LIPIDI

I lipidi sono composti eterogenei la cui proprietà comune è l'**insolubilità** in acqua.

Diversi tipi di lipidi:

- Acidi grassi
- Lipidi di riserva
- Lipidi di membrana

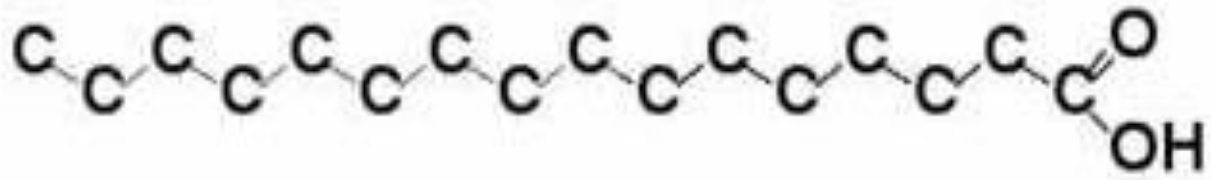
Altre molecole di natura lipidica

- Ormoni (es. ormoni steroidei, ormoni tiroidei)
- Vitamine
- Cofattori

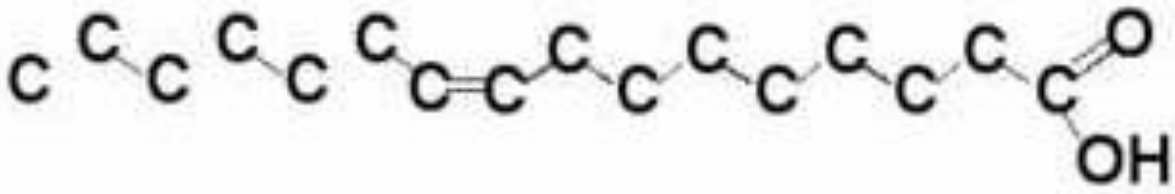
ACIDI GRASSI

