

الفصل التاسع

الجليكوسيدات

Glycosides

(Aglican)

] (Glycon)

:

[

(...)

. (H₂O)

:

(-

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-

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: (-

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: (-

-

. Digitoxin

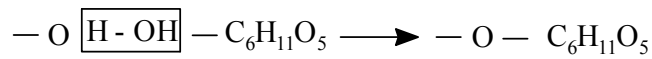
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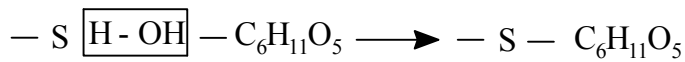
: The Glycosides Linkase

(-

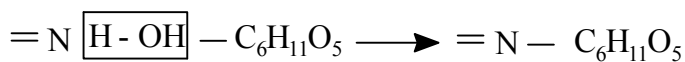
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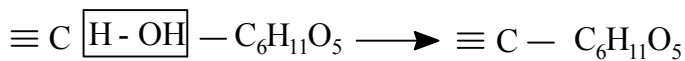
O - glycosides



S - glycosides



N - glycosides



C - glycosides

: (-

:

.Gentiopiridin () (

. Aesculin () (

. () (

. (Anthocyanins) (

. (-) (

. (-) (

: **Aglycan** (-

. (OH)

[Hydroquinone, CH₃OH ... glucose] (OH)

:

: Heterosides -

Rutin,) (Nonsugar) .

. (Digitoxin

(Aglycan)

: Holosides -

(Lactose , Lactarin) (Sugar)

(Aglycan)

:

. (Arbutin) = (

. (Salicin) = (

. (Gluco-aloe-emodin) = (

. (Vanillin) = (

. (Digitoxin) = (

. (Digitonin) = (

. (Sinigrin) = (

(Amygdalin) = (

(Rutin) = ()
(Daphnin) = ()

: (-

:

(

(

(

:

)

-:

:

-

(

(

freez drying .

Ammonium Sulphate

(

Acid hydrolysis

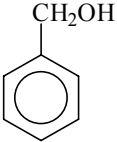
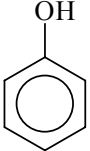
Lead acetate

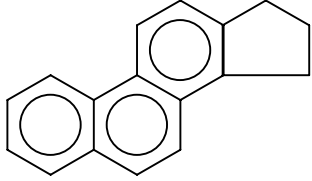
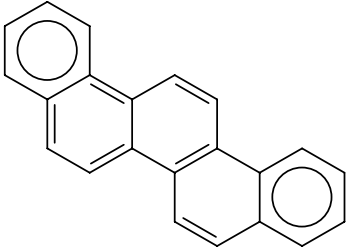
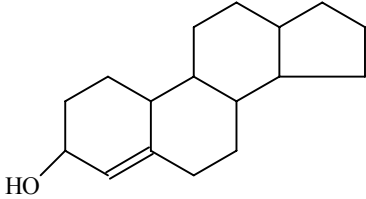
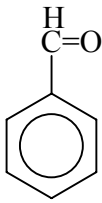
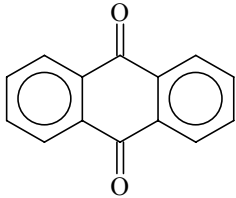
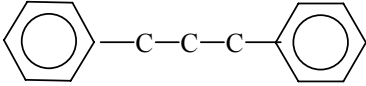
:

Crystallization

Hexan & Petroleum)

(Ether

	()	
	()	
	()	
		
		
	1)Flavonoid 2)Flavone 3)Flavonal	

—S		
N≡CH		

Alcoholic Glycosides

(

:

(Salix)

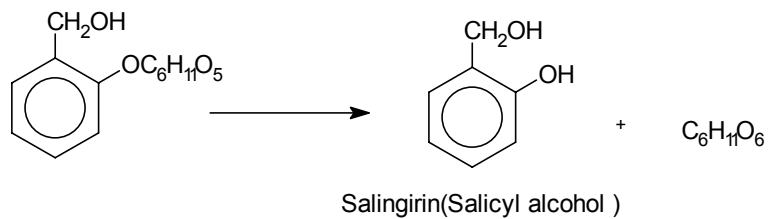
(Salicin)

-

. (Poplar barks)

(Emulsin)

o



		salix		
		poplar parks		

Phenolic Glycosides

(

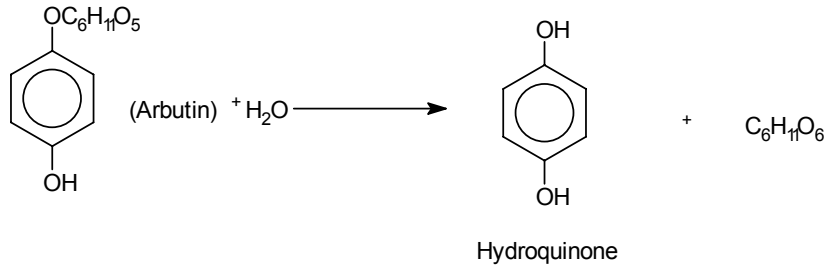
.

