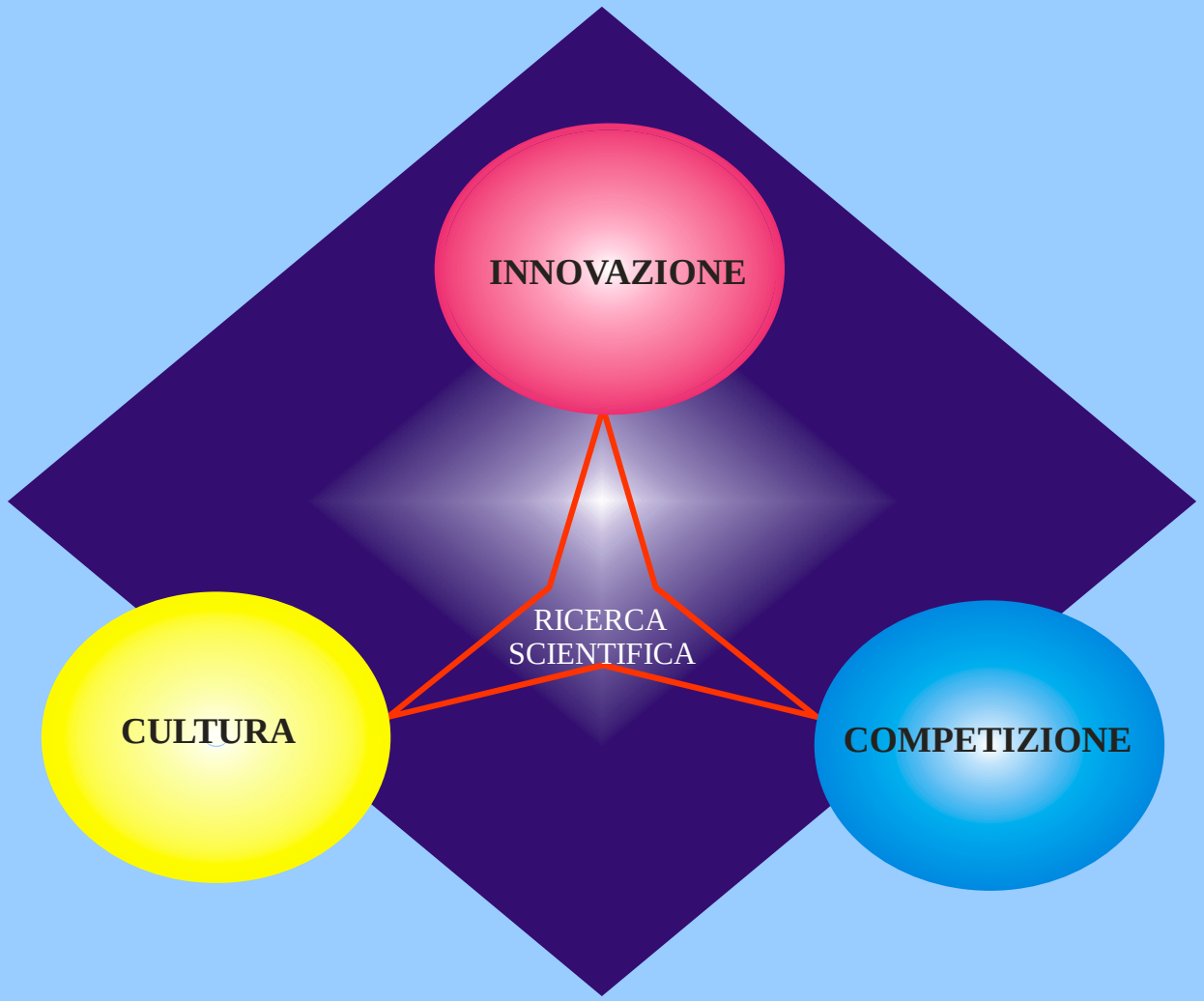
Prosperitati
Publicae
Augendae

Accademia dei Georgofili

1753

Sezione Centro-Est

La

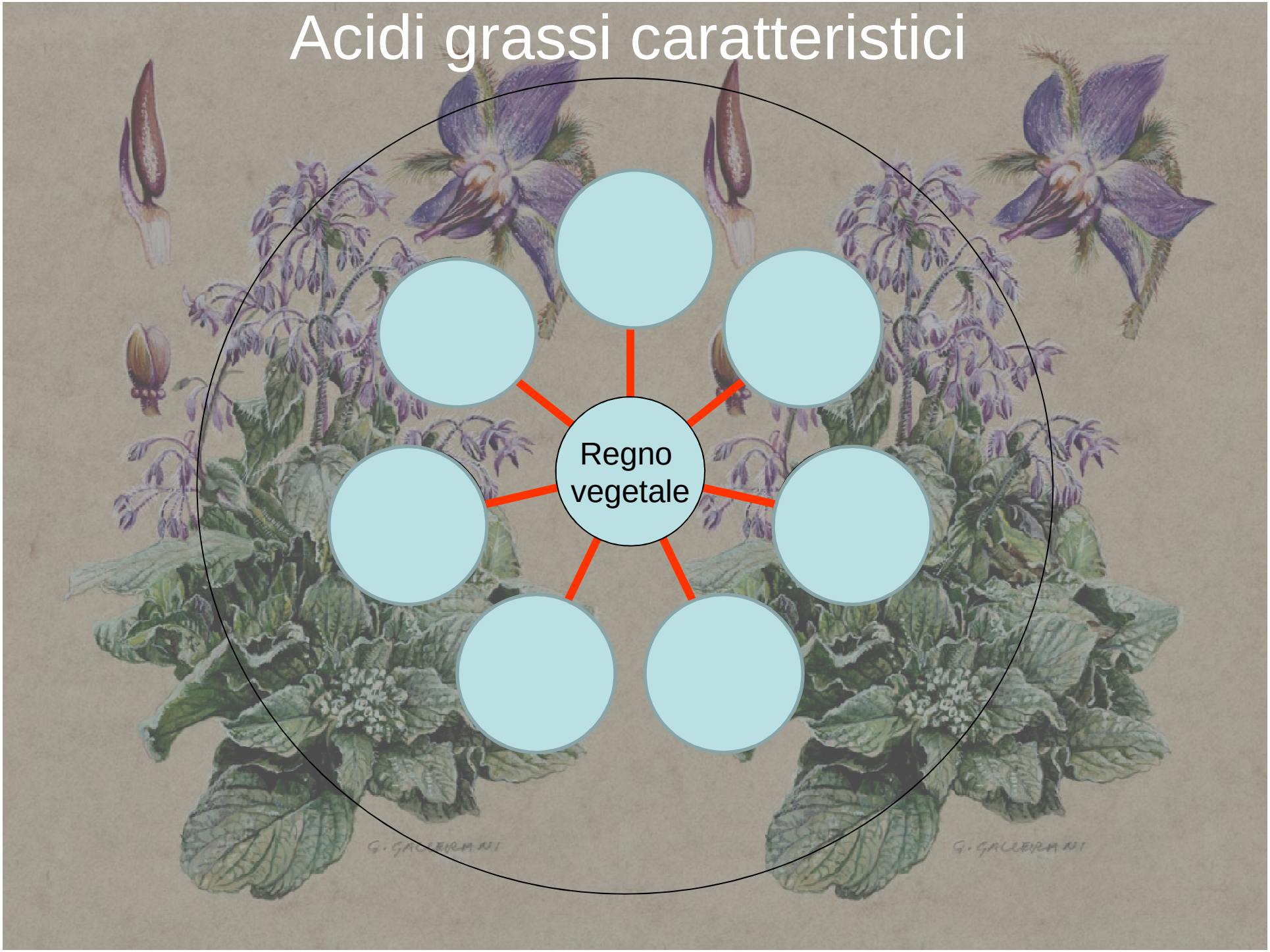


Non vi è nessun obbligo nei confronti delle cose impossibili

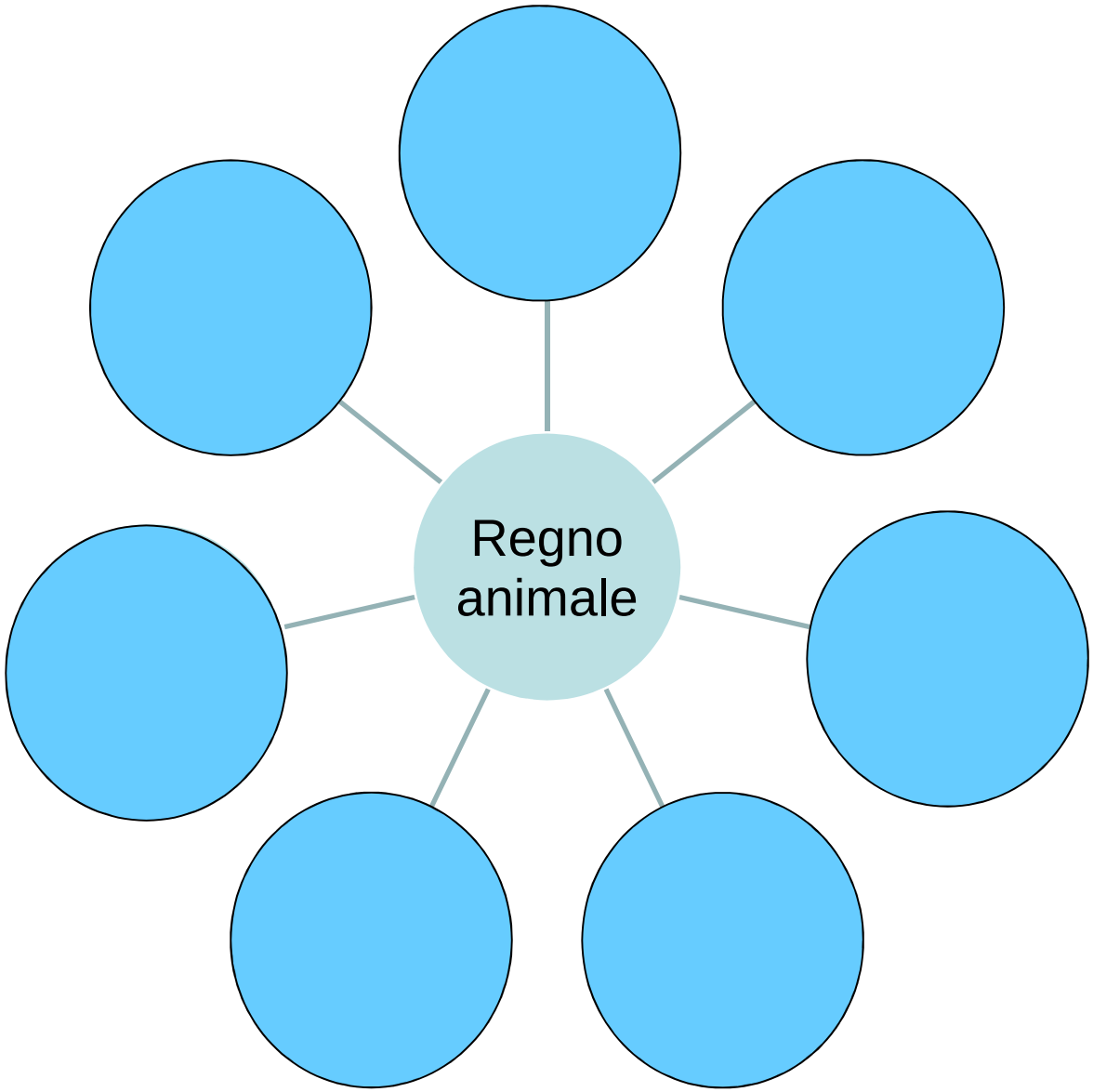
Se sostieni la
ricerca scientifica
l'Italia cresce

Acidi grassi terresti e marini: aspetti analitici, tecnologici e funzionali

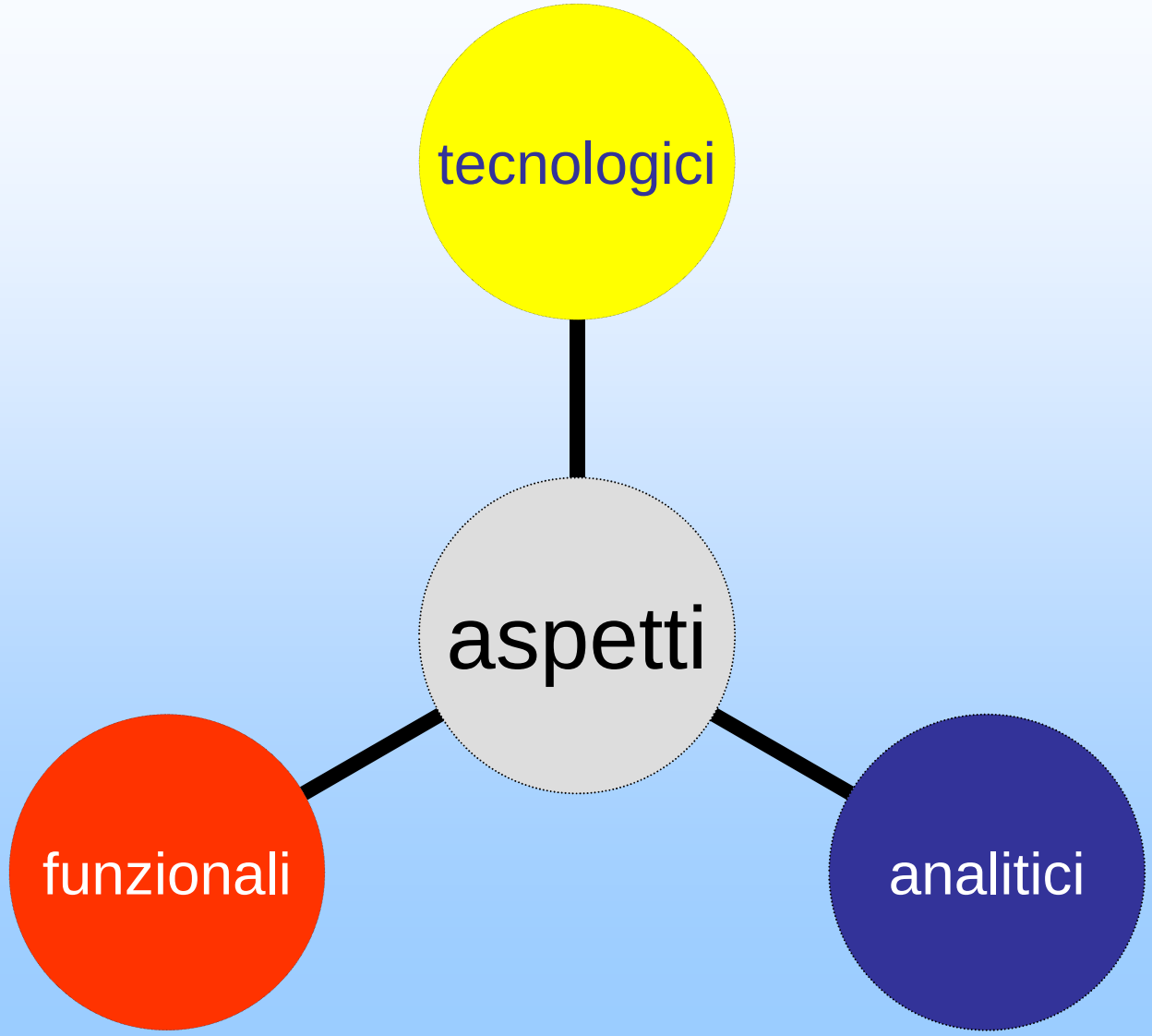
Acidi grassi caratteristici



acidi grassi caratteristici



Perché è importante conoscere la composizione in acidi grassi di un substrato lipidico?

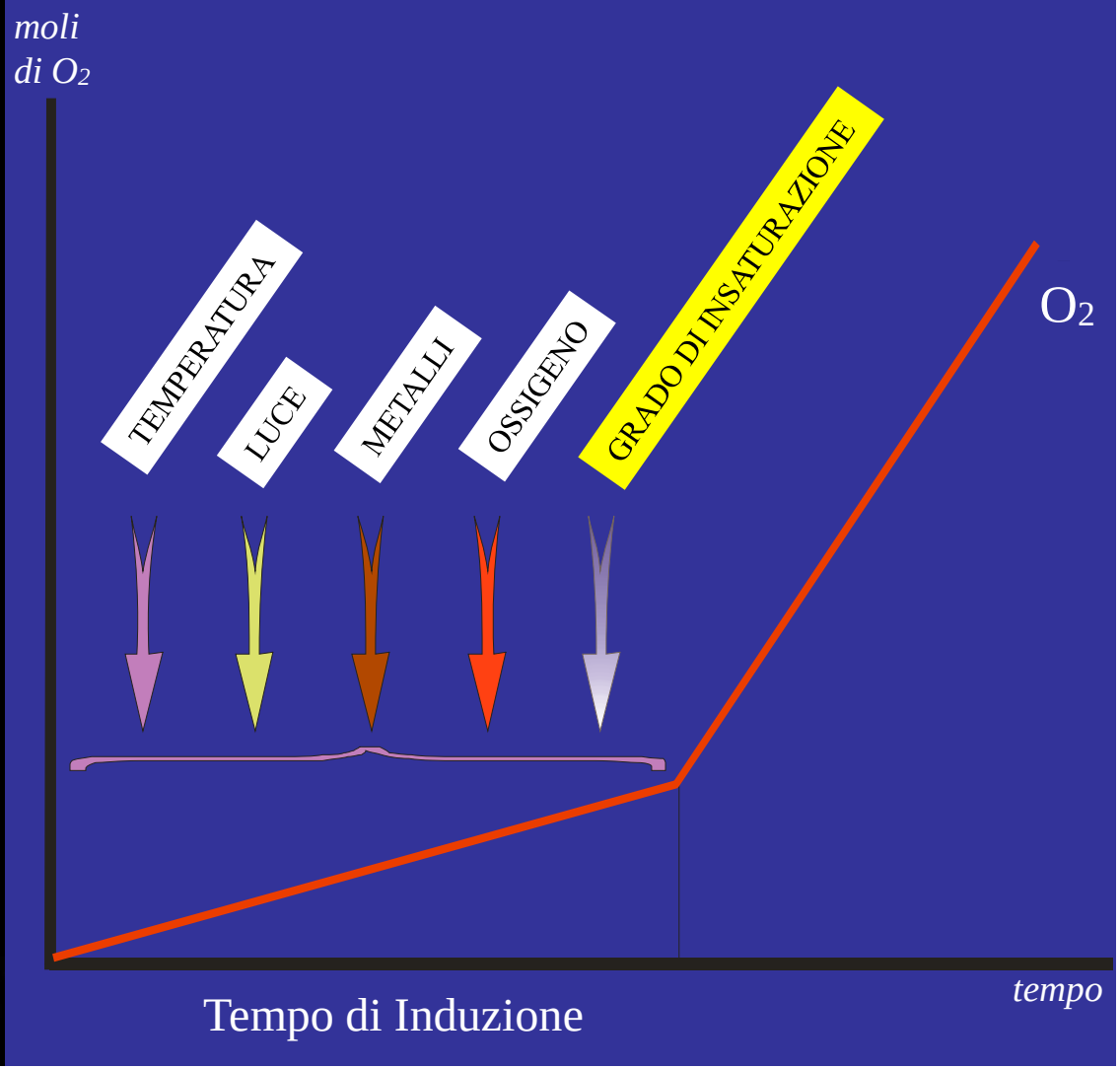


Acidi grassi

Aspetti tecnologici

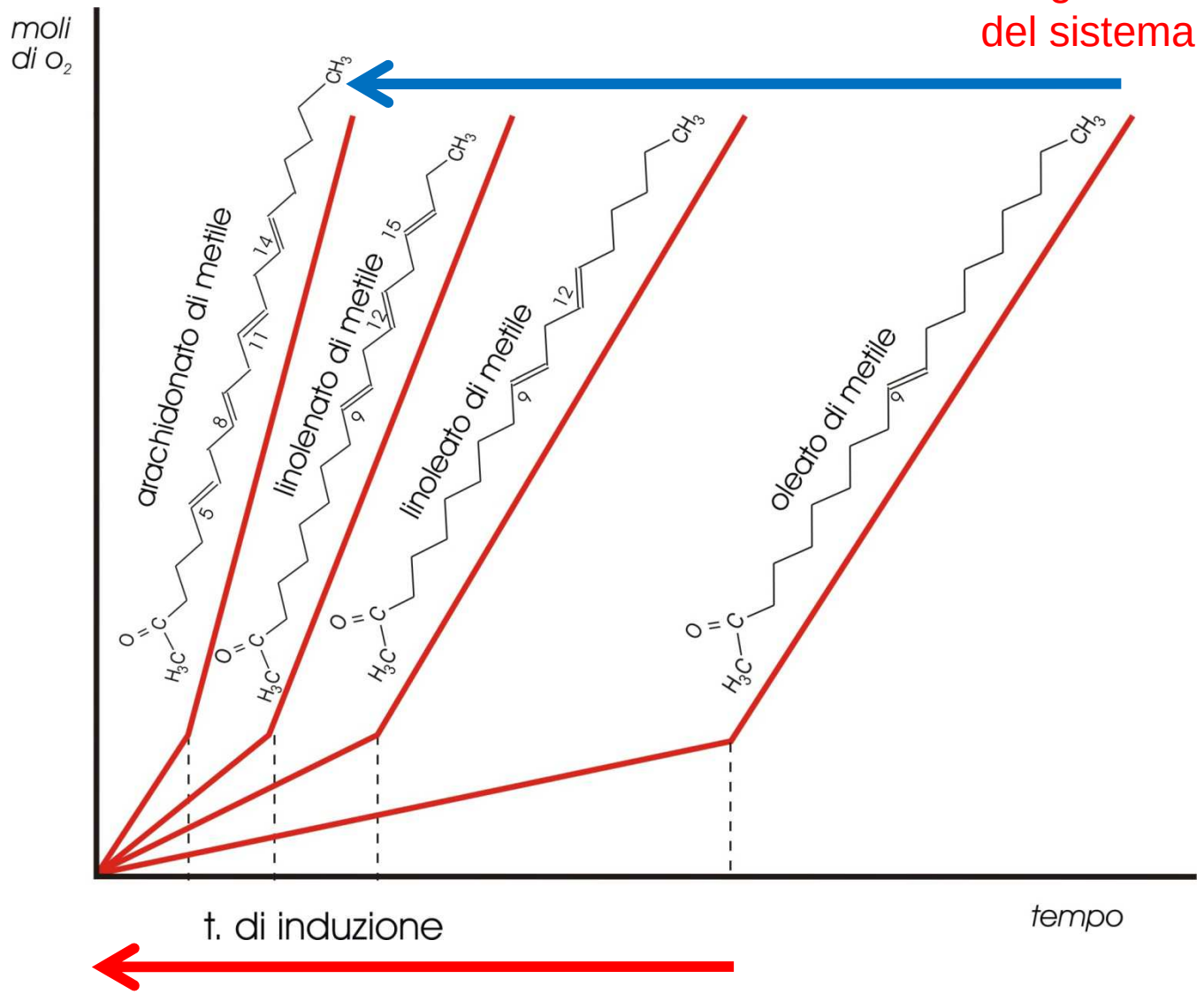
Tempo di induzione:

parametri chimico–fisici

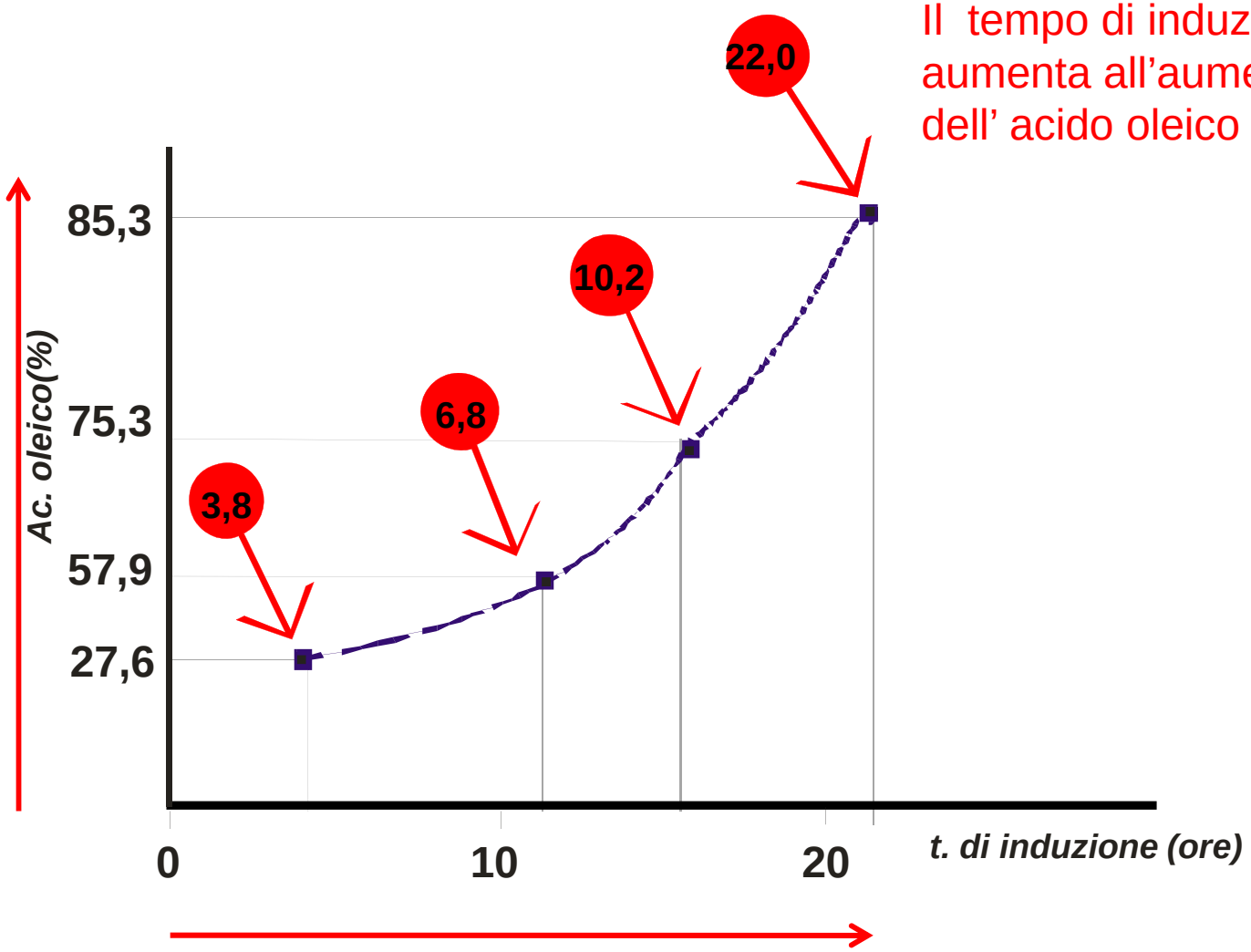


Tempo di induzione degli acidi grassi insaturi

Il tempo di induzione diminuisce all'aumentare del grado di insaturazione del sistema



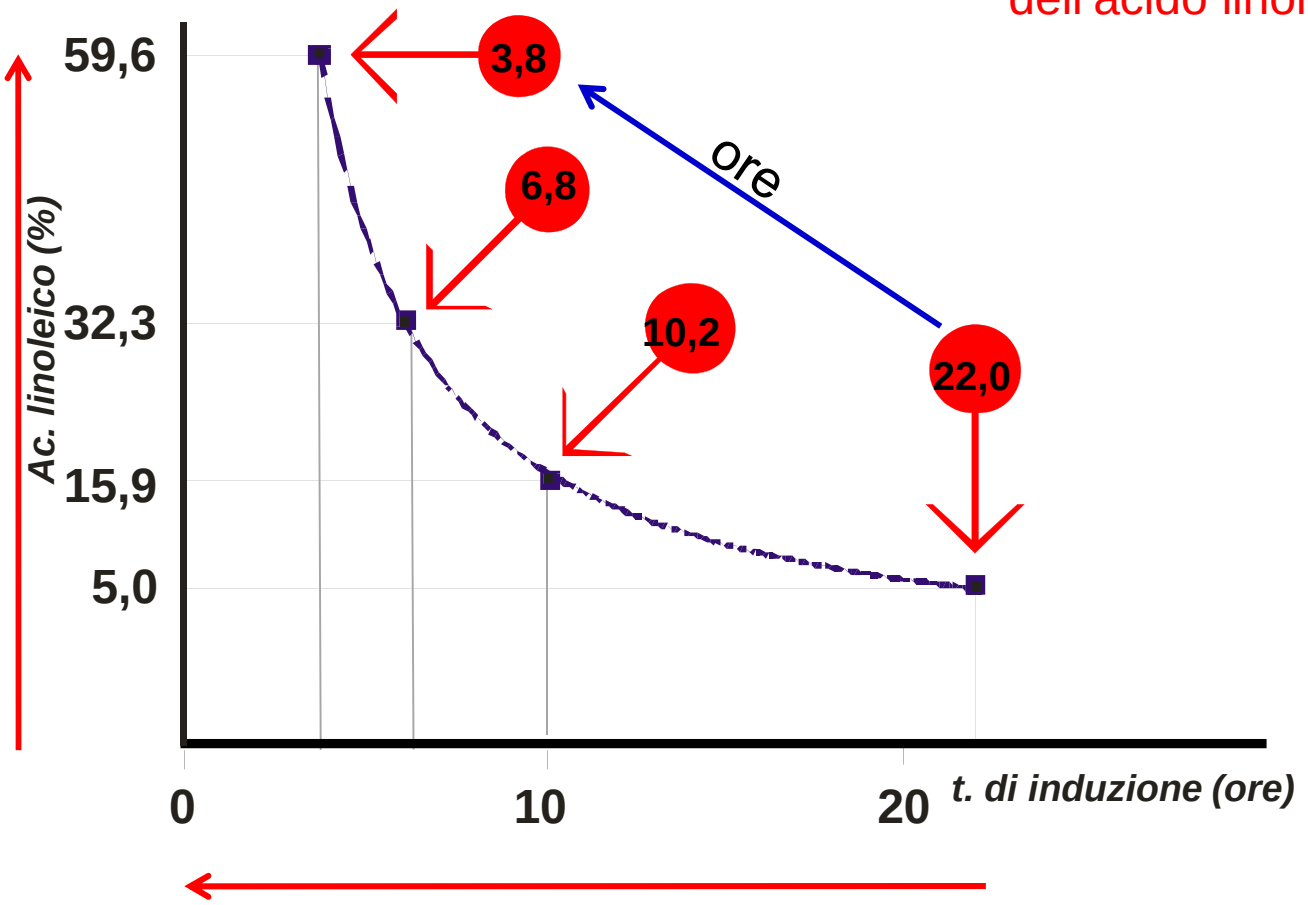
Olio di semi di girasole: tempo di induzione in funzione del contenuto di acido oleico



Il tempo di induzione aumenta all'aumentare dell' acido oleico

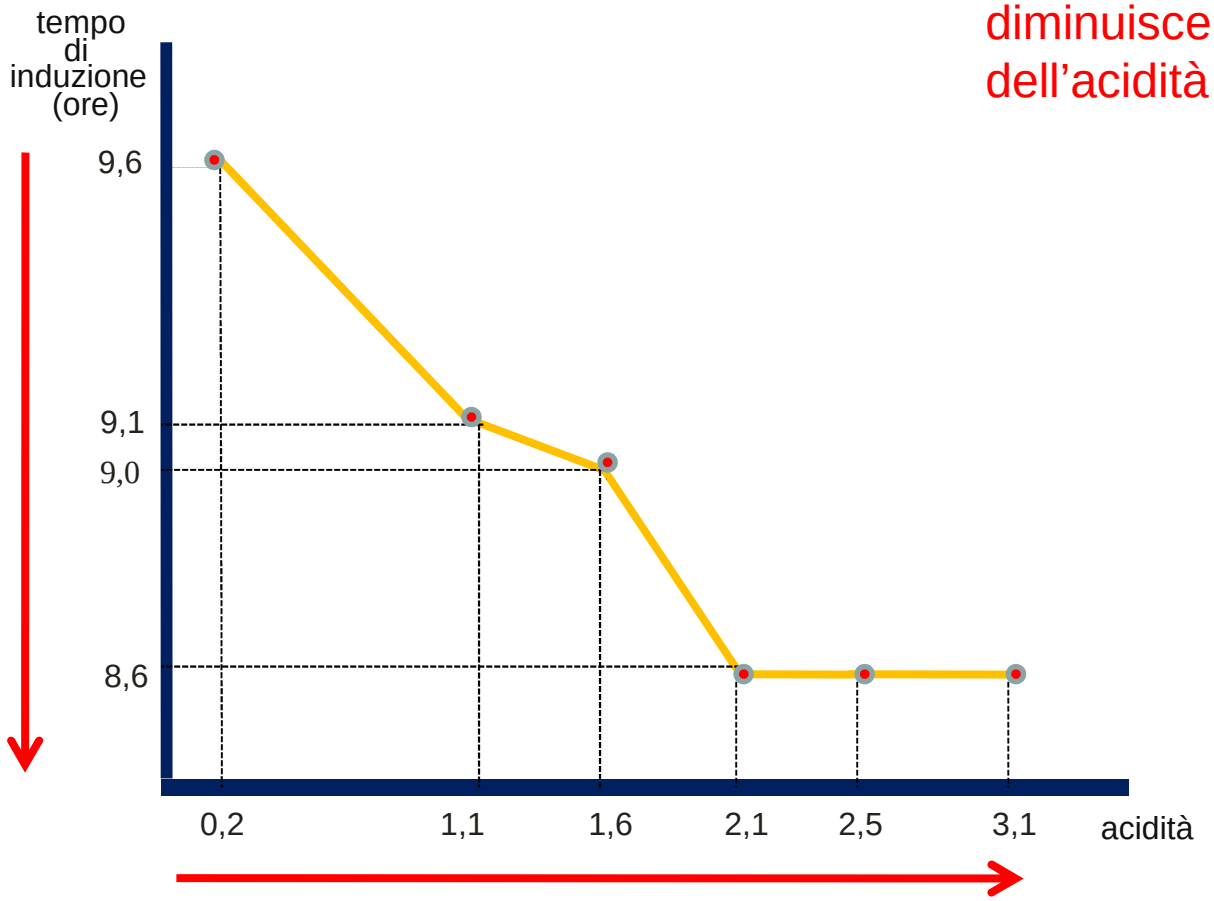
Olio di semi di girasole:
tempo di induzione in funzione del contenuto di acido linoleico

Il tempo di induzione diminuisce all'aumentare dell'acido linoleico

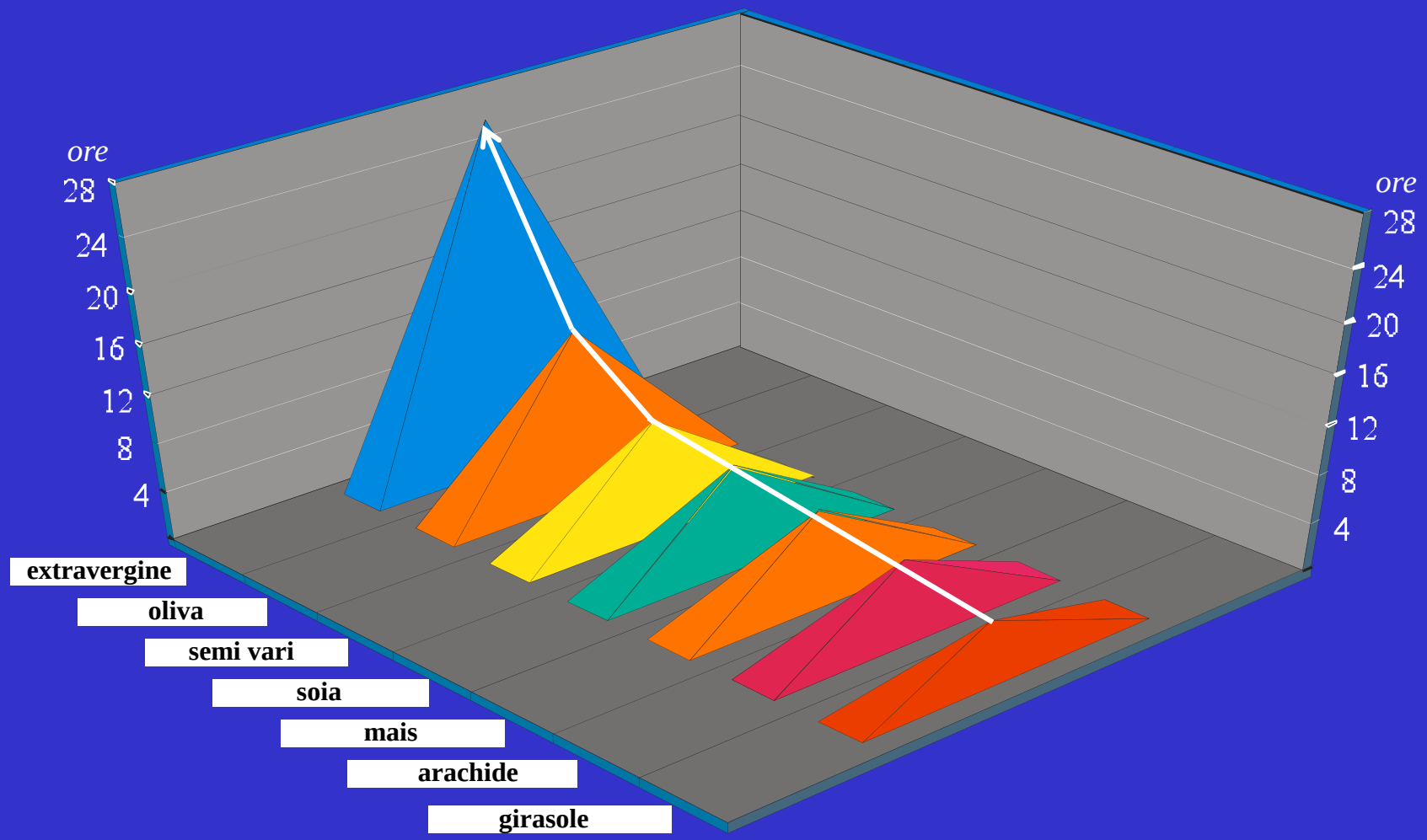


Tempo di induzione in funzione dell'acidità libera

Il tempo di induzione diminuisce all'aumentare dell'acidità libera



RESISTENZA ALL'OSSIDAZIONE FORZATA DI ALCUNI OLI VEGETALI



Acidi grassi

Aspetti analitici

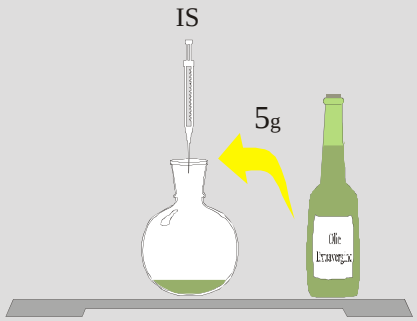
Prosperitati
Publicae
Augendae

Caratteristiche richieste ad un metodo analitico

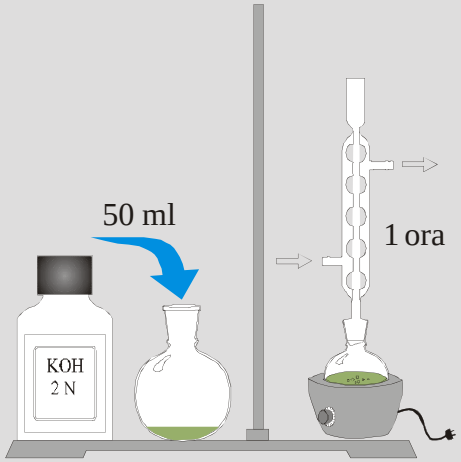
- Precisione
- Riproducibilità
- Ripetibilità
- Scarsa manipolazione
- Velocità
- Basso costo
- Basso rischio ambientale

METODOLOGIA PER LA PREPARAZIONE E LA DETERMINAZIONE DEGLI ACIDI GRASSI

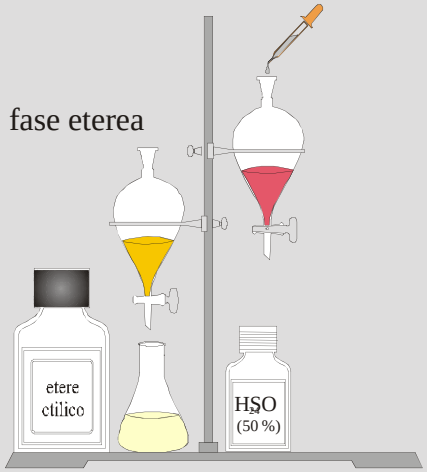
Add. dello Standard Interno a 5 g di olio



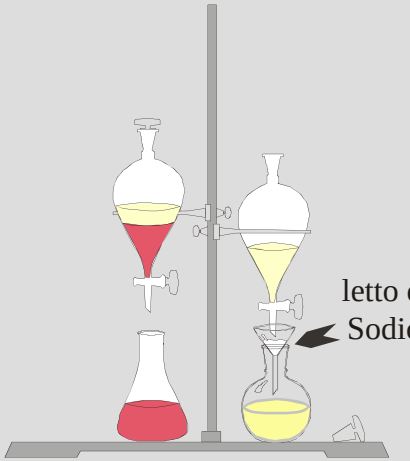
Reazione di Saponificazione



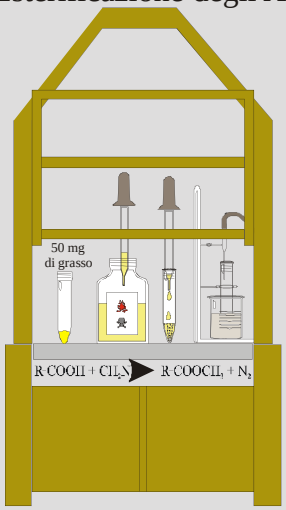
Separazione della fraz. dell'insaponificabile



