DESMAI

Salix babylonica L.

[1753, Sp. Pl. : 1017] **2n = 76**

Autor del recull: Alexis Manuel Joan Russell Ermengol Sín Masó Téllez-Girón Beaufort-Spontin Andreu Palau Wolferichs
(=**Alexis Rosell Armengol**)

Foto: Liliane Roubaudi

Foto: Alvesgaspar

Foto: Keipei

Làmina: Брандис, Дитрих (1874) «Illustrations of the Forest Flora of North-West and Central India»

NOMS POPULARS

- AFRIKAANS: Treurwilger.
- ALBANÈS: Shelgu pikëllues
- ALEMANY: Echte Trauer-weide, babylonische Trauer-Weide, babylonische Weide, chinesische Hängeweide, chinesische Trauer-Weide, echte Trauer-Weide, grüne Trauerweide, hänge Weide, hängende Weide, Tränen-Weide, Trauer-Weide
- ANGLÈS: Babylon weeping willow, Weeping willow.
- ÀRAB: صفصاف باكي Safsaaf baky.
- BASC-EUSKERA: Zume nagarti
- BÚLGAR: Плачеща върба, Плачуща върба
- CASTELLÀ: Sauce de Babilonia, Sauce llorón, Sauce criollo
- CATALÀ: desmai, salze ploraner
- COREÀ: 수양버들 Su yang beo deul.
- CROAT: Žalosna vrba
- DANÈS: Tårepil.
- ESLOVAC: Vŕba babylonská
- ESLOVÈ: Vrba žalujka.
- FINLANDÈS: itkusalava, itkupaju
- FRANCÈS: Saule de Babylone, Saule pleureur.
- GREC: Ιτιά κλαίουσα Itiá klaíousa
- HEBREU: ערבת בבל
- HINDI: Bahda, Majnu, Majunun.
- HONGARÈS: Babiloni fűz, Babiloni szomorúfűz, szomorúfűz
- ITALIÀ: Salice piangente, salcio davidico
- JAPONÈS : イトヤナギ Ito yanagi, しだれやなぎ - シダレヤナギ Shidare yanagi.
- MARATHI: गिऊर Gioor.
- NORUEC: babylonpil
- PERSA: درخت بید مجنون .
- POLONÈS: wierzba babilońska
- PORTUGUÈS: Chorão-salgueiro (Brazil), Salceiro-chorão (Brazil), Salceiro-da-Babilônia (Brazil), Salgueiro-chorão (Brazil), Salgueiro-da-Babilônia (Brazil).
- ROMANÈS: salcie pletoasă, salcie plângătoare
- RUS:Ива плакучая Iva plakuchaia, Ива вавилонская Iva vavilonskaia.
- SERBI: Жалосна врба Žalosna vrba
- SUEC: tårpil
- SWAHILI: Msafsafi wa Babeli.
- TAILANDÈS: หลิว Hliw
- TELUGU: Arruppaalai, Attuppalai.
- TURC: Salkım söğüt.
- TXEC: vrba babylónská>
- UCRAÏNÈS: верба вавілонська verba vavilons'ka, Верба плакуча Verba plakucha
- XINÈS: 垂柳 Chui liu.

DESCRIPCIÓ BOTÀNICA

La família de les *Salicaceae* Mirbel es distingeix per tenir les flors sense corol·la ni calze, superovàriques, no ser plantes herbàcies ni tenir el fruit en sàmara. Dins la família, el gènere *Salix* es distingeix per tenir pocs estams a la flor (2-3). Dins el gènere, *Salix babylonica* es distingeix per ser un arbret normalment de 5-10 metres, de branques esveltes, aprimades, glabres —excepte als nusos—, que pengen molt i molt, de color verd grogós; i per les fulles i tiges joves sovint pubescents no pruïnoses. Escorça adulta rugosa, amb esquerdes. Borrons grogosos o castanys, amb cera o glabres, ovals, sobresortints. Tanys vigorosos tendres de color verd clar amb estípules turionals ben marcades, lanceolades, estretes o semiovals, amb àpex acuminat i amb glàndules basals a la cara superior. Fulles alternes, de fins a 12 × 2 cm, curtament (3-5 mm) peciolades, estretament lanceolades, llargament acuminades, falcades a la zona distal, denticulades, glabres al dors, blanquinoses pel revers, amb poc floema. És arbre dioic. Rames amentiformes curtes, amb fulles lanceolades o linear-lanceolades de 3-5 cm de longitud, amb marges llisos o una mica serrats, glabres i glaucs a la cara inferior i verd clar a la superior, lleugerament acuminades. Aments femenins contemporanis, densos, cilíndrics,

sovint arquejats, normalment superats per les fulles del peduncle, amb flors amb 2 estils, petits, prims, de 3-5 mm de gruix, amb flors protegides per una escata còncava la meitat o menys la llargada de l'ovari, amb pèls interns i basals. Ovari glabre, sèssils; estigma emergent. Un nectari a cada flor. Càpsula de 2.8 a 3.8 mm de longitud. Aments masculins amb flors amb 2 estams. Escates glabrescents, groguenques, caduques. Estil curt. Càpsula petita, glabra, sèssil, amb escata ultrapassant la base. Pol·linització per insectes i pel vent.

Els desmais més robustos fan 7 m de volt de canó, 26 m d'alçària i els més vells tenir 120 anys. https://www.monumentaltrees.com/es/arboles/salixbabylonica/records/

