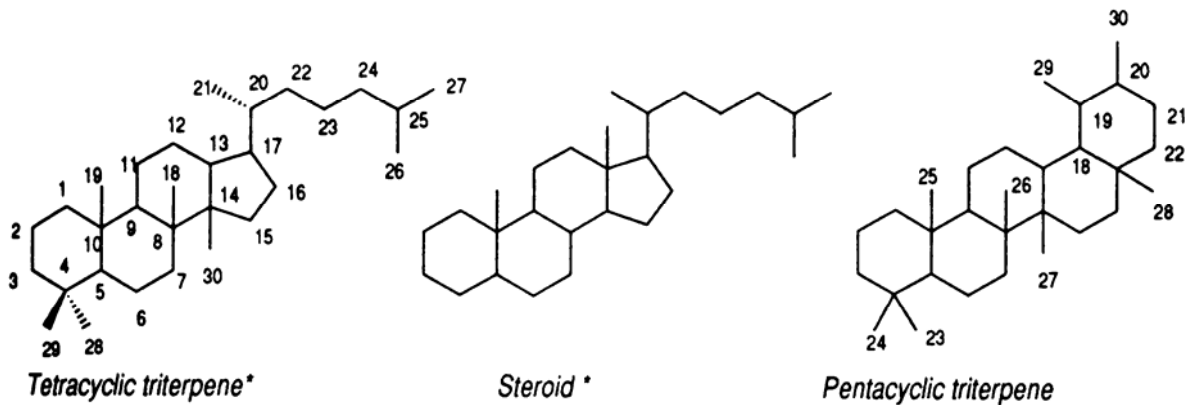


2.7.4 Triterpeny a steroidy

Triterpeny a steroidy asi 4000 sloučenin se zhruba 40 různými rámcovými druhů skeletů (C₃₀)

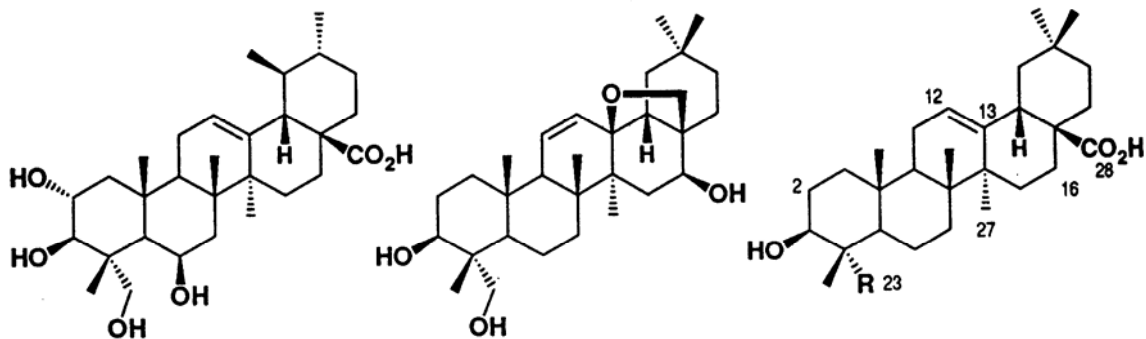


2.7.4.1 Saponiny

Saponiny triterpenové:

α-amyrinový, β-amyrinový, lupeolový typ

☞ Magnoliopsida: Hippocastanaceae, Polygonaceae, Sapotaceae, Primulaceae, Silenaceae (Caryophyllaceae)