Arbutin

.

(UVA-URSI) Arctostaphylos

+
Emulsin (Hydroquinone)



:

	Arbutin	arctostaphylos uva-ursi		Bear-berry
	Heperidin	Citru Fruets		
	phloridzin	Roaceons plants		
	Baptisin	Baptisia		
	Iridin Iris			

() Anthraquinone (

Aglycon

Anthracene

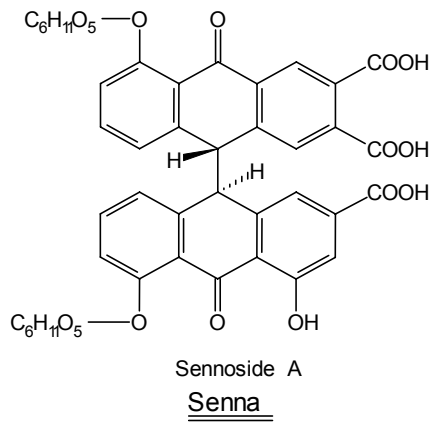
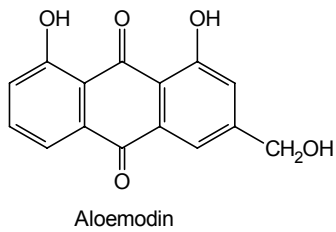
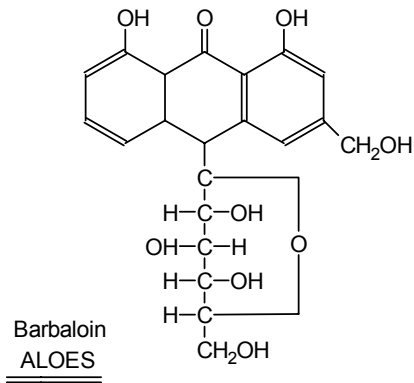
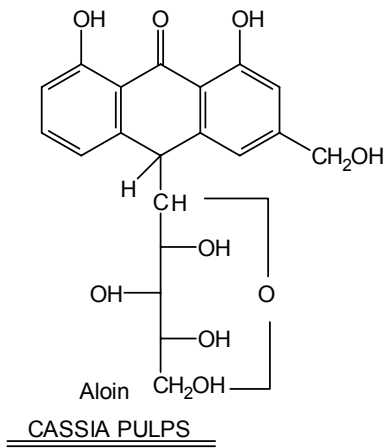
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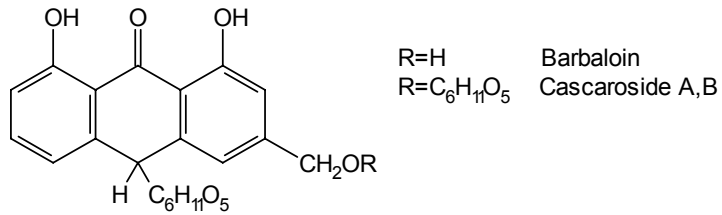
Laxative glycosides

()

:

	Aloin Barbaloin	Aloe vera		
	() Sennoside A&B	Senna		
- -	Emodin Aloemodin	Rhubarb		
		F. glumosa (Delile)		
		Rhamnuse perchiana		





* **Cascaroside A&B** are optical isomers of **barbaloïn**.

C&D are optical isomers of **chrysaloïn**.

* Hydrolysis of the total glycosides yields Rhamnose and glucose . 1=1.

of habitual Constipation , where it not only . * It is a Cathartic Correction acts as a laxative but restores natural tone to the colon.