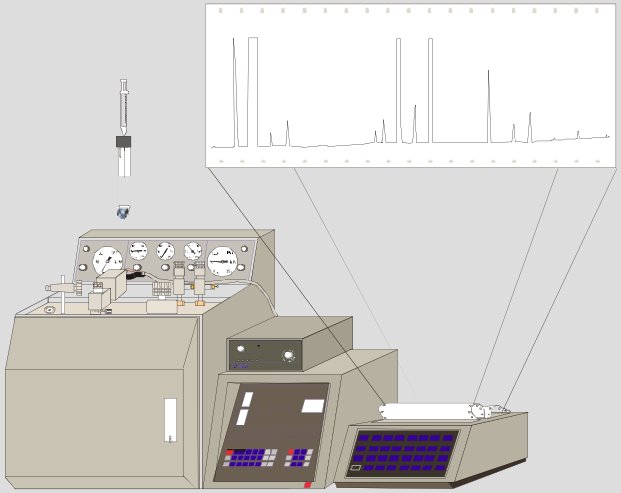
Separazione degli Acidi Grassi



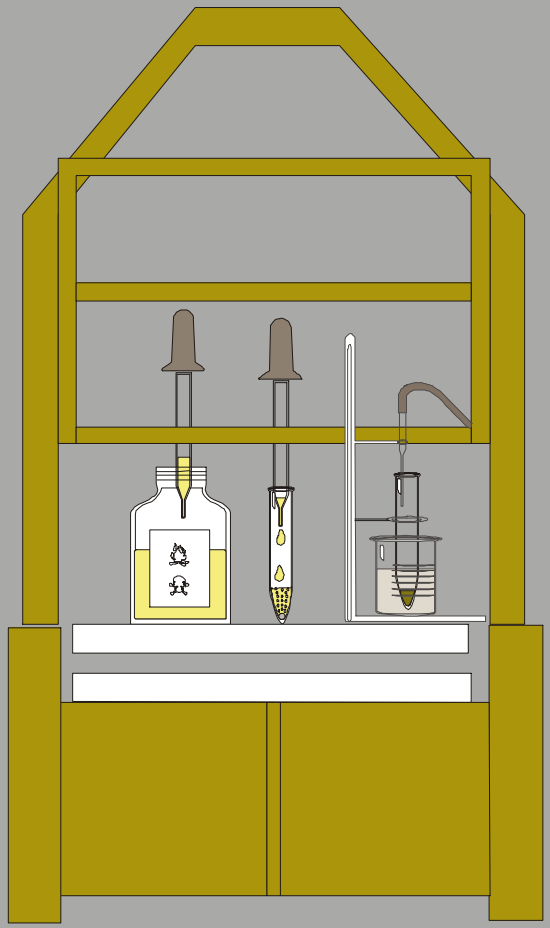
Esterificazione degli Ac. Grassi

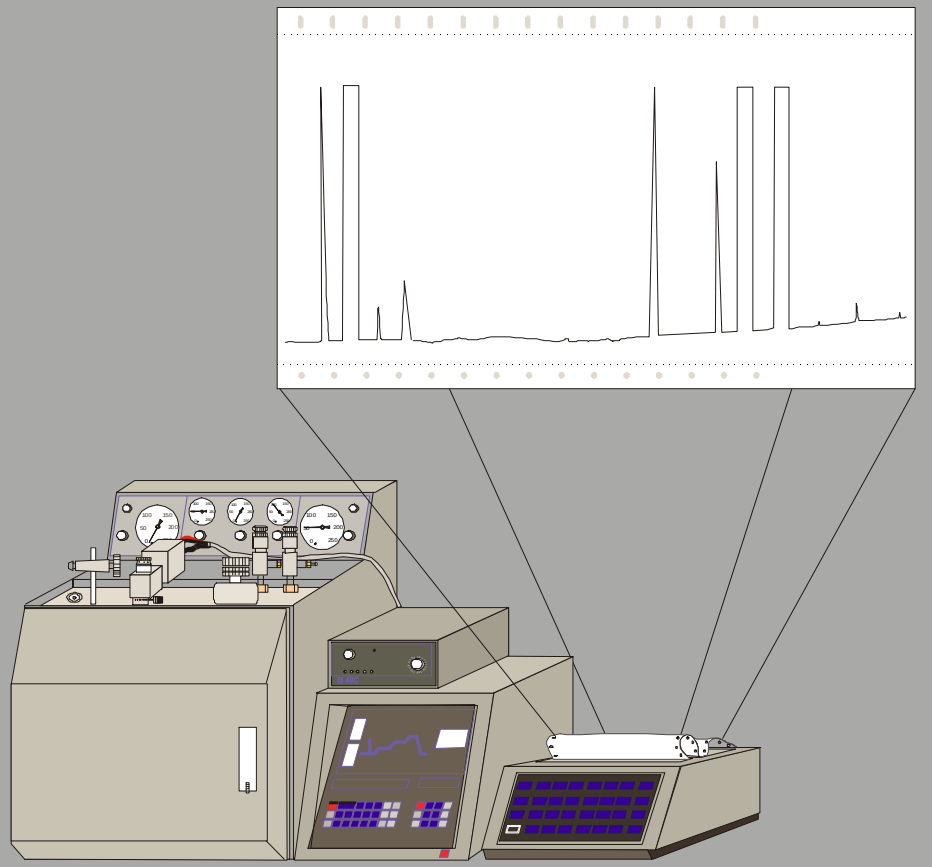


Analisi Gas-cromatografica degli Esteri Metilici



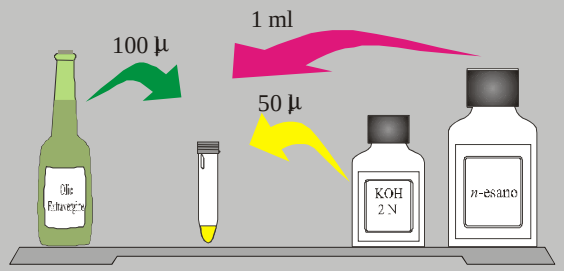
Esterificazione e analisi degli acidi grassi

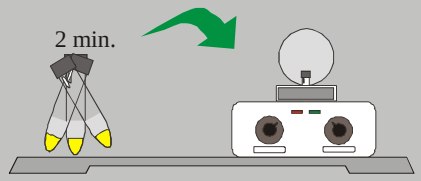


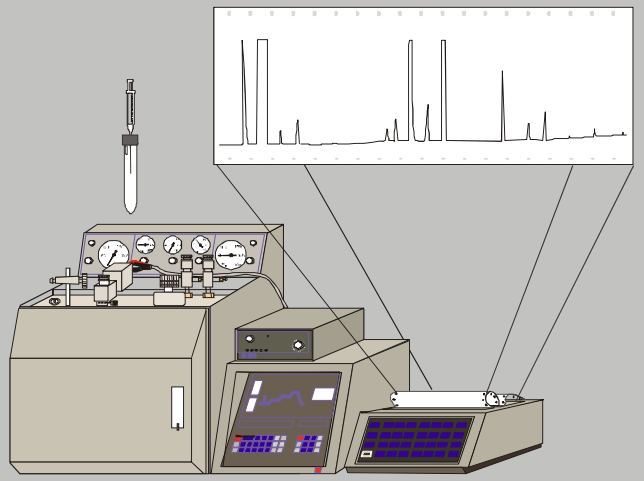


$$R\text{-}COOH + CH_2N_2 \longrightarrow R\text{-}COOCH_3 + N_2$$

transmetilazione diretta degli acidi grassi in ambiente basico



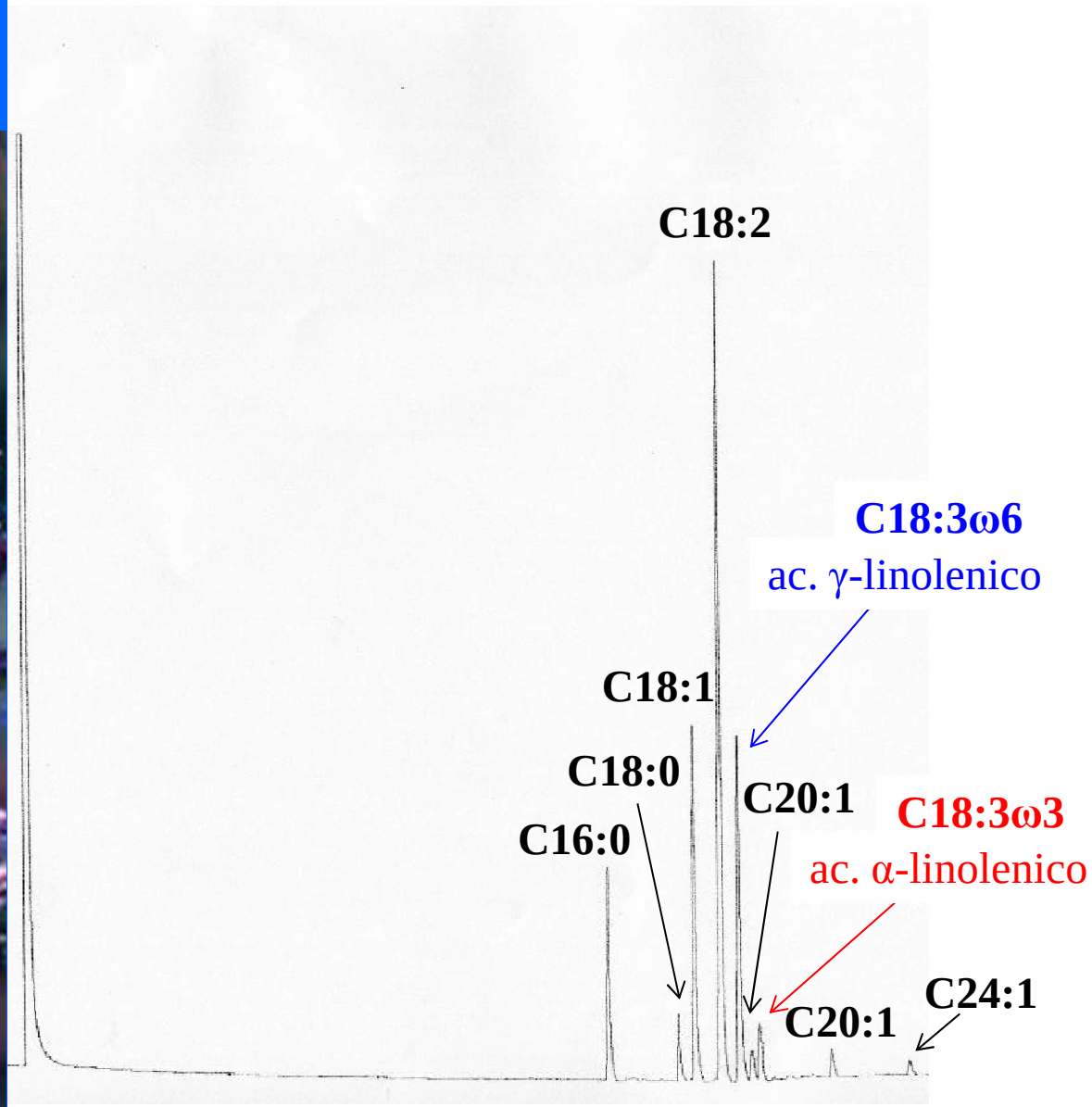




borragine

Borrago officinalis

borragine e soia (70/30): acidi grassi

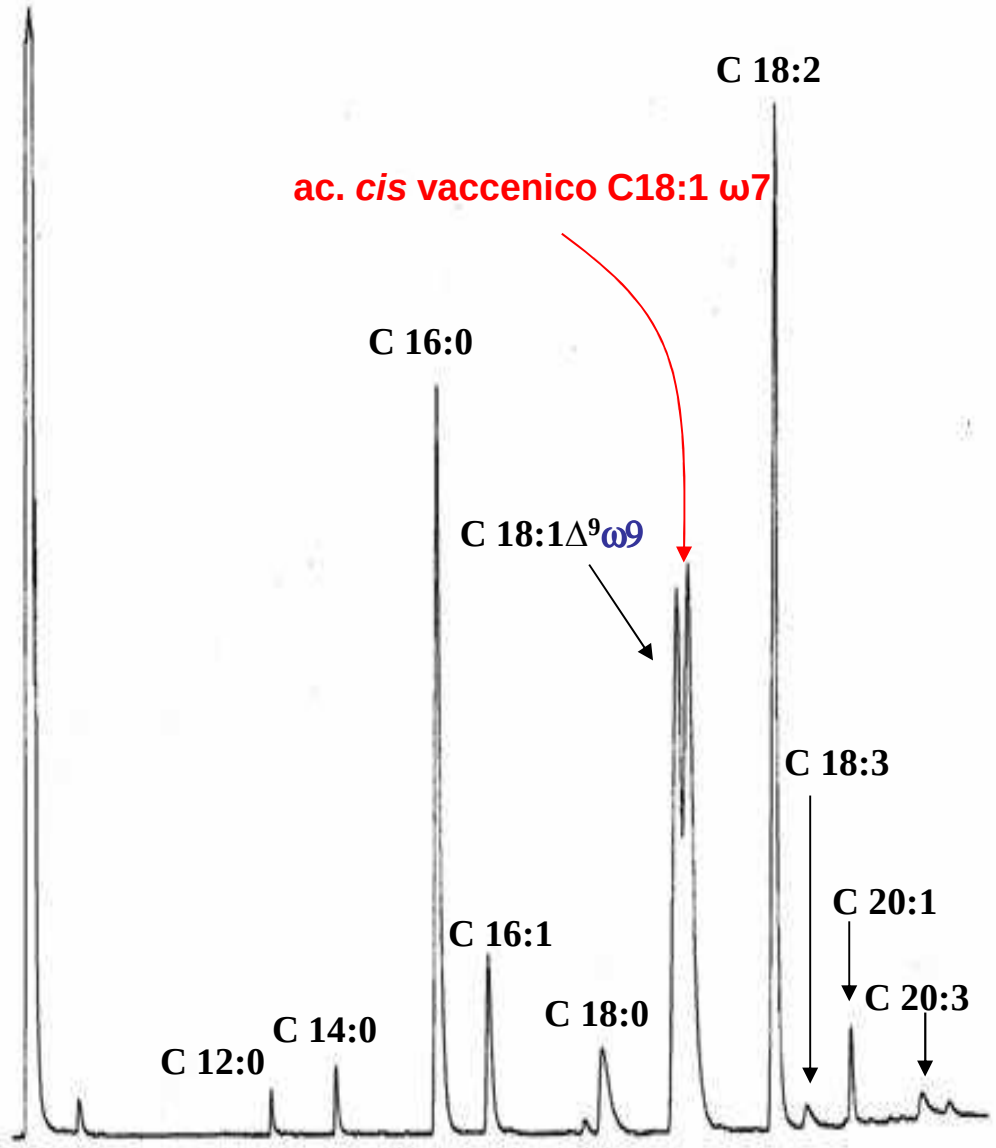


ZAFFERANO: ACIDI GRASSI

cappero

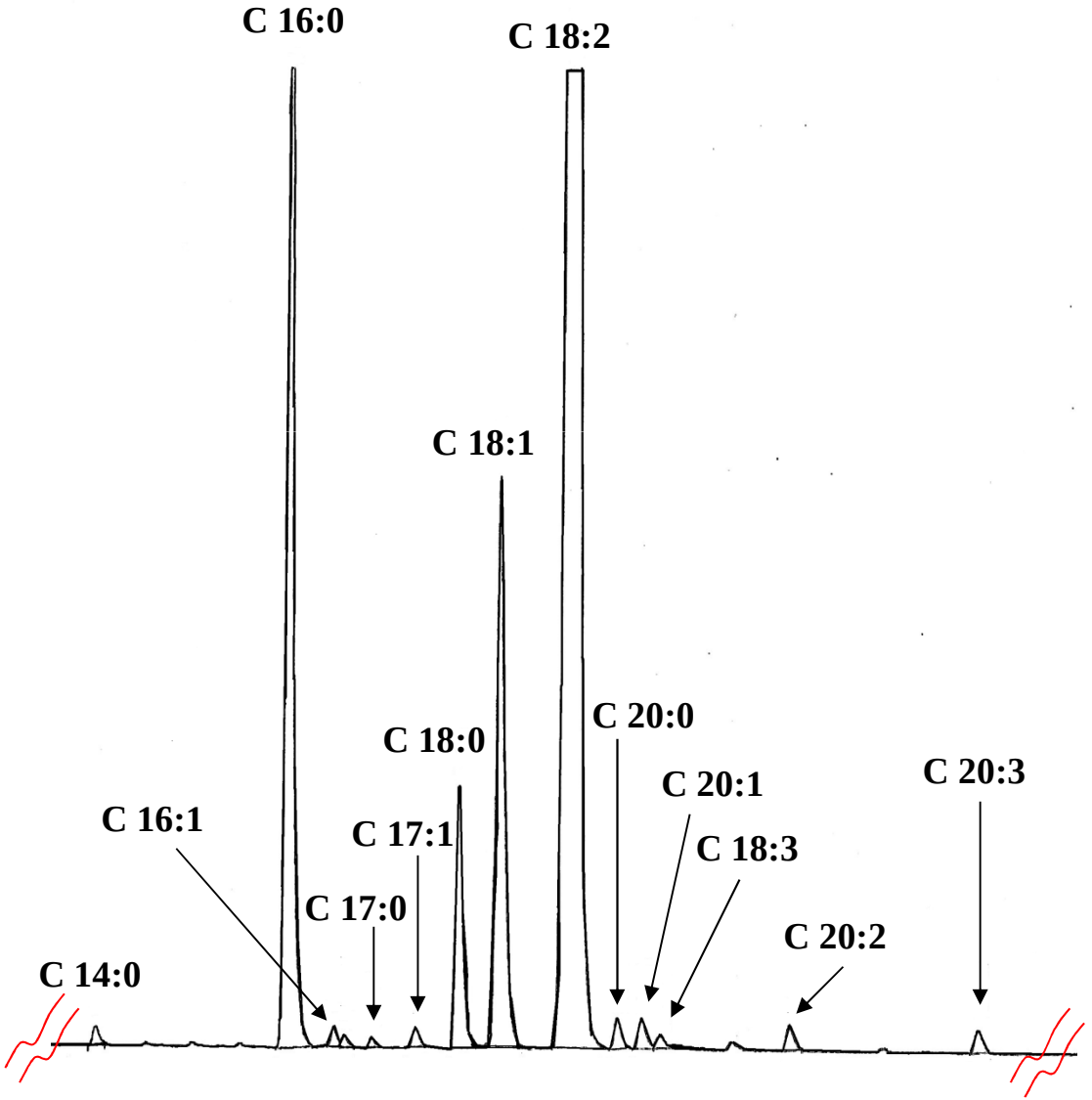
specie:
capparis spinosa
e
capparis ruprestis

