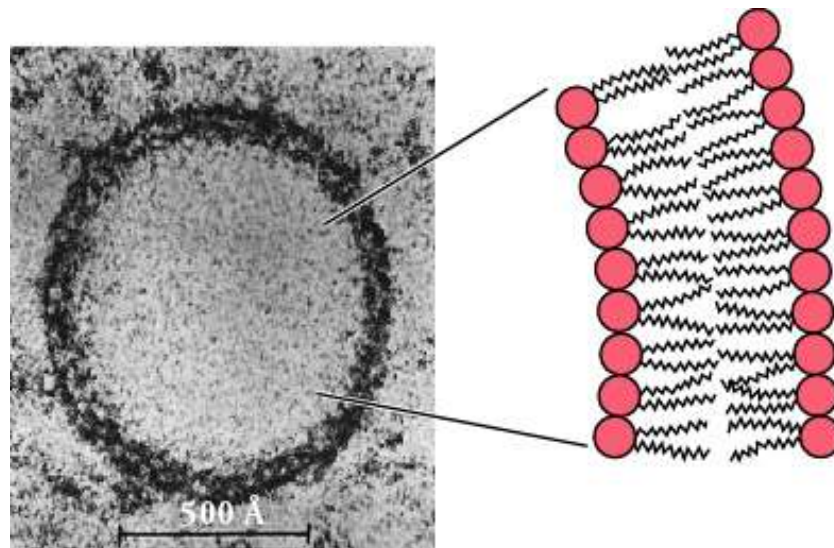
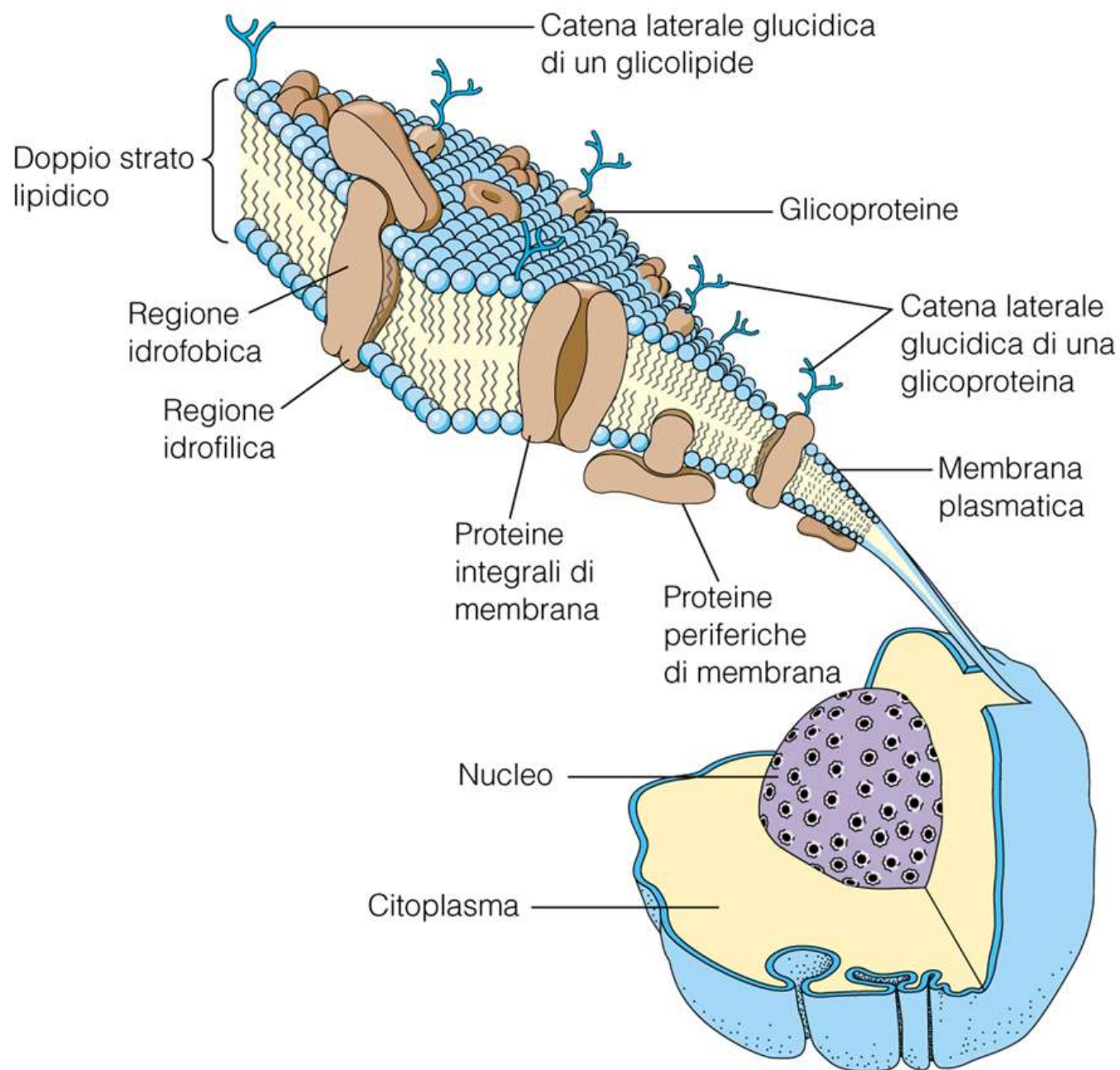
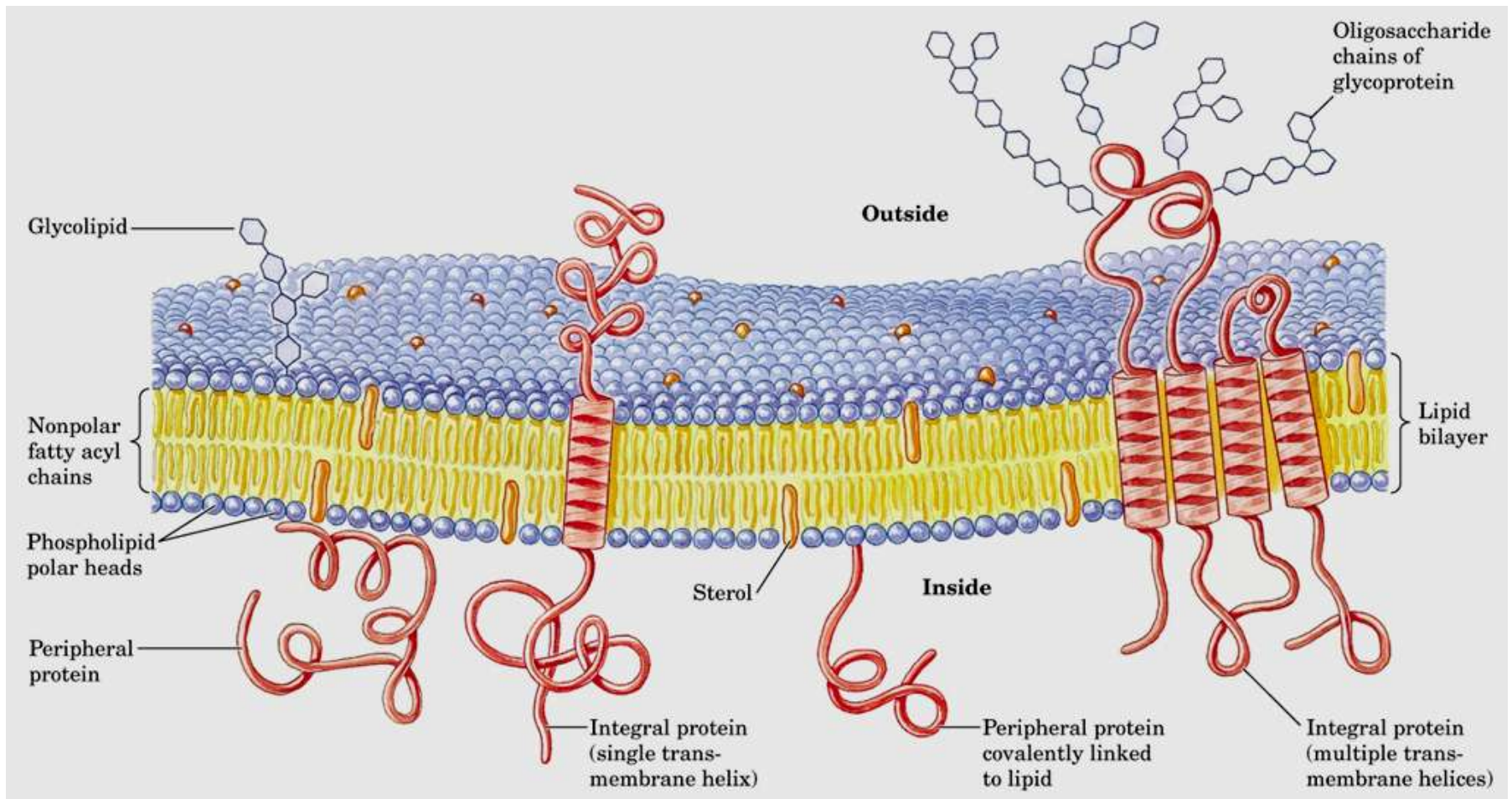


