

LIPIDI

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

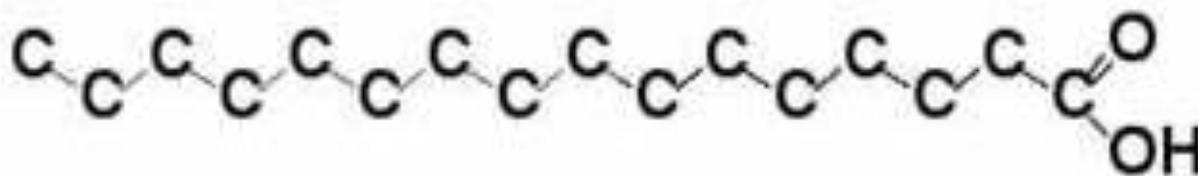
Diversi tipi di lipidi:

- Acidi grassi
- Lipidi di riserva
- Lipidi di membrana
- Ormoni
- Vitamine
- Cofattori

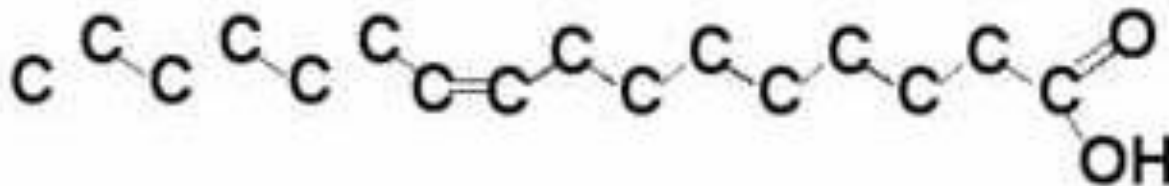
ACIDI GRASSI

acidi carbossilici con catena idrocarburica

saturo



insaturo



ACIDI GRASSI: ACIDI CARBOSSILICI CON CATENA IDROCARBURICA

Nomenclatura acidi grassi

Estremità metilica

Estremità carbossilica



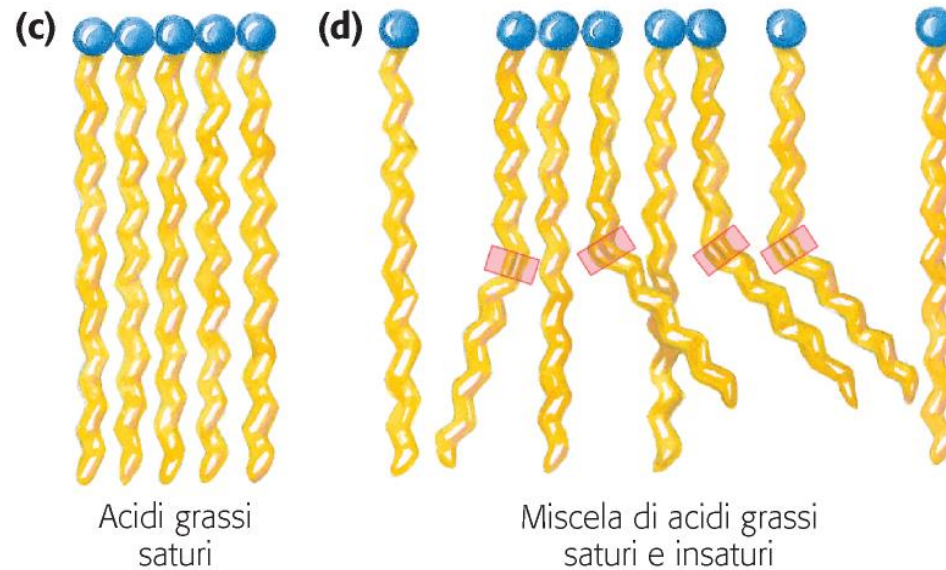
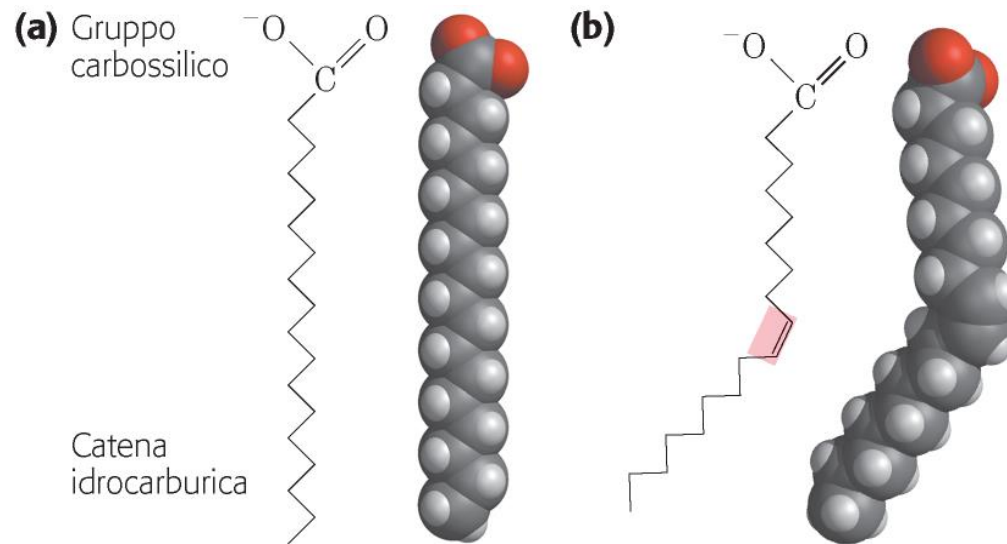
carbon numbering system