acidi grassi



peperoncino

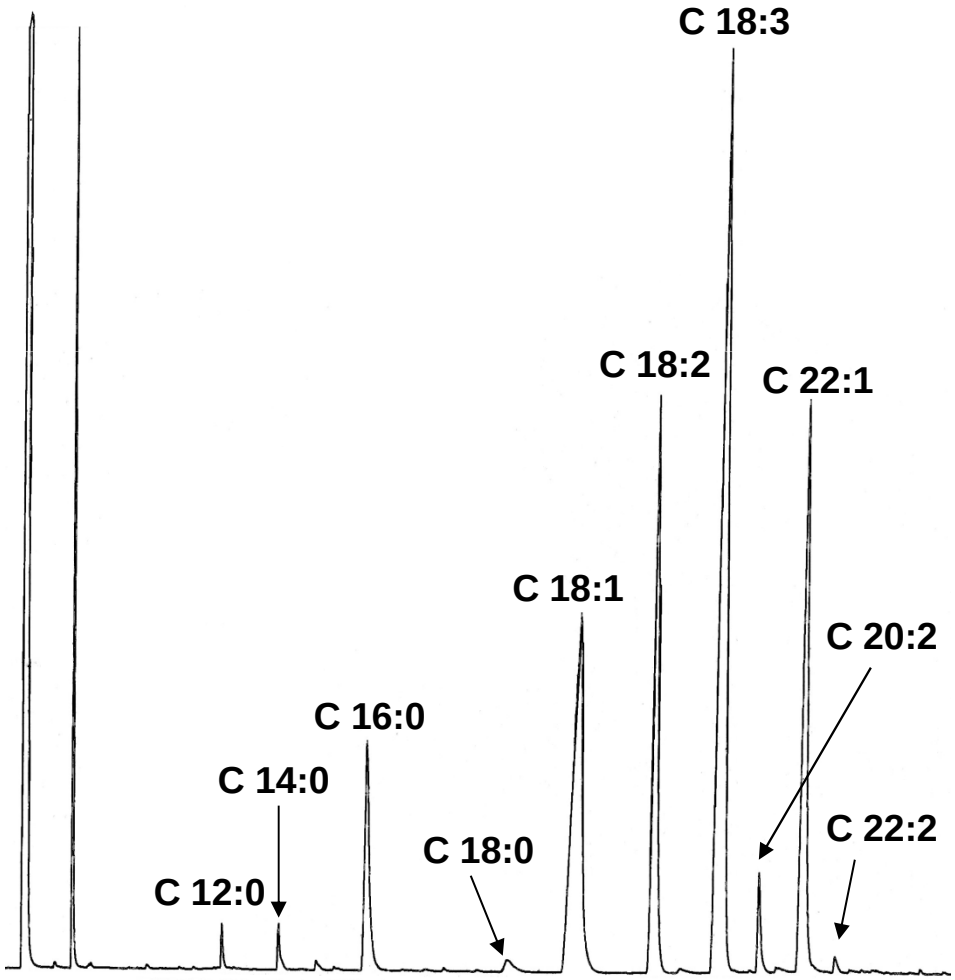
acidi grassi



pitosforo

pitosforo tenuifolium

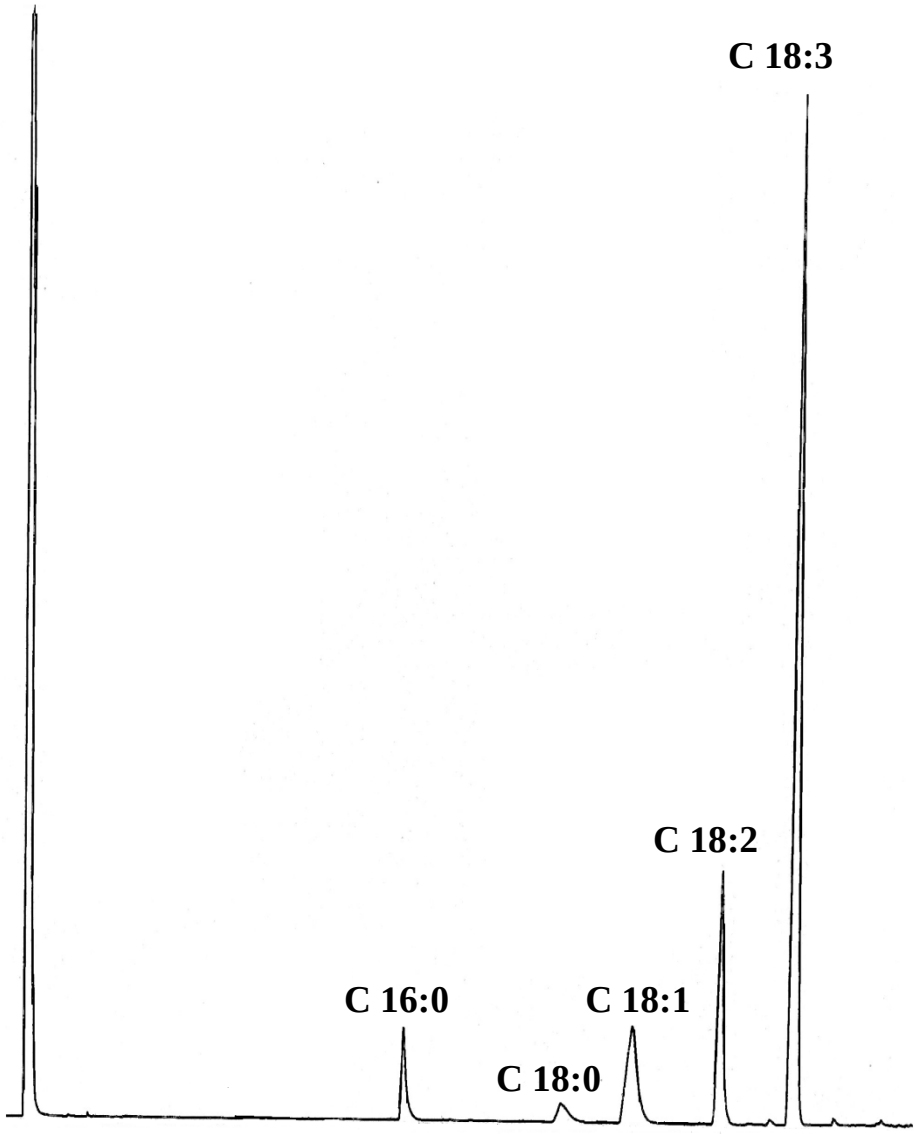
acidi grassi



Actinidia

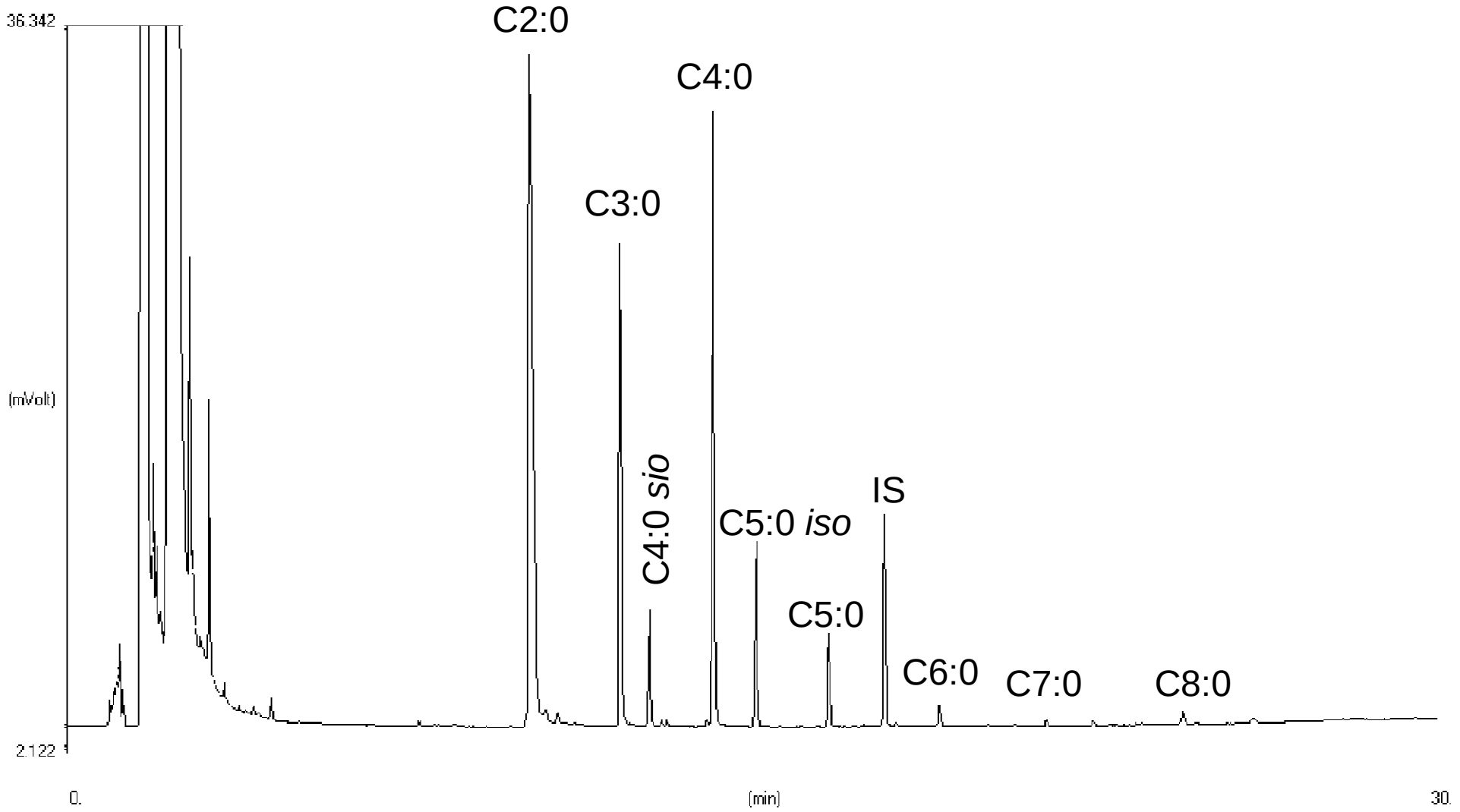
Actinidia chinensis

acidi grassi



RUMINE: ACIDI GRASSI

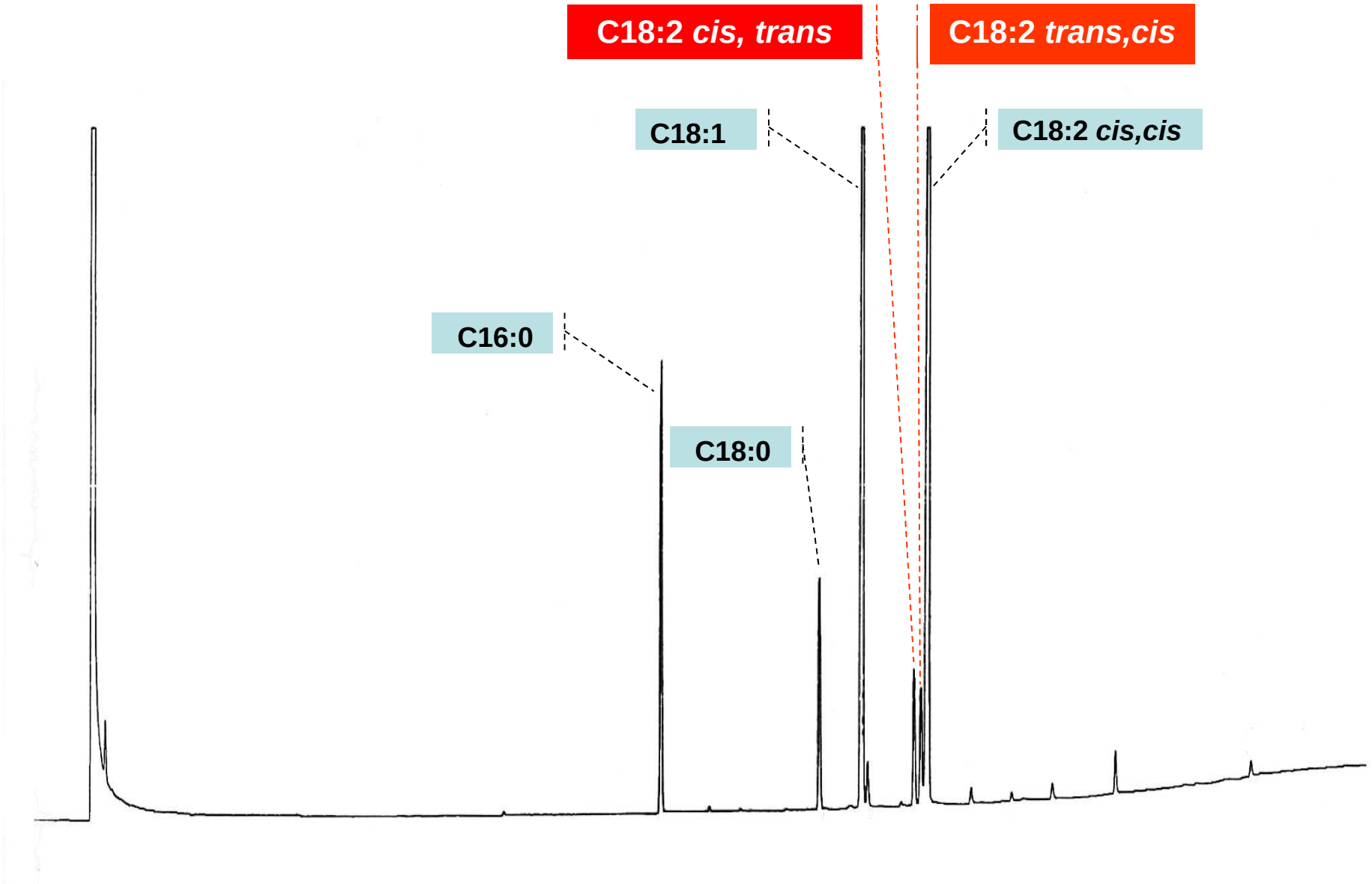
DB-FFAP 30m x 0,25mm I.D.



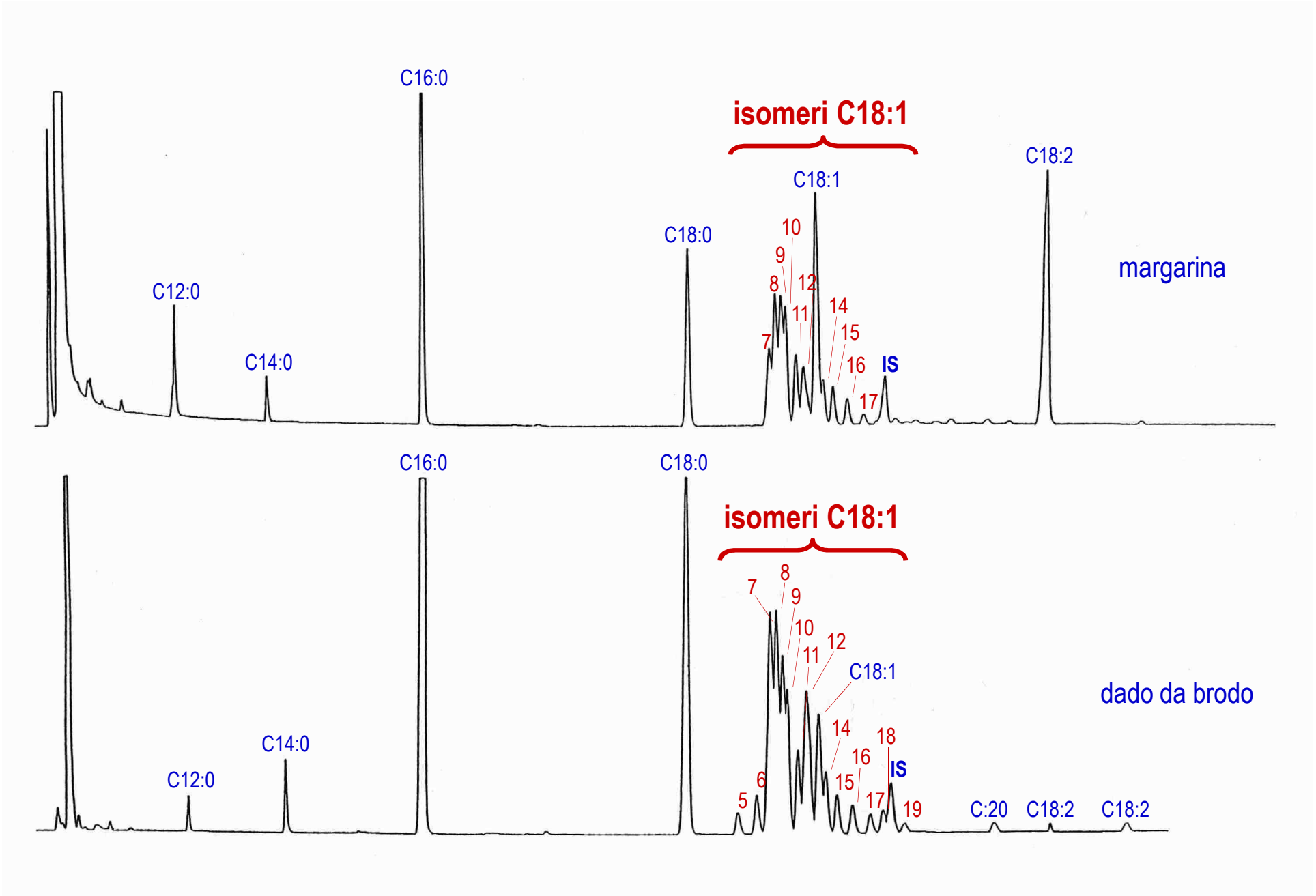
Acidi grassi

trans

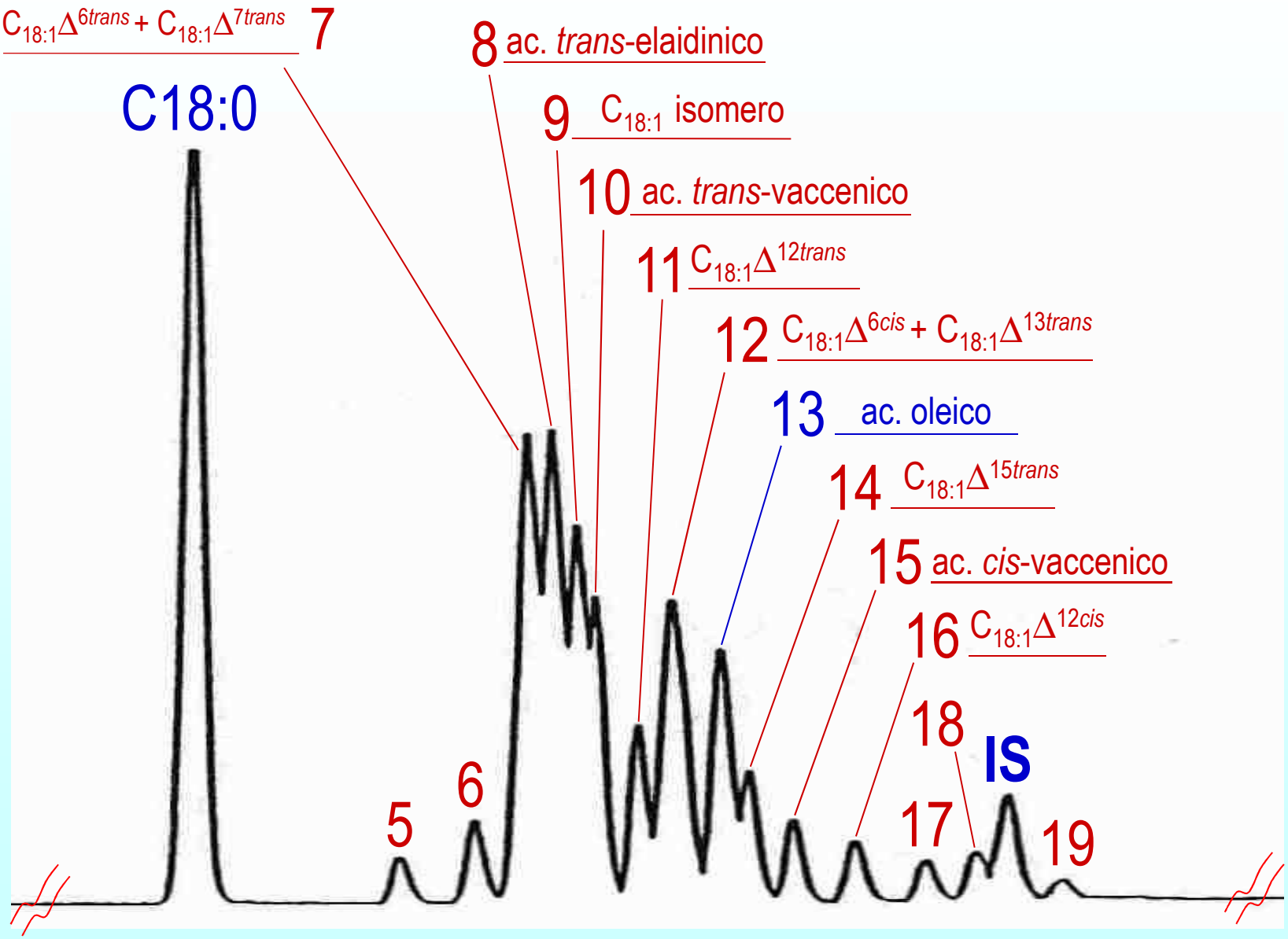
olio di girasole: acidi grassi



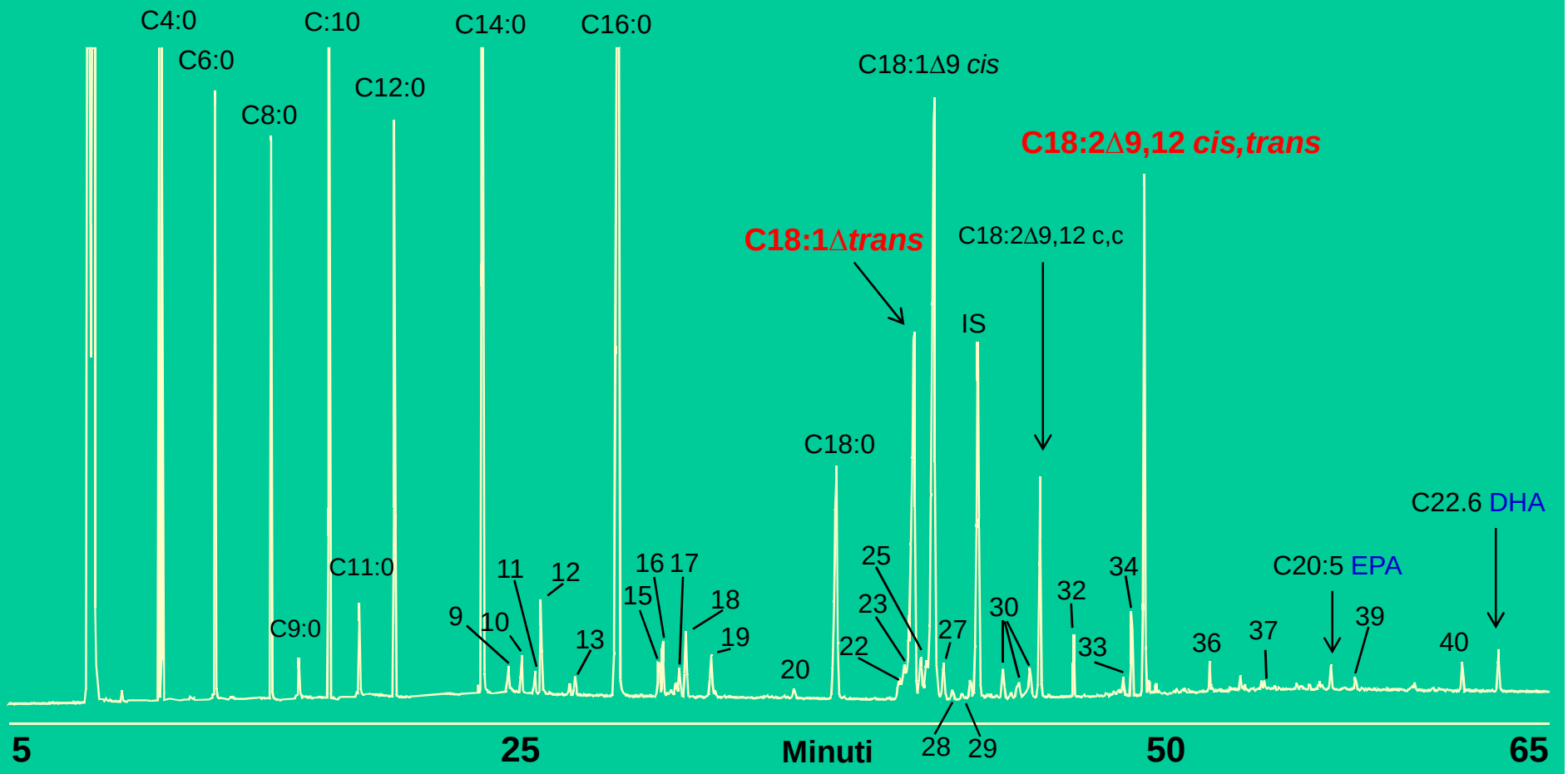
Margarina e dado da brodo: acidi grassi, tracciati gas-cromatografici



Dado da brodo: isomeri geometrici e di posizione dell'acido oleico



LATTE DI PECORA: ACIDI GRASSI



9 = *iso*-15:0; **10** = *anteiso*-15:0; **11** = 14:1 Δ9c; **12** = 15:0; **13** = iso-16:0; **15** = 16:1 Δ9t + *iso*-17:0; **16** = isomeri 16:1 *trans*; **17** = *anteiso*-17:0 + 16:1Δ7t; **18** = 16:1 Δ9c; **19** = 17:0; **22** = 18:1 Δ6t + Δ7t + Δ8t; **23** = 18:1 Δ9t; **25** = 18:1 Δ6c + Δ7c + Δ12t + Δ13t + Δ14t; **27** = 18:1 Δ11c; **28** = 18:1 Δ12c; **29** = 18:1 Δ13c; **30** = isom. 18:2; **32** = 20:0; **33** = 20:1 Δ11; **34** = α-18:3; **36** = 22:0; **37** = 20:4; 39 = 24:1; **40** = 22:5.

