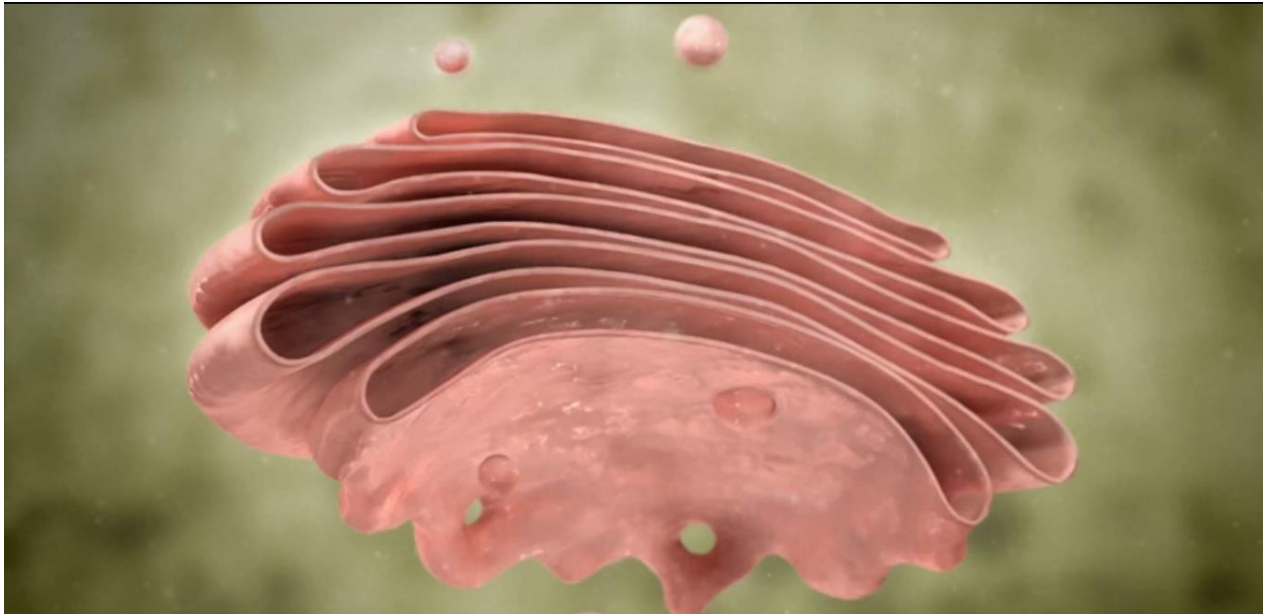


# Ribossomos.



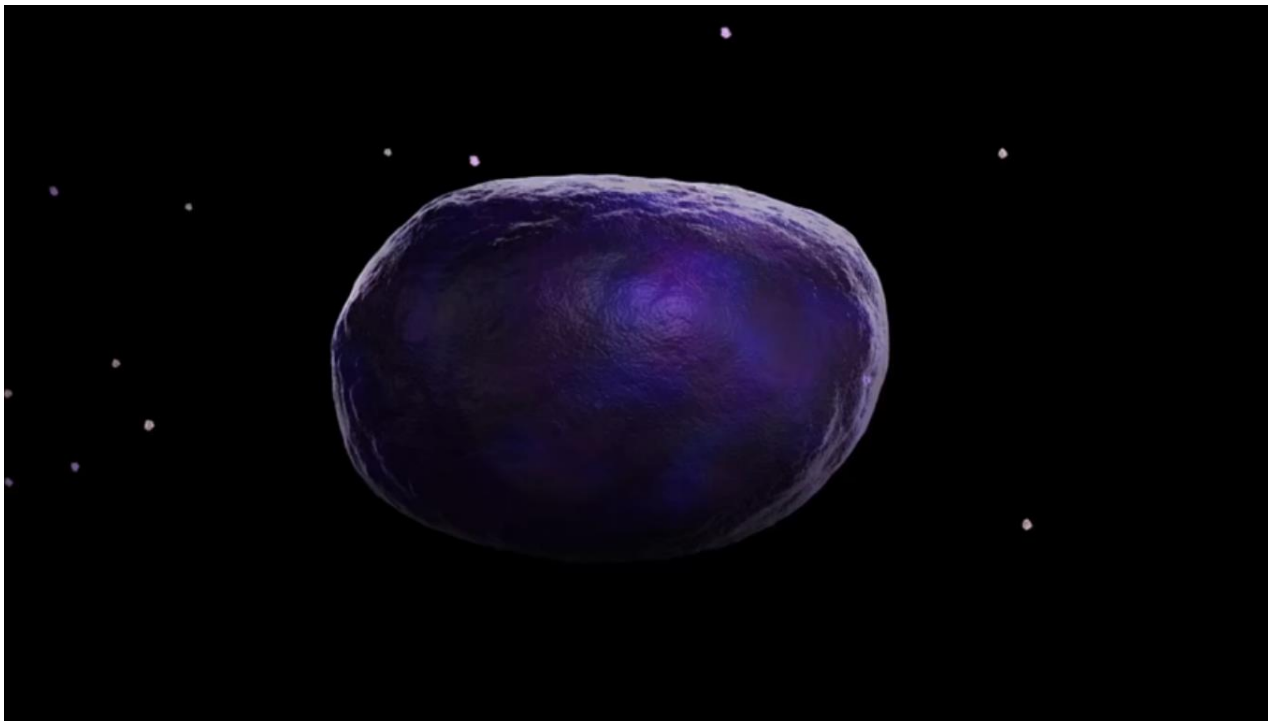
- **Síntese de proteínas internas.**
- **Formados por duas subunidades.**
- **Associação a RNA<sub>t</sub>, RNA<sub>m</sub>.**