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

omega designation system

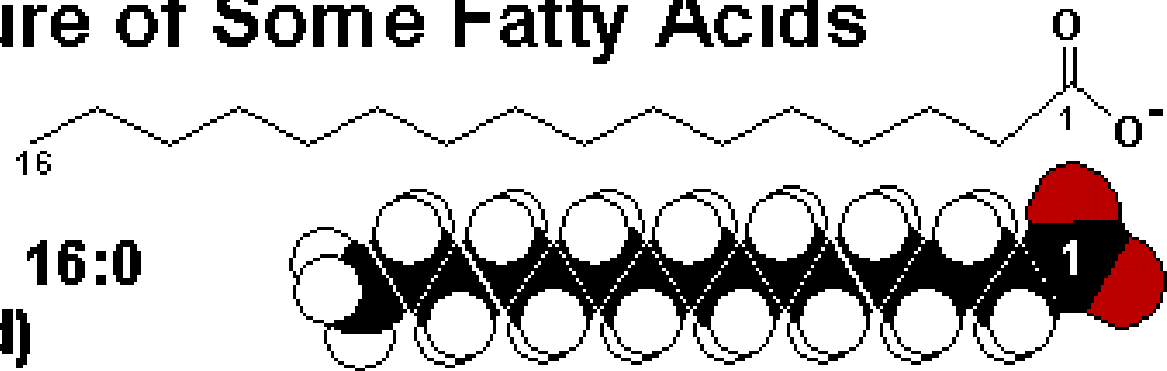
ω1 ω2 ω3 γ β α

Acidi grassi

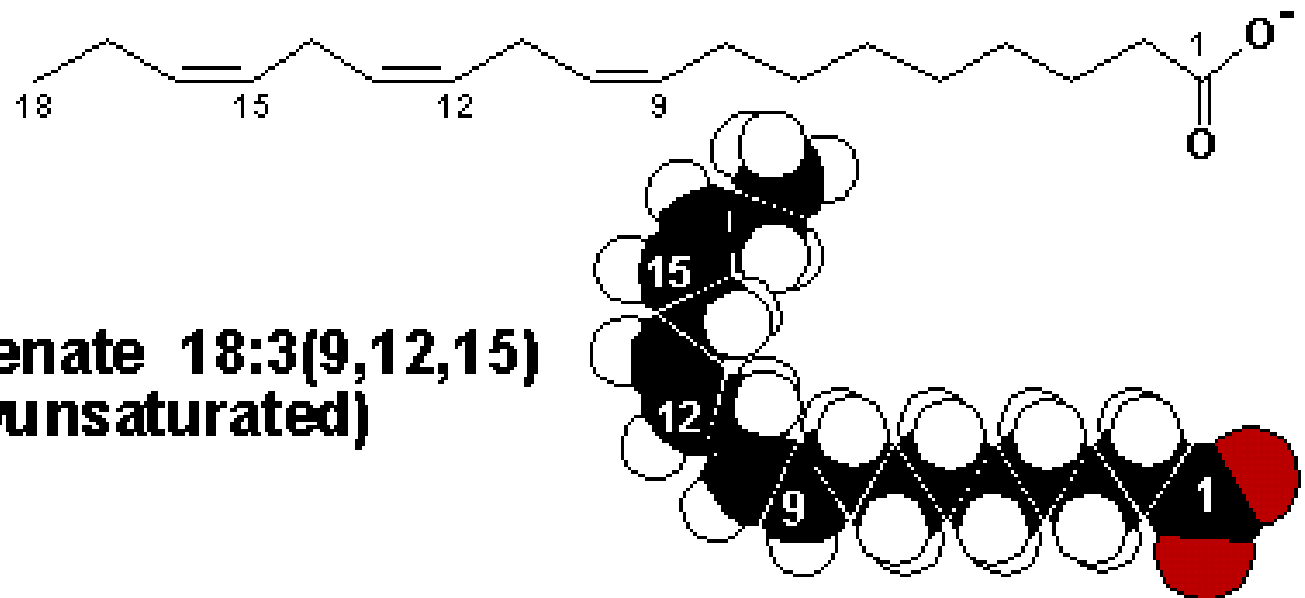