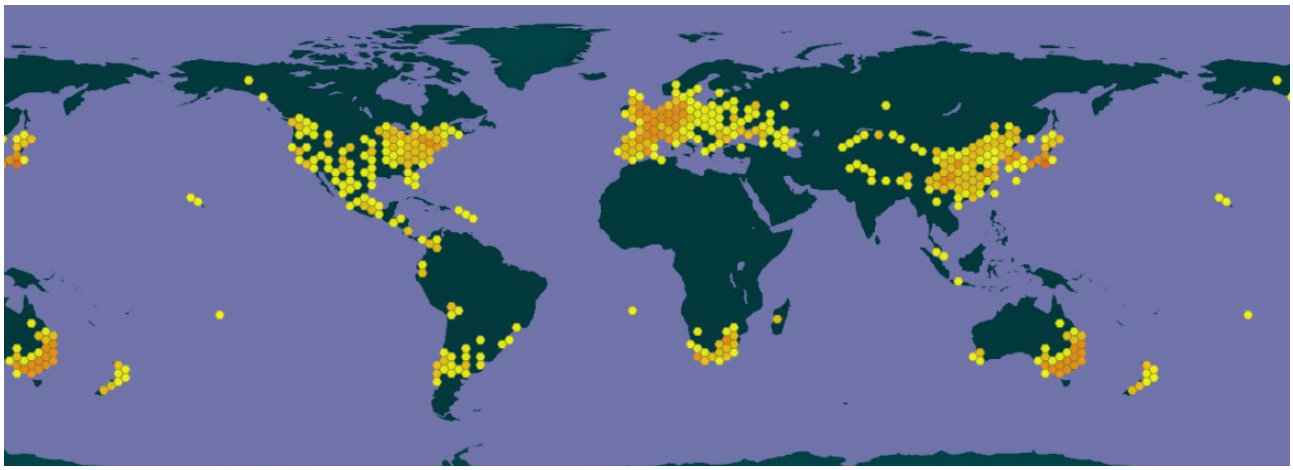
Salix babylonica es pot hibridar amb *Salix alba* var. *vitellina* o amb *Salix fragilis*. Hi ha exemplars en climes suaus que mantenen les fulles tot l'any.

Al Ripollès destaca a Campdevànol el Desmai de Can Branques, vora el pont sobre el riu i la cruïlla de carreteres. A Osona (Calldetenes) destaca el Desmai del Molí del Pujol. A la Garrotxa (Les Preses, darrere l'hostal Vertisol) destaca un exemplar de 3 m de volt de canó i 12 m d'alçària. Als Pallars Sobirà (Surri) destaca el de la plaça de l'església de Santa Coloma, amb 9 m d'alçària i 3 m de volt de canó. Va ser trasplantat des de l'hotel Cardós el 1958 i al voltant d'ell s'hi celebra la festa major per Sant Llorenç.

MALURES

Agrobacterium tumefaciens
Anoplophora chinensis,
Anoplophora glabripennis,
Apriona germarii,
Armillaria mellea,
Botryosphaeria dothidea,
Colletotrichum acutatum,
Colletotrichum acutatum,
Colletotrichum gloeosporoides,
Cytospora atrocirrhata,
Drepanopeziza sphaeroides,
Fusicladium saliciperdum
Ganoderma lucidum,
Indarbela dea,
Lymantria dispar,
Lymantria monacha,
Lymantria obfuscata,
Marssonina salicicola,
Melampsora coleosporioides,
Melampsora ferinii,
Paranthrene tabaniformis,
Phellinus noxius,
Phratora vitellinae,
Phratora vulgatissima,
Phyllodecta vitellinae
Phytoplasma 16Srl-C
Phytoplasma trifolii,
Phytoplasma ziziphi,
Plagiodera versicolora,
Rabdophaga saliciperda,
Rhizobium radiobacter,
Rhizobium rhizogenes,
Scolytus schevyrewi,
Septotinia populiperda
Stilpnotis salicis
Tremex fuscicornis

HÀBITAT I DISTRIBUCIÓ GEOGRÀFICA



Salix babylonica actualment al món, segons GBIF

Plantada en parcs i cementiris, a França i a Europa, on només es troba la planta femella. Distribució: Caucas, Pèrsia, Xina, Japó. Malgrat el seu nom popular o científic és originari de l'Àsia més oriental. Arribà a Europa el 1730 pel botànic VERNON. Pot viure i es deleix per viure de l'aigua propera, ja siguin rierols o piscines o desaigües o comunes. No és gaire resistent a la contaminació atmosfèrica. Aguanta gelades de fins a -10º C.

ESOTERISME I LITERATURA

Una llegenda explica que un jove pagès es va enamorar d'una fada, sense ell saber que ella ho era. Es varen casar i varen ser molt feliços fins que l'home va tallar el salze on la fada es refugiava a les nits. Ell ja vidu va aprofitar la fusta del salze per fer el bressol del nen que acabava de néixer. Només el nen podia sentir el que la mare fada des del bressol li deia. També diuen que prendre les cendres d'un salze pot curar el desencís o agonia d'un amor menys-preuat. Per impedir la infidelitat de la parella es lliguen branques de salze a les potes del llit conjugal o es cusen branquillons de salze a la seva roba. Per trobar parella es llença al riu (la Nit de Sant Joan) un collaret fet d'escorça de salze. Per a enamorar un home poc apassionat es deixa una corona feta de branques de salze on la pugui veure durant els seus recorreguts habituals.

Per evitar tenir mala sort cal tocar fusta: millor que sigui de salze. Somniar en un desmai pronostica que un amic o amiga vindrà a explicar-te les seves penes. La figura d'un desmai als pòsits del cafè segons la cafeomància significa propera etapa de melancolia.

«Del cor d'un arbre
me n'han fet uns esclops
de fusta ribotejada
me'ls poso quan plou.

És el salze ploraner
que brama pel seu cor,
he anat a aixoplugar-m'hi
així no estem mai sols.

Quan sent els esclops
frisa com un picarol,
si plou em poso a sota
i a la vora si fa sol.

Amb les llàgrimes es rega,
és el seu consol,
jo li porto poemes,
Ja no està de dol». [ASPA]

El malnom de *babilònica* se'l va imaginar LINNÉ per haver associat les branques que pengen molt com si estiguessin deprimides amb el mateix sentiment dels jueus durant el desterrament a Babilònia. Aquest exili es va produir al conquerir el 587 aC Jerusalem el famós rei NABUCODONOSOR II; i deu anys més tard el segon exili va tenir lloc arrel d'una subsegüent rebel·lió dels hebreus qui hi quedaven encara. El 521 aC els jueus retornaren a Jerusalem alliberats pel rei persa CIRO; i ja eren més creients en Jehovà. El tram de l'òpera del cors dels esclaus al «Nabuco» de VERDI és prou conegut pels melòmans. Actualment, però, no és pas gaire creïble que aquests salzes estiguessin als famosos jardins penjants de Babilònia, de la mateixa època de l'exili dels jueus.