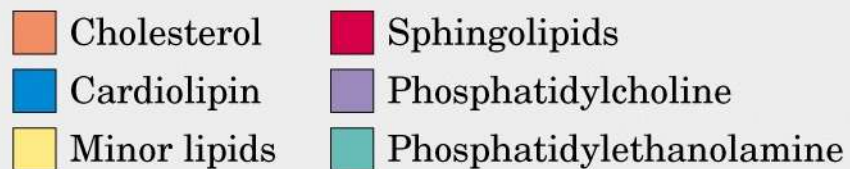
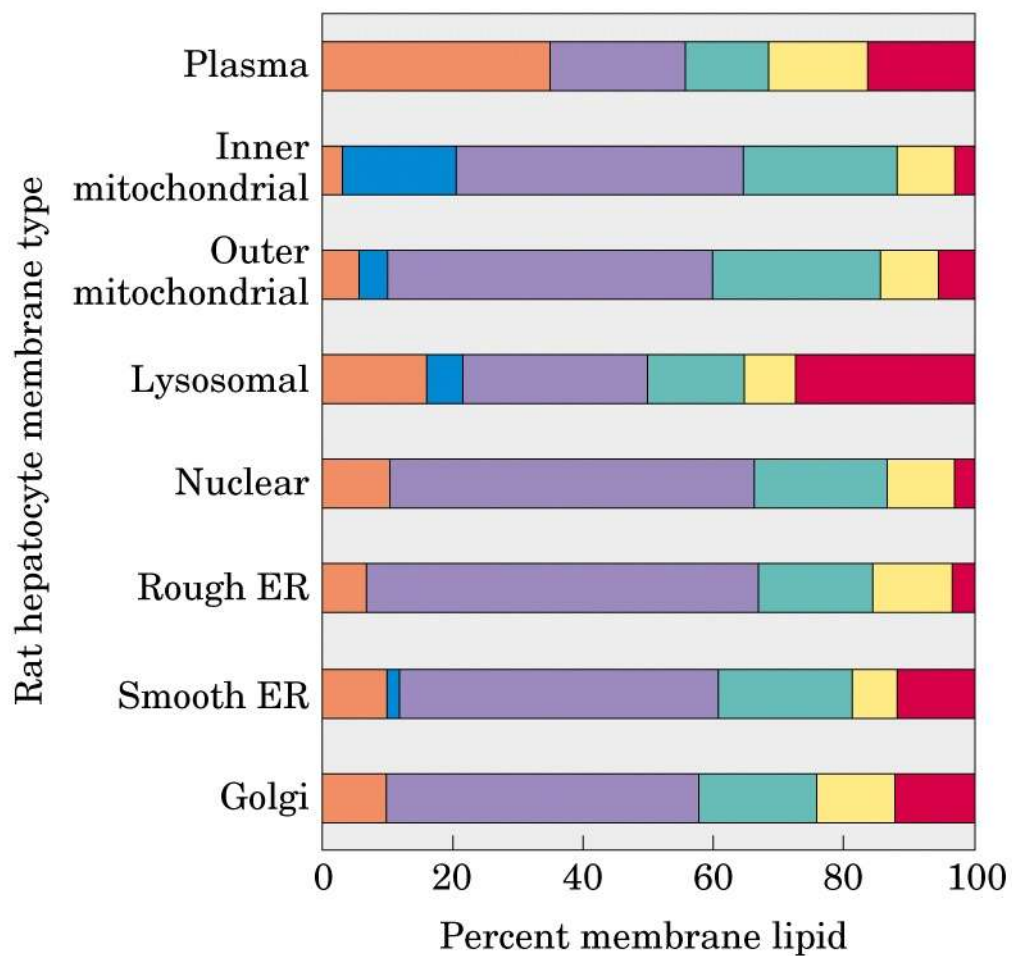
STRUTTURA E FUNZIONE DELLE MEMBRANE

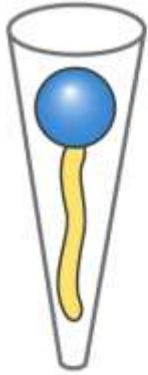


(a)

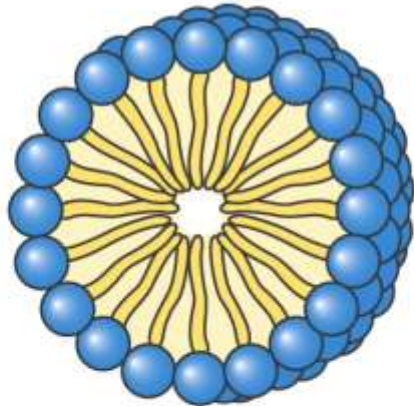




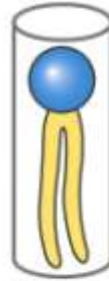




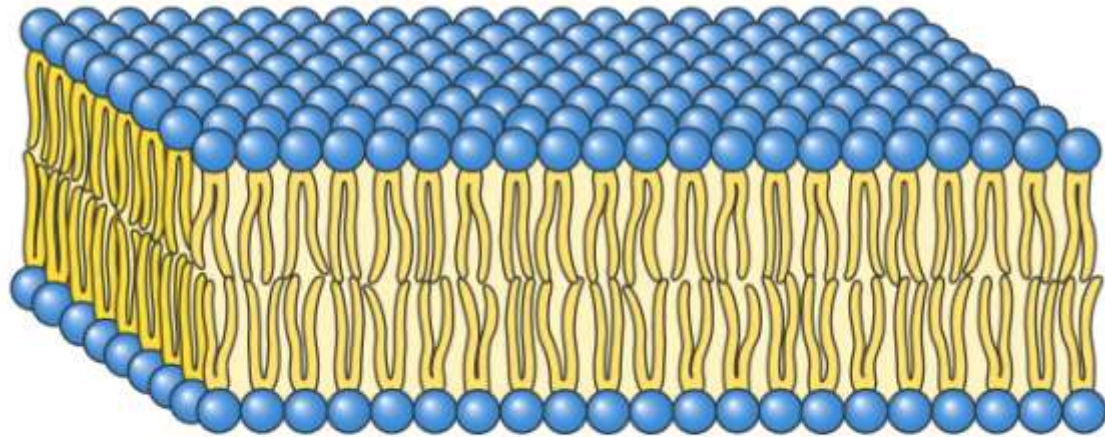
Individual units are wedge-shaped (cross-section of head greater than that of side chain)



Micelle
(a)