Saponin Glycosides (

Saponin

Emulsion

Surface tension

Hemolysis

Steroidal Saponins

Triterpenoidal

Sex hormones

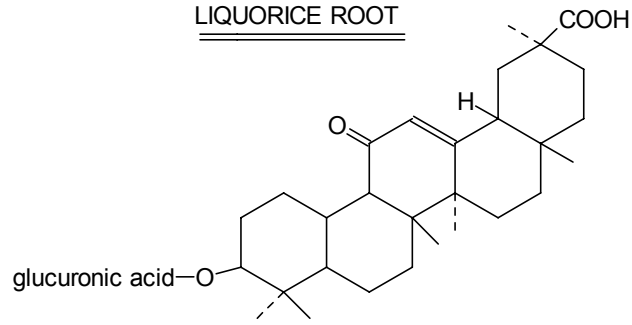
Steroidal Structure

(Liquorice

Glycyrrhizin

(Root)

LIQUORICE ROOT



Glycyrrhetic acid
 (Glycyrrhizin=mixture of calcium and sodium salts of glycyrrhizinic acid)

Solanum

Solasonine

(

Glyco-alkaloids

()

Glycyrrhetic acid

o

o

. Glucuronic

:

-	Glycyrrhizin	Liquorice root		
	Solasonine	Solanum	-	
	Lupulin Humulone	Humulus Lupulus	-	
		Saponaria officinalis L		Soapwort
		G.Struthium		

Steroidal glycosides

(

Cardiotonic glycosides

. Diuretic

-

()

Lactone ring

Digitalis

-

Cardinolids

Squill

-

. scilldienolides

Rhaminose

glucose)

(Cymarose

Digitoxose

Deoxy Sugars

:

*

. **Cardinolides**

-

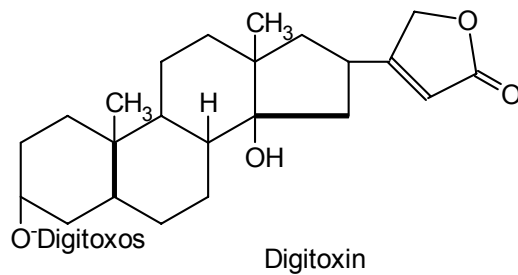
Gitalin

(Gitoxin

(Digitoxin

(

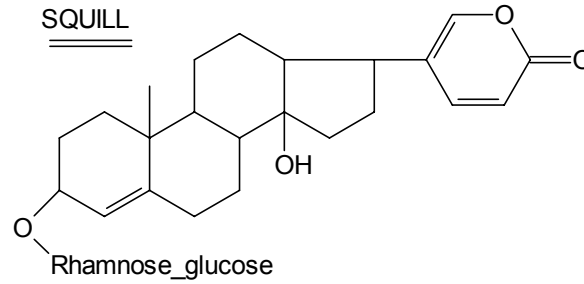
Digitalis Leaves



Scilladienoides

(Scillarin A , Scillarin B) () (

White squill



Scillaren A

:

	Digitoxin Gitoxin Gitalin	Digitalis		
	Scillarin () (A&B)	White squill		
	Oleandrin Niriin	Nerium oleander		
	Rutin	Fagopyrum esculantum		

Lanatoside A, B, C .

()

(A)

Digitoxin

(B)

Digitoxin

Thioglycosides (Sulphur glycosides)

(

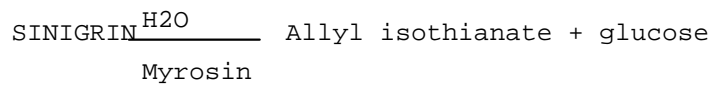
Aglycon .

Sinigrin

(

Black Mustard

Myrosin



Sinalbin

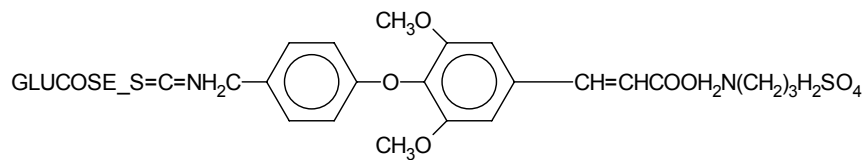
(

White Mustard

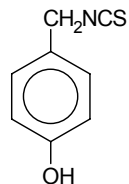
+ + =

+

Reactionary Drugs



Sinalbin



Acrinyl isothiocyanate
(Parahydroxybenzyl isothiocyanate)

:

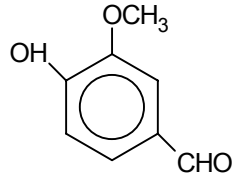
	Sinigrin	Brassica alba		
	Sinalbin	Brassica nigra		

Aldelydic glcocides

(

:

Vanillin -
Vanilia Pods



Vanilin
(Vanilia Pods)

	Vanillin	Vanilia pods		

Cyanogenetic glycosides

(

Hydrocyanic acid

Reactionary drugs

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:

Bitter Almond

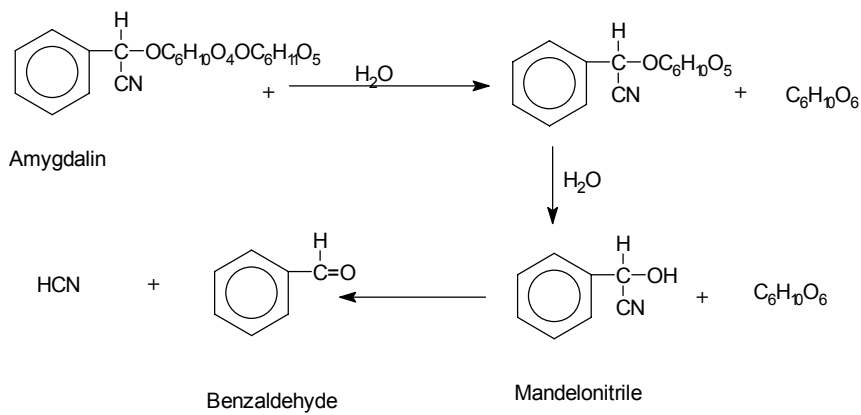
Amygdalin

-

Linseed

Linamarin

-



HYDROLYSIS OF AMYGDALIN

:

	Amygdalin	Bitter Almond		
	Linamarin	Linseed		
		A.Sorghum Sorghum bicolor L.		Broomcorn

Flavonoid glycosides

(

Flavonoid Aglycon
Chromone Benzopyrone

*

Flavonoid

*

:

Flavone glycoside

-

Apin Flavone
Celery Parsly

Flavonol glycosides

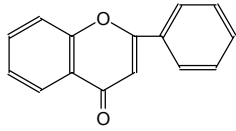
-

Rutin Flavonol
Buckweat

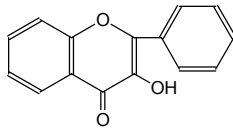
Flavanone glycoside

-

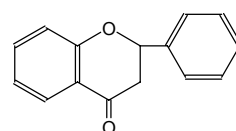
Hesperidin Flavanone
Citrus Fruits



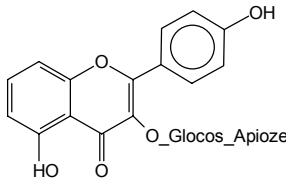
Flavone



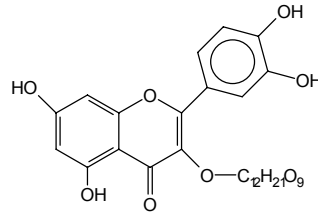
Flavanol



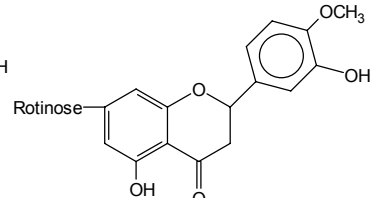
Flavanone



Apigin



Rutin



Hesperidin

:

	Apigin	Parsly		
	Abigin	Celery		
	Rutin	Fagopyrum esculentum		
	Hesperidin	Citrus Fruits		

	Crocin			
	Picrocrocin			
	khillin khillol	Ammi vinaga		
	Rutin	Ruta graveolens		

		/	
/ /	summer adonis		
	Tree of heaven		/
	Lebbek tree	/ /	
/ / /	Aloes		
	Jericho-roses		/
/ / /	Camomill		
/ / /	Santonica		/
	Mountain spinach		/
/ /	Desert date	/ /	
/	Butterfly tree	/ / / /	
/	Birch	/ /	/
/	Mustard		/
/	Bryonia		/
/ /	Caper		/
/	Shepherd's purse		
/	Cassia pulp		
(.) / /	Senna		/ /
/()	Colocynth	/	/
/ /	Hawthorn	/ /	
	Saffron	/	
/	Foxglove		
/	Native hops	/	
/ /	Lablab beans	/	

	Sky flower	/	
	Loqust	/	
	Hemlock geranium		
	Sanke root	/	
	Fagonia	/ /	/ /
	Liquarice		/
	Common ivy	/	
	Show flower	/	
	Roselle	/ /	
/(.)	Fog fruit	/	
	Mullberry	/	/
	Water cress		
/ /	Oleander	/ /	
	Nicotiana		
/	Nigella		/
/ /	Knot-grass	/	
/	Poplar	/	
	Rhubarb		
/ /	Madder	/	/
	Butcher's broom	/	
	Rue		
	Willow	/ /	
	Elder	/ /	
	Cow-herb		
	Sida	/	
	Spanich		
	Tamarin	/	

/ (.)	Squill		
	Black-leaved mullein	/ /	
/	Pigeon's grass		
/	Violet		