USOS I VIRTUTS MEDICINALS

- abscessos FUL
- amargant
- analgèsic
- antibiòtic contra: *Bacillus subtilis, Escherichia coli* [extr. amb clorur de metilè], *Listeria monocytogenes, Paenibacillus alvei, Salmonella enterica, Staphylococcus aureus* [extr. amb etil-acetat o amb metanol], *Streptococcus penumoniae*
- antioxidant
- antiparasitari contra: *Bonostomum, Chabertia, Cooperia,, Hemonchos contortus, Monieza, Nematodirus, Nematodirus pathiger, battus, Ostertagia,, Strongiloides papillosus,*
- antisèptic

- astringent
- cabell debilitat ESC
- càncer de còlon
- carboncle FUL
- caspa
- cor-agre
- dermatitis
- dolors
- febre LLA
- fungicida suau contra: *Candida albicans, Fusarium oxysporum*
- gonorrea
- hemorràgies LLA
- hemorroides
- icterícia LLA
- immunoestimulant
- insulinoma FUL
- mal de cap
- malària
- obesitat
- paràsits a a pell ESC-REL
- protector pancreàtic front a la dexametasona
- reumatisme
- tònic
- úlceres externes FUL/ GOM
- vermífug

FLOR DE BACH

Com s'assemblen tant el *Salix vitellina* var. *pendula* (que pot ser un híbrid amb *Salix babylonica*) cal suposar que la preparació amb *Salix babylonica* tindrà els mateixos efectes que amb el *Willow* del Dr. BACH (*Salix vitellina*). És a dir, que serà adient per ales persones pessimistes victimistes, ressentides, amargades, queixoses, rancoroses, deprimides, incapaces de perdonar, insatisfetes, obnubilades per les ferides que altres els han fet, ancorades en el dolor del passat, irritables, que vol compartir la infelicitat als poc amb qui es relaciona. Les malalties associades solen ser reuma, gasos intestinals, dolors exacerbats.

PREPARAT

«Sipi» és un extracte aquós de rels de *Sophora japonica, Salix babylonica, Morus alba, Amygadalus davidiana*. A la Xina hom ho recomana quan hi ha infeccions o inflamacions. A més redueix almenys la progressió del càncer de matriu.

VETERINÀRIA

Eimeria (coccidiosis) als conills. *Vibrio parahaemolyticus, Vibrio alginolyticus* en peixos. Millora el creixement dels xais a 25 ml/xai/dia i els allibera de paràsits nematodes i *Moniezia* intestinals. L'extracte del desmai (150 mL/dia) augmenta la producció de llet (13%) a les vaques que el prenen, si bé la llet conté menys greix; però els ajuda a rumiar millor. L'extracte també facilita la digestió als cavalls ja que produeixen menys gasos (metà, monòxid de Carboni, àcid sulfhídric) intestinals. En general el desmai és antiinflamatori per al bestiar. A les gallines les fa resistir millor la calor.

ALTRES USOS

El desmai sol plantar-se com a arbre decoratiu. Evita l'erosió de les riberes i frena la progressió de les dunes. Les tiges s'empren per fer cistells. Inhibeix la producció d'aflatoxines cancerígenes per part d'*Aspergillus parasiticus* i fongs similars. La plantació de desmais pot actuar sanejant el sòl d'anilines i la pols de les fulles absorbeix de l'aigua el blau de metilè i altres contaminants, com fins i tot gasolina, nitrats, benzè, etanol. Els extractes de desmai milloren el creixement de plantes com el blat de moro, l'olivera, els cítrics o la *Houtuynia cordata*.

PRINCIPALS PRINCIPIS ACTIUS DE *SALIX BABYLONICA*

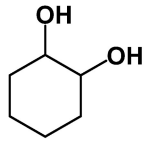
L'aspirina és àcid acetil-salicílic, o sigui, un derivat de laboratori del principi actiu (amargant) del salze.

- 1-O-p-cumaroïl-beta-D-glucopiranòsid FUL
- 1,2-ciclohexà-diol FUL
- 1,3-dioxà-4-(hexadecil-oxi)-2-pentadecil FUL 10%
- 2-[(benzoïl-oxi)-metil]-4-hidroxi-fenil-beta-D-glucopiranòsid-3-benzoat RFEL
- 2-(hidroxi-metil)-fenil-beta-D-glucopiranòsid REL
- 3-dioxà-4-(hexadecil-oxi)-2-pentadecil
- àcid octadecenoic-1,2,3-propà-triïl-èster FUL 11%
- àcid p-hidroxi-benzoic
- àcid salicílic
- acmofil·lina B FUL
- alfa-pinè FUL
- alfa-terpineol ESC
- andapigenina-7-O-galactòsid REL
- apigenina-7-O-galactòsid
- aìgenina-7-O-beta-D-(4"-p-cumaroïl)-glucòsid FUL
- astragalina
- beta-cedrè FUL
- beta-sitosterol REL FUL
- beta-sitosterol-3-O-beta-D-glucopiranòsid
- bis-(2-etil-hexil)-adipat
- carvacrol
- catecol FUL
- catequina
- cis-4-hexèn-1-ol FUL
- cis-linalool-òxid ESC
- citoquinina-glucòsid
- crisoeriol
- crisoeriol-7-O-beta-D-glucuronil-metil-pester
- dihidro-diosgenina
- (E)-4-(4-hidroxi-2,2,6-trimetil-7-oxa-biciclo[4.1.0]heptan-1-il)-but-3-èn-2-ona
- (E)-2-(2,2,6-trimetil-7-oxa-biciclo[4.1.0]heptan-1-il)-prop-1-èn-1-ol
- estaquiosa FUL
- èster de l'àcid tereftàlic
- èster benzílic de l'àcid gentísic-2'-O-acetil-beta-D-glucòsid
- èster metílic de l'àcid hexadecanoic FUL 10.5%
- esteroides
- floratanins
- fructosa FUL
- glucosa FUL
- iso-quercitrina
- iso-rhamnetina
- kaempferol
- kaempferol-7-O-glucòsid REL FUL
- linalool FUL
- llimonè
- luteolina
- luteolina-4'-O-glucòsid
- luteolina-7-O-beta-D-glucopiranòsid [= iso-orientina]
- metil-trans-4-hidroxi-cinamat FUL
- naringenina
- piceïna
- populòsid FUL
- quercetina
- rafinosa FUL
- rutina
- sacarosa FUL
- salicil-aldehid FUL
- salicilamina
- salicina
- saponina
- timol
- trans-linalool-òxid ESC
- tremuloidina
- tricocarpina
- trigonel·lina
- tritetracontà FUL 15%