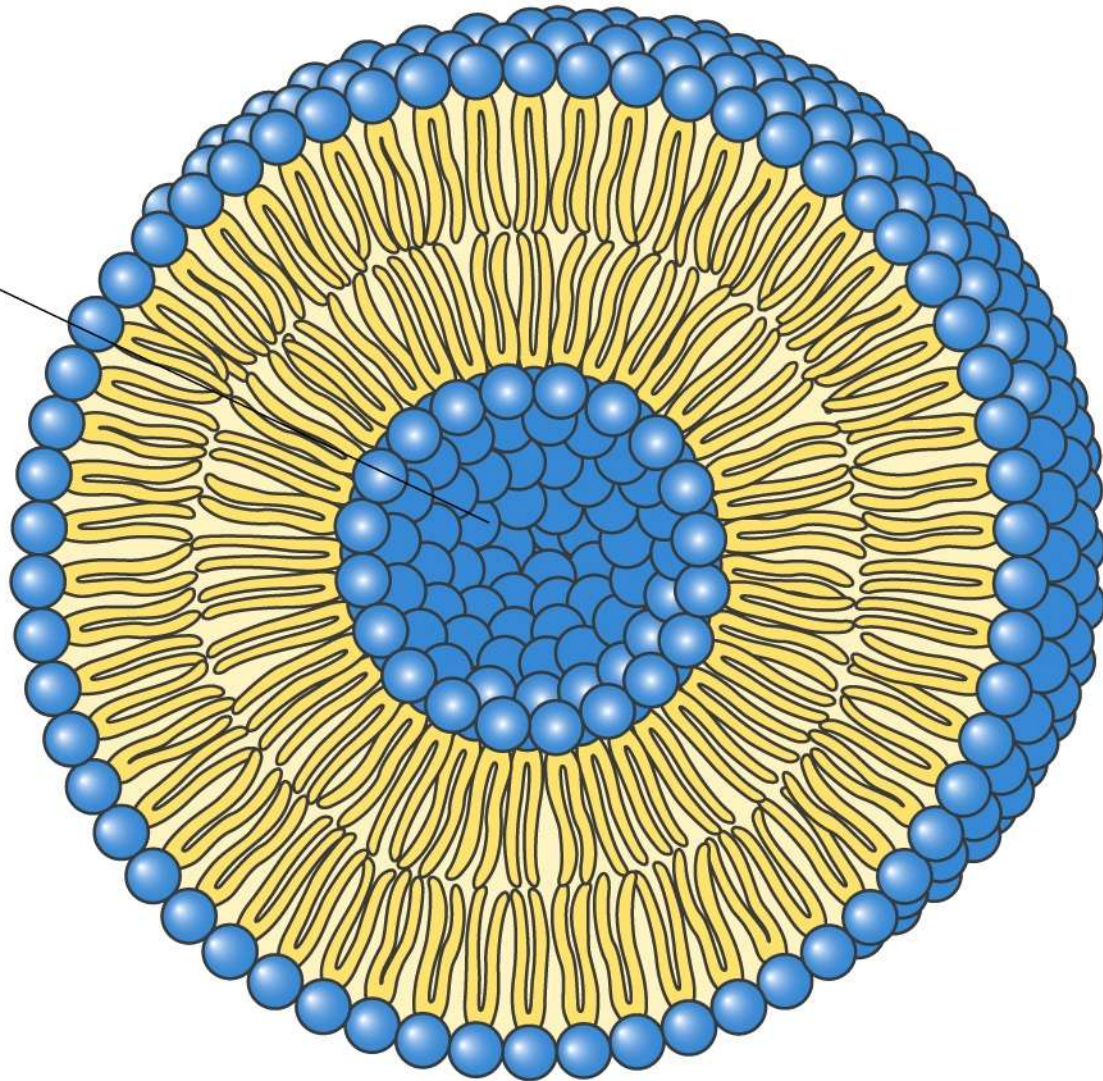


Individual units are cylindrical (cross-section of head equals that of side chain)



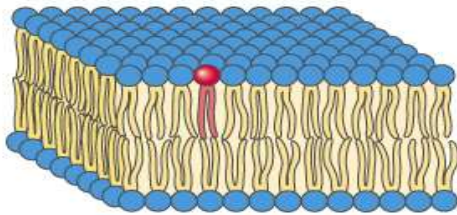
Bilayer
(b)

Aqueous
cavity



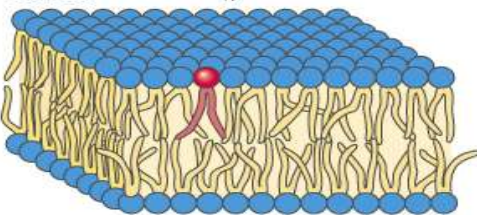
Liposome
(c)

Paracrystalline state (solid)

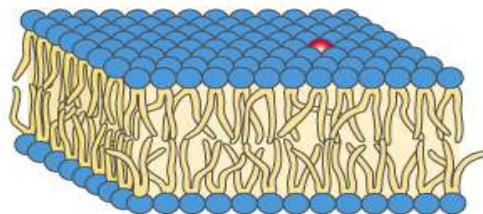


(a)
Heat produces thermal motion of acyl side chains (solid → fluid transition)

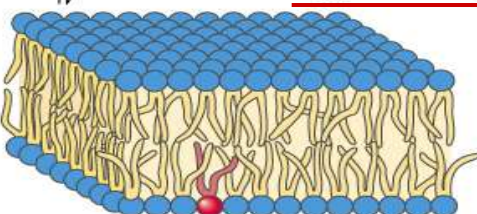
Fluid state



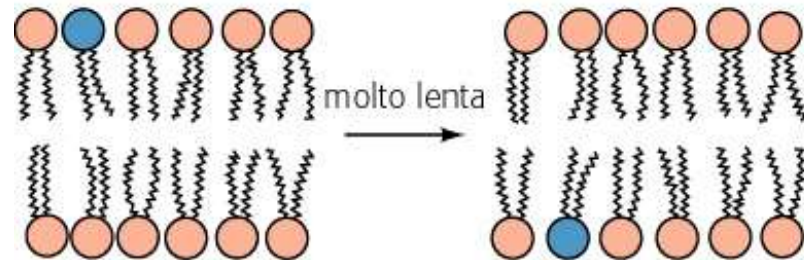
(b)
Lateral diffusion in plane of bilayer



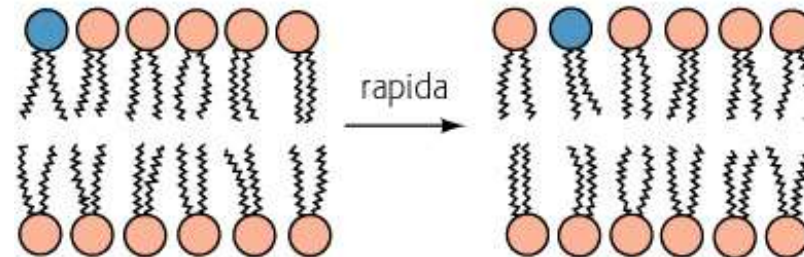
(c)
Transbilayer diffusion ("flip flop")
 $t_{1/2}$ = hours to days (uncatalyzed)
= seconds (flippase catalyzed)



(a) Diffusione trasversale (flip-flop)



