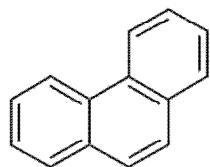
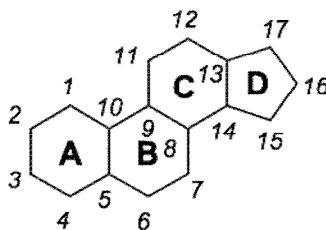


# Sterydy (Steroidy)

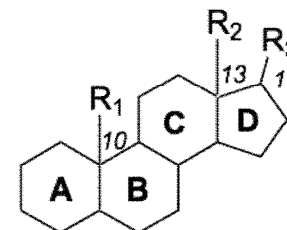
---



fenantren



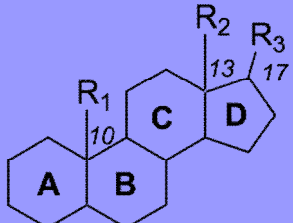
1,2-cyklopentanoperhydrofenantren

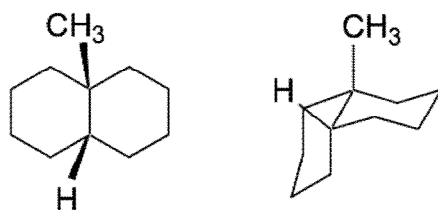


steroidy

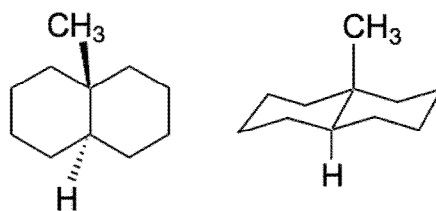
- **Sterydy** -- węglowodory będące pochodnymi 1,2-cyklopentanoperhydrofenantrenu
- **Steroidy** -- pochodne steroidów zawierające grupy funkcyjne
- Różne ułożenie pierścieni **A/B B/C**
- Różna wielkość łańcuchów alifatycznych **R<sup>1</sup>, R<sup>2</sup> i R<sup>3</sup>** przy **10, 13, 17**

# Sterydy - podział

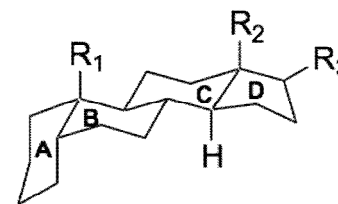
Wzór ogólny	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	A/B <i>cis</i>	A/B <i>trans</i>
	- CH <sub>3</sub>	- CH <sub>3</sub>	- H	testan	androstan
	- CH <sub>3</sub>	- H	- H	estran	
	- CH <sub>3</sub>	- CH <sub>3</sub>	- CH <sub>2</sub> CH <sub>3</sub>	pregnan	allopregnan
	- CH <sub>3</sub>	- CH <sub>3</sub>	- CH(CH <sub>3</sub> )CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub>	cholan	allocholan
	- CH <sub>3</sub>	- CH <sub>3</sub>	-CH(CH <sub>3</sub> )(CH <sub>2</sub> ) <sub>3</sub> CH(CH <sub>3</sub> ) <sub>2</sub>	koprostan	cholestan