Structure of Some Fatty Acids

**palmitate 16:0
(saturated)**



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



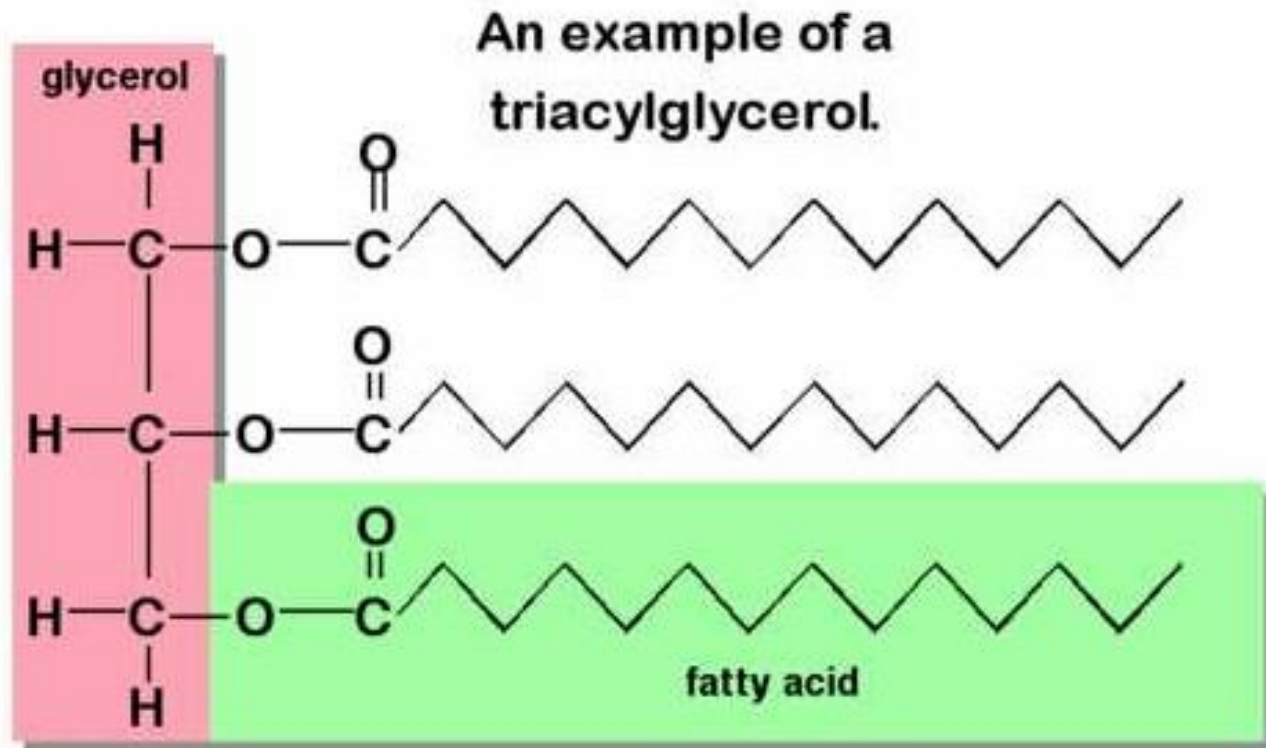
I triacilgliceroli trigliceridi, lipidi neutri, "grassi"