(b) Diffusione laterale



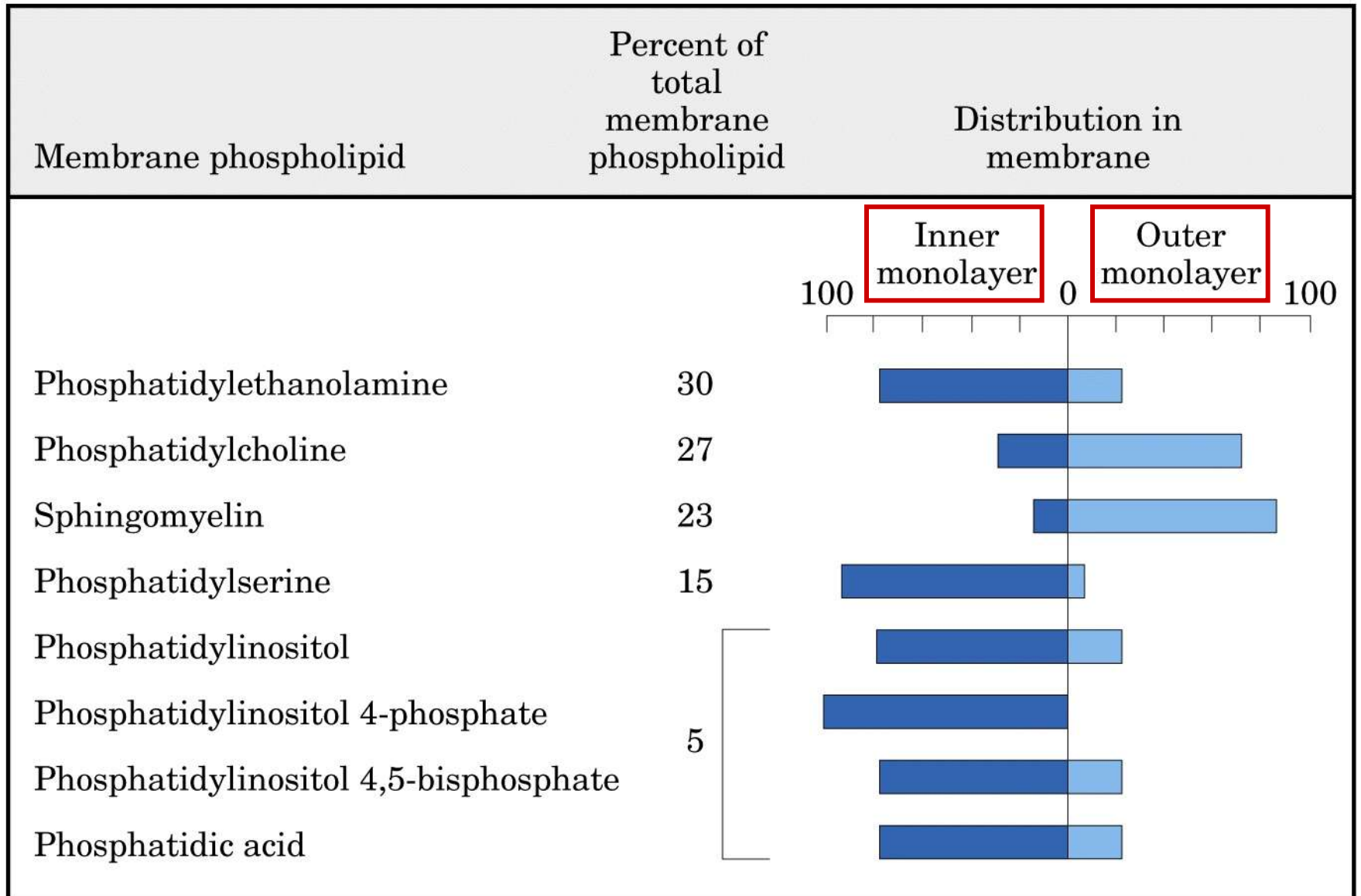


table 12-2

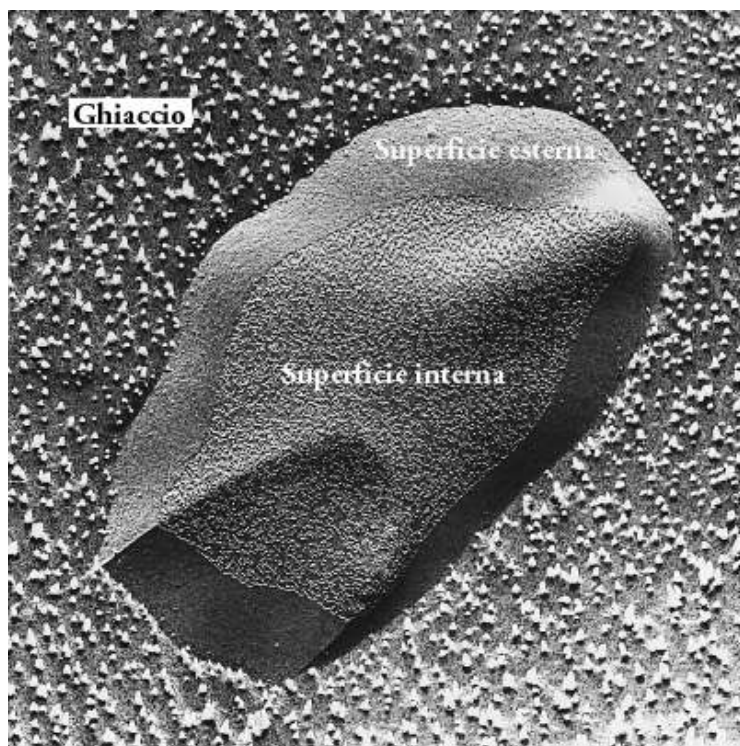
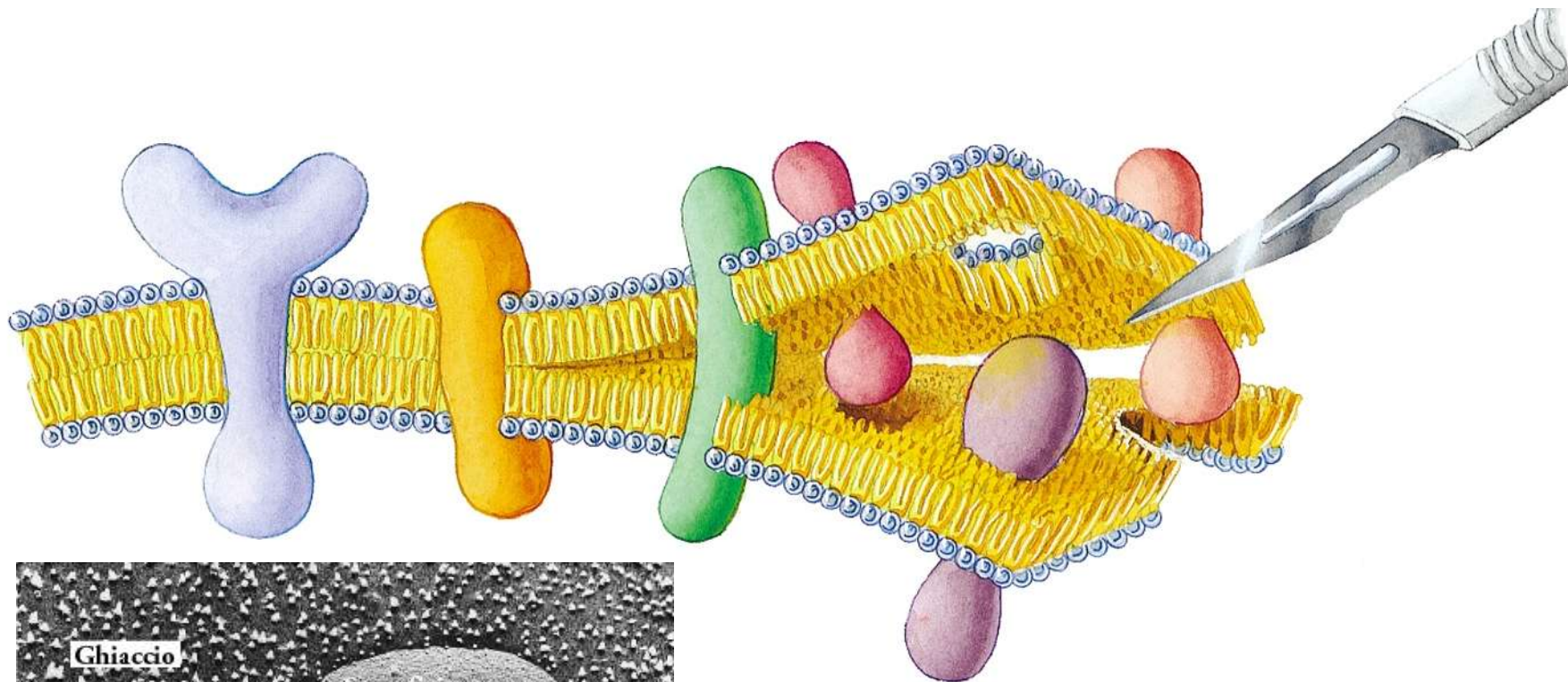
Fatty Acid Composition of *E. coli* Cells Cultured at Different Temperatures

	Percentage of total fatty acids*			
	10 °C	20 °C	30 °C	40 °C
Myristic acid (14:0)	4	4	4	8
Palmitic acid (16:0)	18	25	29	48
Palmitoleic acid (16:1)	26	24	23	9
Oleic acid (18:1)	38	34	30	12
Hydroxymyristic acid	13	10	10	8
Ratio of unsaturated to saturated [†]	2.9	2.0	1.6	0.38