EFECTES FISIOLÒGICS DEL *SALIX BABYLONICA*

Dosi baixes de la fracció de l'extracte de la fulla del desmai fet amb etil-acetat o amb aigua provoca la mort de les cèl·lules de l'insulinoma pancreàtic. La fracció de l'extracte fet amb aigua incrementa l'expressió genètica de INS1, INS2, Akt; l'extreta amb butanol incrementa l'expressió genètica de GLUT2, IR, HSP70 i l'expressió proteica de WNT4. Amb ambdues fraccions disminueix l'expressió l'expressió genètica de HSP90 i l'expressió

proteica de beta-actina, GADH, insulina, HSP70, HSP90, HSF-1, beta-catenina i WNT7A; I, en canvi, augmenta la intensitat de l'etiquetatge immunològic d'IR. També augmenten els ions Ca^{++}, K^{+}, Na^{+} ai el CA-19-9 a les cèl·lules i els ions Ca^{++} i K^{+} a la secreció. Els metabòlits secundaris a la fracció de l'etil-acetat causen més danys a les cèl·lules de l'insulinoma INS-1. La fracció aquosa fa que les cèl·lules morin i espatllen la funció cel·lular. Els metabòlits secundaris a la fracció del butanol mata les cèl·lules INS-1 amb menys danys, per la qual cosa seria pla preferida per tractar aquest tumor pancreàtic.



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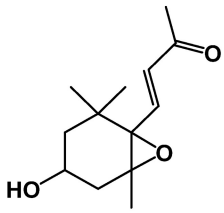

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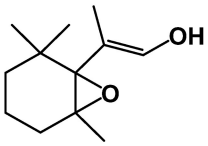

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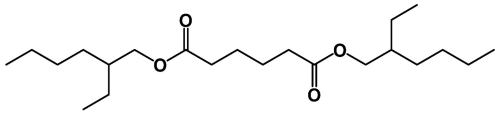

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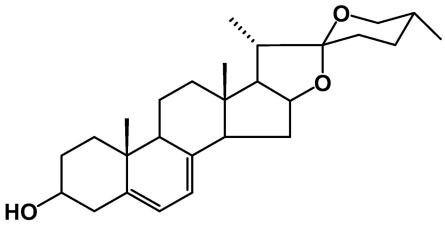

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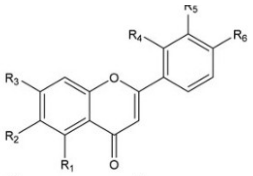
3) 1,2-ciclohexanediol / **4)** (E)-4-(4-hidroxi-2,2,6-trimetil-7-oxabiciclo [4.1.0] heptan-1-il)but-3-èn-2-ona / **5)** (E)-2-(2,2,6-trimetil-7-oxabiciclo [4.1.0]heptan-1-il) prop-1-èn-1-ol /**6)** bis(2-etil-hexol) adipat / **7)** dehidro-diosgenina.

[De "Chemical constituents of *Salix babylonica* L. and their antibacterial activity against Gram-pisitive and Gram-.negative animal bacteria" - EDDY NATHALYE GONZÁLEZ-ALAMILLA, MANASES GONZALEZ-CORTAZAR, BENJAMÍN VALLADARES-CARRANZA, MARCO ANTONIO RIVAS-JACOBO, CAMELIA ALEJANDRA HERRERA-CORREDOR, DEYANIRA OJEDA-RAMÍREZ, ADRIAN ZARAGOZA-BASTIDA, NALLELY RIVERO-PEREZ - Molecules 18 - VII-2019: (24): 2992.]

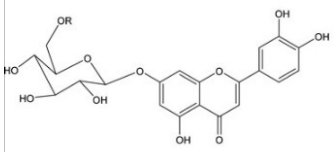
MÉS INFORMACIÓ

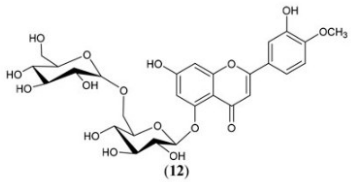
«Volatiles, phenolics and biological activities of *Salix babylonica* L. leaves and stem bark». ABOU-ZEID, AH. Bulletin of the National Research Centre 31(4): 289-312 (2006):2522-8307 https://eurekamag.com/research/017/656/017656899.php

«Phytochemistry, pharmacology and medicinal uses of plants of the genus *Salix*: an update review». NORA TAWFEEK, MONA F MAHMOUD, DALIA I HAMDAN, MANSOUR SOBEH, NAWAAL FARRAG, MICHAEL WINK, ASSEM M EL-SHAZLY. Front. Pharmacol. 12 II 2021 Vol 12. Frontiers | Phytochemistry, Pharmacology and Medicinal Uses of Plants of the Genus Salix: An Updated Review (frontiersin.org) [**les fórmules de les pàgines següents són extretes d'aquesta publicació**]



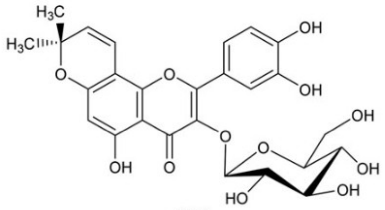
No.	R_1	R_2	R_3	R_4	R_5	R_6
(1)	OH	H	OH	H	H	OH
(2)	OH	H	*O*-Glc.	H	H	OH
(3)	OH	H	*O*- *p*-CoumaroylGlc.	H	H	OH
(4)	OH	H	*O*-Glac.	H	H	OH
(5)	OH	H	*O*-Glc.	H	OCH_2CH_3	OH
(6)	OH	H	OH	H	OCH_3	OH
(7)	OH	H	*O*-Glc.	H	OCH_3	OH
(8)	OH	H	*O*-Glucuronide	H	OCH_3	OH
(9)	H	H	OH	H	H	OH
(10)	OH	H	OH	H	OH	H
(11)	OH	H	*O*-Glc.	OH	H	OCH_3
(14)	OH	H	OH	H	OH	OCH_3
(15)	OH	H	OH	H	OH	OH
(16)	OH	Glc.	OH	H	OH	OH
(17)	*O*-Glc.	H	OH	H	OH	OH
(18)	OH	H	OH	H	OH	*O*-Glc.
(19)	OH	H	*O*-Glc.	H	OH	OH
(25)	H	H	OCH_3	H	H	H