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



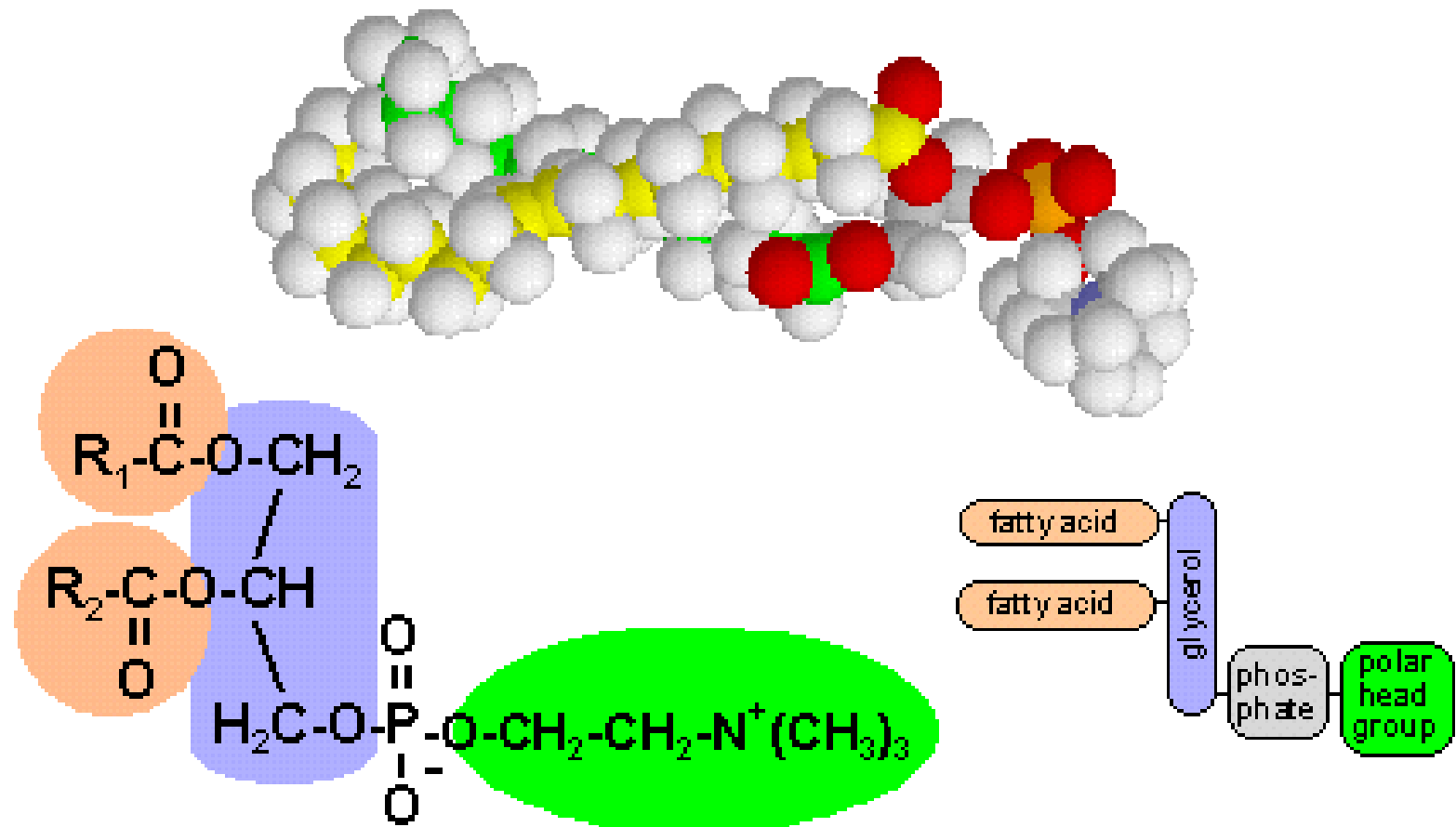
Lipidi strutturali delle membrane

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

- Glicerofosfolipidi
- Sfingolipidi
