# Biochimica: le biomolecole • Capitolo B1

## **VERIFICA LE TUE CONOSCENZE**

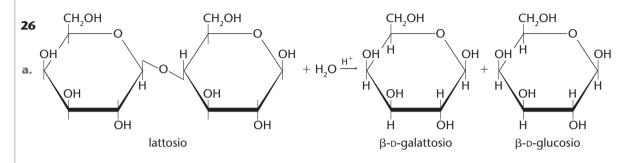
<b>1</b> A	<b>7</b> A	<b>13</b> B
<b>2</b> A	<b>8</b> B	<b>14</b> C
<b>3</b> B	<b>9</b> A	<b>15</b> D
<b>4</b> A	<b>10</b> B	<b>16</b> A
<b>5</b> B	<b>11</b> B	<b>17</b> D
<b>6</b> B	<b>12</b> C	<b>18</b> A

# **VERIFICA LE TUE ABILITÀ**

**23 a.** 
$$\alpha$$
-D-fruttosio = 26,63%

24 CHO 
$$CH_2OH$$
 $HO-H$   $HO-H$ 
 $HO-H$   $HO-H$ 
 $H-OH$   $H-OH$ 
 $CH_2OH$   $CHOH$ 
D-mannosio  $D-mannitolo$ 

**b.** 
$$\beta$$
-D-fruttosio = 73,37%



27 formula razionale

$$\mathsf{CH_{3}} - \mathsf{CH_{2}} - \mathsf{CH$$

formula condensata

CH<sub>3</sub>(CH<sub>2</sub>)<sub>12</sub>COOH

28 formula razionale

$$\mathsf{CH_{3}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2}-CH_{2$$

formula condensata

CH<sub>3</sub> CH<sub>2</sub> CH=CH CH<sub>3</sub> CH=CH (CH<sub>2</sub>)<sub>7</sub> COOH

formula topologica (i tre doppi legami sono cis)



$$\begin{array}{c} O \\ & \\ CH_{2}OC \ (CH_{2})_{14} \ CH_{3} \\ & \\ CH_{2}OH \\ \end{array} + 3 \ CH_{3} \ (CH_{2})_{14} \ COOH \longrightarrow \begin{array}{c} CH \ OC \ (CH_{2})_{14} \ CH_{3} \\ & \\ & \\ CH_{2}OC \ (CH_{2})_{14} \ CH_{3} \\ \end{array}$$

glicerolo

acido palmitico

tripalmitato di glicerile

$$\begin{array}{c} O \\ \parallel \\ CH_2OC \ (CH_2)_7 \ CH=CH \ CH_2 \ CH=CH \ (CH_2)_4 \ CH_3 \\ \parallel \ \\ 0 \\ \parallel \ \\ \end{array}$$
 
$$\begin{array}{c} CH_2OC \ (CH_2)_7 \ CH=CH \ CH_2 \ CH=CH \ (CH_2)_4 \ CH_3 \\ \parallel \ \\ \end{array}$$
 
$$\begin{array}{c} CH_2OC \ (CH_2)_{16} \ CH_3 \\ \parallel \ \\ \end{array}$$
 
$$\begin{array}{c} CH_2OC \ (CH_2)_{16} \ CH_3 \\ \parallel \ \\ \end{array}$$
 
$$\begin{array}{c} CH \ OC \ (CH_2)_{16} \ CH_3 \\ \parallel \ \\ \end{array}$$
 
$$\begin{array}{c} CH \ OC \ (CH_2)_{16} \ CH_3 \\ \parallel \ \\ \end{array}$$
 
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$$\begin{array}{c} CH \ OC \ (CH_2)_{16} \ CH_3 \\ \parallel \ \\ \end{array}$$

tristearato di glicerile

trilaurato di glicerile

glicerolo

laurato di sodio (un sapone)

fenilcisteina fenilalanina cisteina

40

# **TEST YOURSELF**

C

A

B

B

#### VERSO L'UNIVERSITA

C

E

B

A

E

# **VERSO L'ESAME**

#### **ESEMPLIFICA**

54 Sono anfifilici, per esempio, gli acidi biliari, che hanno la funzione biologica di emulsionare i grassi per formazione di micelle, i fosfolipidi e il colesterolo, che compongono le membrane cellulari.

#### **OSSERVA E CLASSIFICA**

55 Prima figura: acido grasso insaturo; seconda figura: acido grasso saturo.

#### **OSSERVA E DESCRIVI**

- 56 a. Globulare.
  - b. Alfa elica e beta foglietto (struttura rappresentata da frecce).
  - c. Sì, si individuano 4 polipeptidi evidenziati in colori diversi.

#### **IPOTIZZA**

- 57 a. Basicità.
  - b. Lisina, Istidina, Arginina.

#### **OSSERVA E IPOTIZZA**

- 58 a. La planarità.
  - **b.** Per la maggiore frequenza del processo di duplicazione.

### **CONFRONTA**

- 59 Le differenze nella struttura quaternaria: la mioglobina è costituita da un unico polipeptide, mentre l'emoglobina presenta 4 subunità.
- 60 L'associazione di più polipeptidi in una struttura quaternaria è stabilizzata da legami deboli, mentre ubiquitina e proteina da degradare sono coinvolte in un legame covalente.