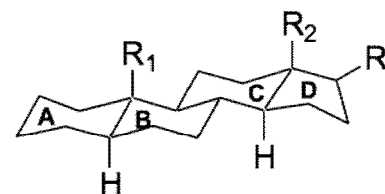
**cis-metylo dekalina**



**trans-metylo dekalina**



**sterydy- cis (normalne)**

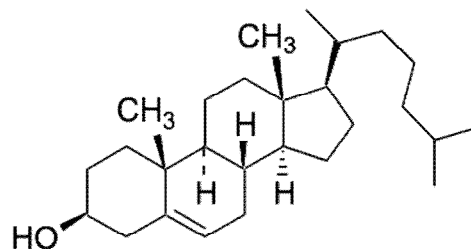


**sterydy- trans (allo)**

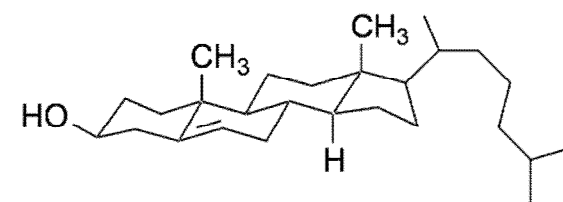
# Sterydy - Sterole

Pochodne sterydowe z gr. **OH** przy C3

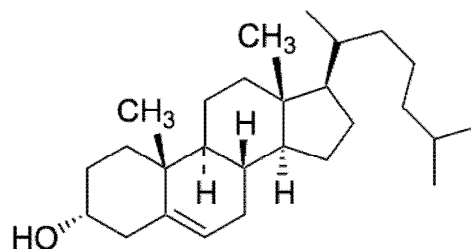
**cholesterol**



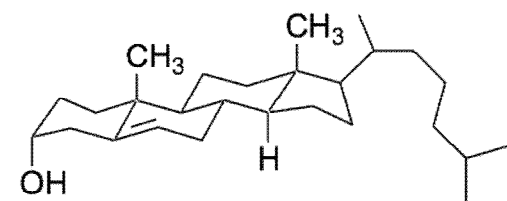
**cholesterol**



przedstawiciel  $\beta$  steroli



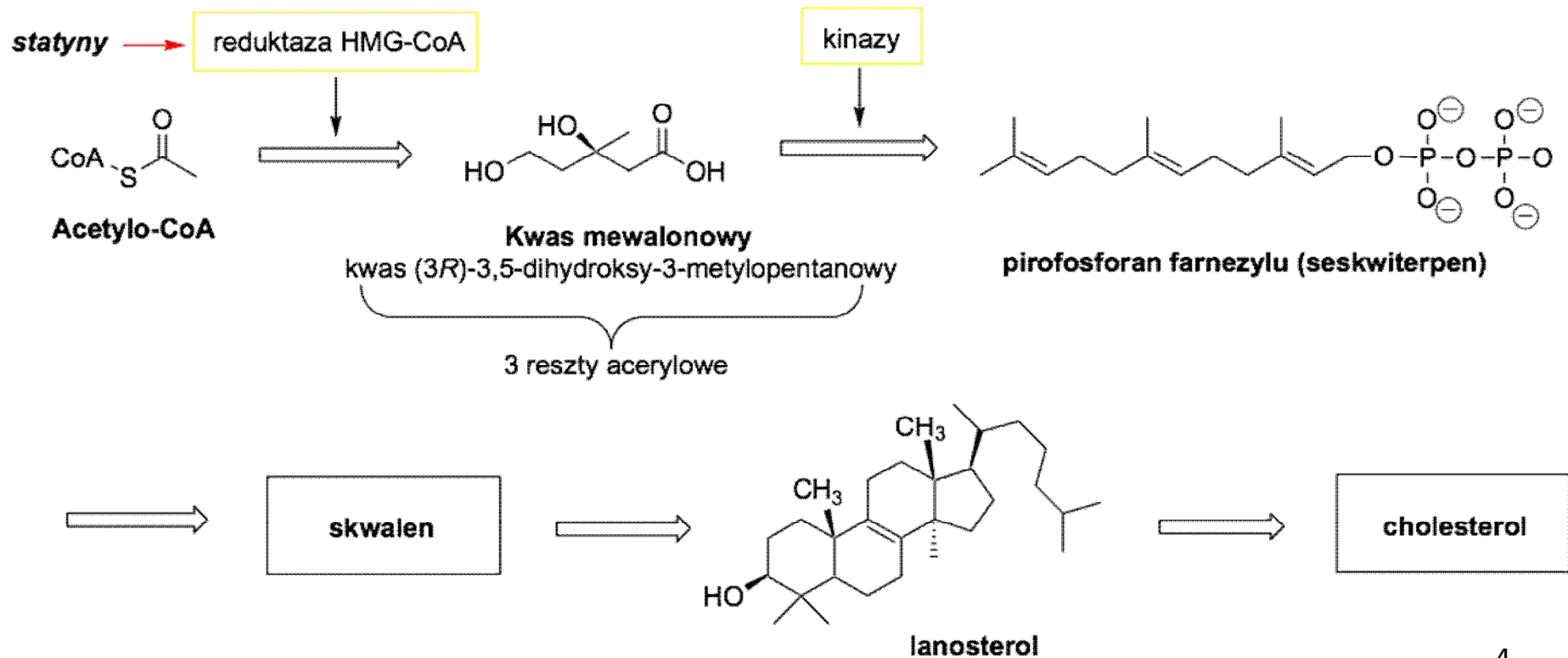
**epi-cholesterol**



przedstawiciel  $\alpha$  steroli

# Sterydy

## Cholesterol



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„Dobry cholesterol” / „Zły cholesterol

*High Density Lipoproteins/ Low Density Lipoproteins*

**HDL / LDL**

Normy:

Cholesterol całkowity - poniżej 190 mg/dl (5mmol/l)

Trójglicerydy - poniżej 150 mg/dl (1,7 mmol/l)