- Steroli

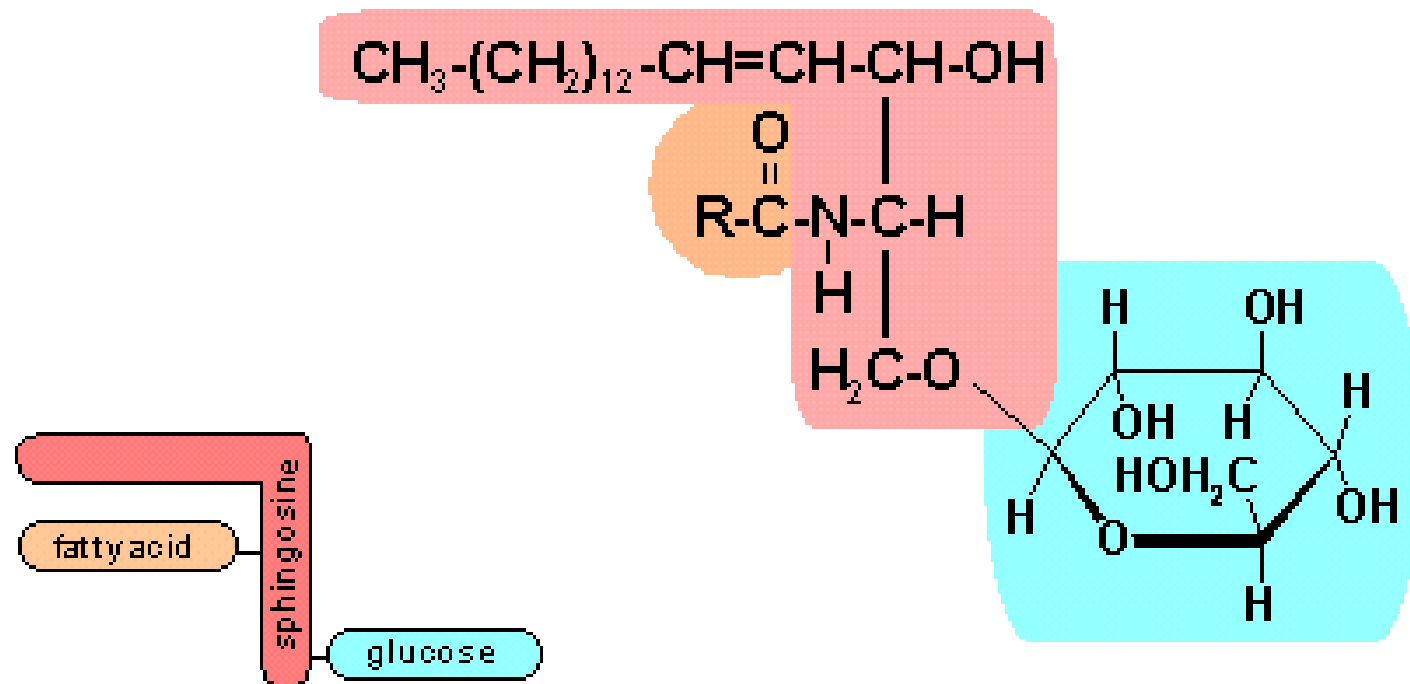
Structure of a Glycerolipid

phosphatidylcholine, a typical glycerophospholipid

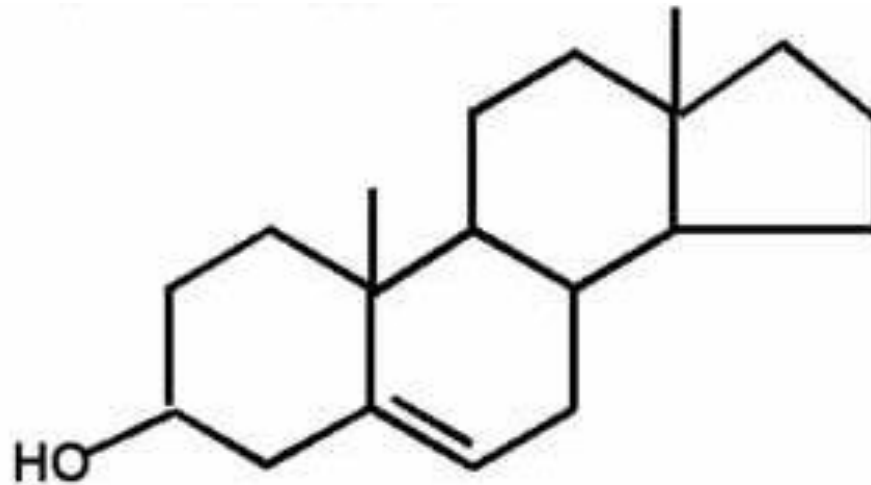


Structure of a Sphingolipid