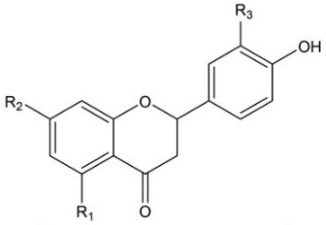


(12)

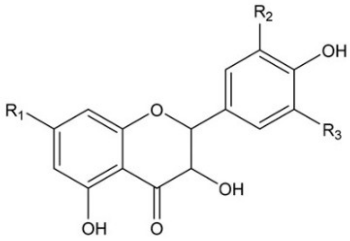
No.	R
(20)	*trans*-Cinnamoyl
(21)	Feruloyl
(22)	Ac
(23)	*p*-Coumaroyl
(24)	Glc.



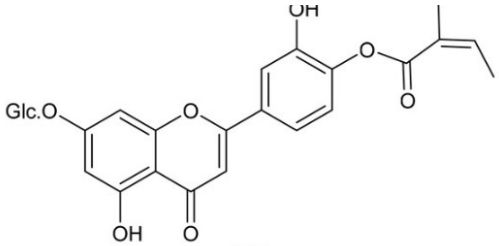
(36)



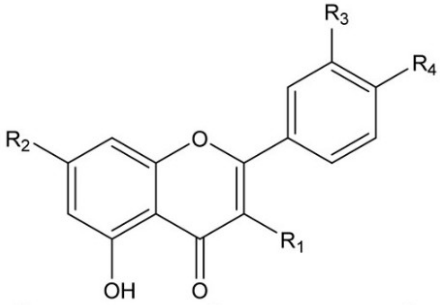
No.	R_1	R_2	R_3
(48)	OH	OH	OH
(49)	OSO_3H	OH	OH
(50)	OH	*O*-Glc.	OH
(51)	OH	OH	H
(52)	OSO_3H	OH	H
(53)	*O*-Glc.	OH	H
(54)	OH	*O*-Glc.	H
(55)	*O*-(6``-*trans*-*p*-Coumaroyl) glucosyl	OH	H



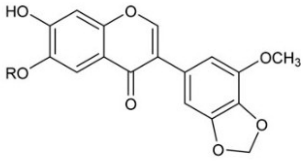
No.	R_1	R_2	R_3
(56)	OH	OH	OH
(57)	OH	H	H
(58)	OSO_3H	H	H
(59)	OH	OH	H



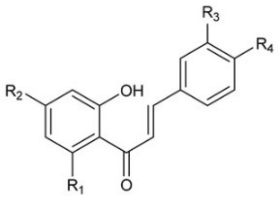
(13)



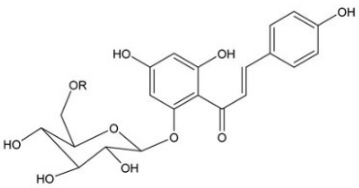
No.	R_1	R_2	R_3	R_4
(26)	*O*-Glc.	OH	OCH_3	OH
(27)	*O*-Rut.	OH	OCH_3	OH
(28)	*O*-Pent.-Rut.	OH	OCH_3	OH
(29)	*O*-Rh.	OH	OCH_3	OH
(30)	*O*-Pent.-Hex.	OH	OCH_3	OH
(31)	*O*- Hex.	OH	H	OCH
(32)	OH	OH	H	OH
(33)	OH	OCH_3	H	OCH
(34)	OH	*O*-Glc.	H	OH
(37)	OH	OH	OH	OH
(38)	*O*-Glc.	OH	OH	OH
(39)	*O*-Rh.	OH	OH	OH
(40)	*O*-Glc.	OH	OH	OH
(41)	*O*-Rut.	OH	OH	OH
(42)	*O*-Glac.	OH	OH	OH
(43)	*O*-Gluc.	OH	OH	OH
(44)	*O*-Hex.-Hex.	OH	OH	OH
(45)	*O*-Pent.-Rut.	OH	OH	OH
(46)	*O*-Pent.-Hex.	OH	OH	OH
(47)	OH	OCH_3	OH	OH

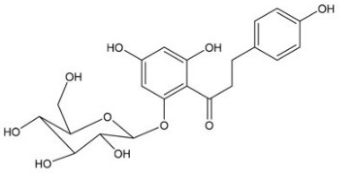


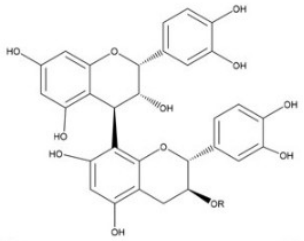
No.	R
(63)	H
(64)	Glc.