acidi carbossilici con catena idrocarburica

saturo



insaturo



ACIDI GRASSI: ACIDI CARBOSSILICI CON CATENA IDROCARBURICA

Nomenclatura acidi grassi

Estremità metilica

Estremità carbossilica

CH_3-CH_2-CH=CH·····CH_2-CH_2-CH_2-COO^-

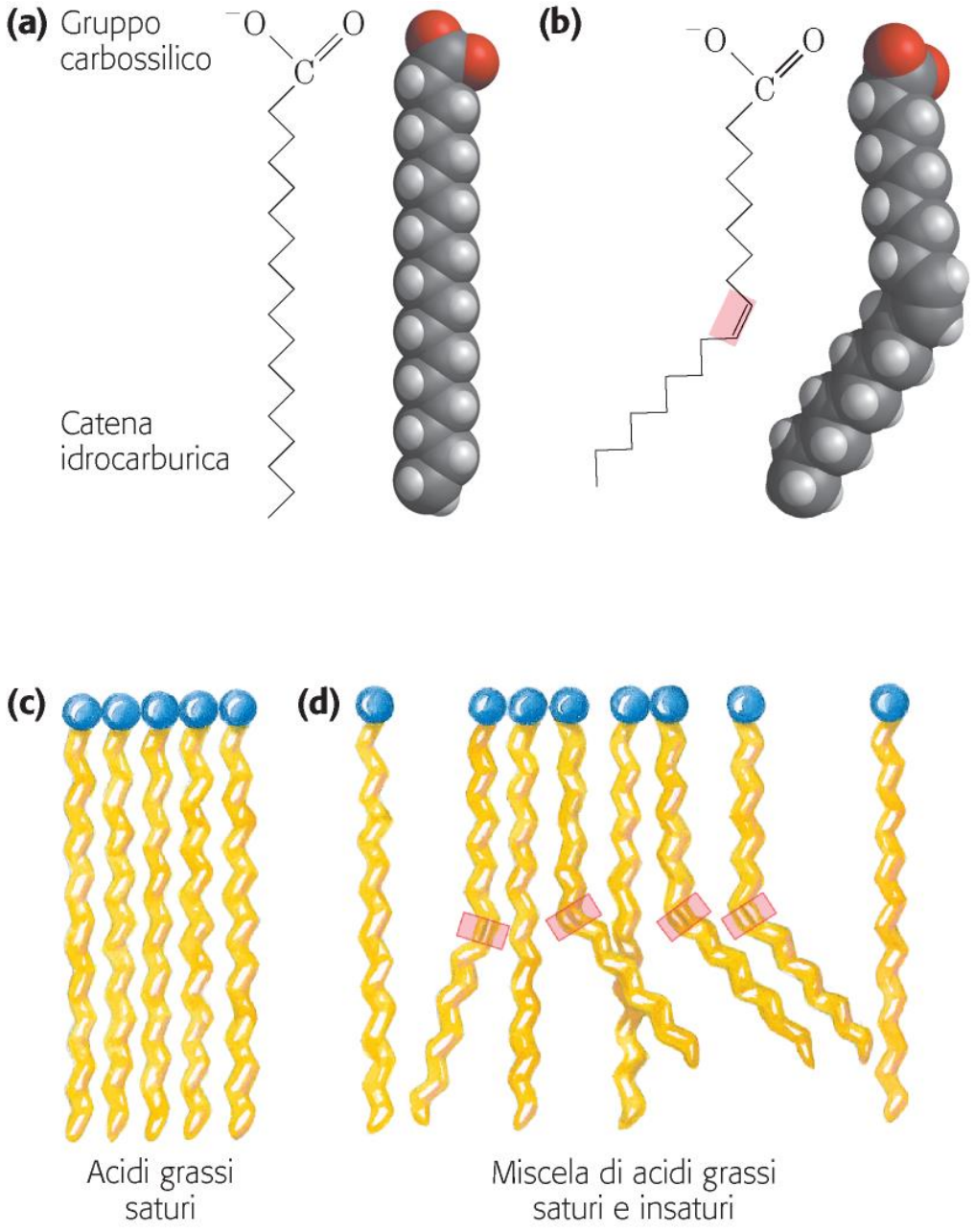
carbon numbering system

n n-1 n-2 n-3 4 3 2 1

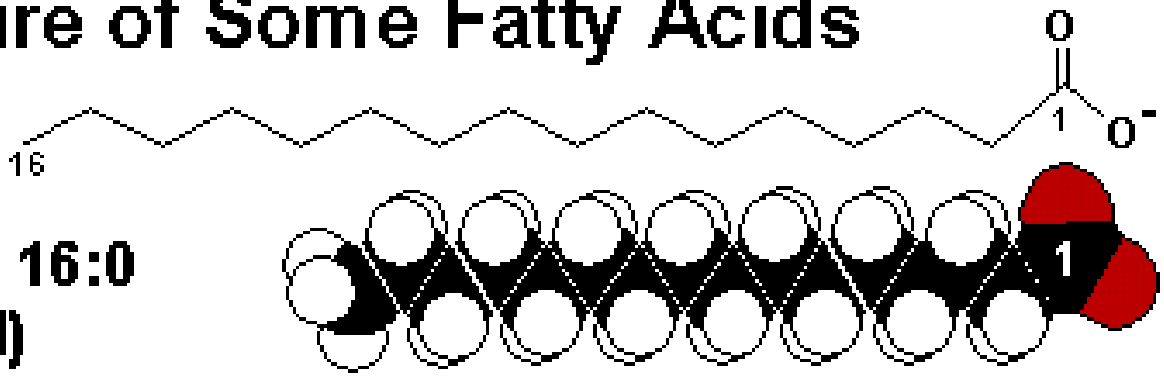
omega designation system