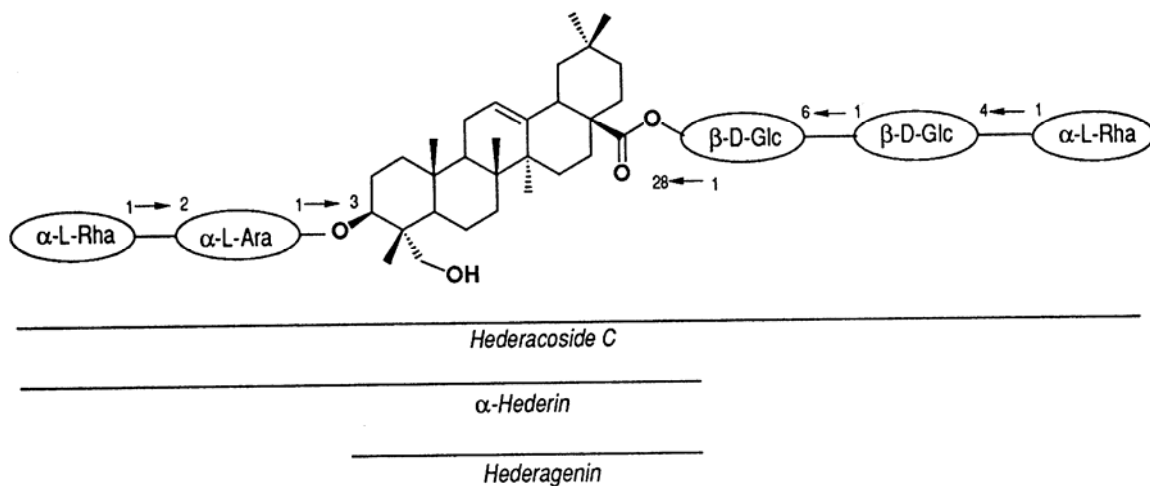


Madecassic acid

Saikogenin F

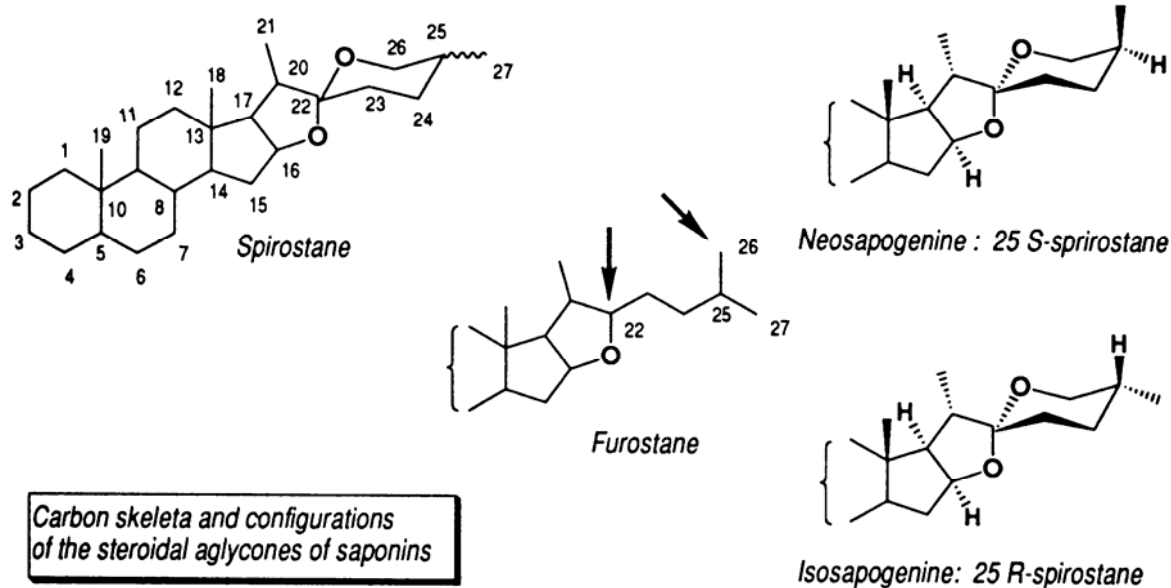
R = CH₃ : *Oleanolic acid*
 R = CH₂OH : *Hederagenin*
 R = CH₂OH, OH 2β, 16α : *Polygalacic acid*
 R = CHO : *Gypsogenin*
 R = COOH, OH 2β : *Medicagenic acid*
 R = COOH, OH 2β, 27 : *Preseneginin*

Examples of pentacyclic triterpenoid aglycones (ursanes and oleananes)



Saponiny steroidní:

- ☞ Liliopsida: Liliaceae – *Smilax* sp., *Yucca* sp., Amaryllidaceae – *Agave* sp., Dioscoreaceae – *Dioscorea* sp.
- ☞ Magnoliopsida: zřídka – Scrophulariaceae – *Digitalis* sp., Fabaceae – *Trigonella* sp.