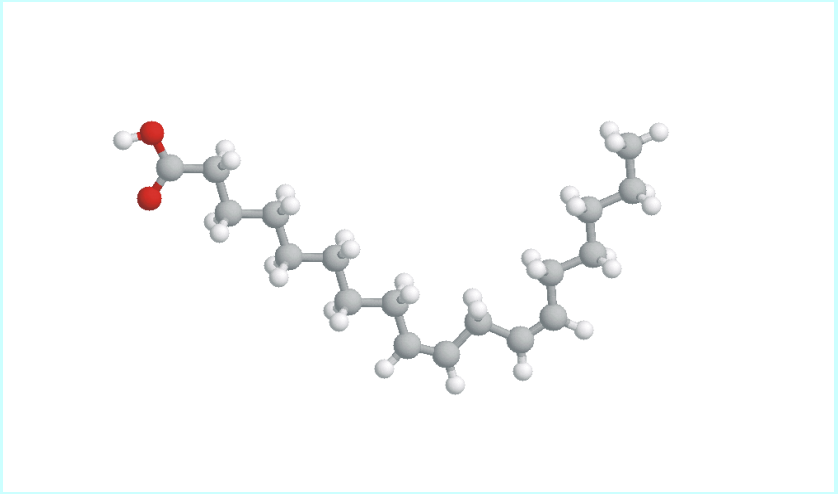
Acidi grassi

Aspetti funzionali

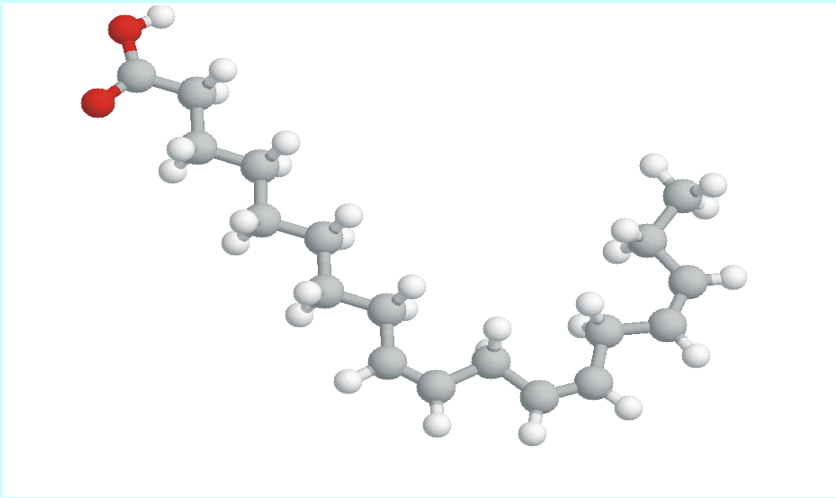
Acidi grassi

ω_3

Acidi grassi essenziali (EFA)



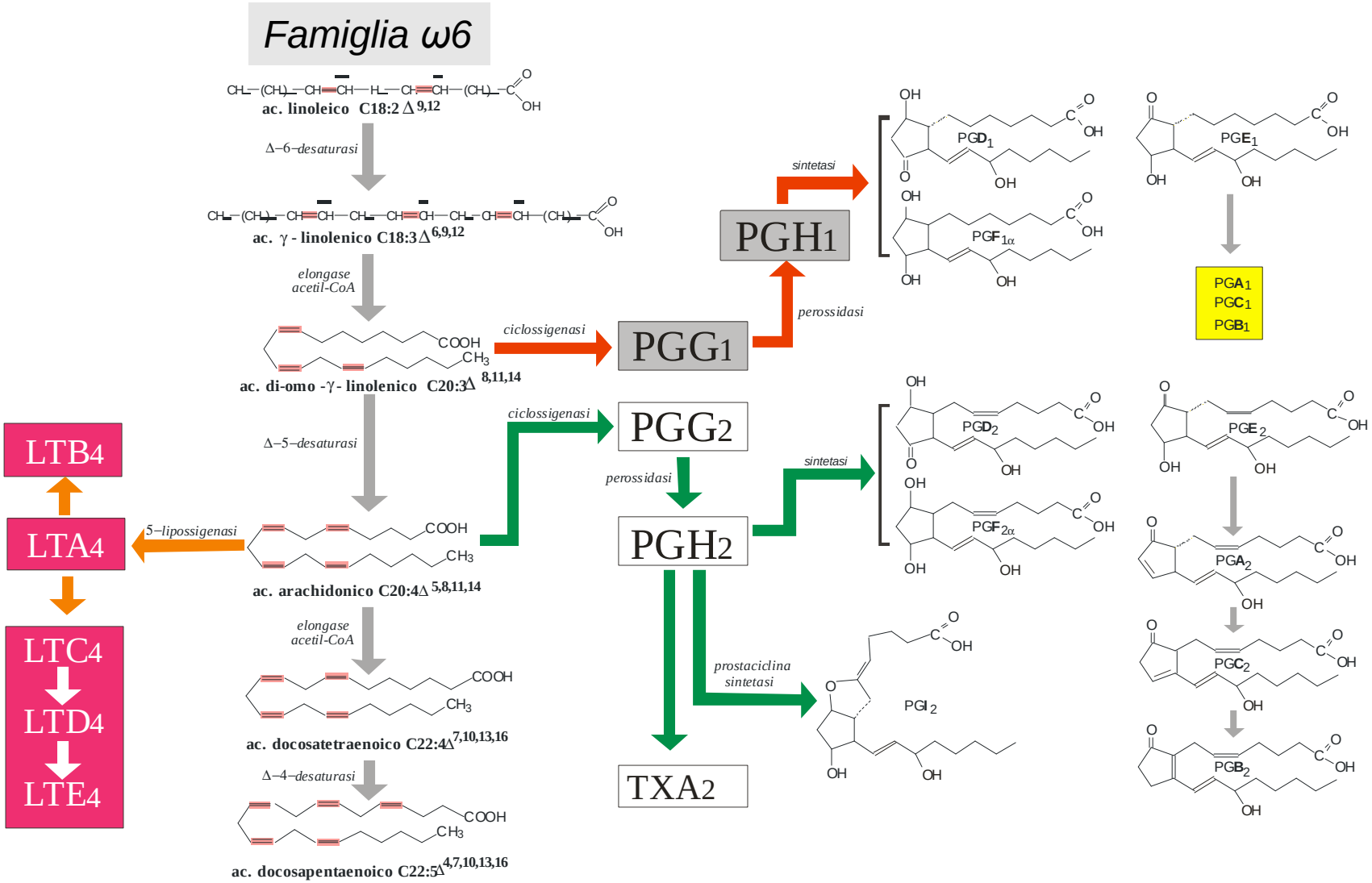
Acido linoleico *18:2* $\Delta^{9c,12c}$ **ω6**



Acido linolenico *18:3* $\Delta^{9c,12c,15c}$ **ω3**

Acidi grassi essenziali

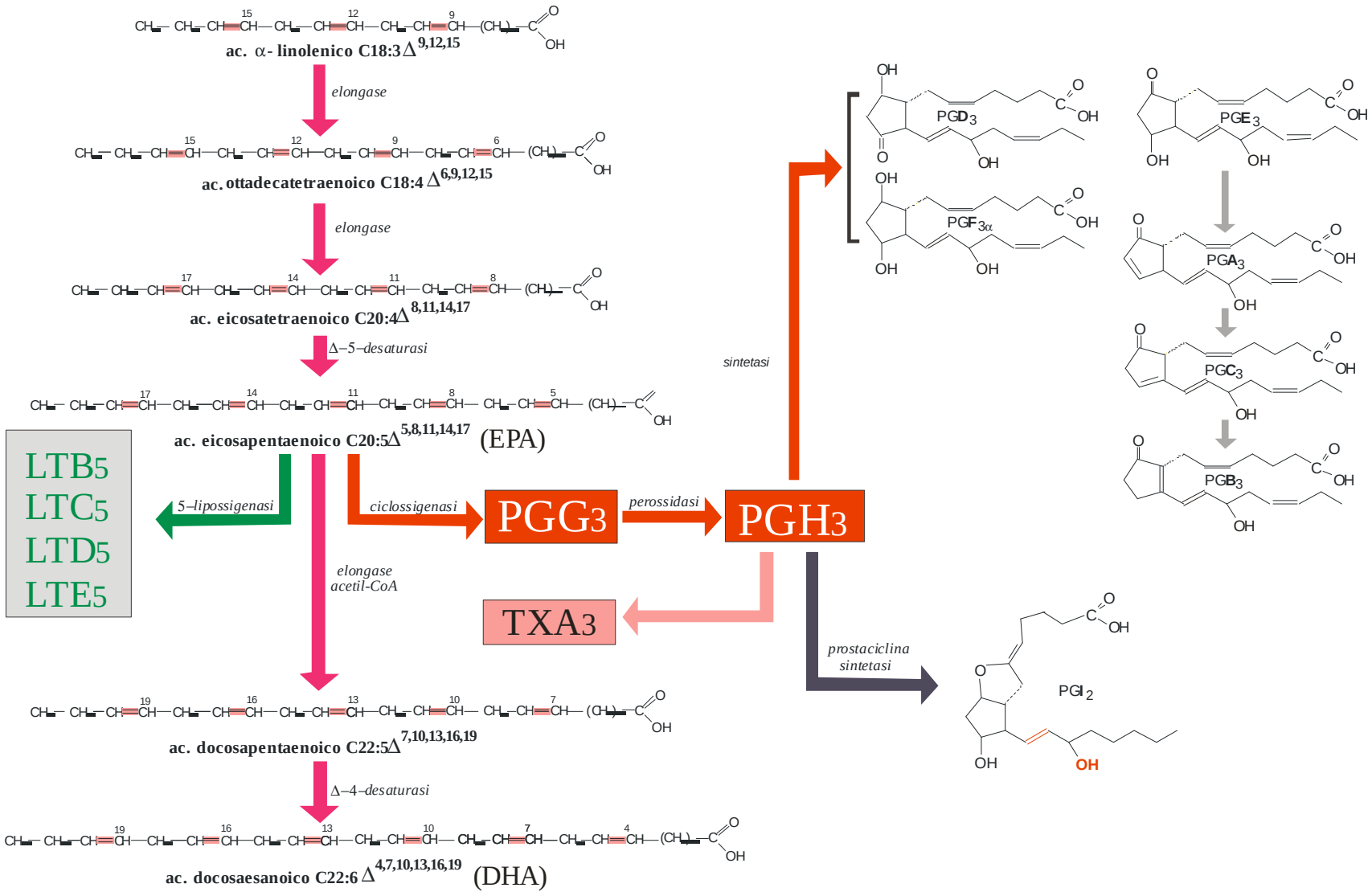
cascata biologica



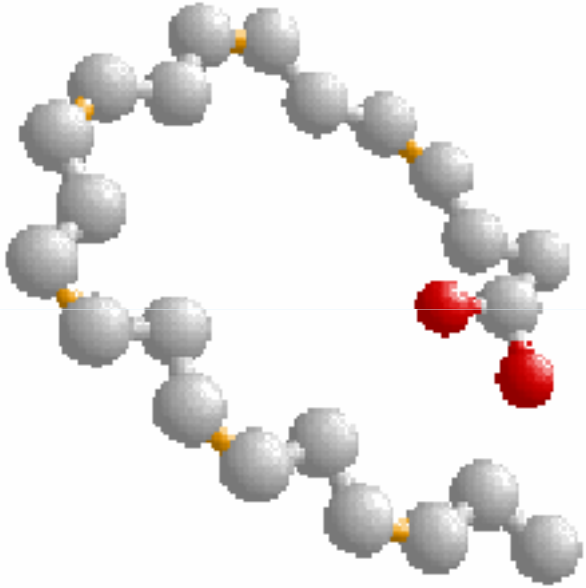
Acidi grassi essenziali

cascata biologica

Famiglia ω3

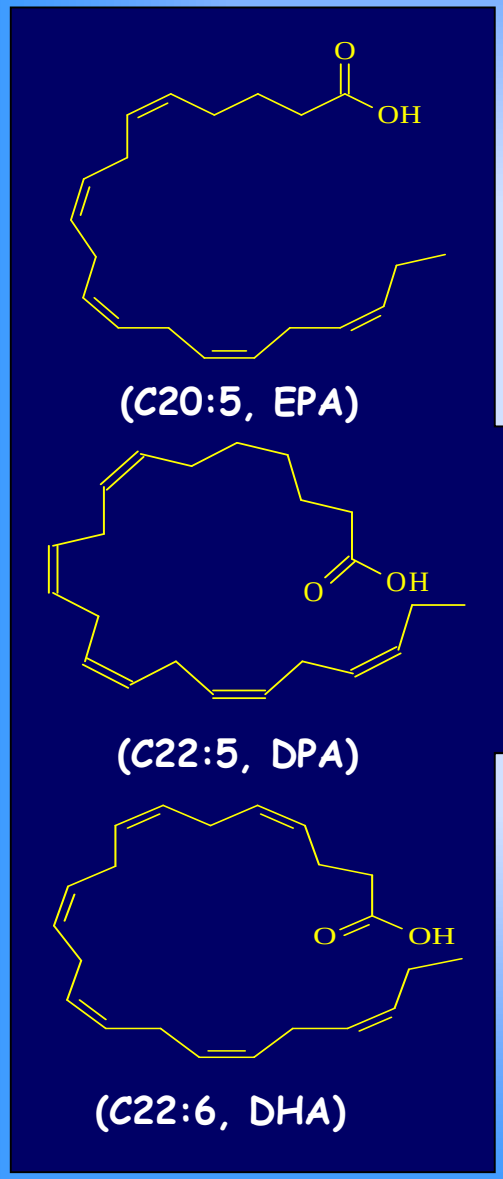


Acido docosaesaenoico



DHA C22:6 $\Delta^{4,7,10,13,15,19}$

LE FUNZIONI DEGLI ACIDI GRASSI ω3 (EPA, DPA, DHA)



MODULANO L'ASSETTO LIPIDICO PLASMATICO

SINTESI DEGLI CHEMIOPREVENTIVA

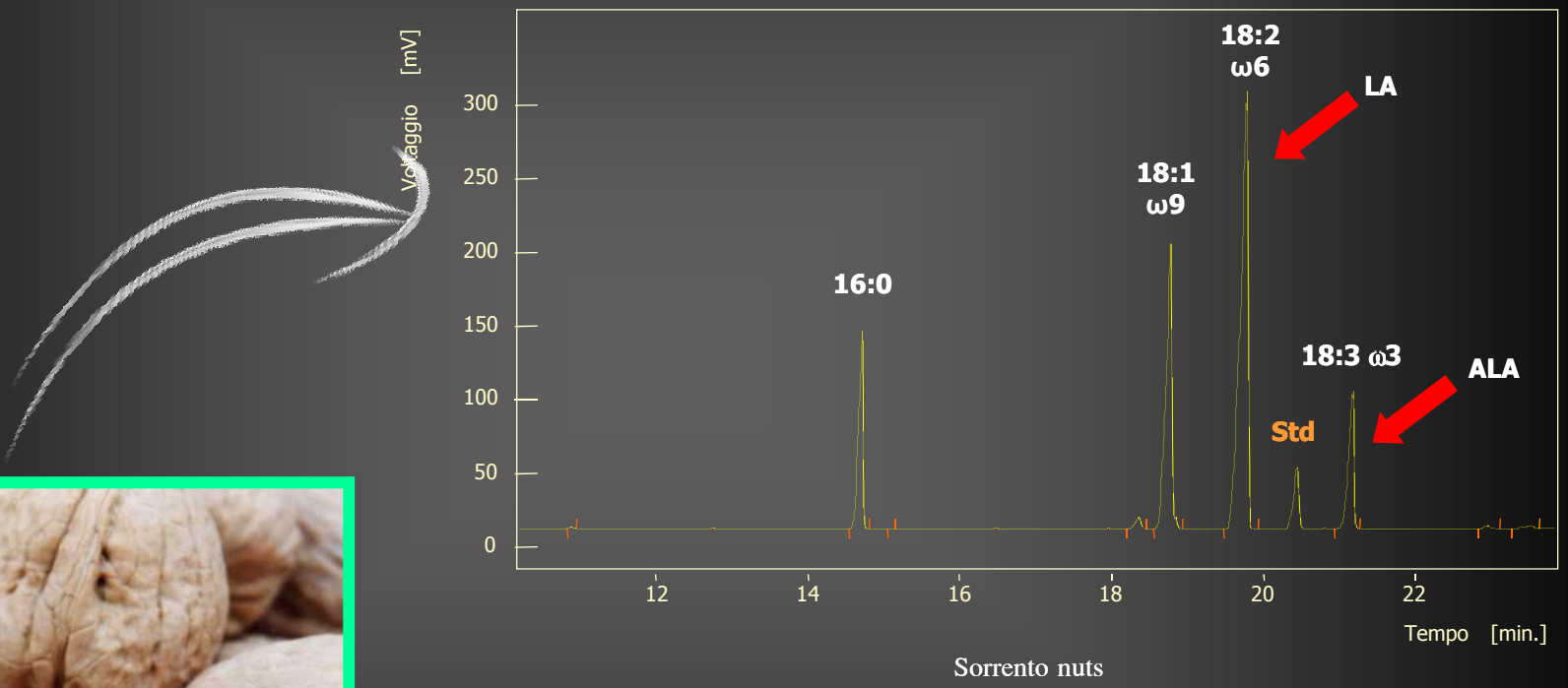
MODULANO LA CONTRAZIONE DEL MUSCOLO CARDIACO

Il Contenuto in ω3 negli alimenti: dal pesce ad alimenti “nicchia”

g/100 g di alimento edibile

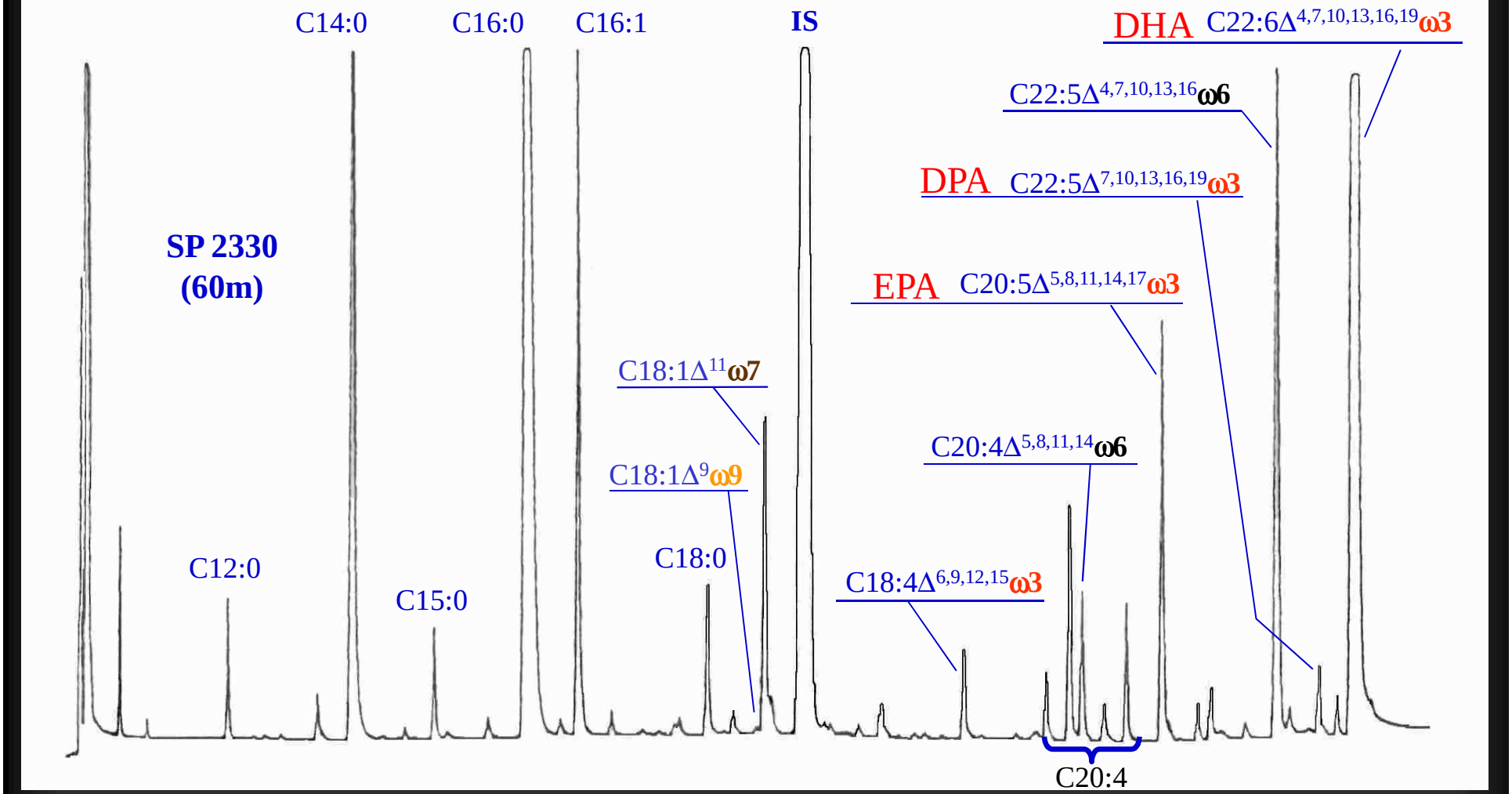
Alimenti	AGS	AGM	AGP	ω 3
Olio di Mais	12.9	27.5	54.6	Nd
Olio di Oliva	13.8	72.9	10.5	0.7
Burro	51.4	21.0	3.0	0.2
Lardo	39.0	45.1	11.2	1.0
Mozzarella	13.1	6.5	0.5	0.3
Parmigiano	16.4	7.5	0.4	0.2
Spinaci	0.0	0.0	0.2	0.2
Fagioli	0.2	0.0	0.7	0.5
Noci	4.7	5.4	26.0	5.3
Cavallo	5.8	6.4	4.0	0.7
Vitello	5.4	6.1	0.4	0.1
Pollo	1.0	1.2	0.5	0.1
Tonno	1.5	2.9	4.1	1.0
Salmone	0.9	2.0	1.0	0.5
Trota	0.7	1.1	1.2	0.7