ω1 ω2 ω3 γ β α

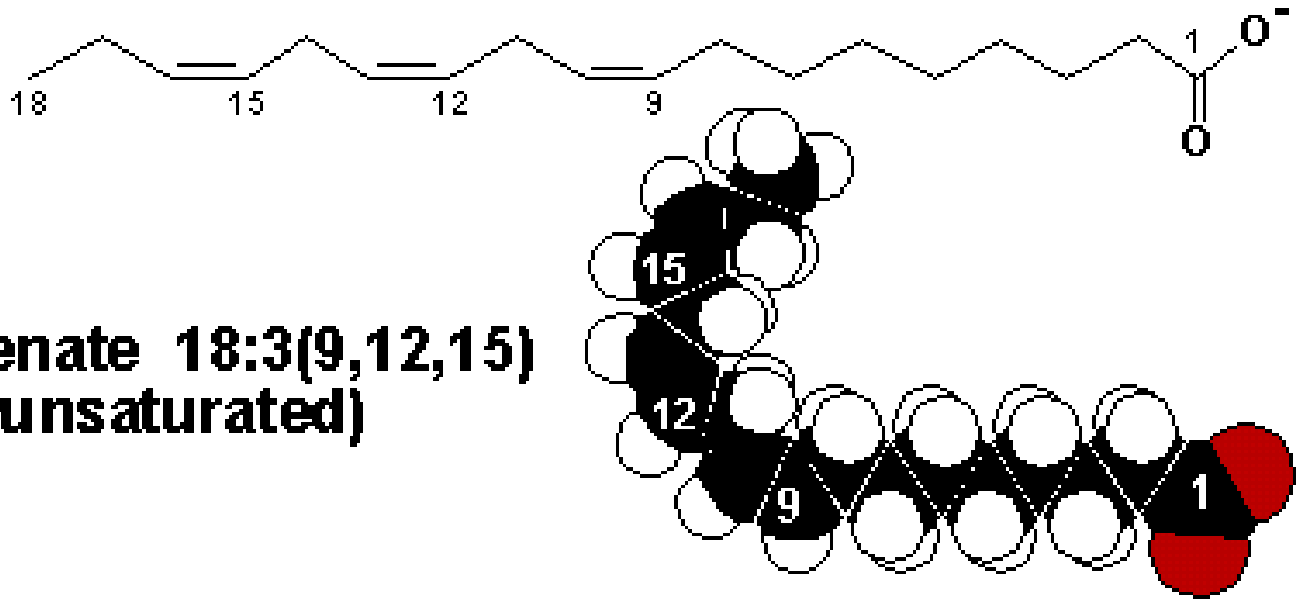
Acidi grassi



Structure of Some Fatty Acids



palmitate 16:0
(saturated)



linolenate 18:3(9,12,15)
(polyunsaturated)

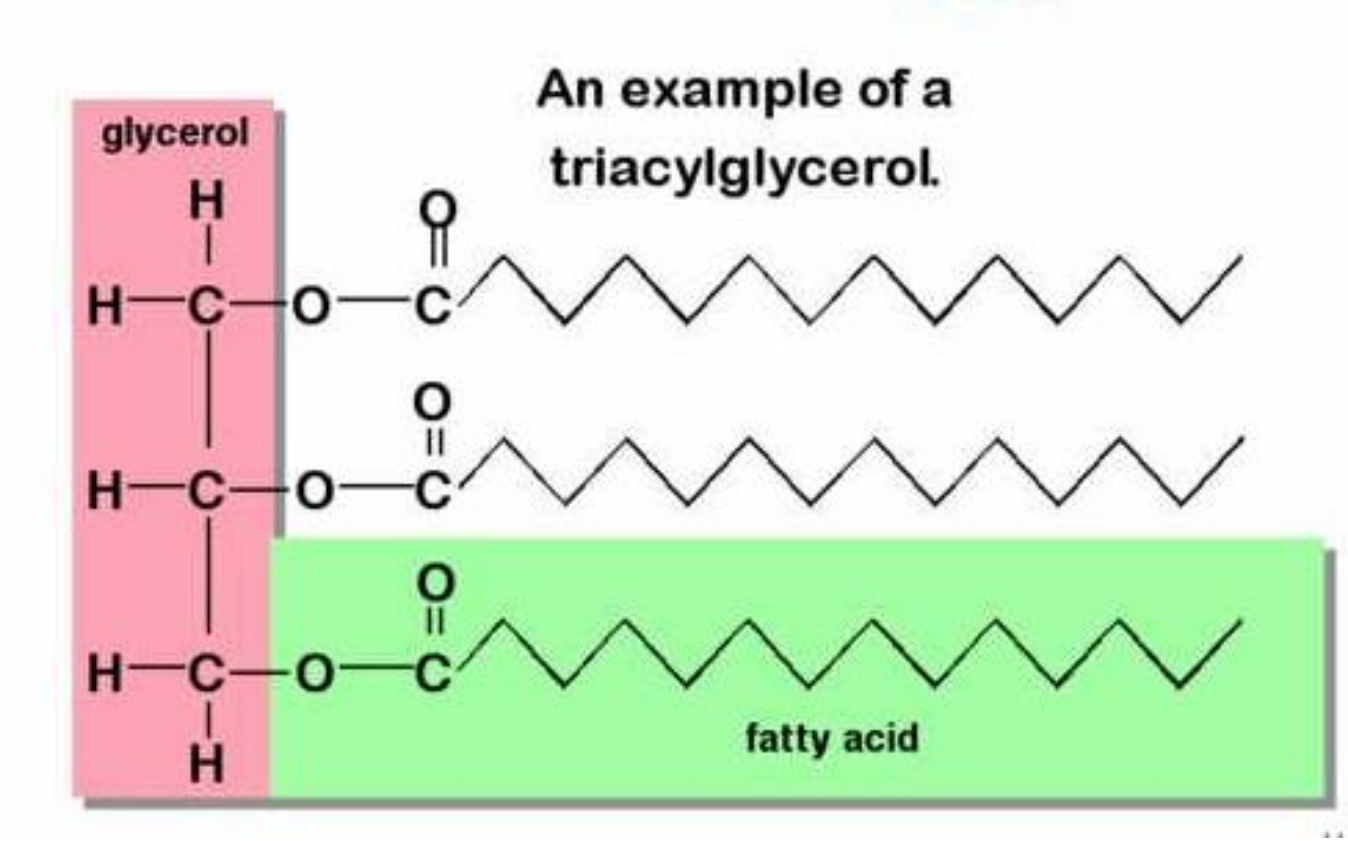
I triacilgliceroli
trigliceridi, lipidi neutri, "grassi"

Sono lipidi non polari, idrofobici

Sono una riserva energetica e forniscono un isolamento termico.