glucosylceramide, a typical glycosphingolipid



STEROLI

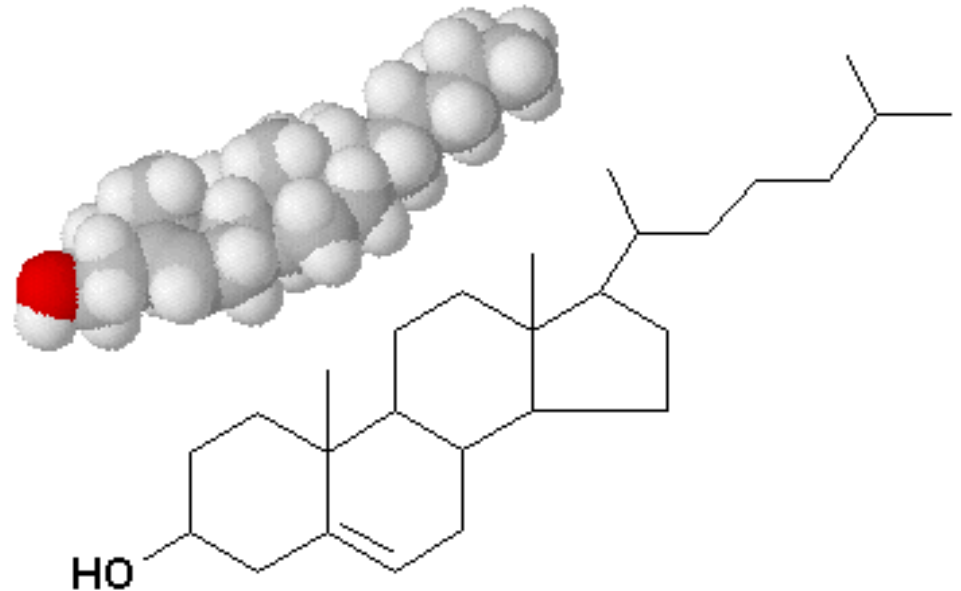


COLESTEROLO

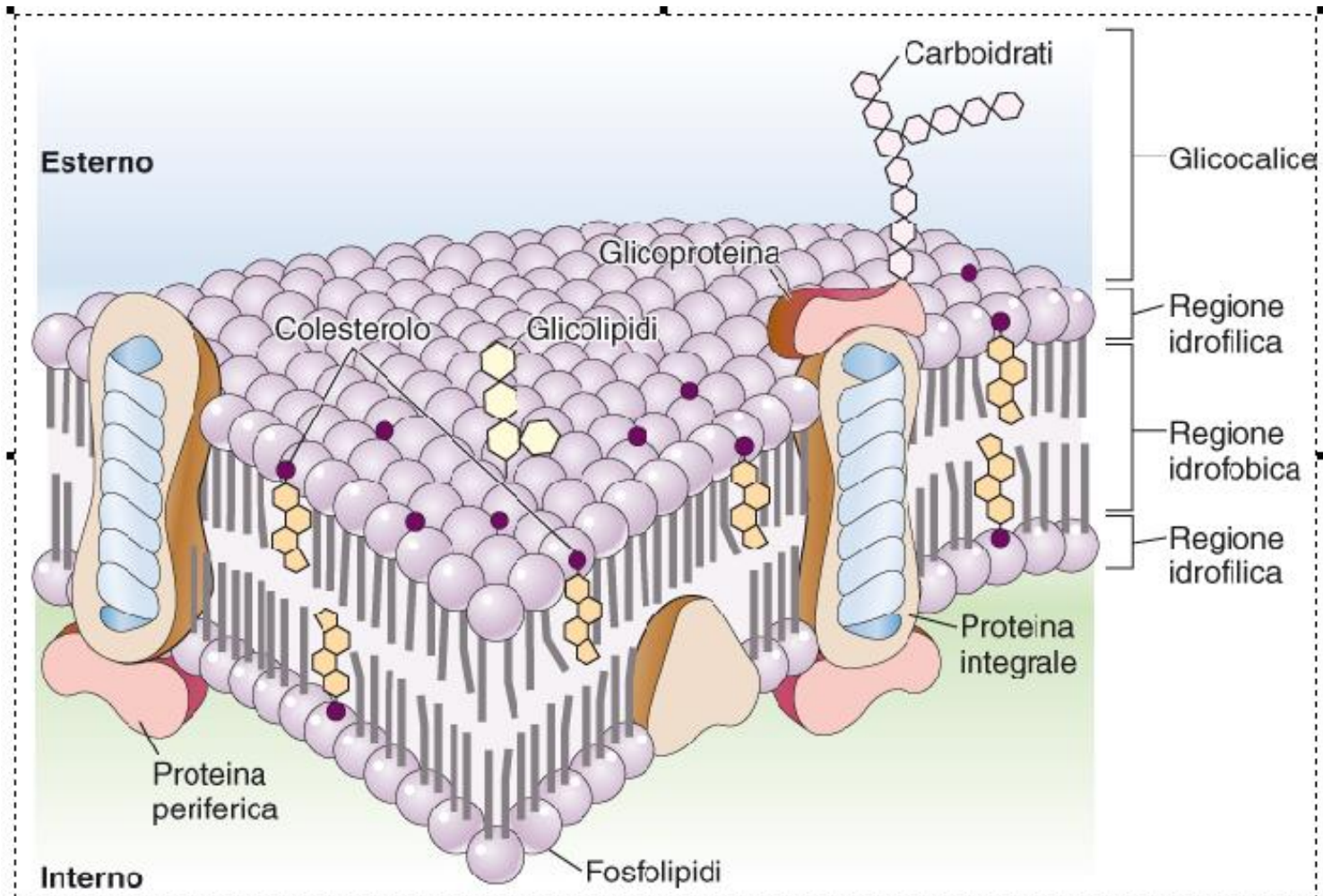
- Componente delle membrane

- Precursore di

- Ormoni steroidei
- Acidi biliari
- Vitamina D