**HDL** ("dobry" cholesterol) – wyższe wartości stanowią lepszy wynik,

Norma u mężczyzn 35–70 mg/dl (0,9–1,8 mmol/l),

Norma u kobiet 40–80 mg/dl (1,0–2,1 mmol/l),

**LDL** ("zły" cholesterol) – niższe wartości stanowią lepszy wynik,

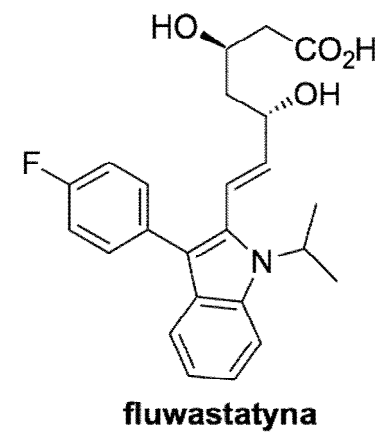
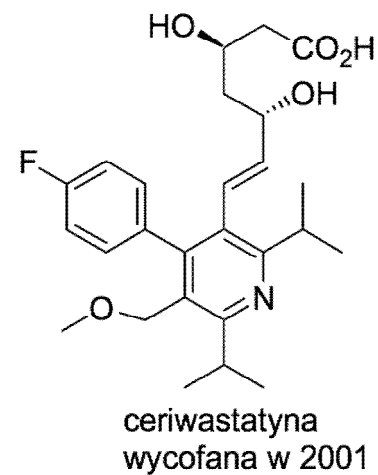
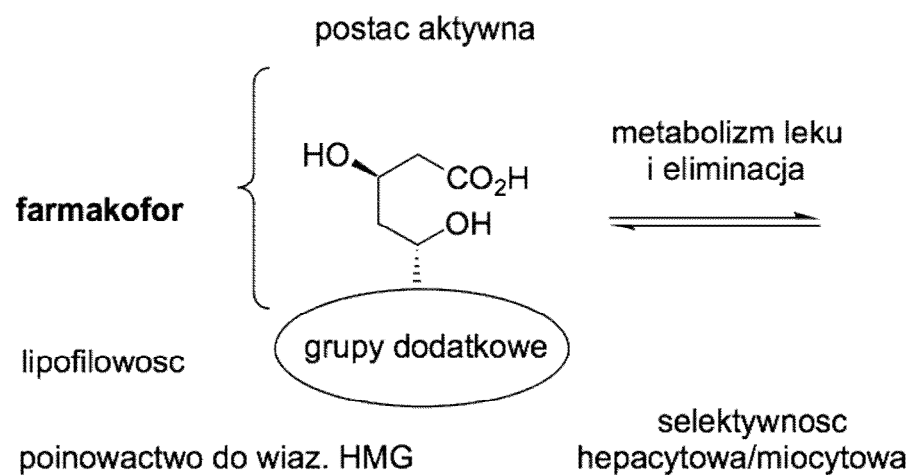
Norma: < 135 mg/dl (< 3,5 mmol/l),

Poziom podwyższony: 135–155 mg/dl (3,5–4,0 mmol/l),

Poziom znacznie podwyższony: > 155 mg/dl (> 4,0 mmol/l)