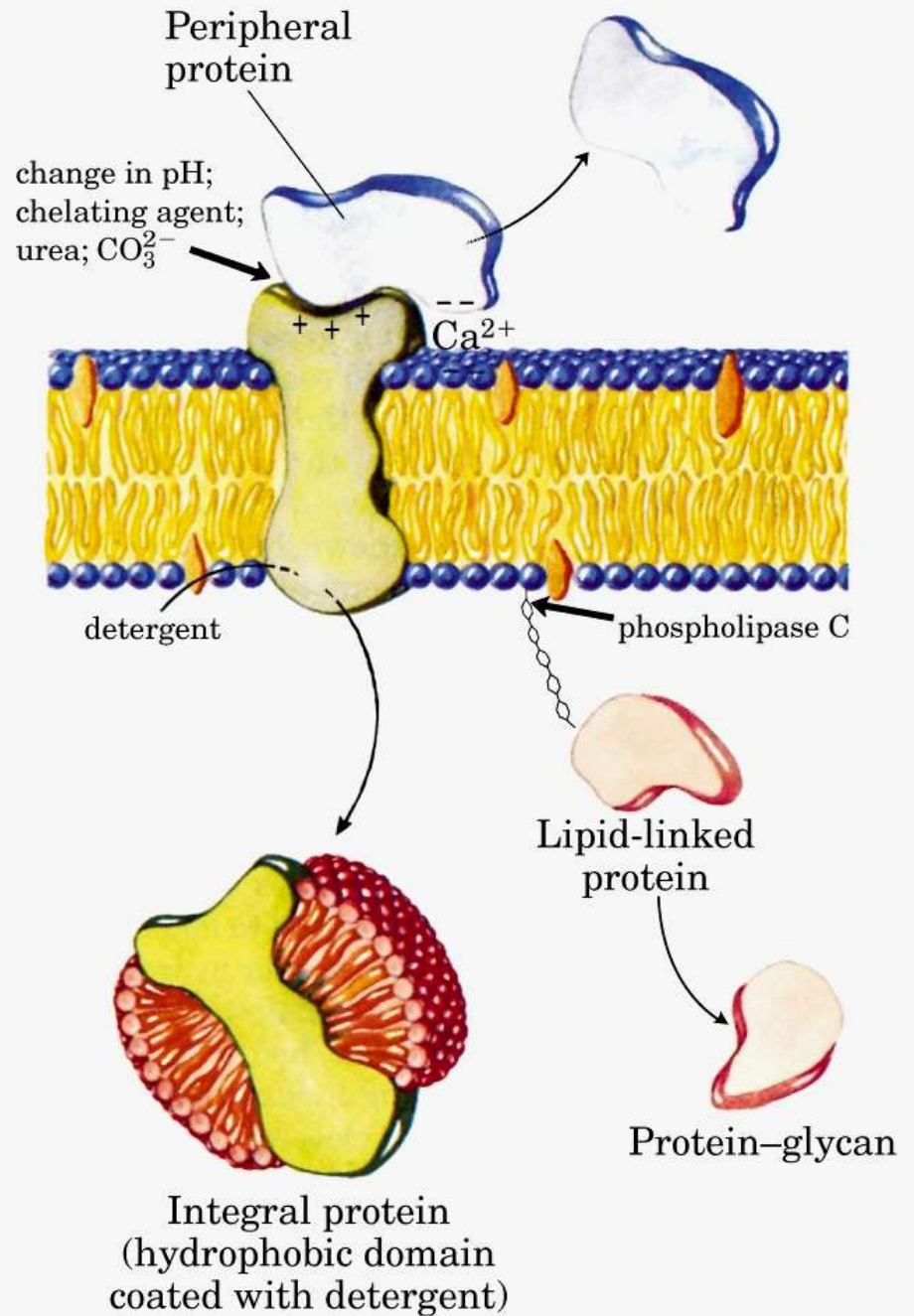
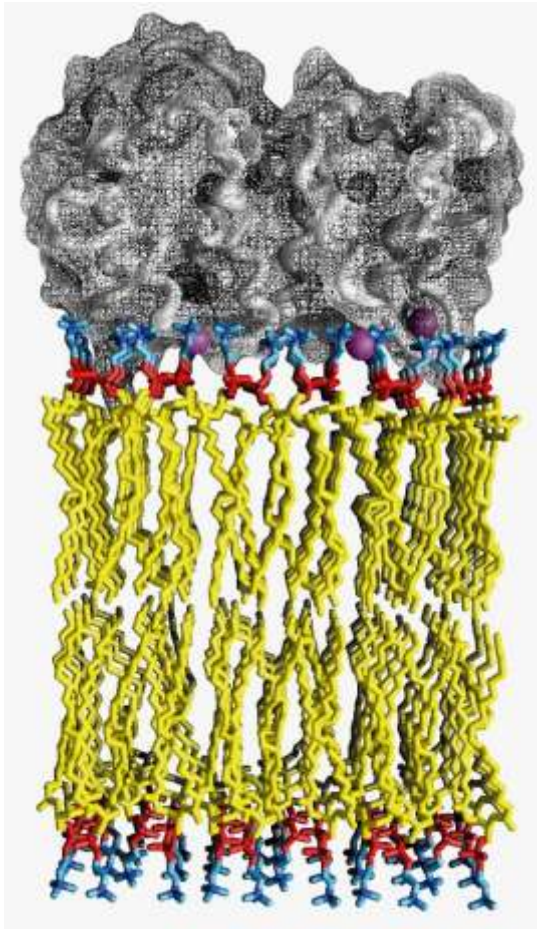
Source: Data from Marr, A.G. & Ingraham, J.L. (1962) Effect of temperature on the composition of fatty acids in *Escherichia coli*. *J. Bacteriol.* **84**, 1260.

*The exact fatty acid composition depends not only on growth temperature but on growth stage and growth medium composition.

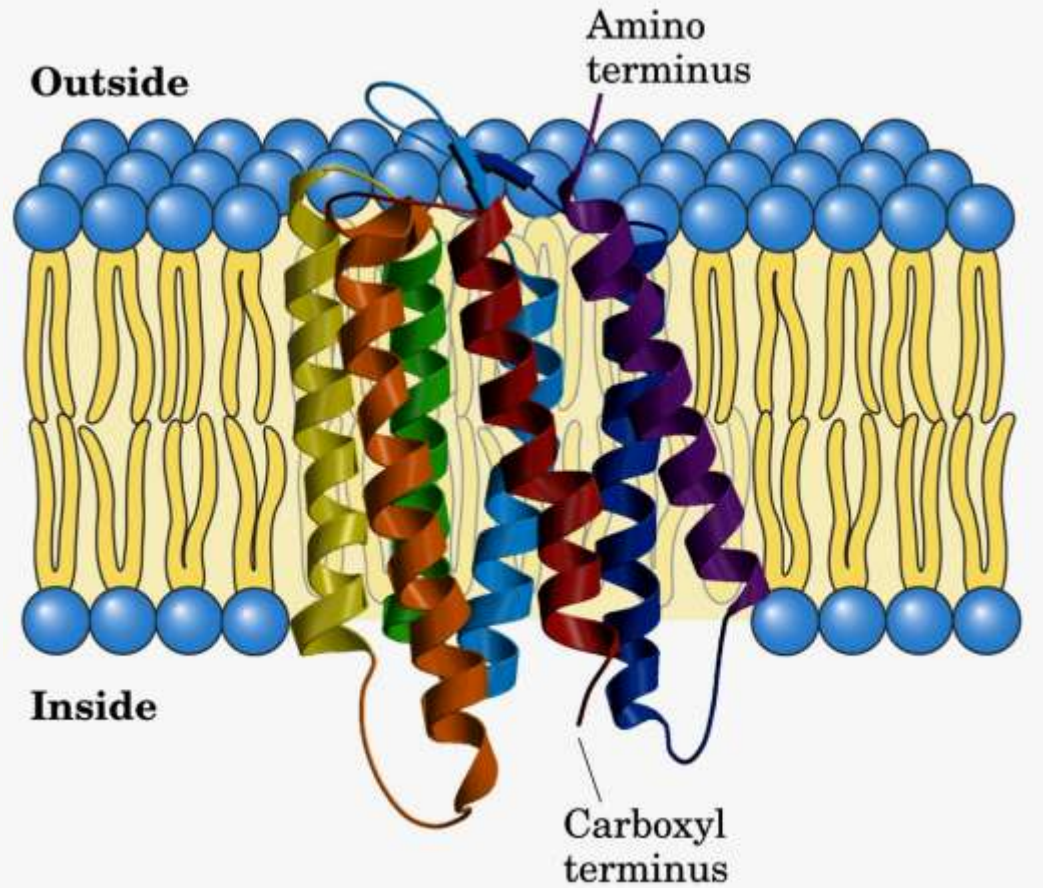
[†]Calculated as the total percentage of 16:1 plus 18:1 divided by the total percentage of 14:0 plus 16:0. Hydroxymyristic acid was omitted from this calculation.