Modello di membrane biologiche



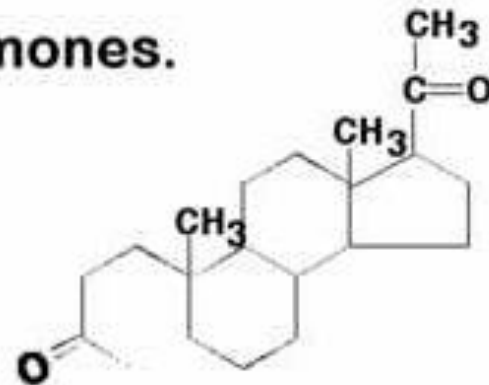
STEROIDI

derivati degli steroli

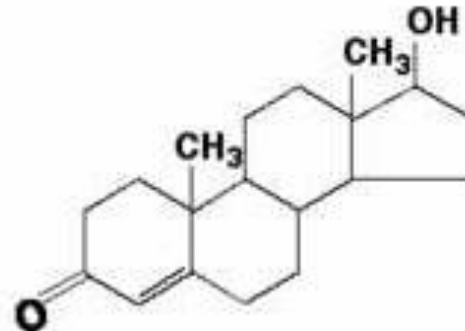
Ormoni della corteccia surrenalica e ormoni sessuali prodotti dalle gonadi