Acidi grassi nelle noci

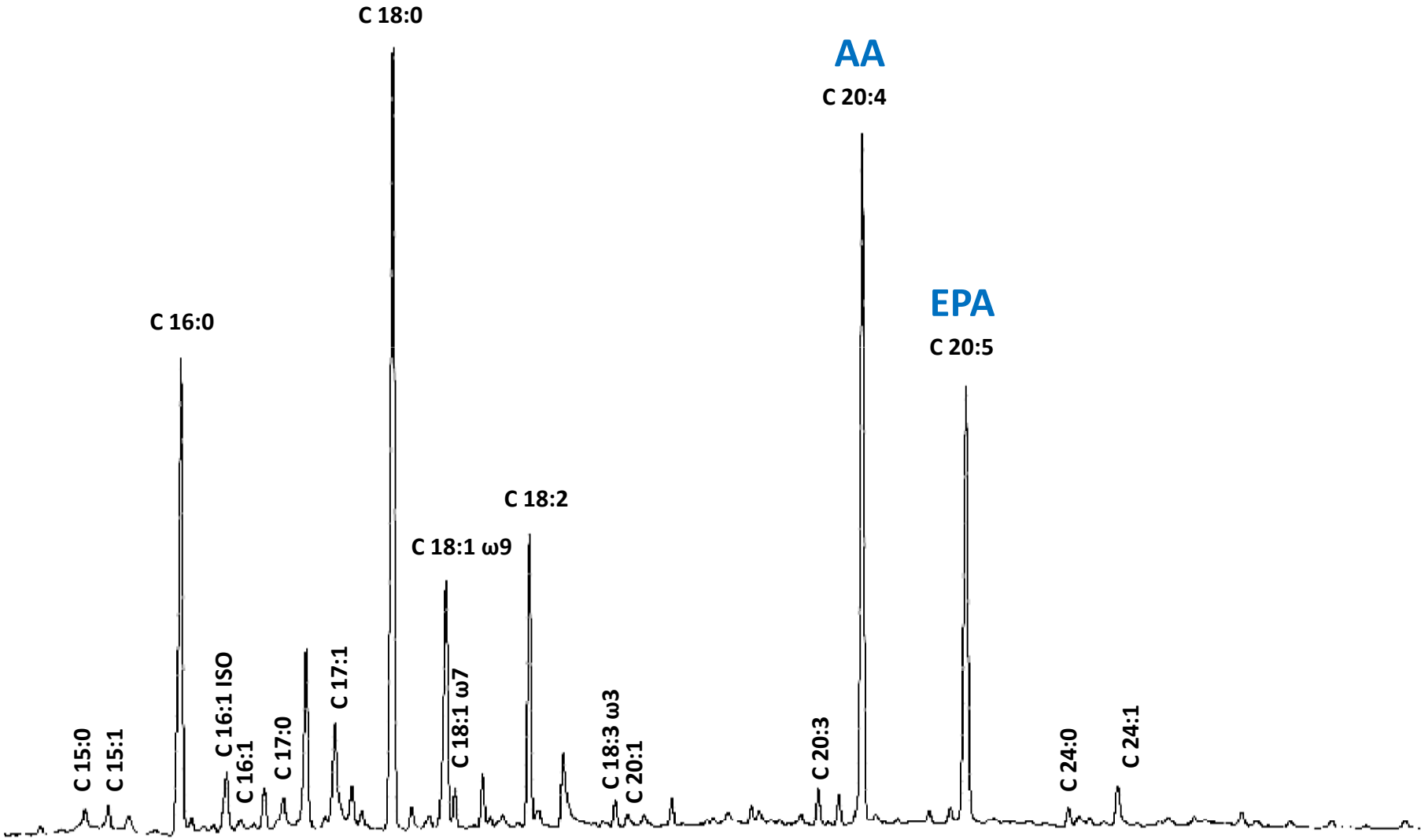


Sorrento nuts

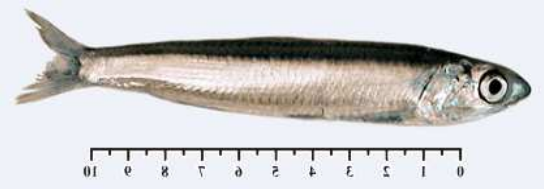
ALGHE: acidi grassi, tracciato gas-cromatografico

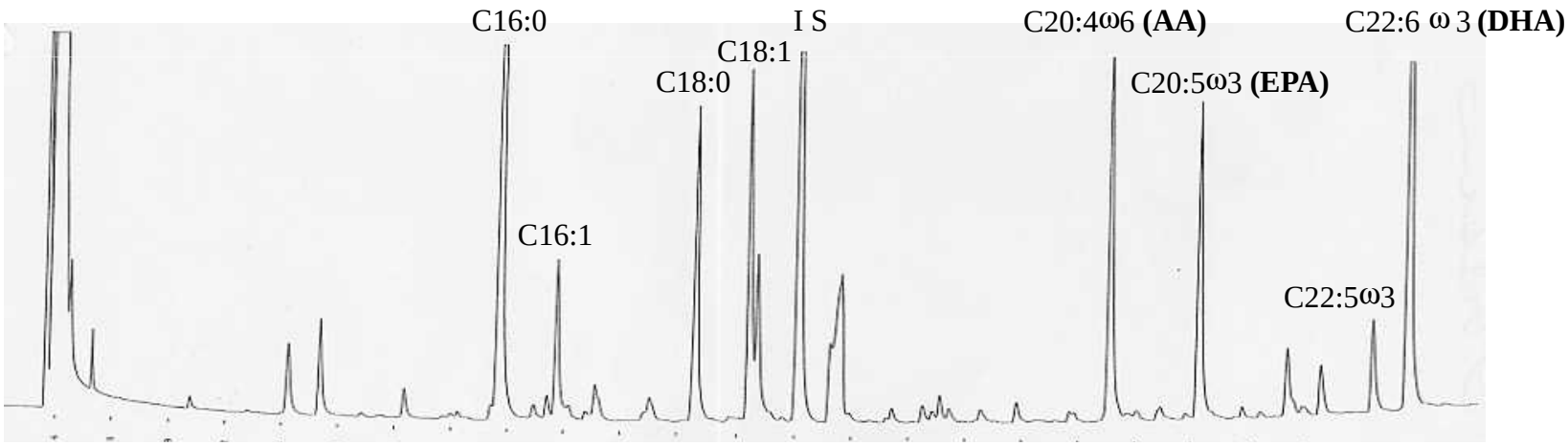


Lipidi ematici del cane: acidi grassi delle piastrine

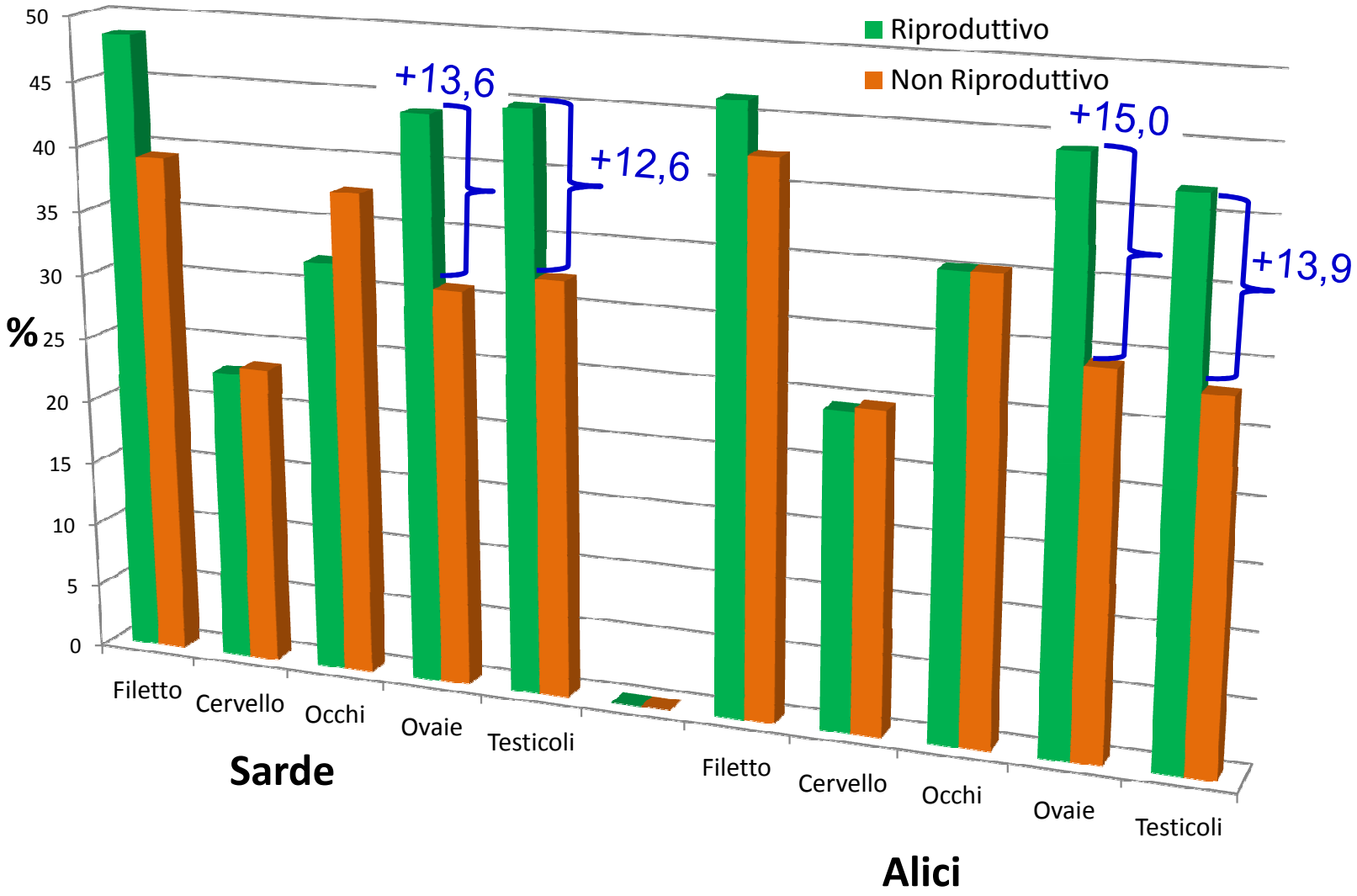


SARDA: tracciato gas - cromatografico degli acidi grassi



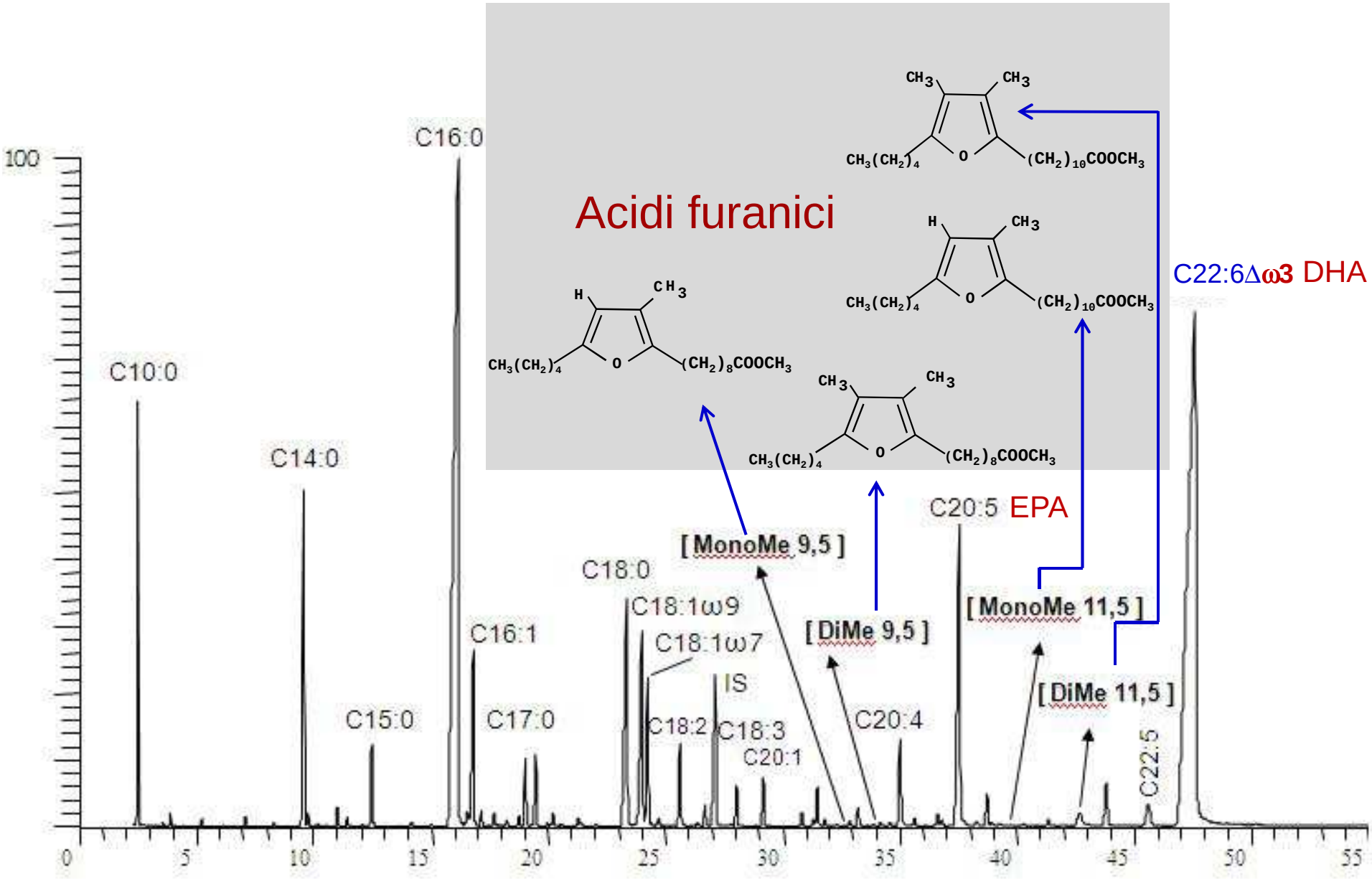


Acidi Grassi ω3 totali contenuti nel filetto e negli organi di sarda e di alice durante il periodo riproduttivo e di quiescenza

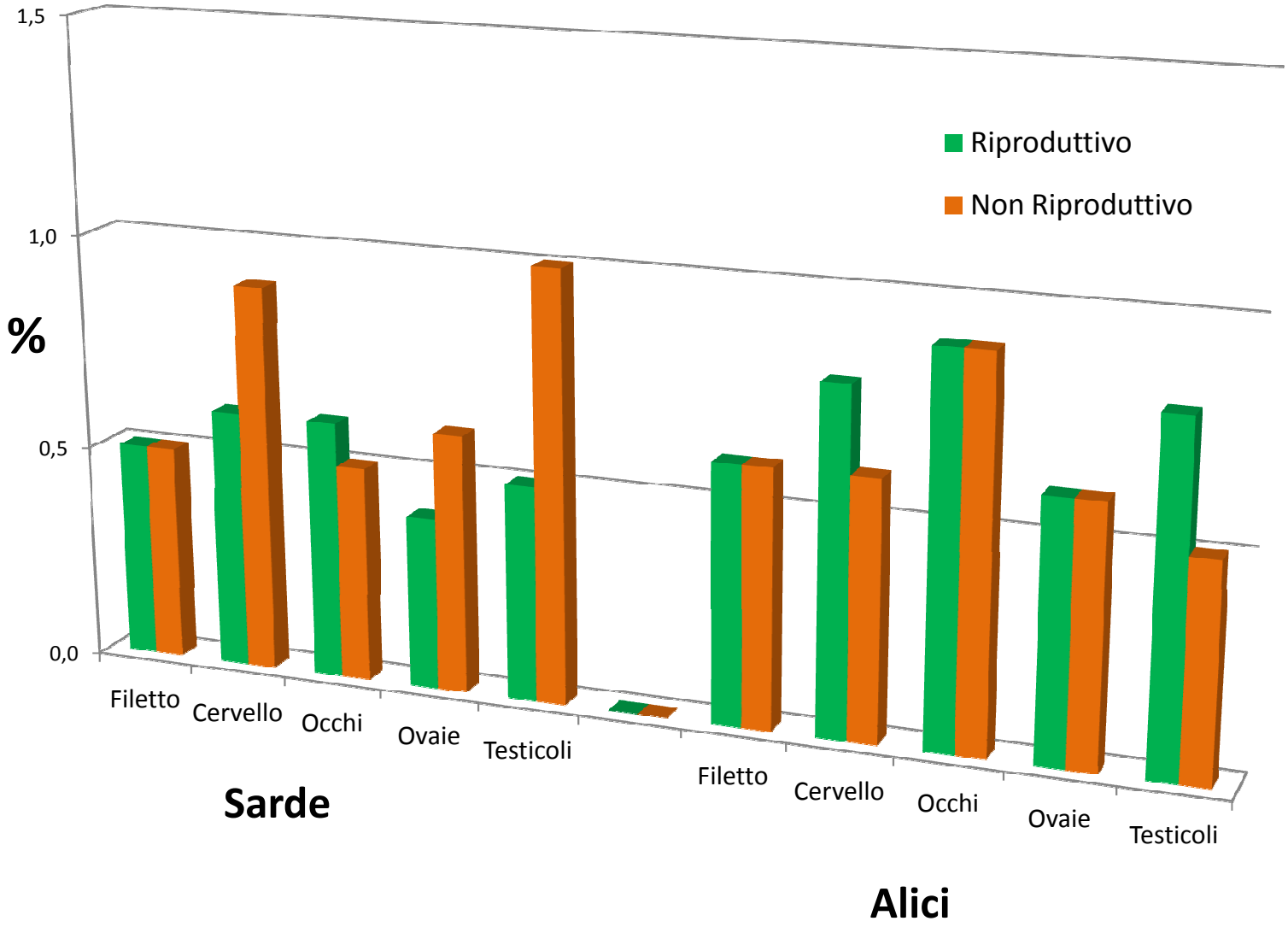


Acidi furanici

Filetto di Alice: acidi grassi e furanici

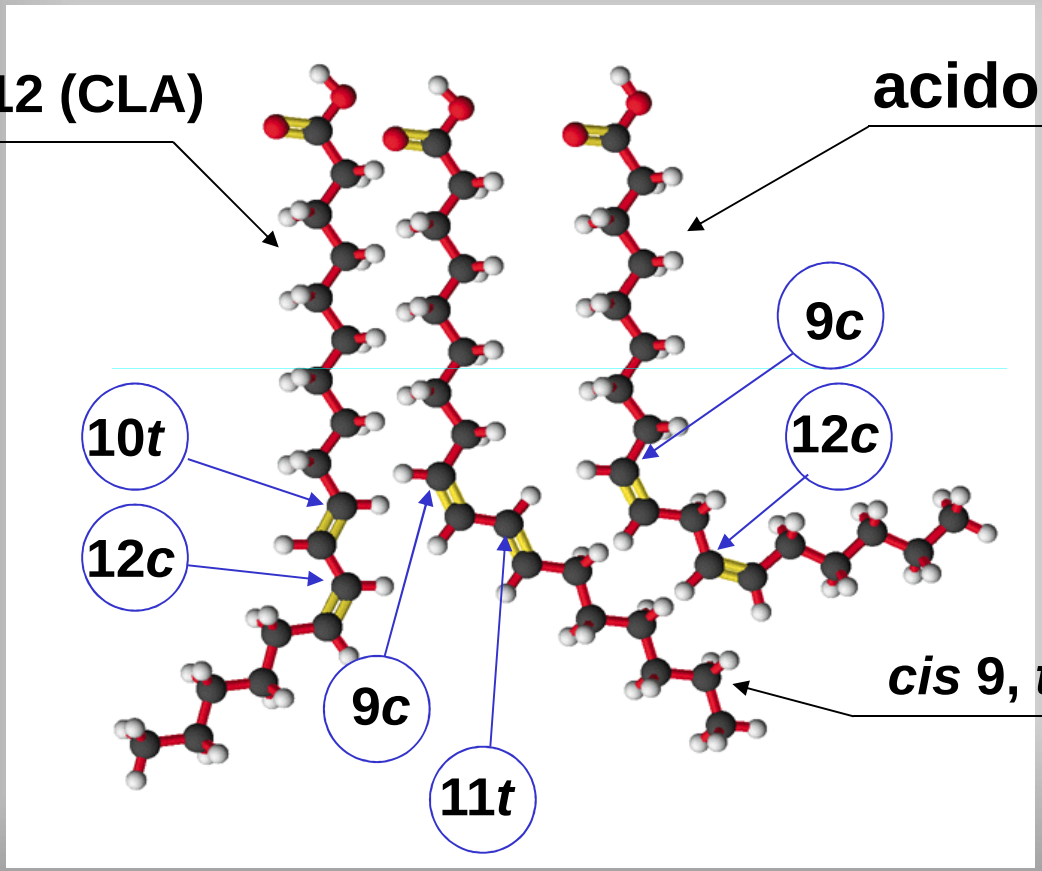


Acidi Grassi Furanici totali contenuti nel filetto e negli organi di sarda e di alice durante il periodo riproduttivo e di quiescenza