2.7.4.2 Kardiotonické glykosidy

Existuje min. 500 sloučenin zahrnujících:

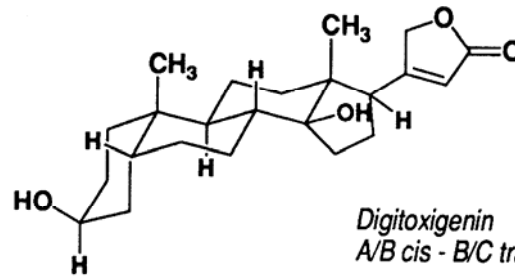
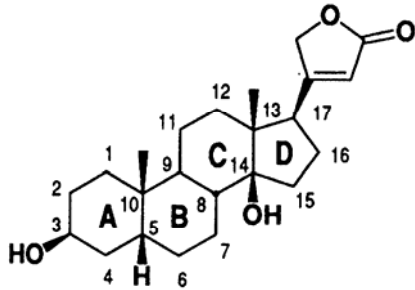
- C₂₃ kardenolidy (lakton na C₁₇ je pětičetný – kardenolid),
- C₂₄ bufadienolidy (lakton na C₁₇ je šestičetný – bufadienolid)

- ☞ Asclepiadaceae – *Asclepias* sp., *Calotropis* sp.
- ☞ Apocynaceae – *Apocynum* sp., *Nerium oleander*, *Strophanthus* sp.
- ☞ Celastraceae – *Euonymus europaeus*
- ☞ Brassicaceae – *Cheiranthus* sp., *Erysimum* sp.

☞ Ranunculaceae – *Adonis sp.*, *Adonanthe vernalis*, *Helleborus sp.*

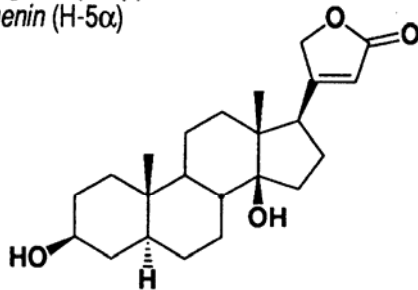
☞ Scrophulariaceae – *Digitalis sp.*

☞ Liliaceae – *Convallaria majalis*, *Urginea scilla*.