Sono conservati in grande quantità negli **adipociti** sotto forma di gocce di grasso

TRIGLICERIDE O TRIACILGLICEROLO



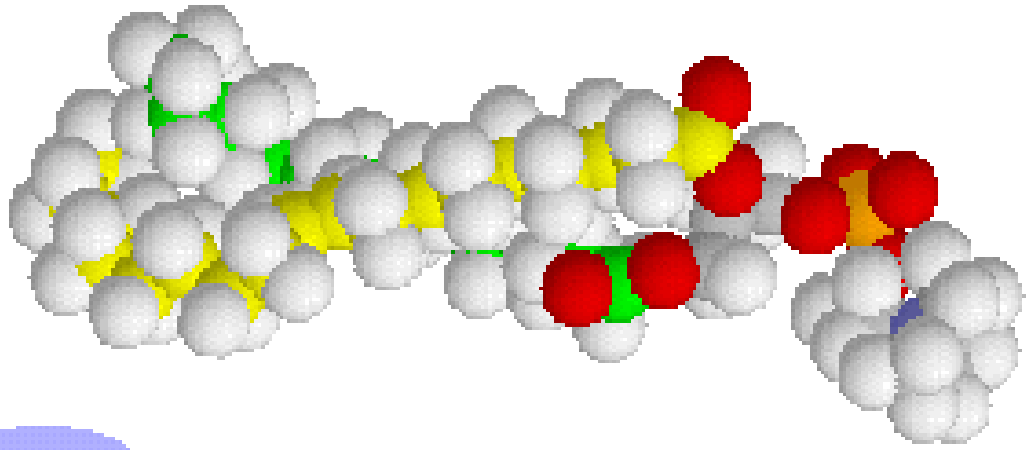
Lipidi strutturali delle membrane

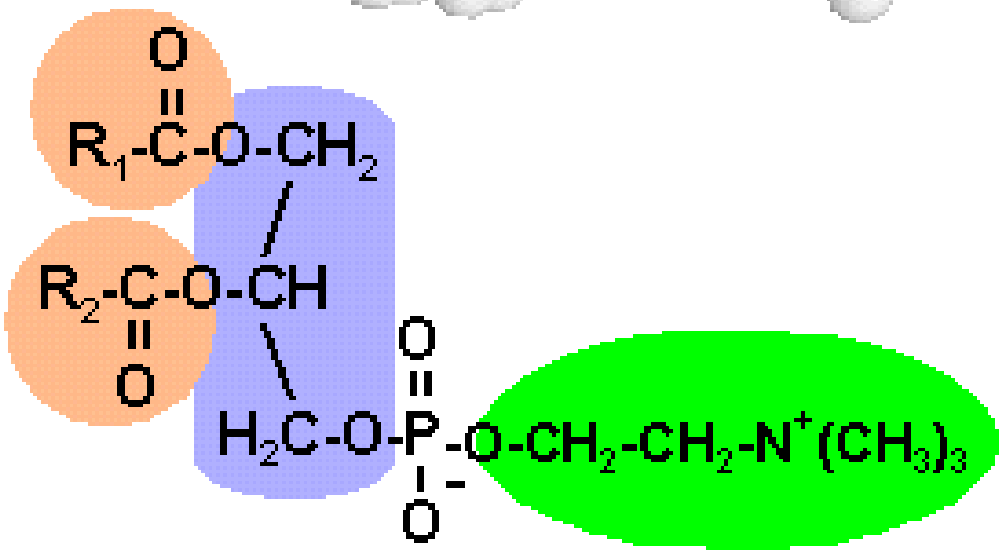
Sono molecole anfipatiche: una estremità della molecola è idrofobica e l' altra è idrofilica

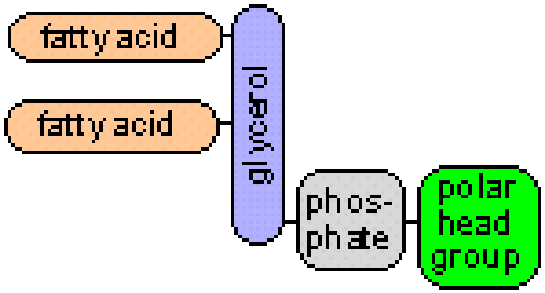
- Glicerofosfolipidi
- Sfingolipidi
- Steroli