- **Presente em células procariontes e eucariontes.**

# Complexo de Golgi.



- **Glicosilação de proteínas.**
- **Transporte para fora da célula.**
- **Síntese de carboidratos.**
- **Formação de lisossomos.**

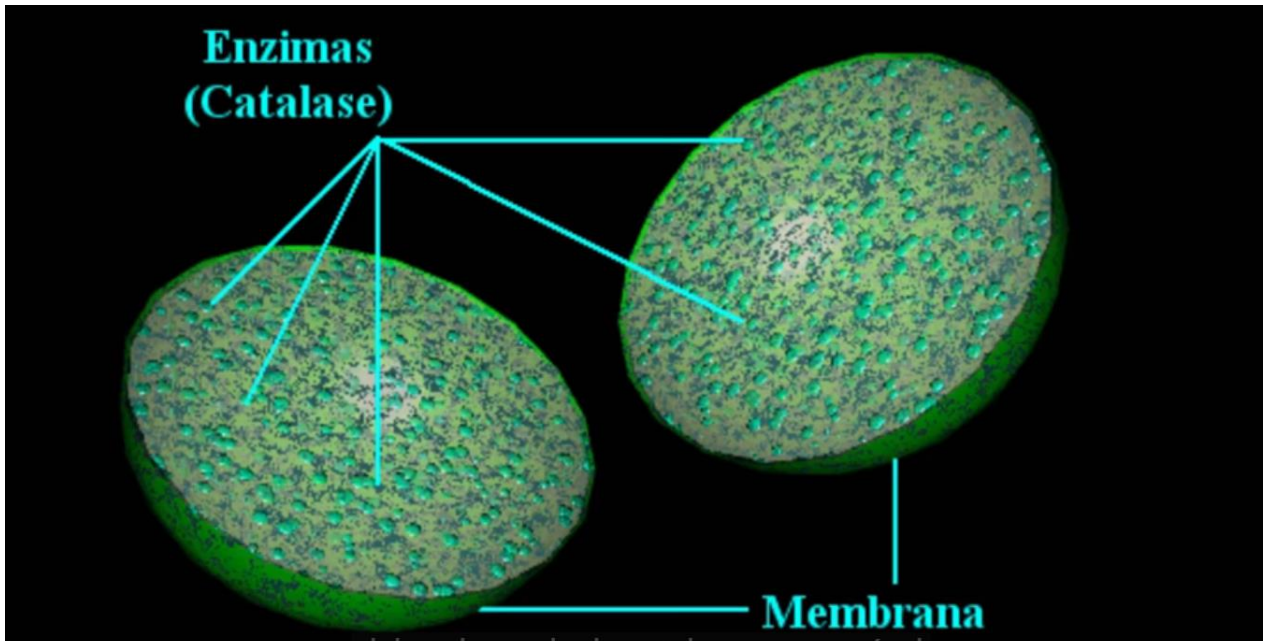
# Lisossomos.