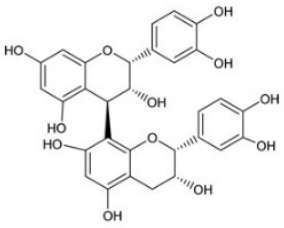
No.	R_1	R_2	R_3	R_4
(65)	*O*-Glc.	OH	H	OH
(67)	OH	OH	H	OH



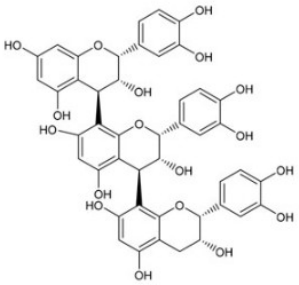




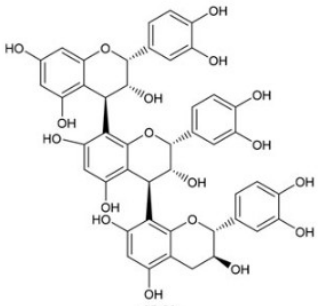
No.	R
(77)	H
(78)	



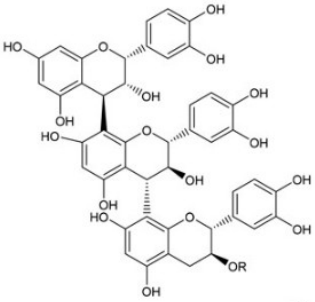
(79)



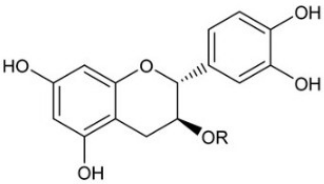
(86)



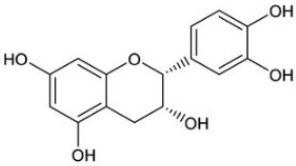
(89)



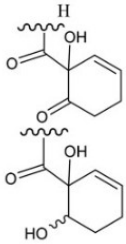
No.			
(60)	OSO_3H	OH	H
(61)	OCH_3	OH	H
(62)	OCH_3	*O*-Glc.	H



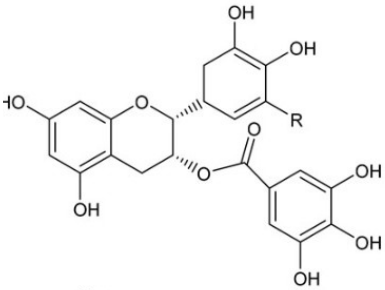
No.	R
(69)	H
(70)	



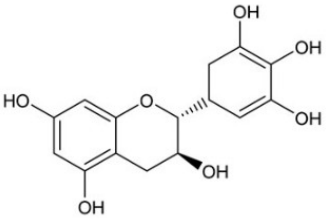
(72)



(71)

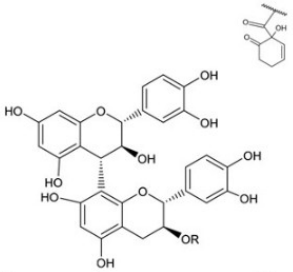


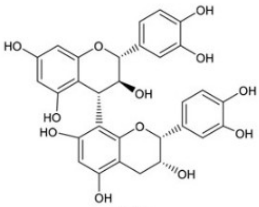
No.	R
(74)	H
(75)	OH



(73)

No.	R
(66)	*p*-Coumaroyl

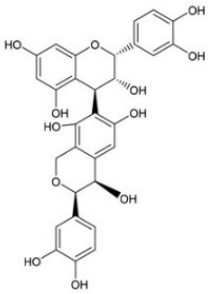




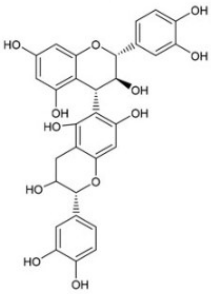
(68)

(82)

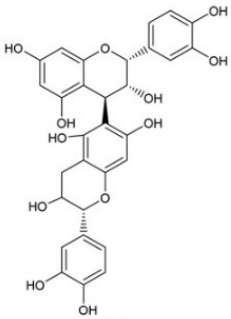
No.	R
(80)	H
(81)	



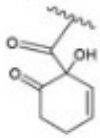
(83)

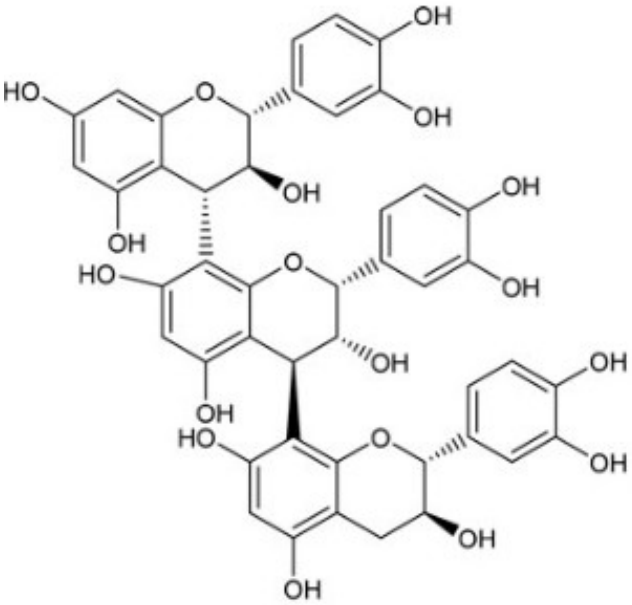


(84)

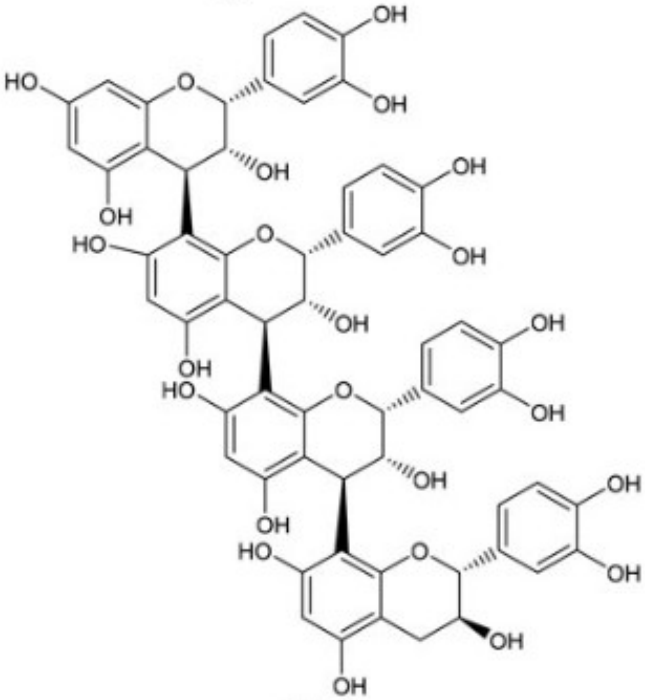


(85)