Structure of a Glycerolipid

phosphatidylcholine, a typical glycerophospholipid

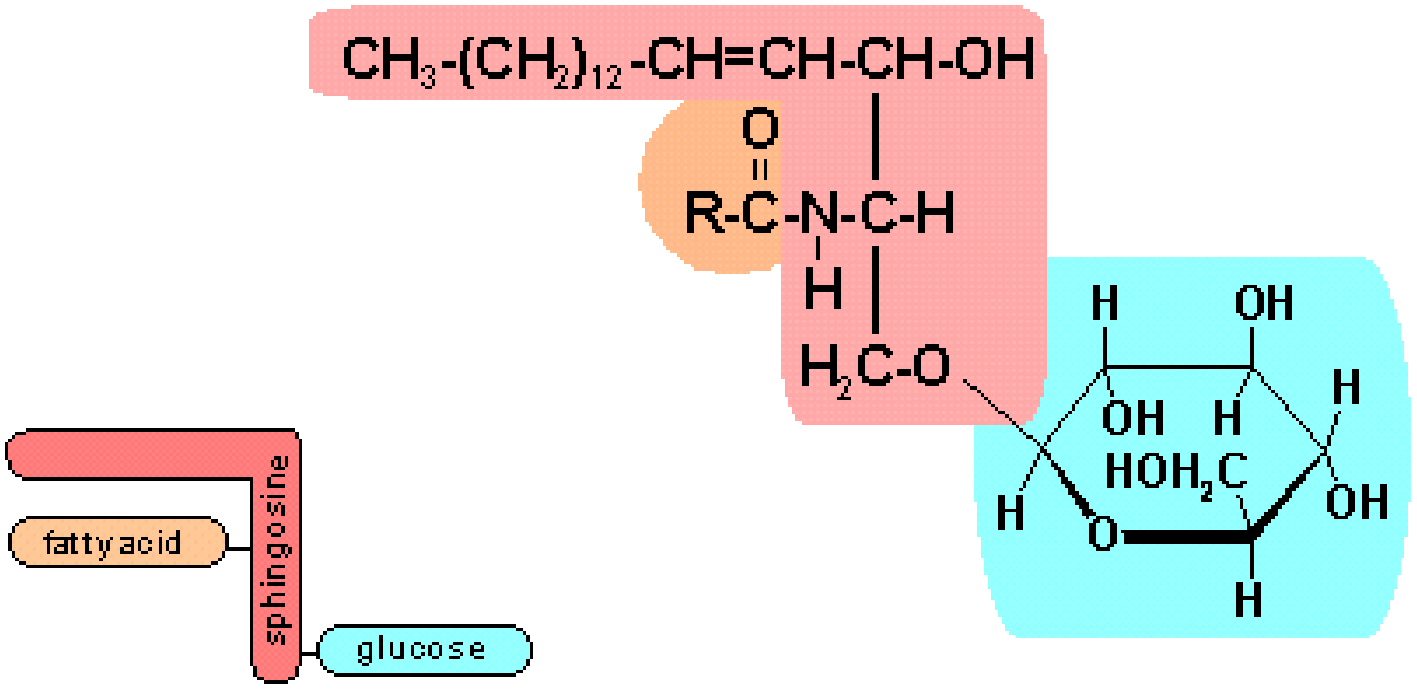




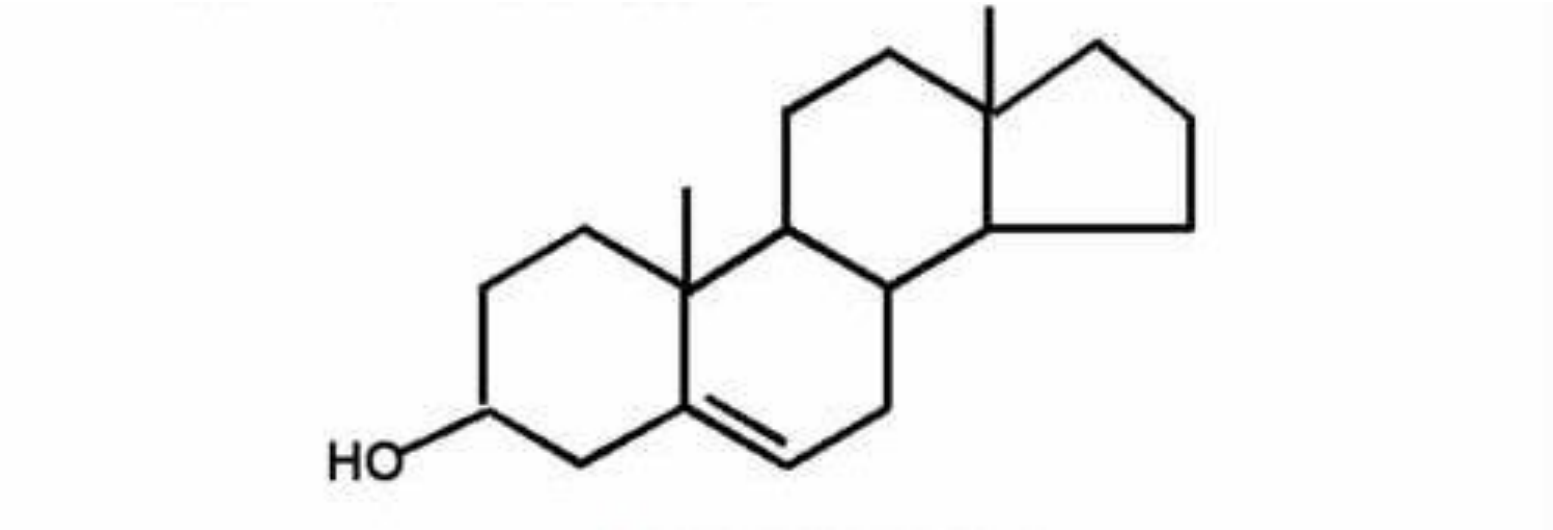


Structure of a Sphingolipid

glucosylceramide, a typical glycosphingolipid



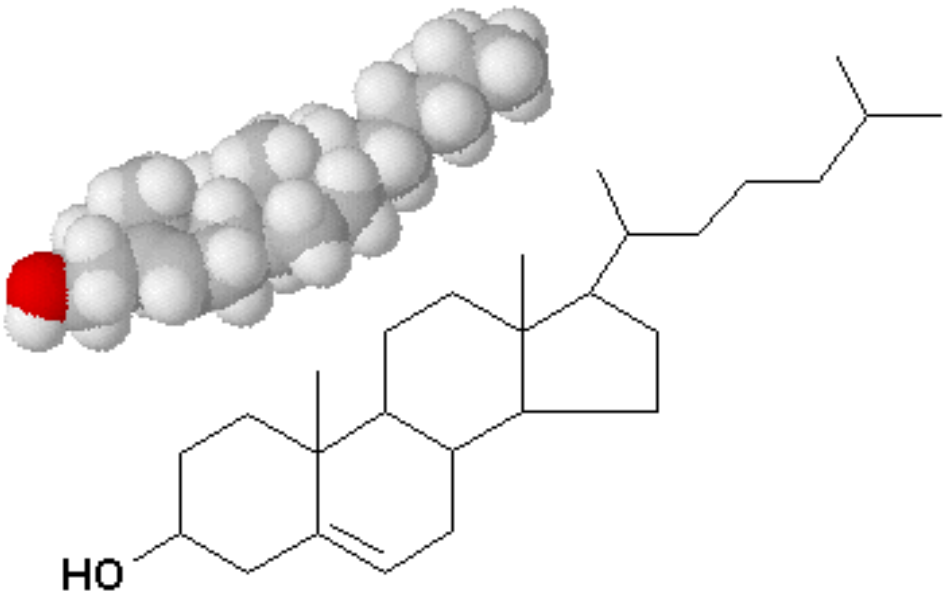
STEROLI