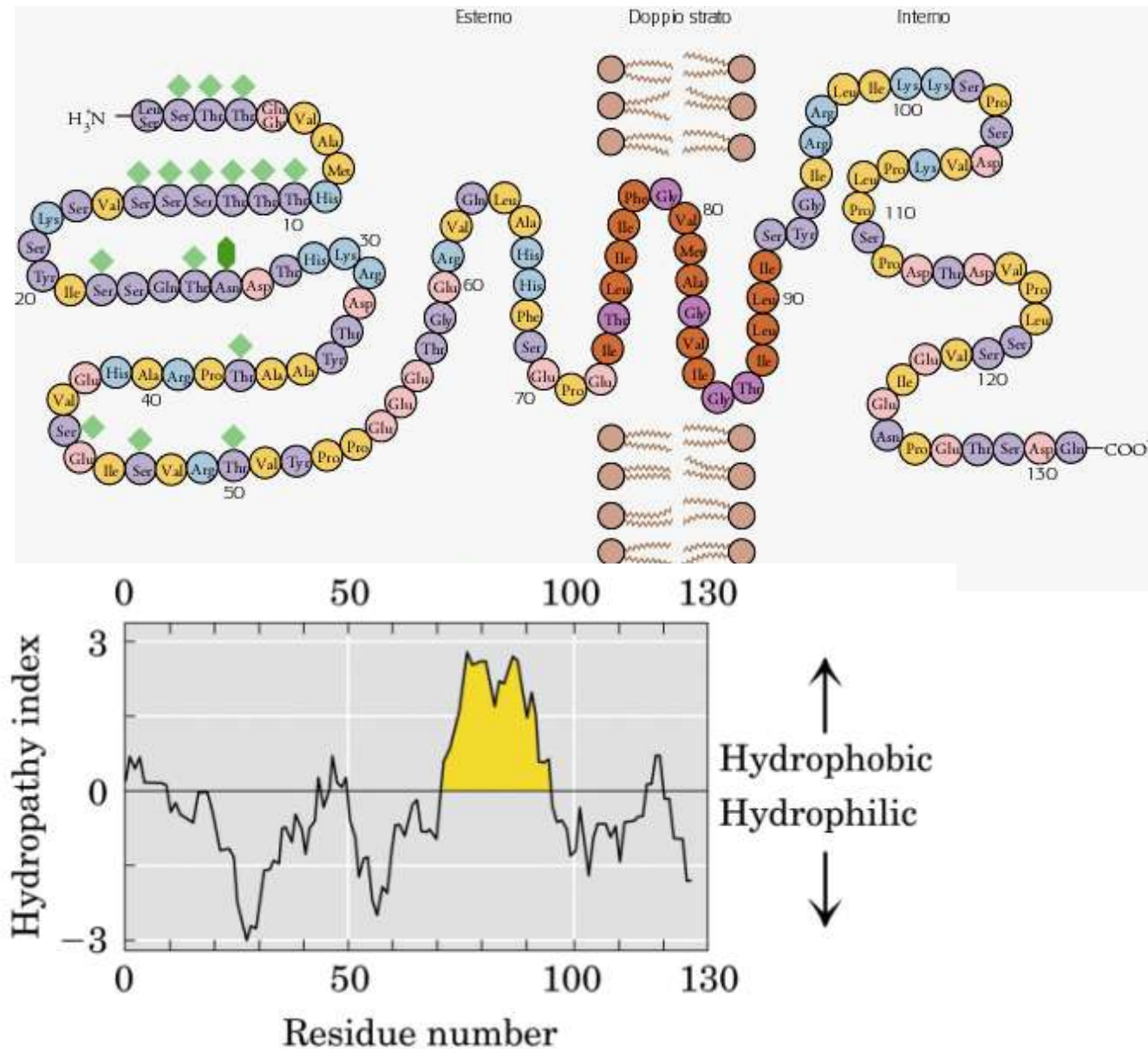
Proteine periferiche e integrali



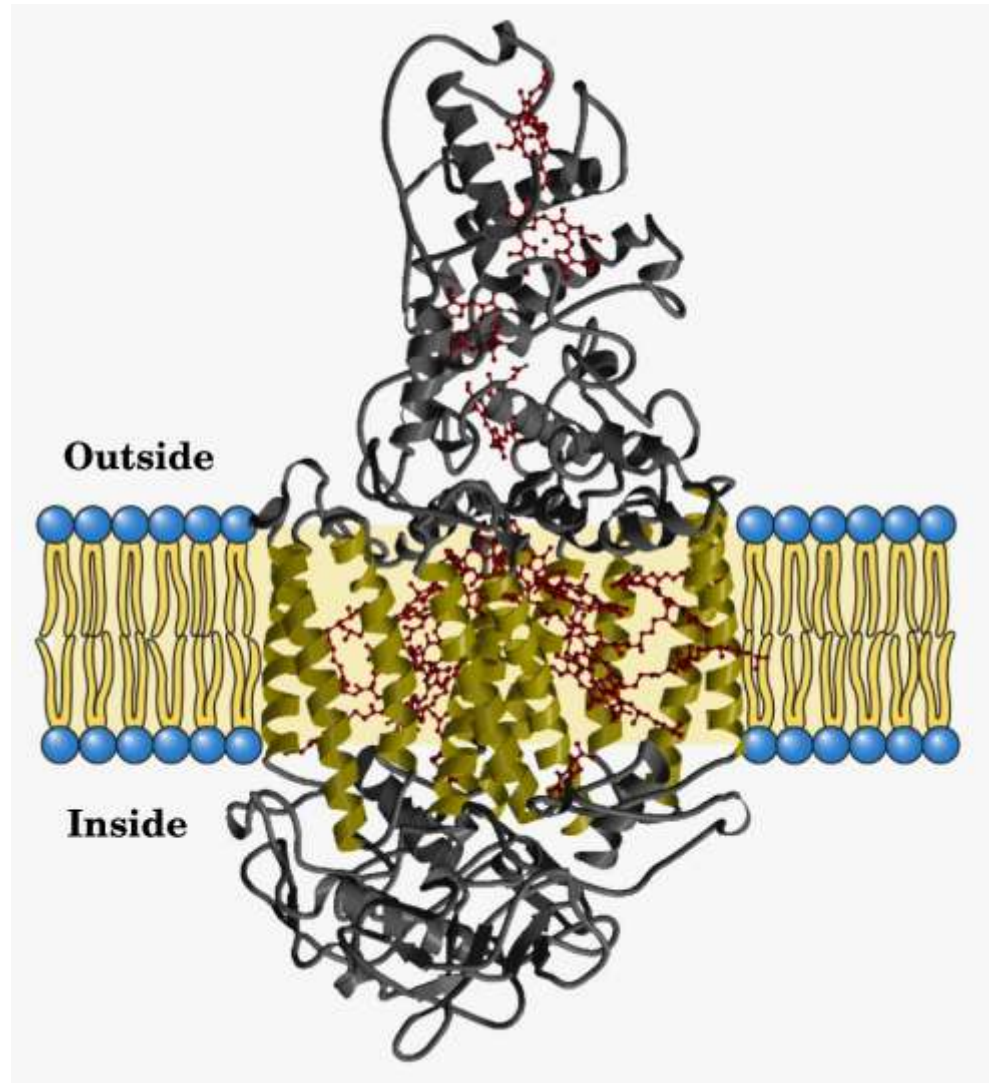
Le proteine integrali

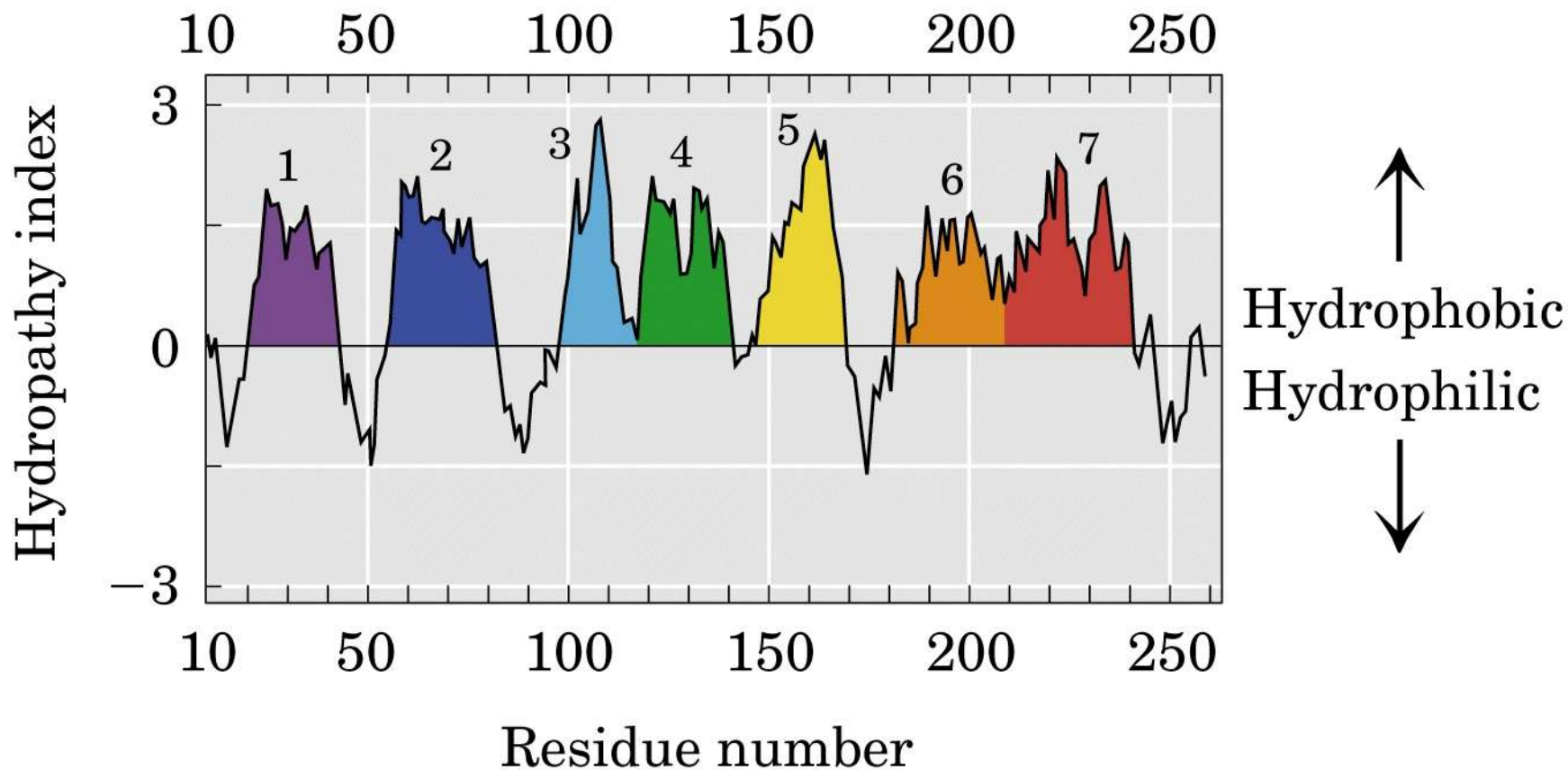


La glicoforina A