Some reproductive hormones.

progesterone

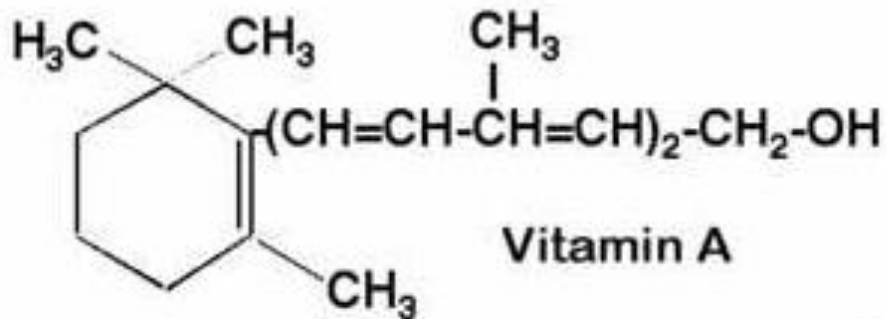


testosterone

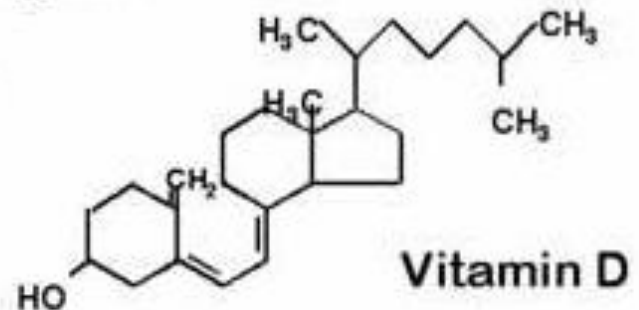


VITAMINE LIPOSOLUBILI

Vitamine A, E, D, K

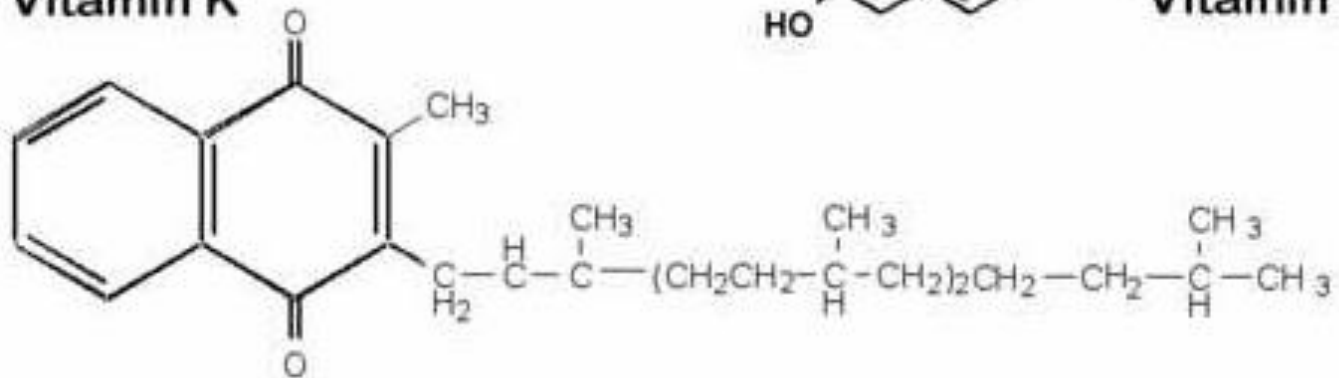


Vitamin A



Vitamin D

Vitamin K



TRASPORTO E METABOLISMO DEI LIPIDI

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.