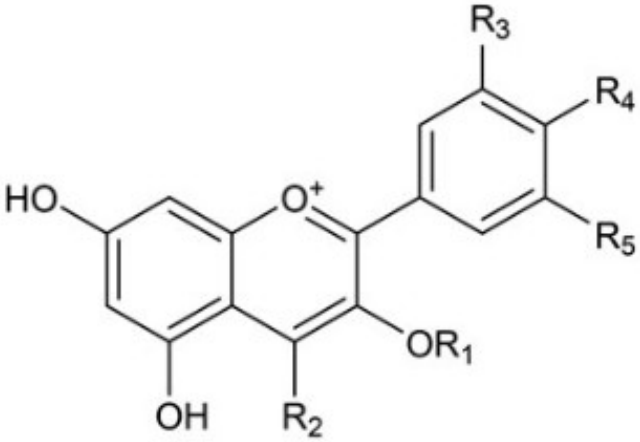
No.	R
(87)	H
(88)	



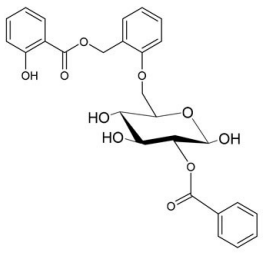
(90)



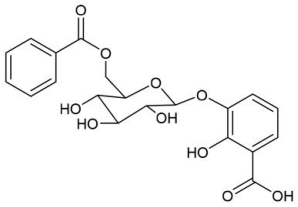
(92)



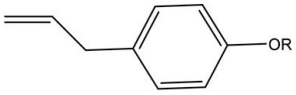
No.	R_1	R_2	R_3	R_4	R_5
(93)	Glc.	H	OH	OH	H
(94)	Glc.	H	OH	OH	OH
(95)	Glc.	H	OH	OH	OCH_3



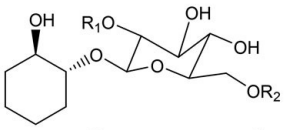
(96)



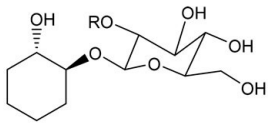
(98)



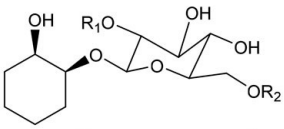
No.	R
(102)	α-L-Araf-[1→ 6]-β-D-Glc.
(103)	α-L-Arap-[1→ 6]-β-D-Glc.
(104)	β-D-Apif-[1 →6]-β-D-Glc.
(105)	β-D-Glc.
(106)	α-L-Rh.-[1→ 6]-β-D-Glc.



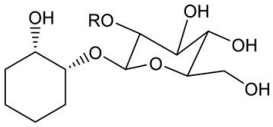
No.	R_1	R_2
(116)	*trans-p*-Coumaroyl	H
(117)	*cis-p*-Coumaroyl	H
(118)	H	*trans-p*-Coumaroyl
(119)	H	*cis-p*-Coumaroyl
(120)	H	4-Hydroxtbenzoyl

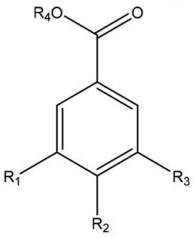


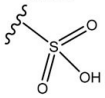
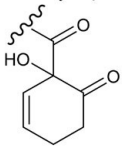
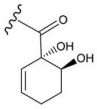
No.	R
(121)	*trans-p*-Coumaroyl
(122)	*cis-p*-Coumaroyl



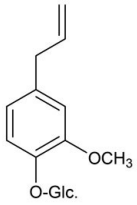
No.	R_1	R_2
(125)	*trans-p*-Coumaroyl	H
(126)	*cis-p*-Coumaroyl	H
(127)	H	*trans-p*-Coumaroyl
(128)	H	*cis-p*-Coumaroyl



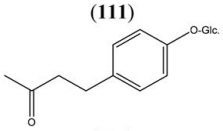


No.		R	No.	R_1	R_2	R_3	R_4
(142)	H	H	Ac		H	H	
(143)	H	H	H		Ac	H	
(144)	H	H	-(E)-*p*-Coumaroyl		H	H	
(145)	H	H	-(Z)-*p*-Coumaroyl		H	H	
(146)	H	H	H		H	-(E)-*p*-Coumaroyl	
(147)	H	H	H		H	-(Z)-*p*-Coumaroyl	
(148)	H	H	*p*-Coumaroyl		H	Dihydrobenzoyl	
(149)	H	H	Cinnamoyl		H	H	
(150)	H	H	Dihydrocinnamoyl		H	H	
(151)	H	Malate	H		H	H	
(152)	H		H		H	H	
(153)	H	Salicyloyl (*o*-Hydroxybenzoyl)	H		H	H	
(154)	H	HCH (1-hydroxy-6-oxo-2-cyclohexen-l-carboxylate) = 	H		H	H	
(155)	H	HCH	Ac		H	H	
(156)	H	HCH	H		Ac	H	
(157)	H	HCH	H		H	Ac	
(158)	H	HCH	Ac		H	Ac	
(159)	H	HCH	(E)-Cinnamoyl		H	H	
(161)	H		Ac		H	H	
(164)	H	H	Benzoyl		H	H	
(165)	H	Salicyloyl	Benzoyl		H	H	
(166)	H	HCH	Benzoyl		H	H	
(167)	H	H	H		H	*p*-Coumaroyl	

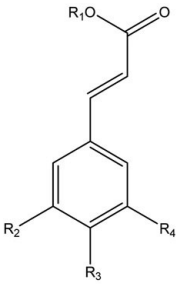
(123)	*cis -p*-Coumaroyl	**(114)**	OH	*O*-Glc.	OH	H
		(115)	OH	*O*-Gluc.-Glc.	OH	H
		(130)	H	OH	OH	*P*-Hydroxy benzoyl Glc.
		(138)	H	OH	OH	Glc.