- Repleto de enzimas.
- Lipases, proteases etc.
- Digestão celular.
- Heterofagia, Autofagia.



# Peroxisissomos

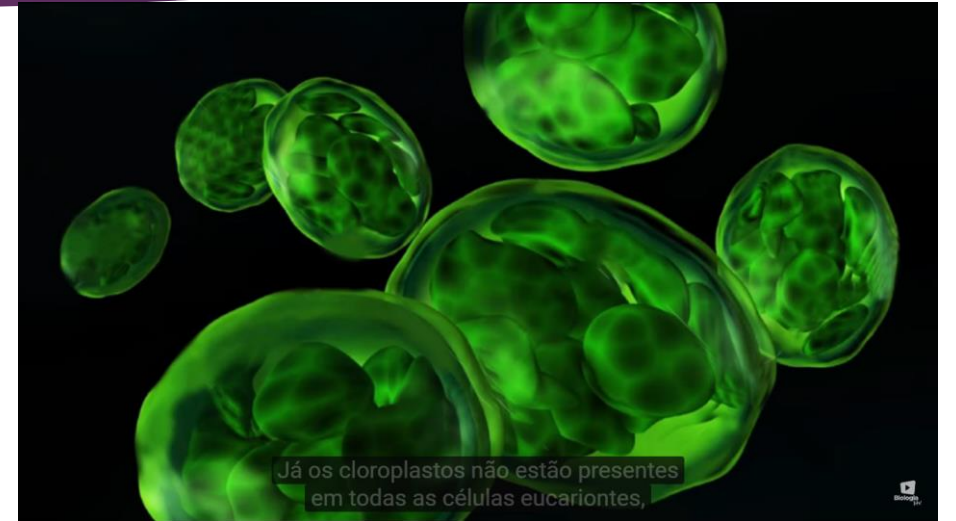


- Responsável pela detoxificação.
- Quebra de Espécies reativas de oxigênio.
- Presença da Enziama catalase.
- H<sub>2</sub>O<sub>2</sub> ( peroxido de Hidrogênio).