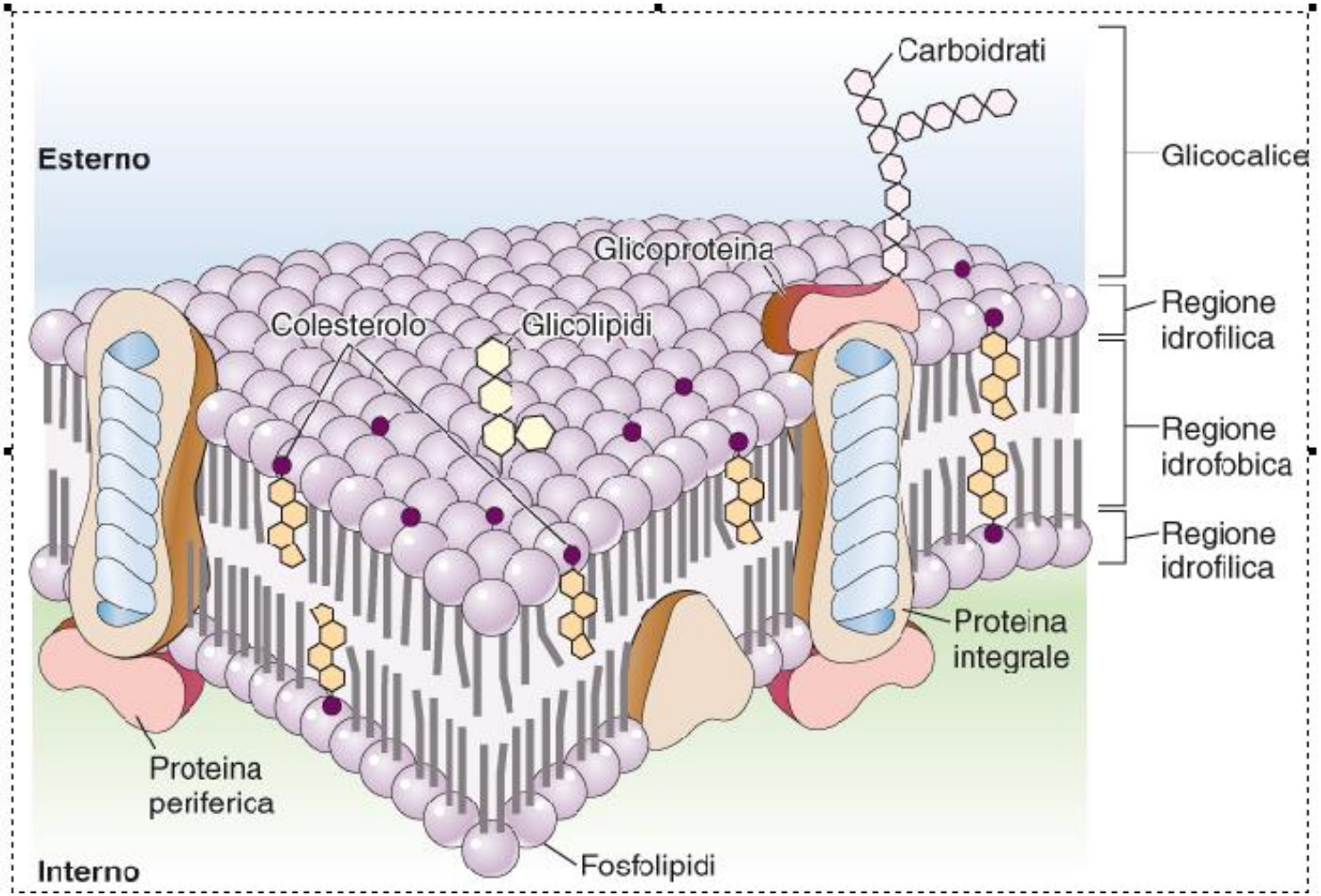
COLESTEROLO

- **Componente delle membrane**

- **Precursore di**
  - -Ormoni steroidei
  - - Acidi biliari
  - - Vitamina D

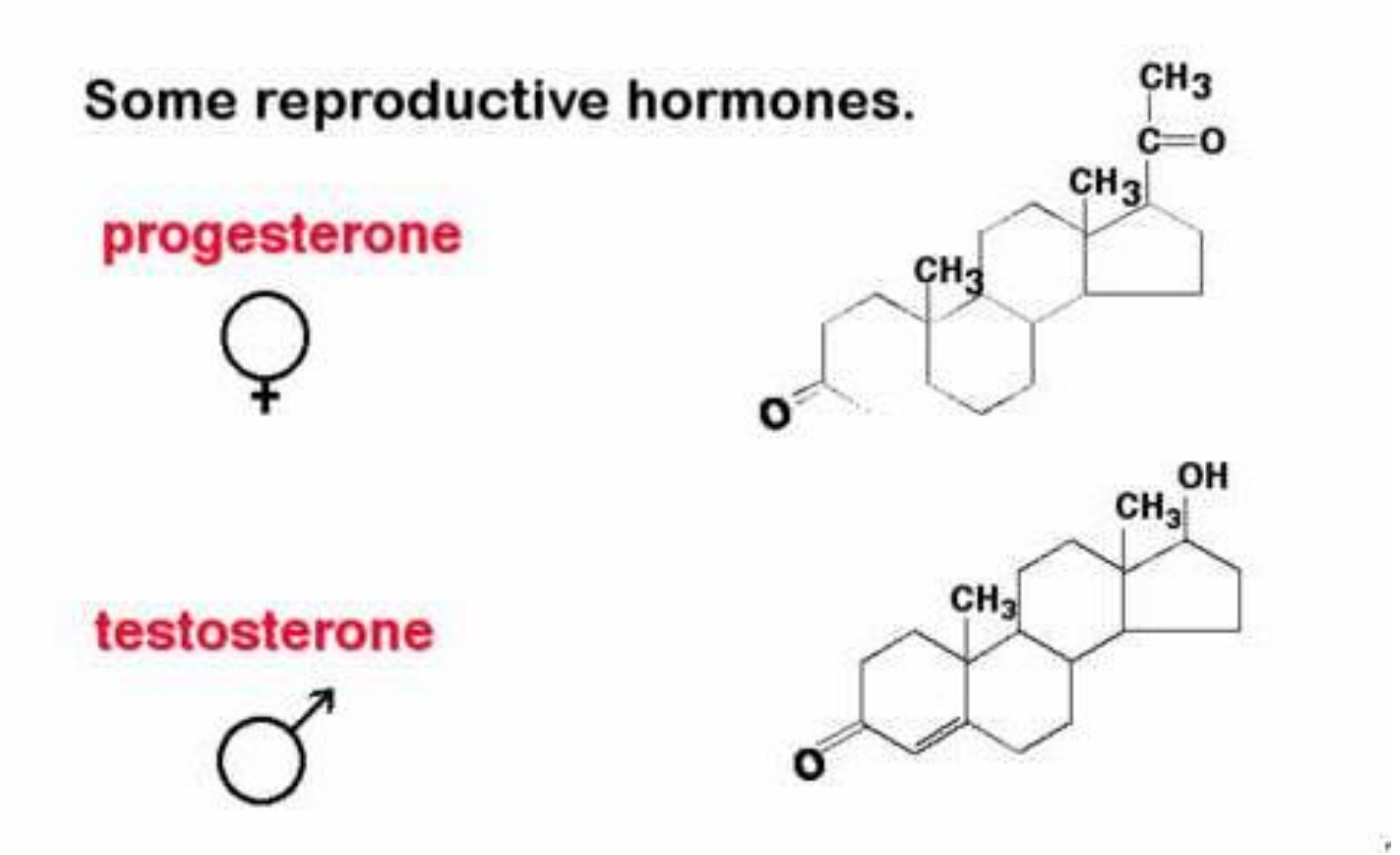


Modello di membrane biologiche



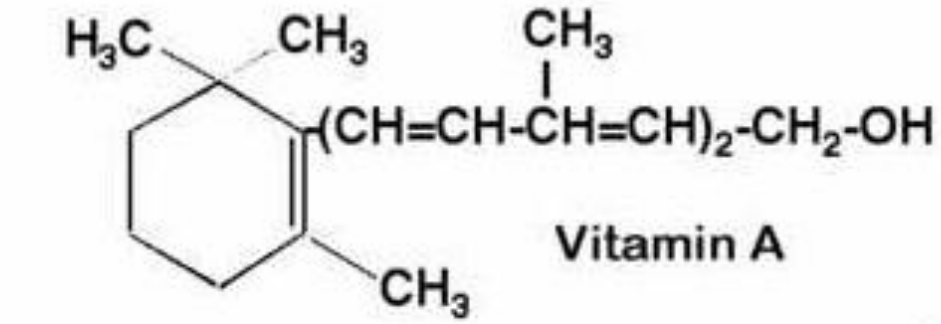
STEROIDI
derivati degli steroli