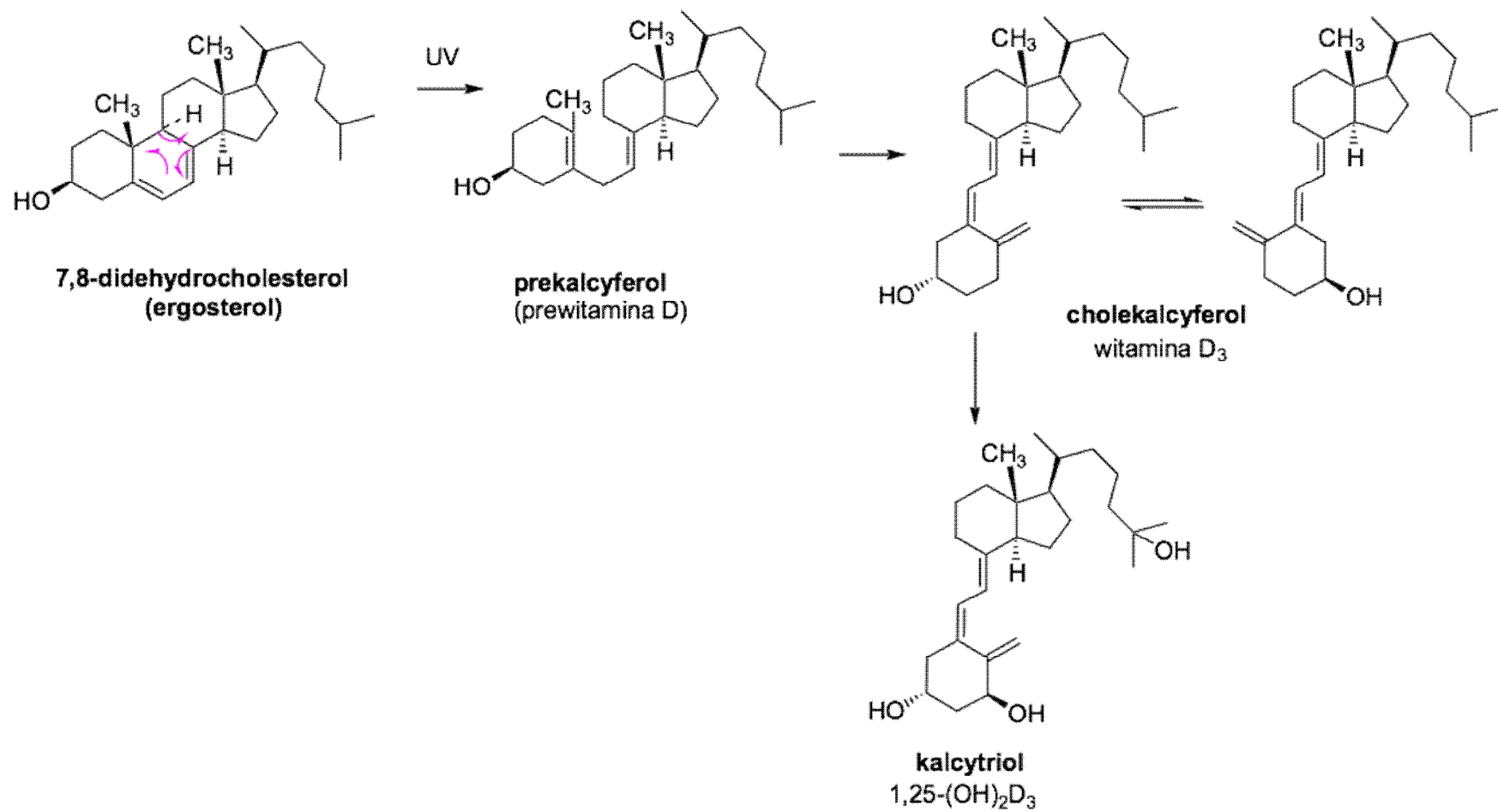
# Sterydy

## „Cholesterol” - Statyny



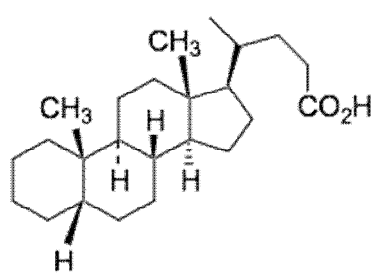
# Sterydy

## Cholesterol → Wit. D

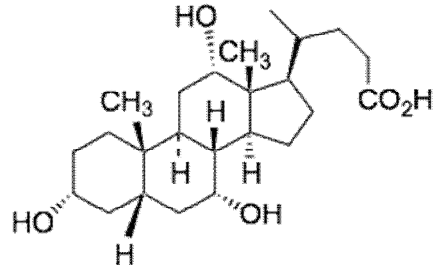


# Sterydy

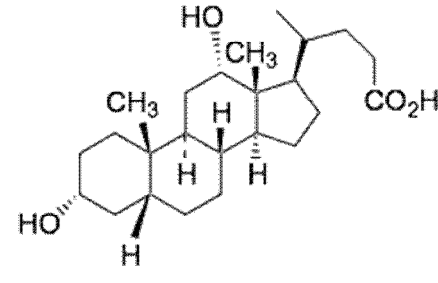
## Kwasy żółciowe



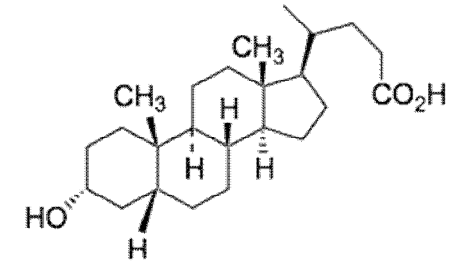
Kwas cholanowy



kwas cholowy  
kwas 3,7,12-trihydroksycholanowy



kwas deoksycholowy  
(3,12-dihydroksycholanowy)



kwas lithocholowy  
(3-hydroksycholanowy)

**Żółć** - wodna emulsja pochodnych kw. cholowych:

**RCO-NHCH<sub>2</sub>COOH**

*kwas glikocholowy*

**RCO-** reszta

*kwasy żółciowe*

**RCO-NHCH<sub>2</sub>CH<sub>2</sub>SO<sub>3</sub>H**

*kwas taurocholowy*