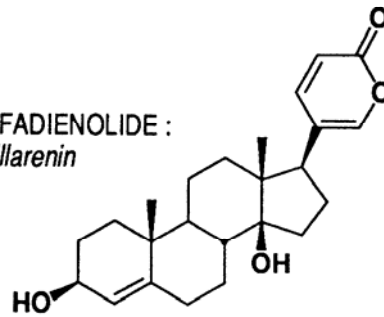


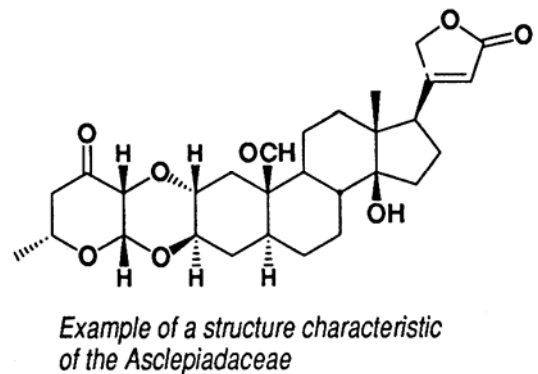
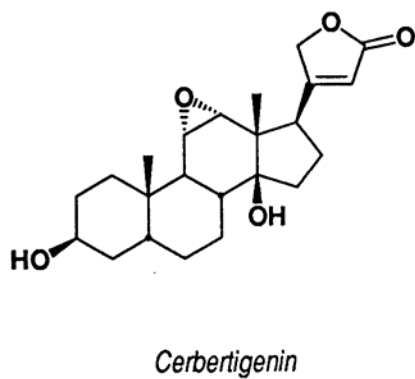
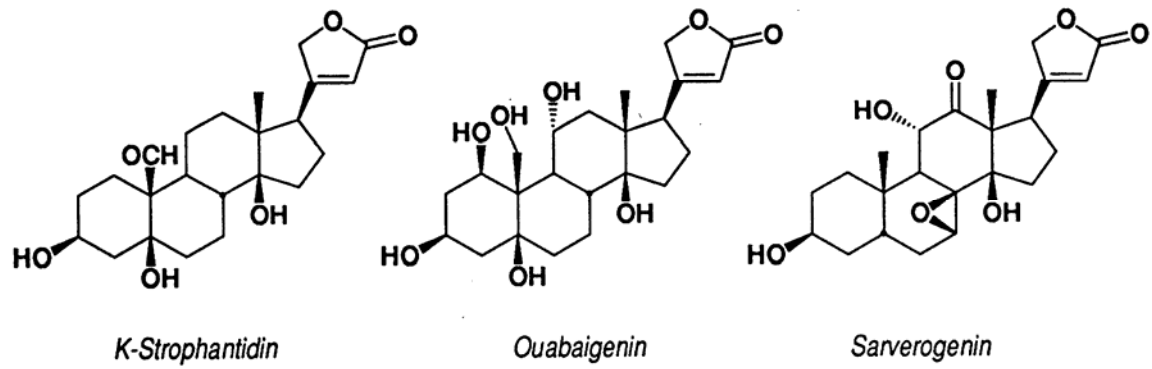
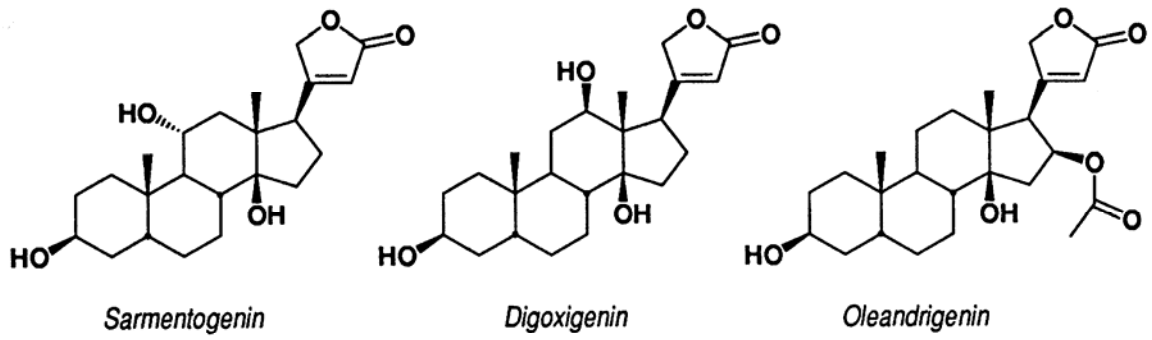
Digitoxigenin
A/B cis - B/C trans - C/D cis

CARDENOLIDES :
Digitoxigenin (H-5 β)
Uzargigenin (H-5 α)



BUFADIENOLIDE :
Scillarenin

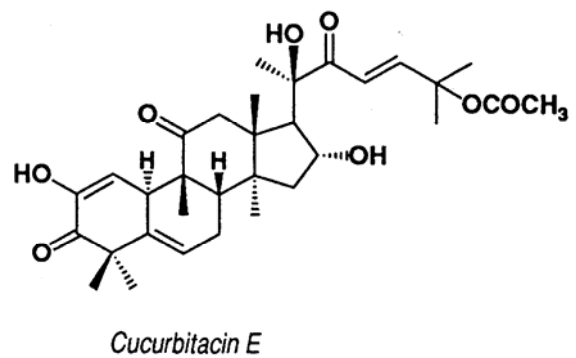
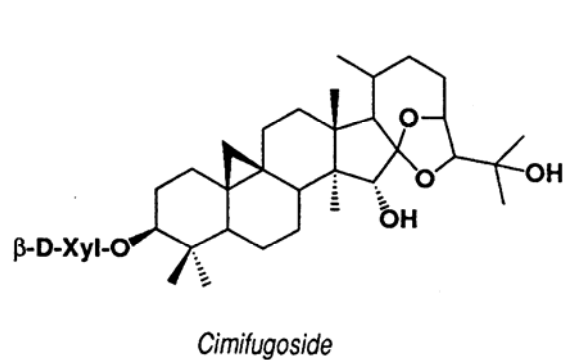