# Mitocôndrias e Cloroplasto.

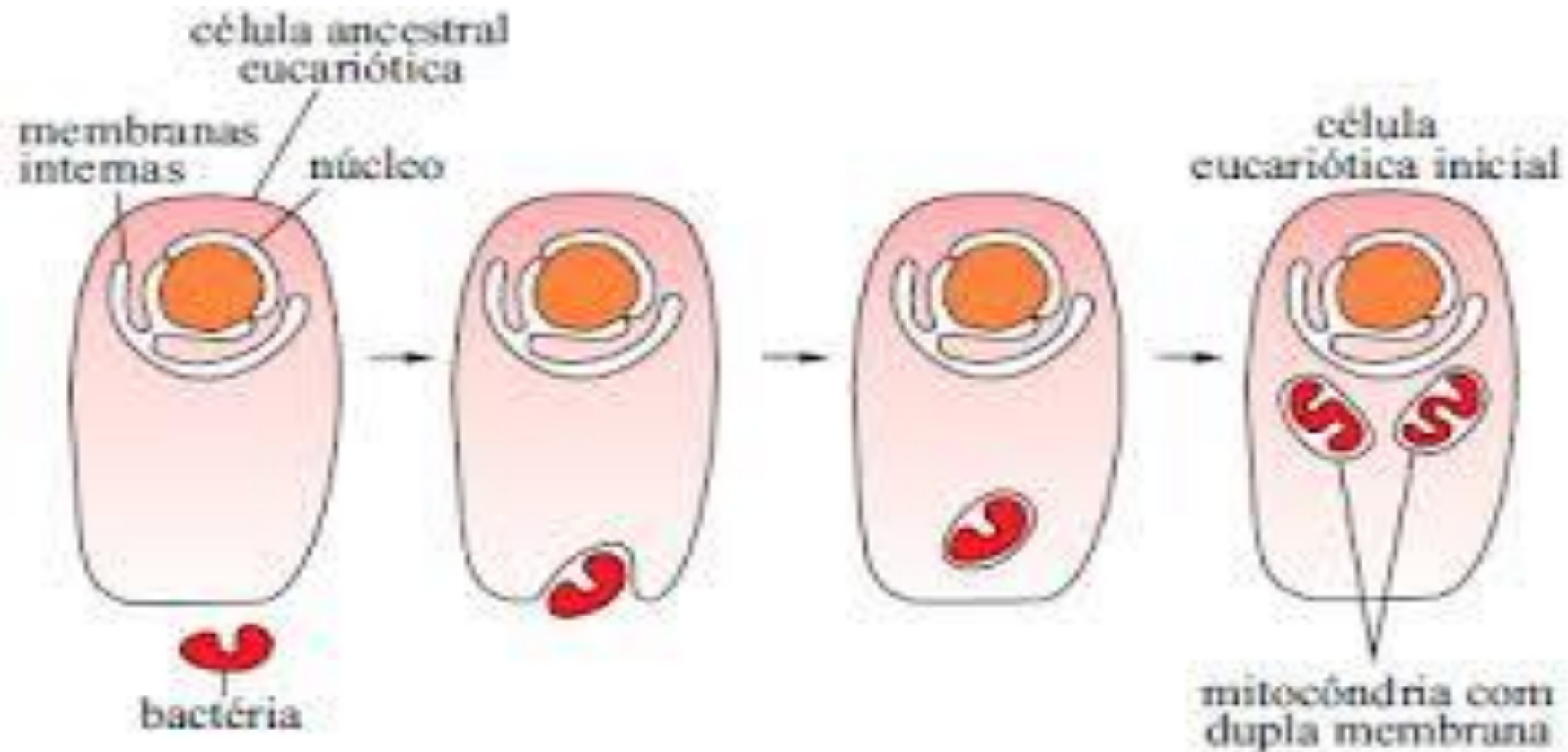


- **Respiração celular.**
- **Síntese de Atp.**
- **Cadeia Transportadora de oxigênio.**
- **Membrana dupla**