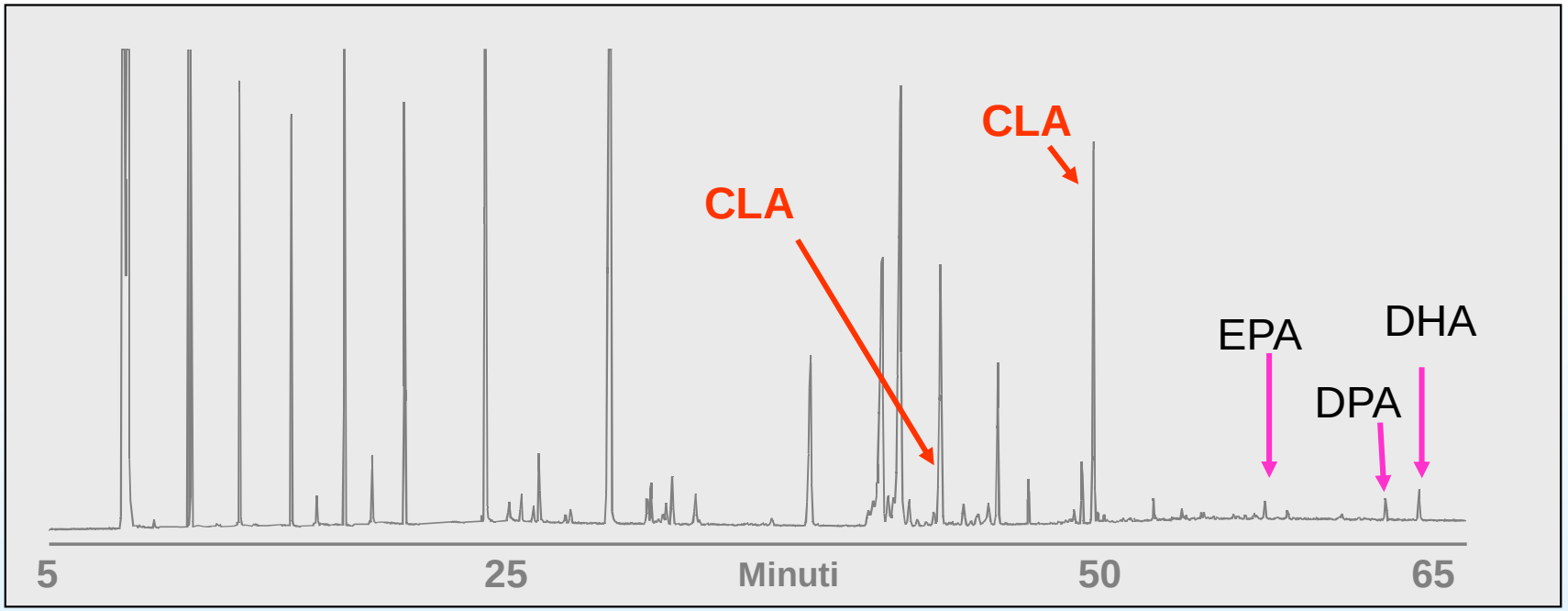


Conjugated Linoleic Acid *(CLA)*

Conjugated Linoleic Acid



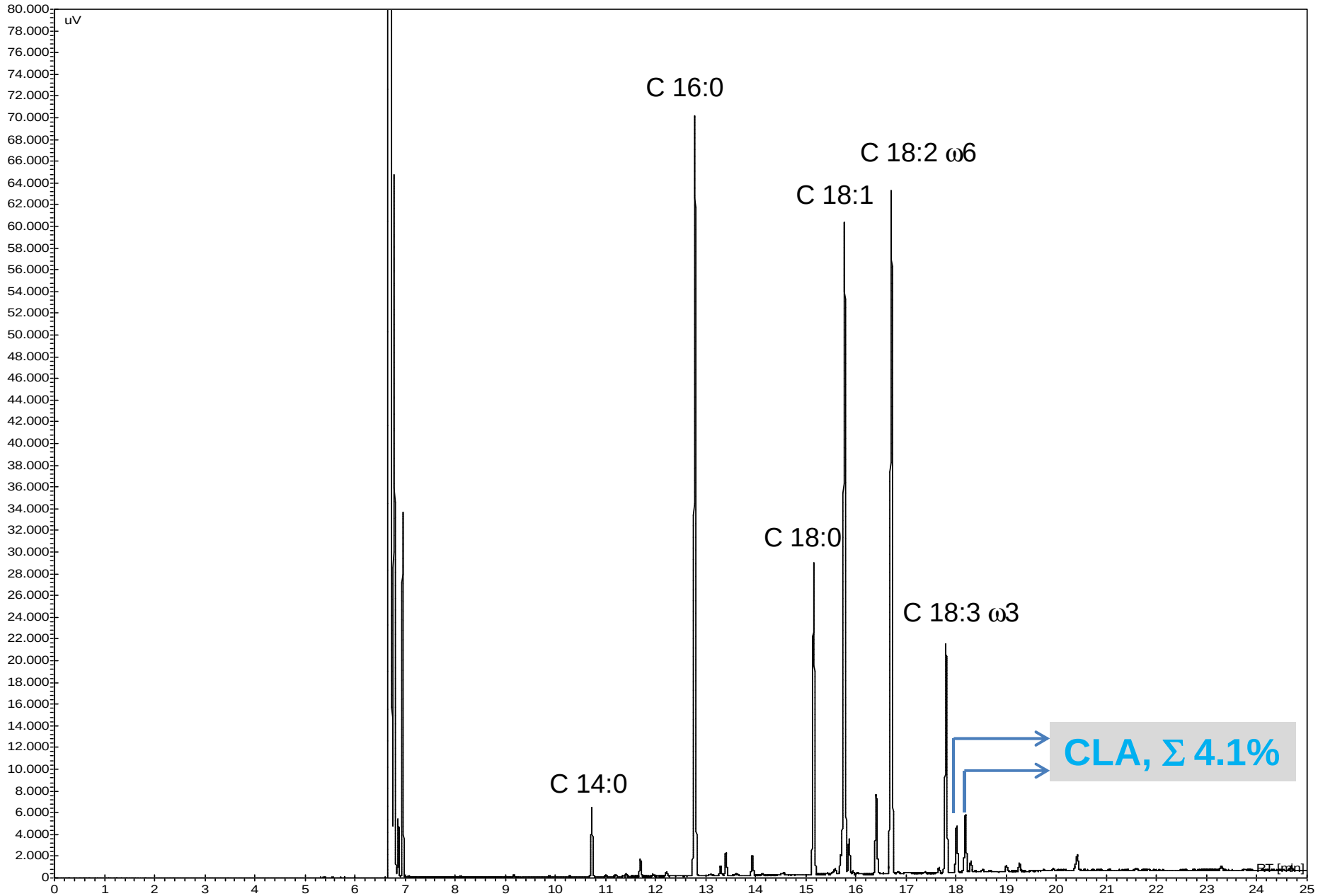
LATTE: TRACCIATO GAS-CROMATOGRAFICO DEGLI ACIDI GRASSI



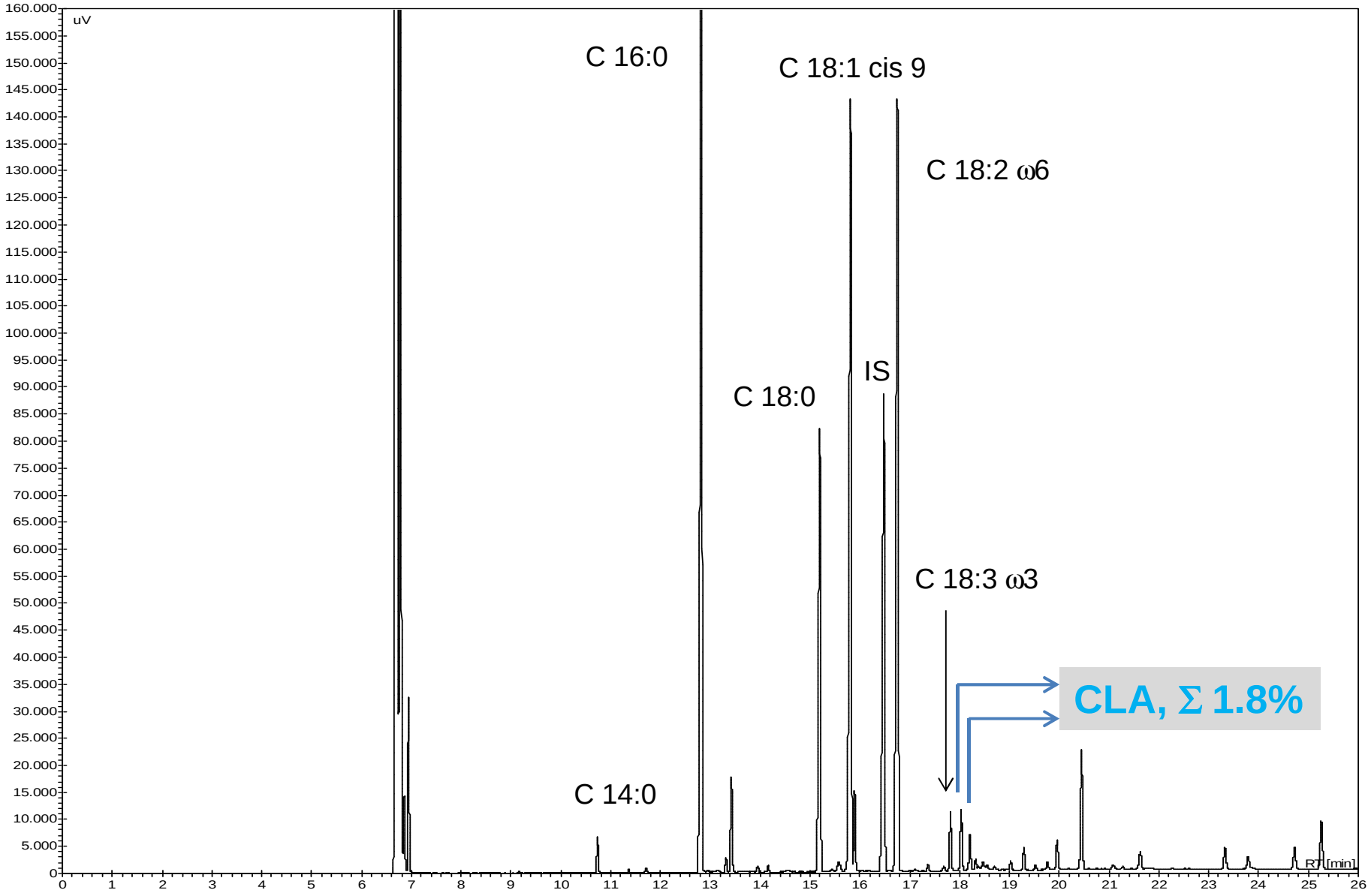
LIPIDI E ACIDI GRASSI NEL LATTE E IN ALCUNI PRODOTTI LATTIERO-CASEARI

		Acidi grassi %				
	Lipidi (g)	***Saturi***	***Monoinsaturi***	***Polinsaturi***	***ω3***	***CLA***
Latte	3,5	67,9	27,5	4,6	0,4	0,9
Latte arricchito	3,5	66,9	27,3	5,8	0,6	0,6
Formaggio morbido	25,0	62,3	31,3	6,4	1,0	0,8
Mozzarella	19,5	62,6	31,5	5,9	0,9	0,6
Ricotta	10,0	62,9	30,8	6,3	1,1	0,6

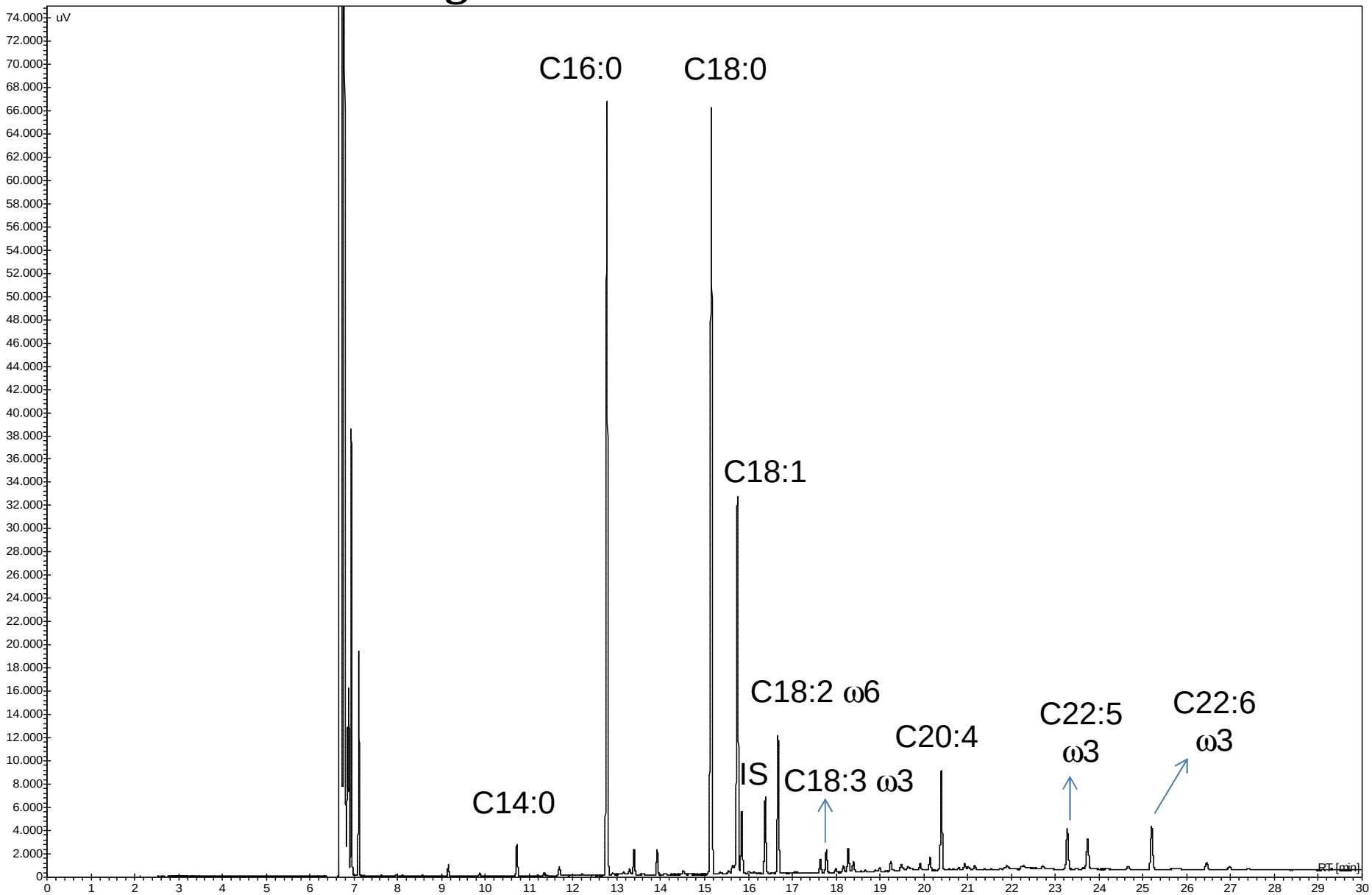
Acidi grassi estratti da conigli alimentati con mangime arricchito in CLA



Acidi grassi estratti da Polli alimentati con mangime arricchito in CLA

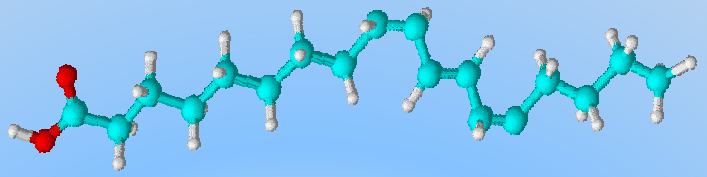


Acidi grassi totali estratti da *cervello* di coniglio alimentato con mangimi arricchiti all'1% in CLA

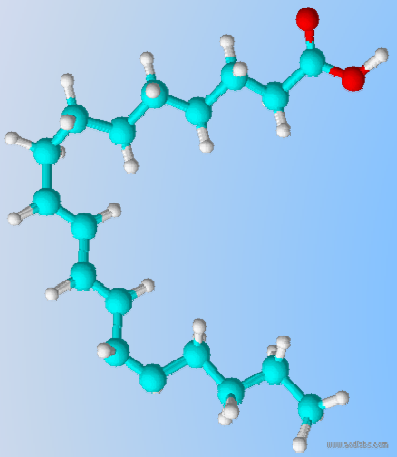


onjugated Linolenic acid

(CLN)