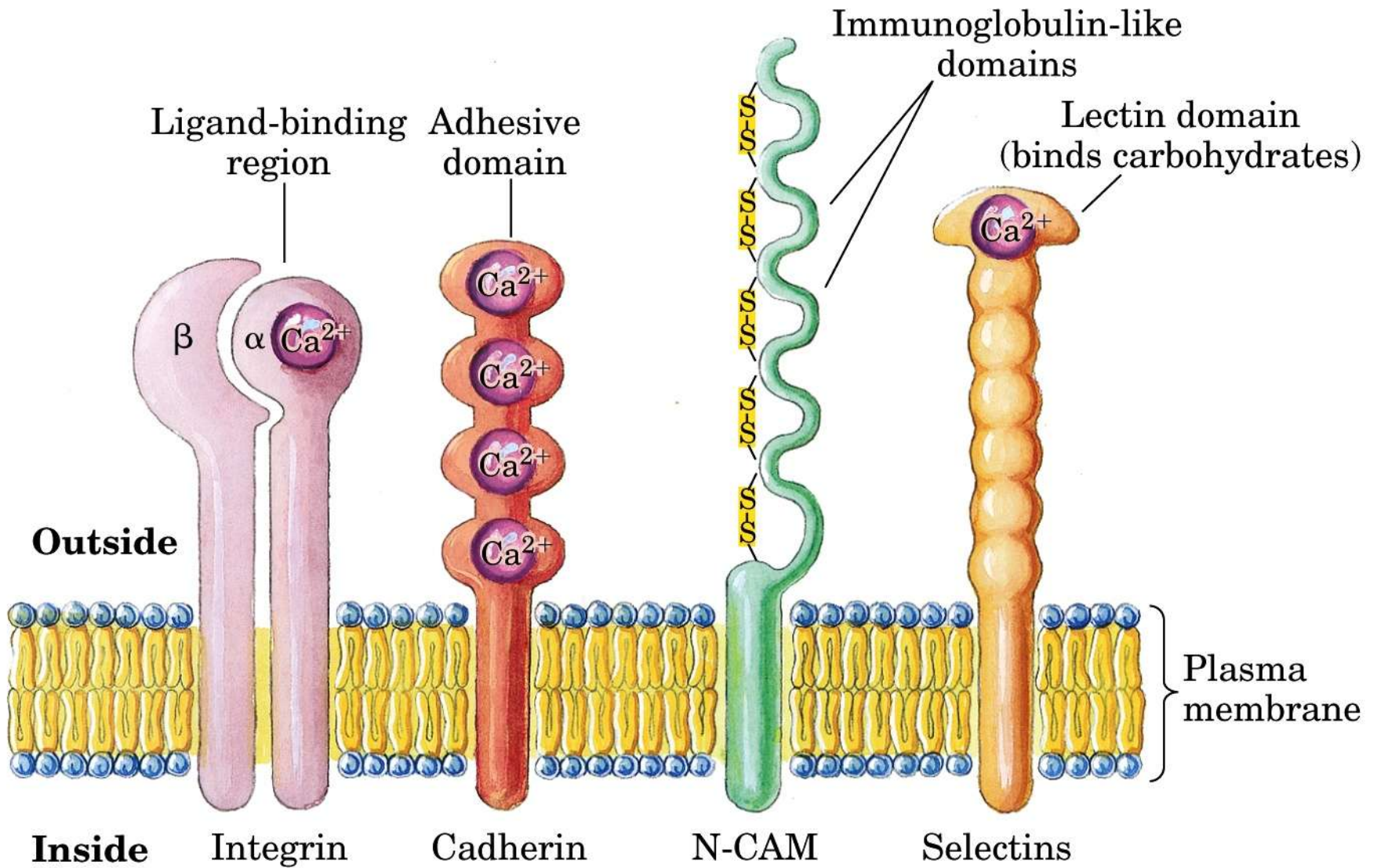


Fasci di eliche transmembrana

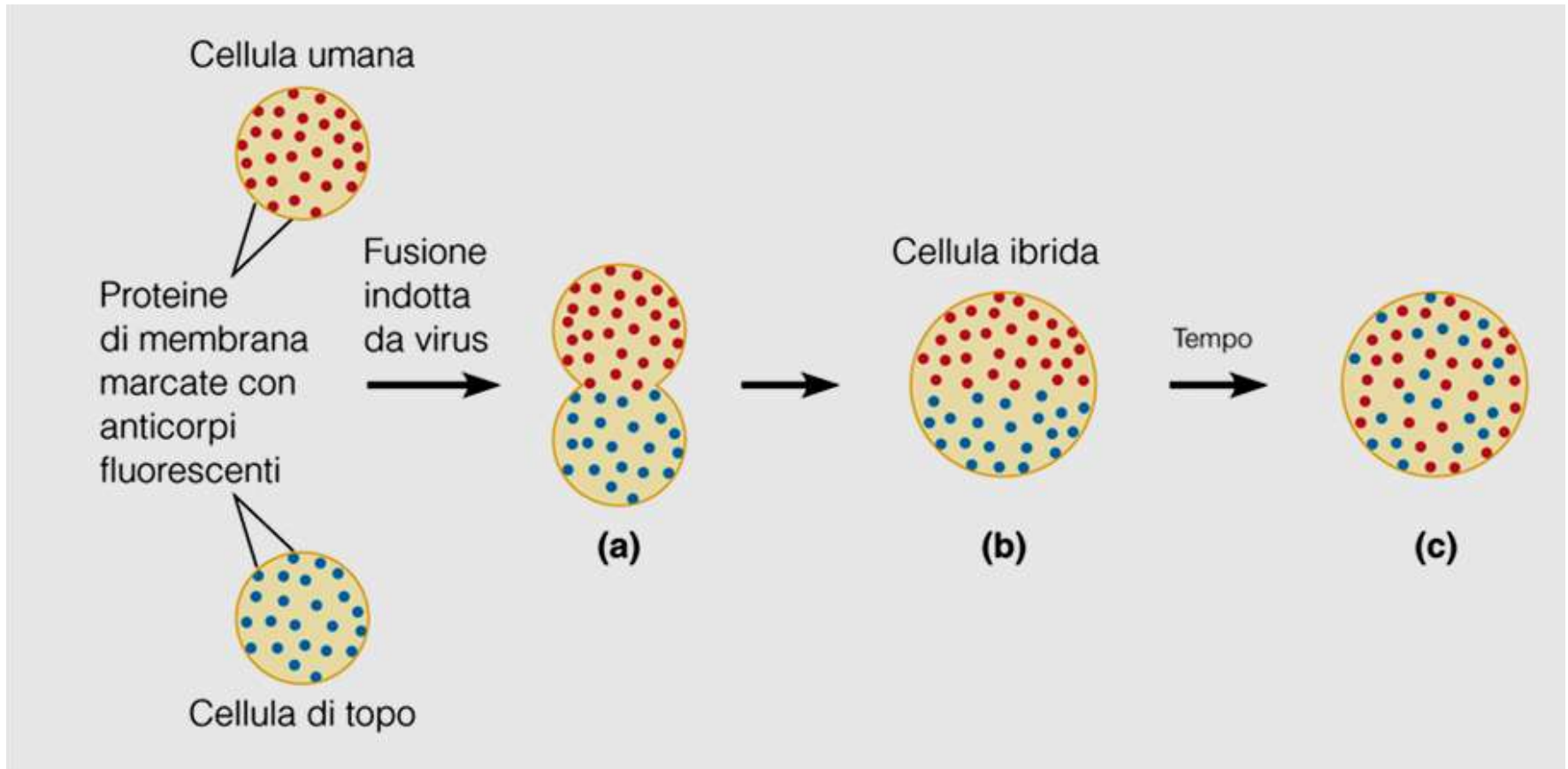




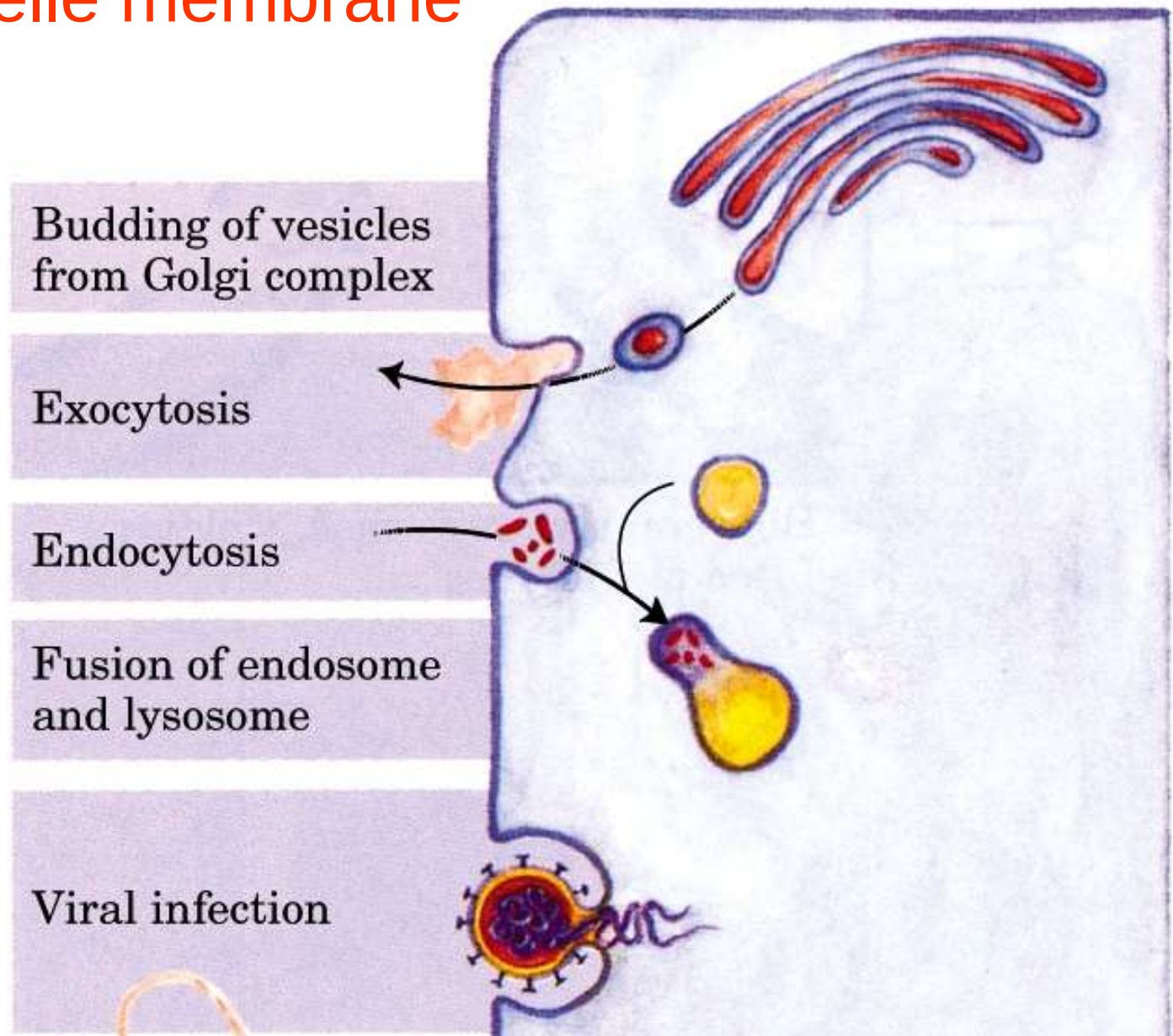
Bacteriorhodopsin
(b)