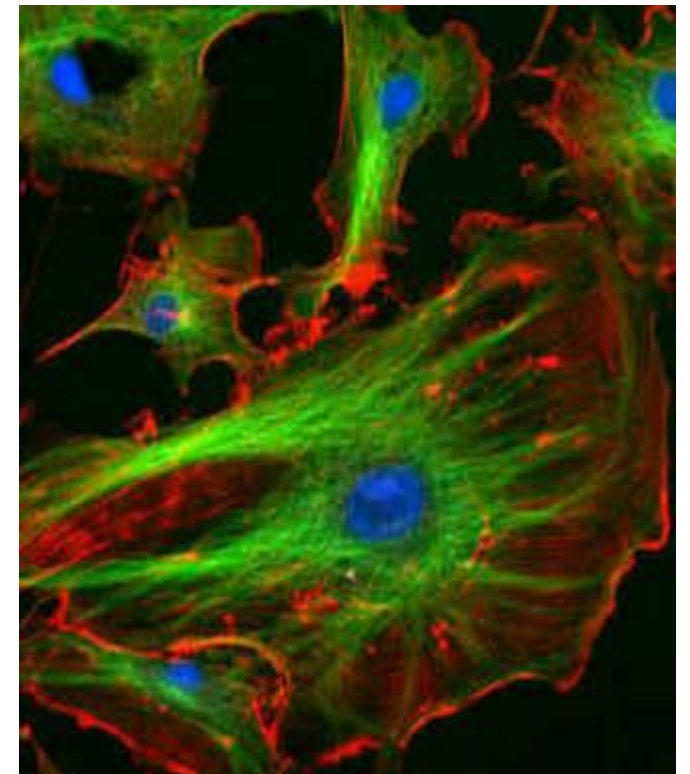
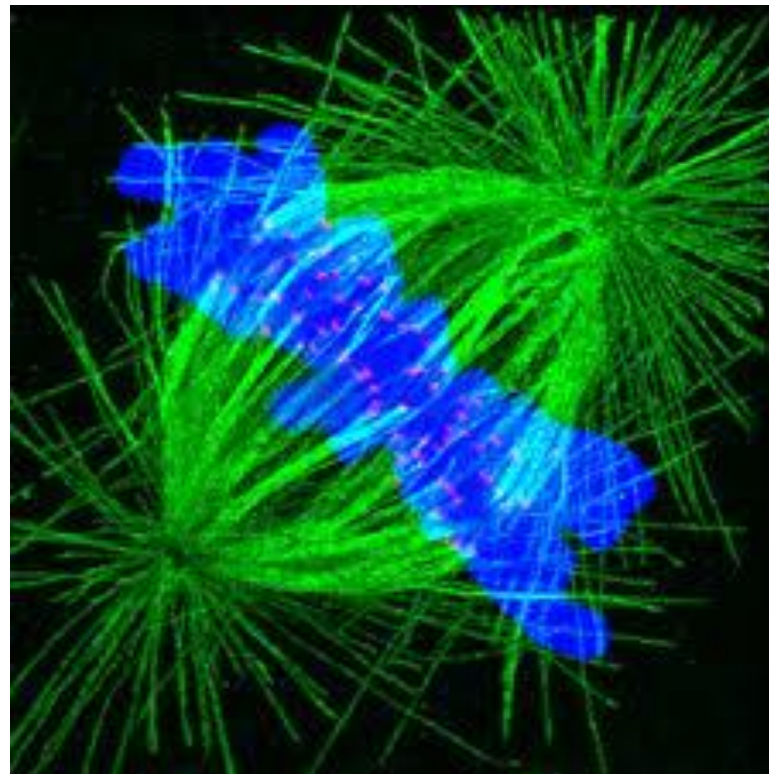
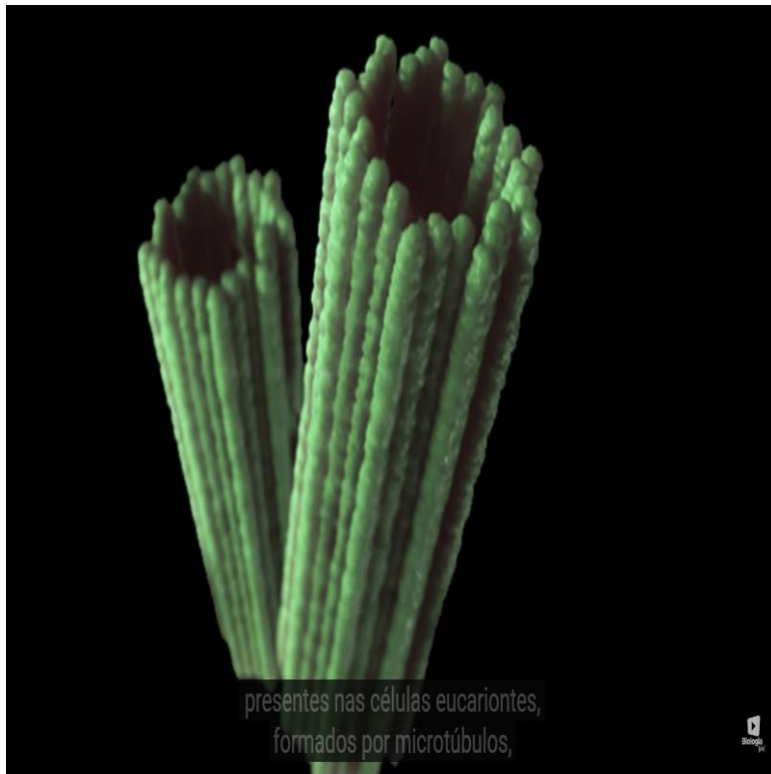
- **Fotossíntese.**
- **Clorofila.**
- **Membrana dupla.**

# Teoria da endossimbiose





# Centríolos e citoesqueleto.



# Referências

- ▶ Princípios de Bioquímica, Lehninger.
- ▶ The cell, Alberts et al.