2.7.4.3 Ostatní terpeny

Kukurbitaciny:

- ☞ Cucurbitaceae - *Bryonia* sp., *Ecballium* sp., *Citrullus* sp.
- ☞ Scrophulariaceae – *Gratiola officinalis*



Cykloartanolové deriváty:

☞ Ranunculaceae - *Cimicifuga racemosa*

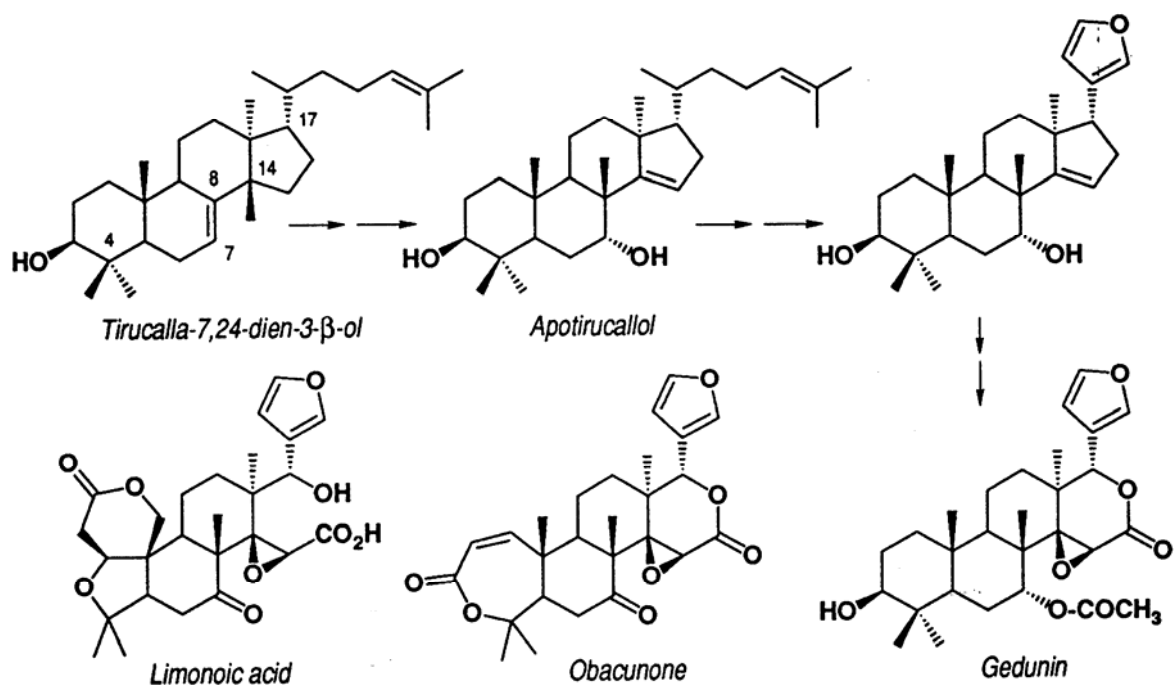
Boswelové kyseliny:

☞ Burseraceae - *Boswellia serrata*

Limonoidy: 300 sloučenin, deriváty tirukallolu

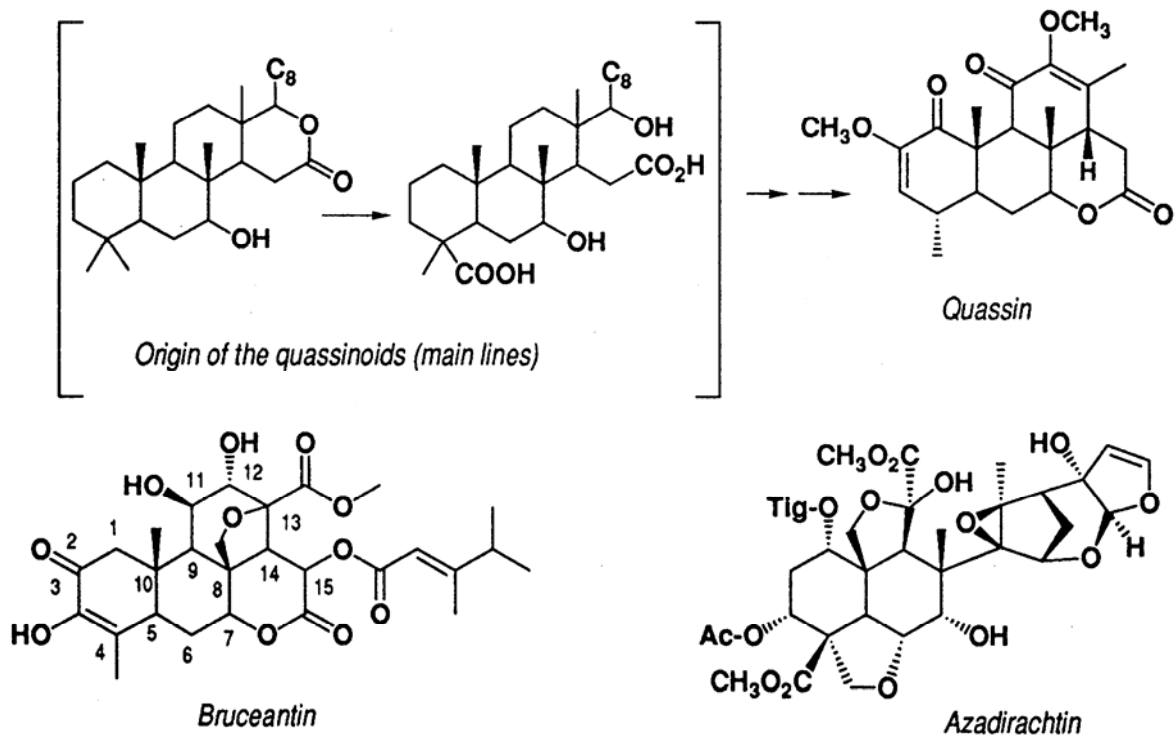
☞ Rutaceae - *Citrus* sp.,

☞ Meliaceae – *Melia azedarach*



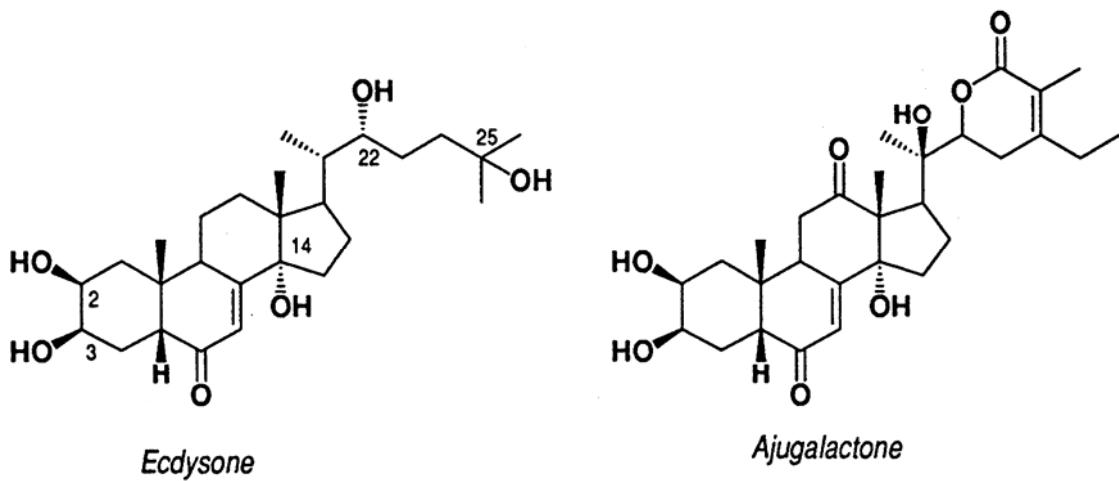
Kvasinoidy:

☞ Meliaceae - *Azadirachta indica*



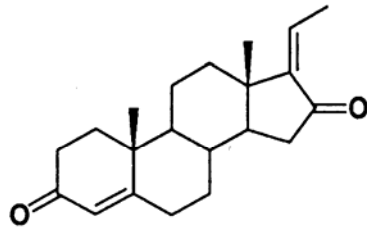
2.7.4.4 Ostatní steroidy

Ekdysteroidy: Asteraceae, Lamiaceae, Podocarpaceae

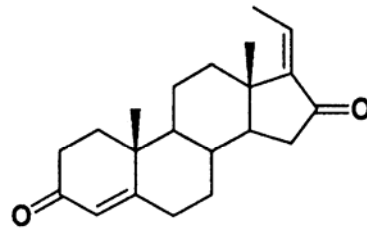


Tetracyklické steroly: gugalsterony

☞ Burseraceae - *Commiphora mukul*



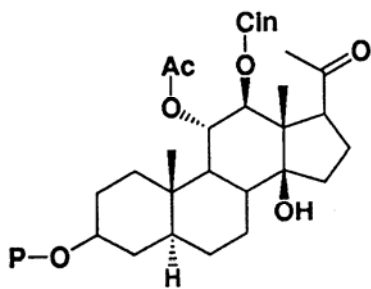
Z-Guggulsterone



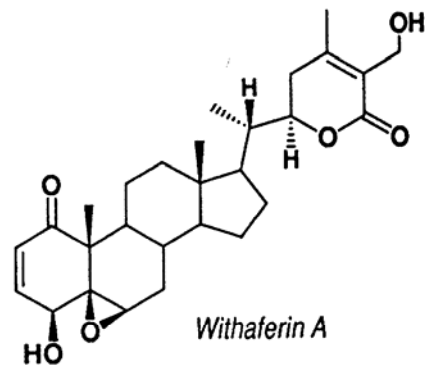
E-Guggulsterone

Pregnanové deriváty

☞ Asclepiadaceae - *Marsdenia condurango*



Cin = cinnamoyl ; P = pentaaccharide
(D-Glc-D-Glc-[3-OMe-6-deoxy-D-Allose]-D-Ole-D-Cym) :
Condurangoglycoside A1



Withaferin A

3-Ketosteroidy

☞ Verbenaceae - *Vitex agnus-castus*

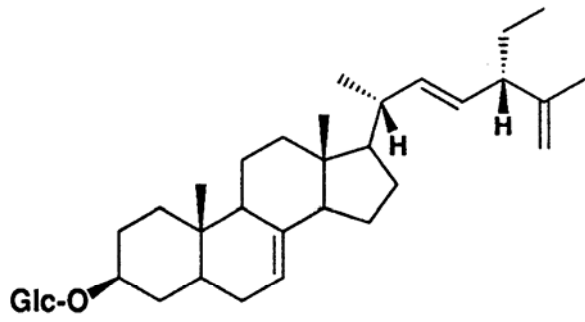
Withanolidy

☞ Solanaceae - *Withania somnifera*

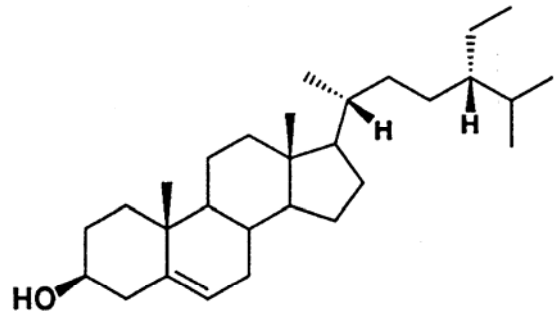
„Fytosteroly“

☞ Cucurbitaceae - *Cucurbita pepo*

☞ Asteraceae - *Helianthus annuus* aj.



Example of Δ^7 -sterol glucoside



Sitosterol