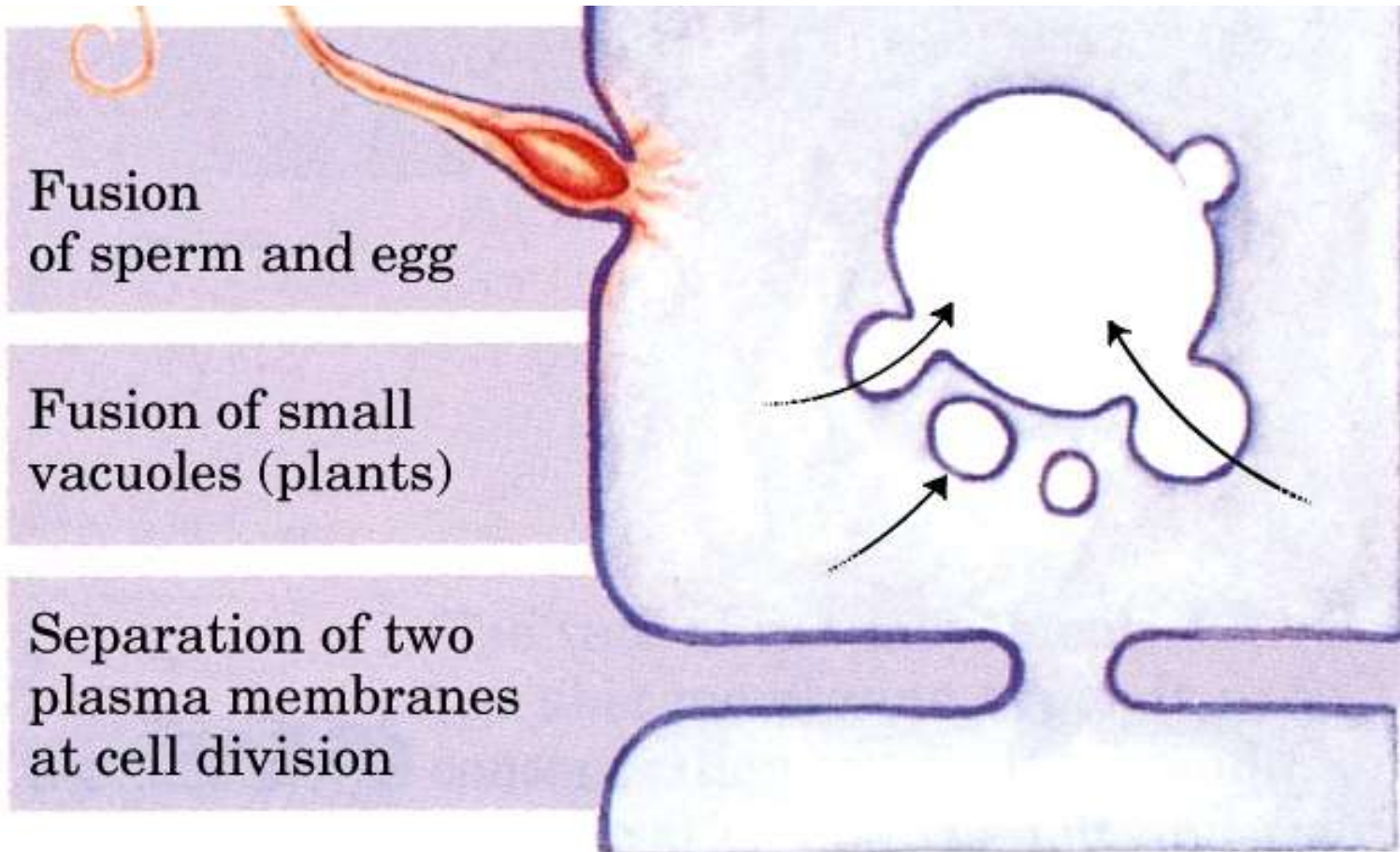
Dimostrazione sperimentale della **fluidità di membrana**



Fusione delle membrane



Fusione delle membrane



Trasporto delle proteine sulla plasmamembrana