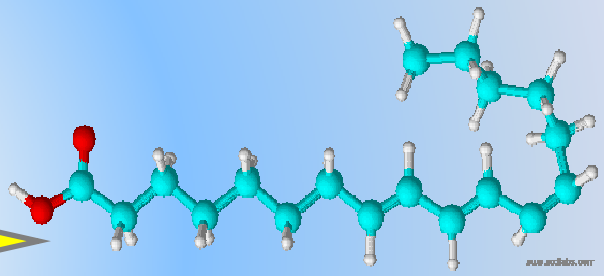


ac. punicico C18:3 *Δ9c,11t,13c*

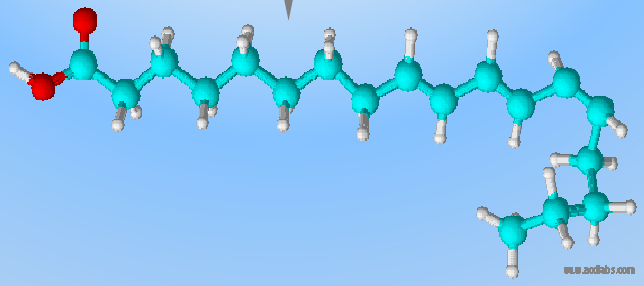


ac. catalpico C18:3 *Δ9t,11t,13c*

CLN

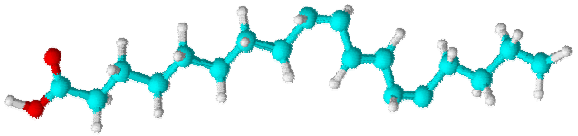


ac. α-eleostearico C18:3 *Δ9c,11t,13t*

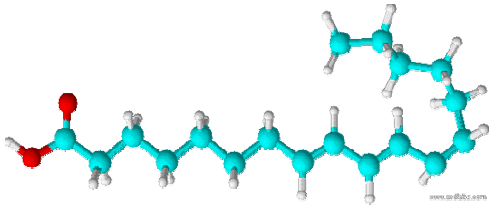


ac. calendico C18:3 *Δ8t,10t,12c*

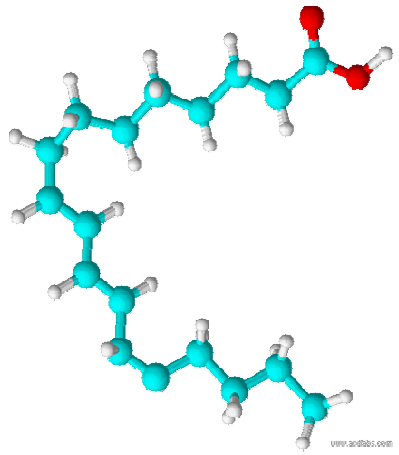
Acidi grassi dei semi di melograna



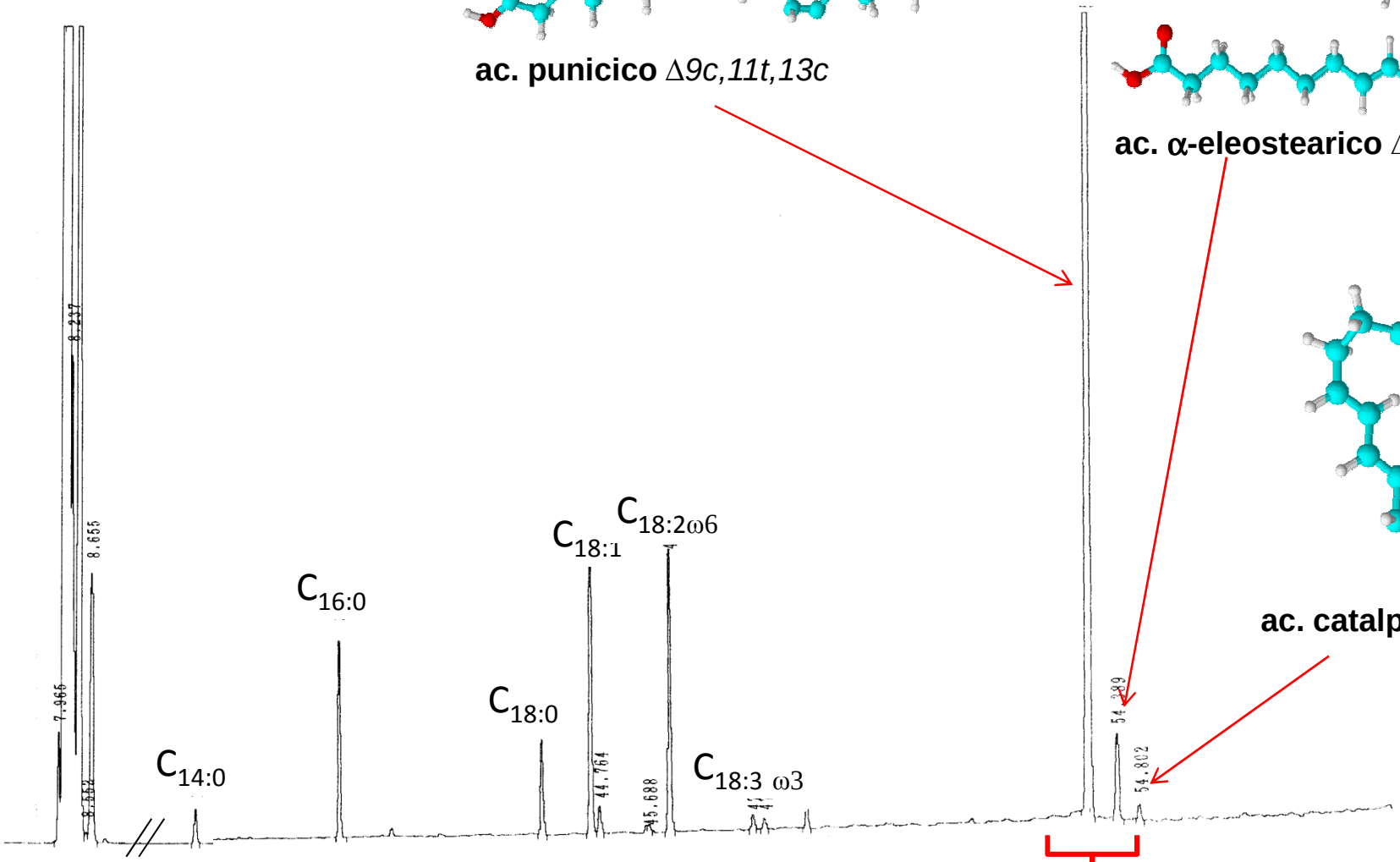
ac. punicico *Δ9c,11t,13c*



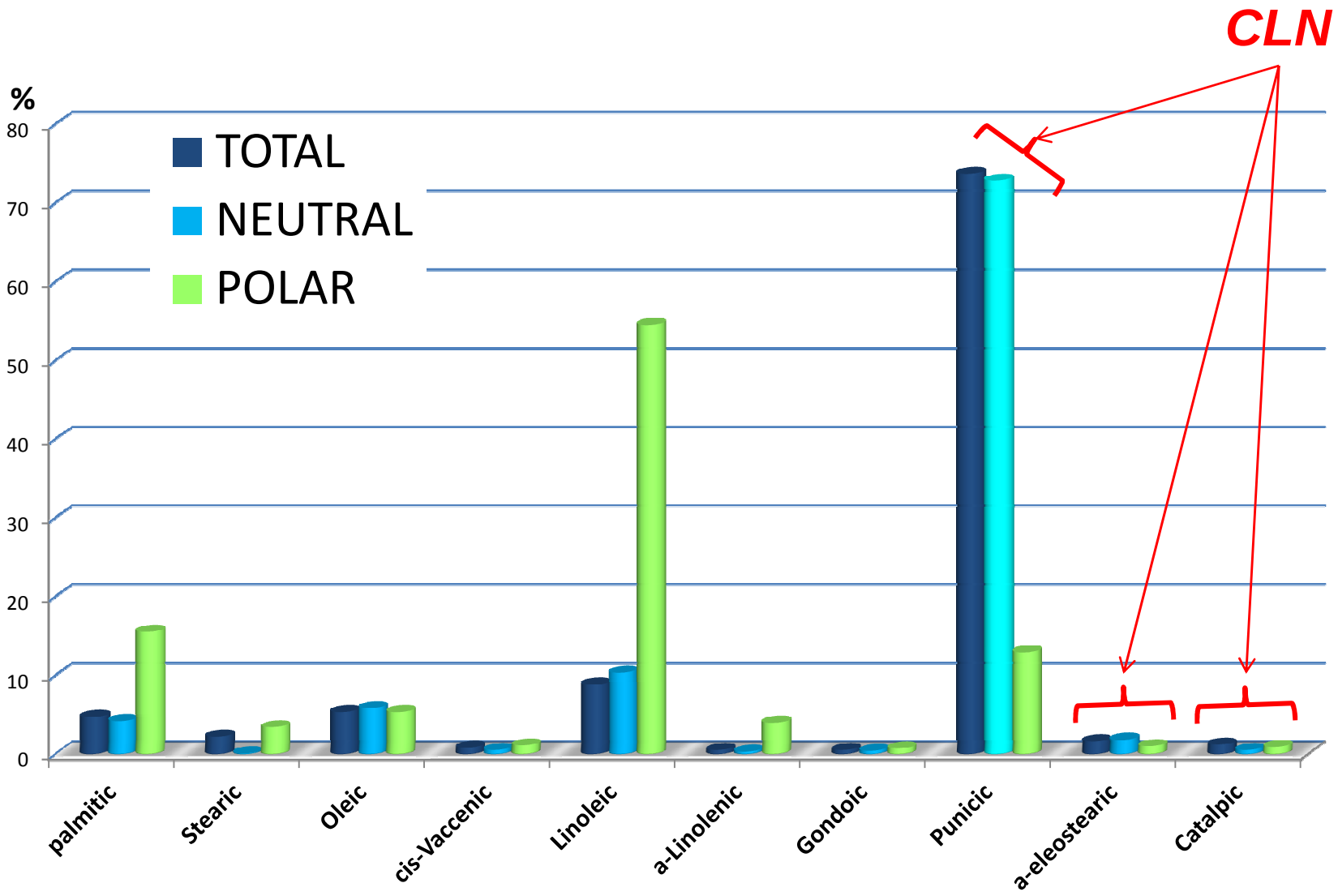
ac. α-eleostearico *Δ9c,11t,13t*



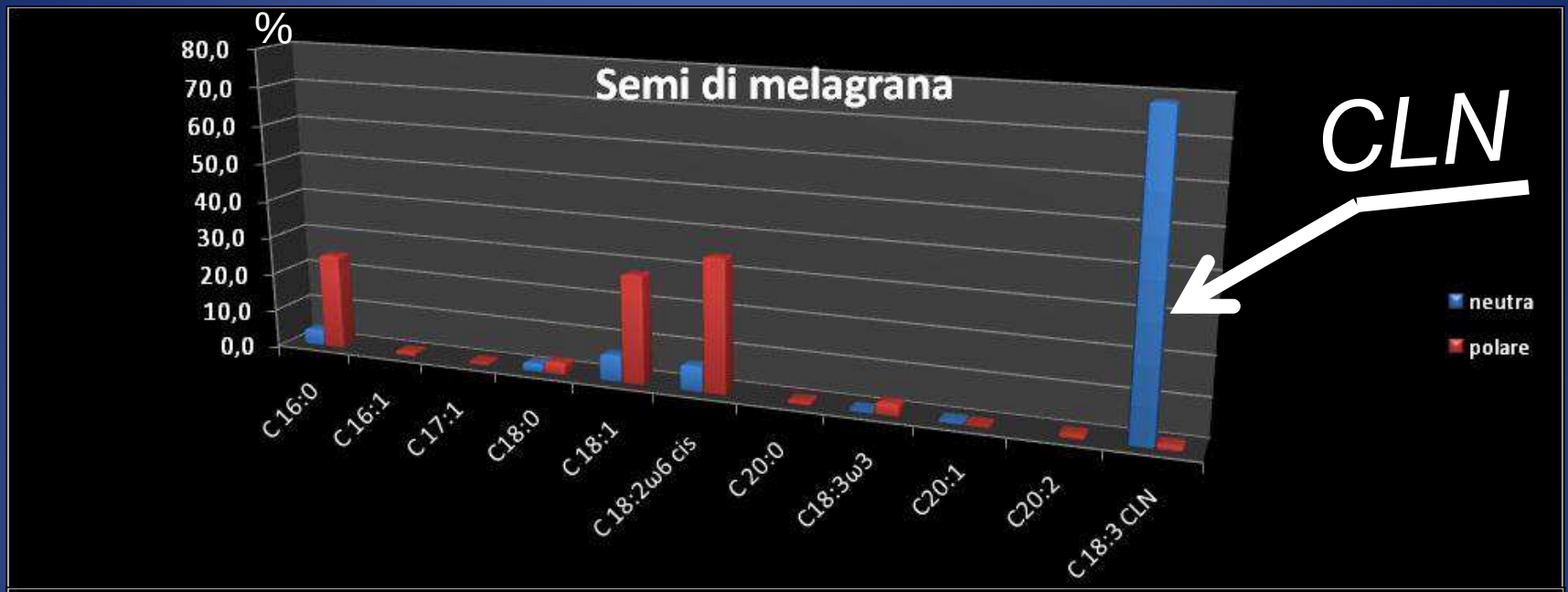
ac. catalpico *Δ9t,11t,13c*

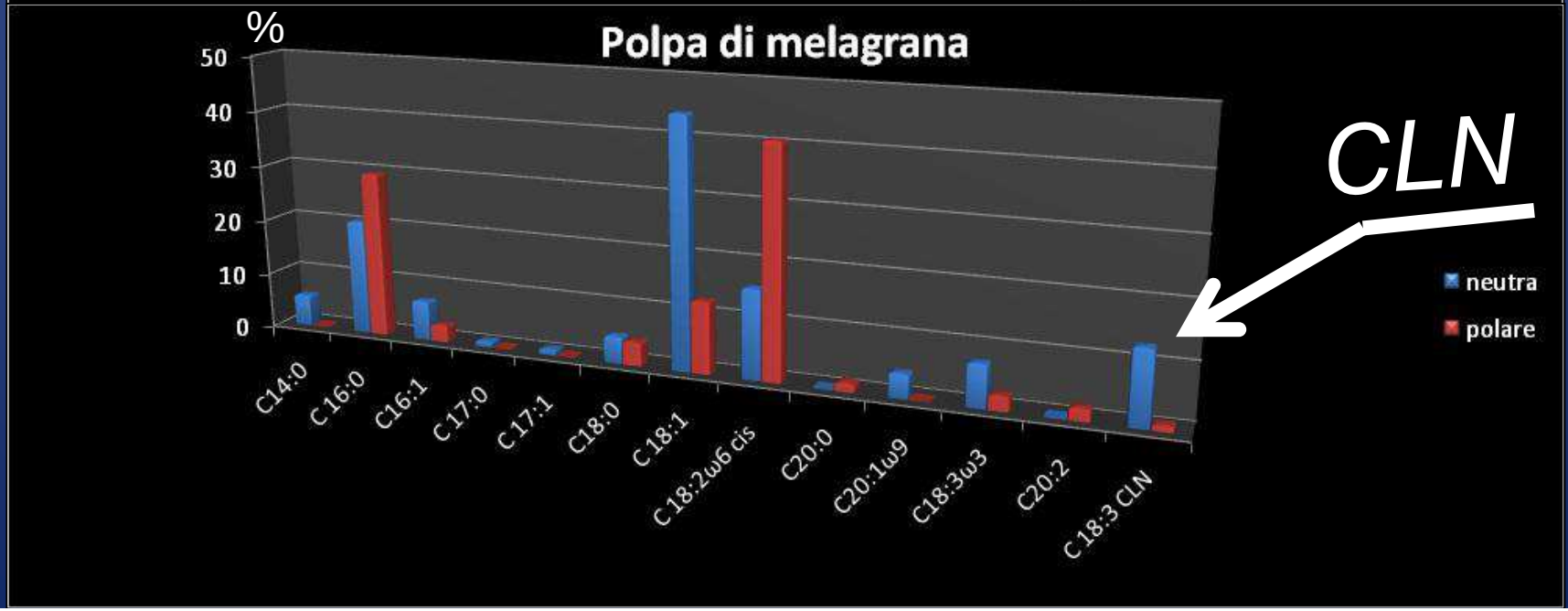


Melograna: composizione degli acidi grassi dei lipidi totali neutri e polari

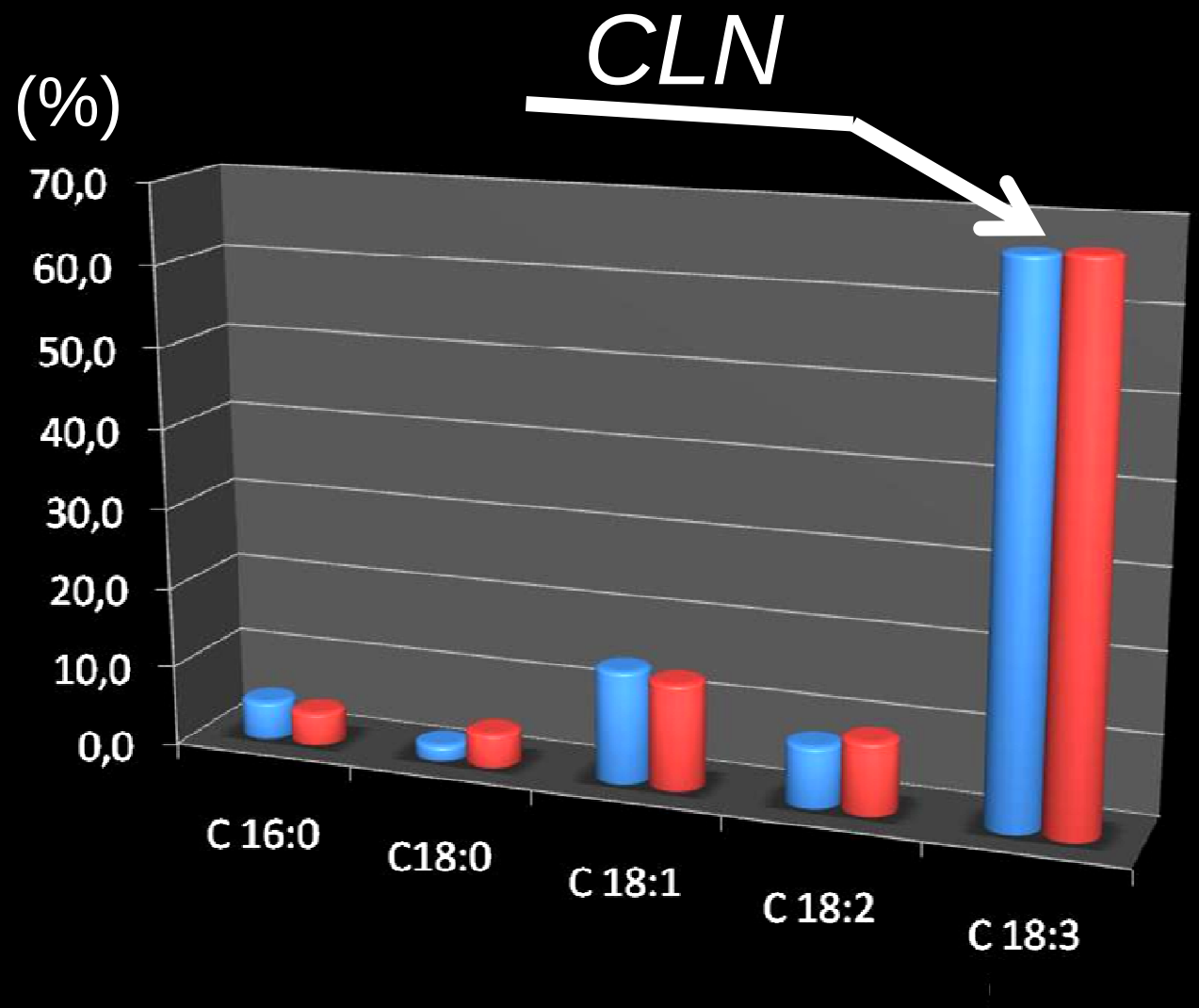


Melograna: ac. grassi dei lipidi neutri e polari dei semi e della polpa

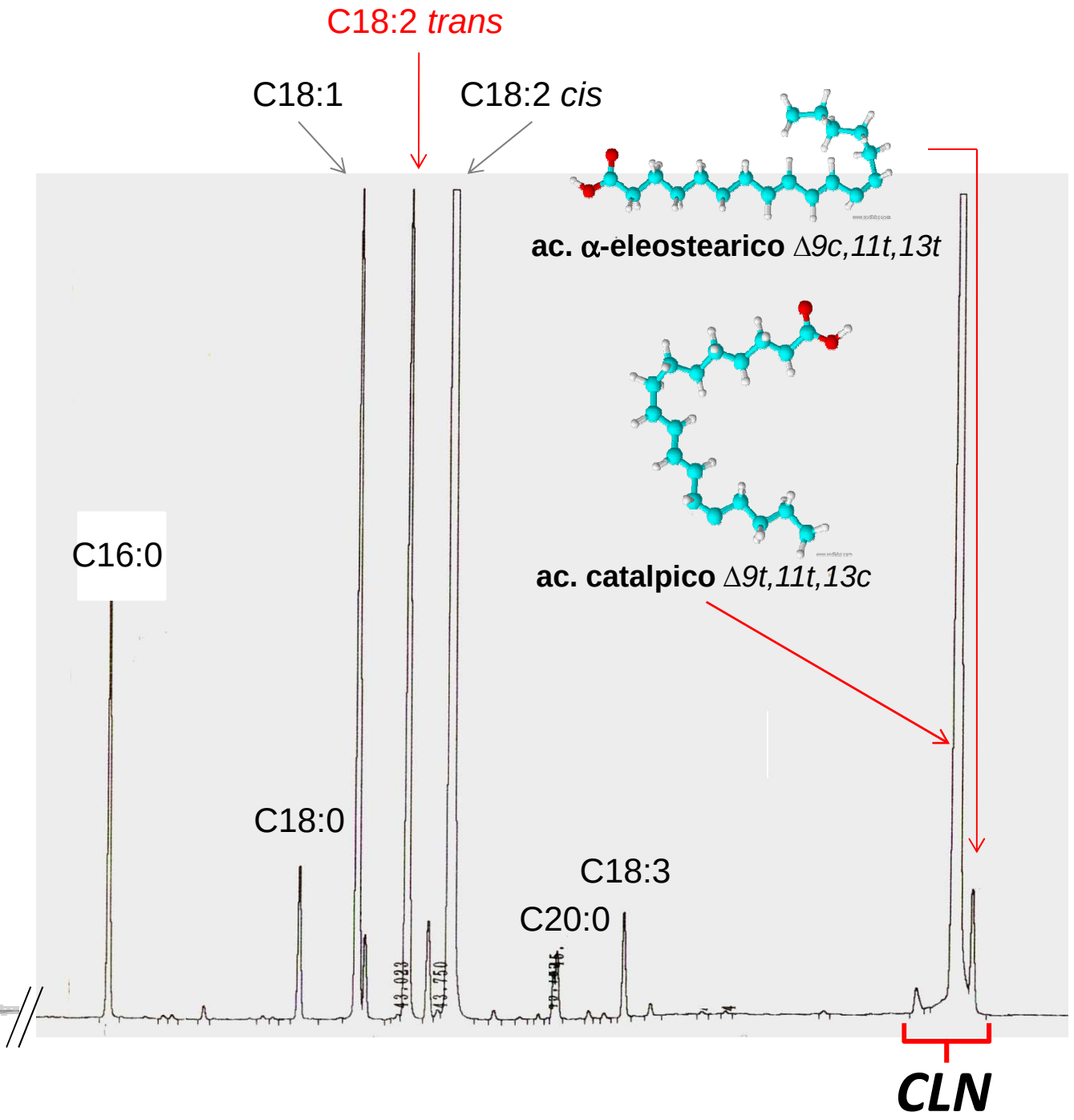




Semi di melograno: acidi grassi di due varietà




Catalpa


C18:2 trans
C18:1
C18:2 cis
ac. α-eleostearico Δ9c,11t,13t
ac. catalpico Δ9t,11t,13c
C16:0
C18:0
C18:3
C20:0
CLN

Prosperitati
Publicae
Augendae

Gli Oli e Grassi come Ingredienti nell'Industria Alimentare e Cosmetica

Non potrai mai volare come un'aquila fintanto che ti circonderai solo di tacchini