-ormoni prodotti dalla **corteccia surrenalica**
-ormoni sessuali prodotti dalle **gonadi**

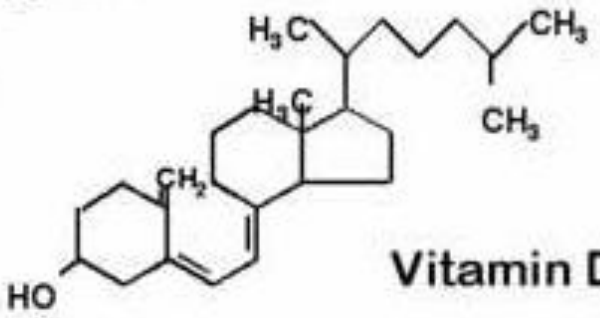


VITAMINE LIPOSOLUBILI

Vitamine A, E, D, K

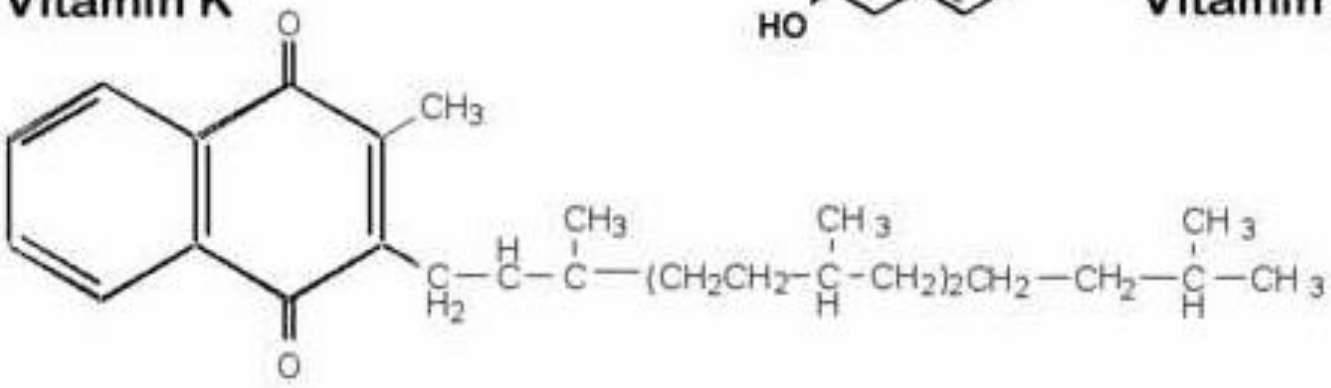


Vitamin A



Vitamin D

Vitamin K



TRASPORTO DEI LIPIDI nel sangue

I lipidi sono molecole non solubili o scarsamente solubili in acqua.

Per essere trasportati in circolo vengono veicolati da proteine

- albumina (acidi grassi)
- lipoproteine (trigliceridi, colesterolo, esteri del colesterolo, fosfolipidi)

LE LIPOPROTEINE

Funzione principale: trasporto dei lipidi nel sangue.