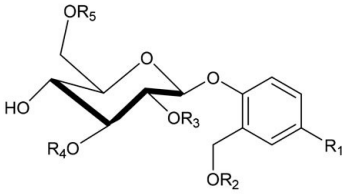
(111)



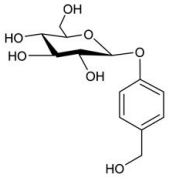
(131)



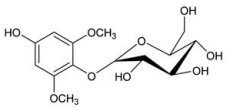
No.	R_1	R_2	R_3	R_4
(108)	Galloyl-Glc.	H	OH	H
(109)	Galloyl-pent.	H	OH	H
(110)	Glc.	H	OH	H
(112)	Glc.	H	OH	OCH_3
(162)	Glc.	OCH_3	OH	OCH_3



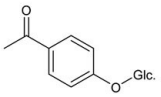
No.	R_1	R_2	R_3	R_4	R_5
(97)	H	Salicyloyl	H	H	Ac
(100)	OH	Benzoyl	H	Benzoyl	H
(101)	H	H	H	Benzoyl	H
(107)	H	HCH	H	Benzoyl	H
(113)	H	H	H	H	Ac
(133)	H	HCH	Ac	H	HCH
(136)	H	H	H	H	Benzoyl
(137)	H	*p*-Coumaroyl	H	H	H
(141)	H	H	H	H	H



(132)



(134)



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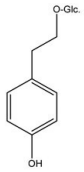
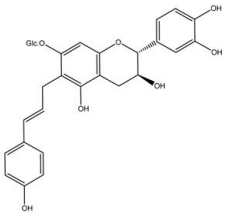
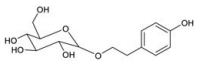


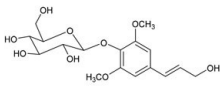
(139)



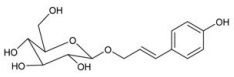
(141)



(160)



(163)



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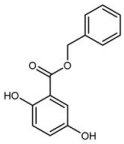

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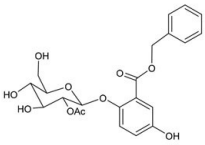

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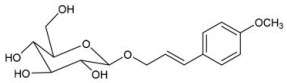

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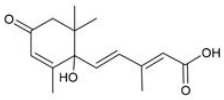
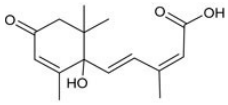
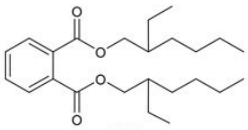


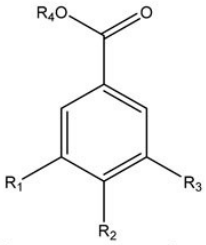
(**189**)



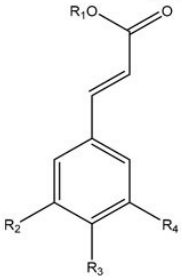
(**190**)



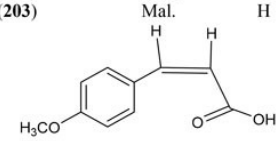
(**191**)



No.	R_1	R_2	R_3	R_4
(**192**)	H	H	H	H
(**193**)	H	OH	H	H
(**194**)	H	OCH_3	H	H
(**195**)	H	OH	OCH_3	H



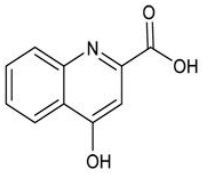
No.	R_1	R_2	R_3	R_4
(**196**)	H	OH	OH	H
(**197**)	Mal.	OH	OH	H
(**198**)	H	H	H	H
(**199**)	H	H	OCH_3	H
(**201**)	H	H	OH	H
(**202**)	Quin.	H	OH	H
(**203**)	Mal.	H	OH	H



(**200**)

$C_{20}H_{40}O_2$

(**204**)



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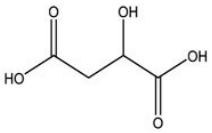
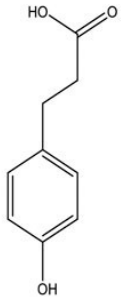
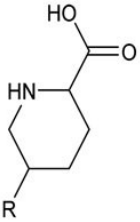


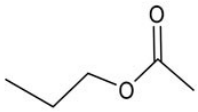
(**208**)



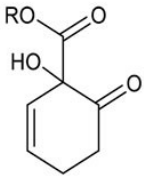
(**209**)



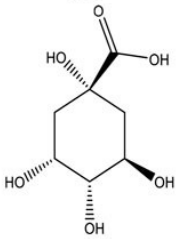
No.	R
(**210**)	H
(**211**)	OH



(**212**)



No.	R
(**213**)	CH_3
(**214**)	CH_2-CH_3



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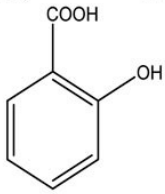
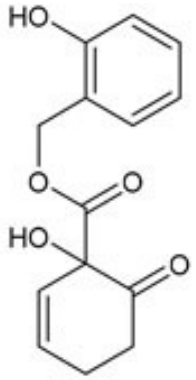
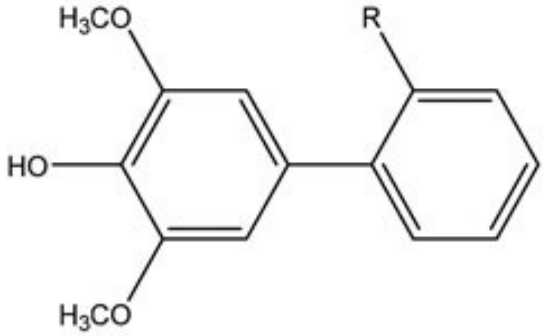


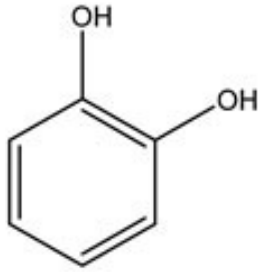
(**216**)



(217)



No.	R
(218)	H
(219)	OCH_3
(223)	OH



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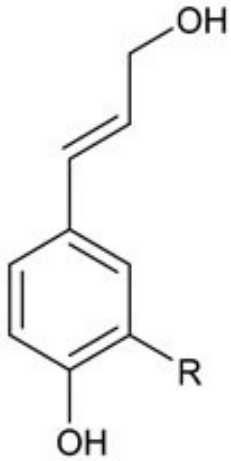
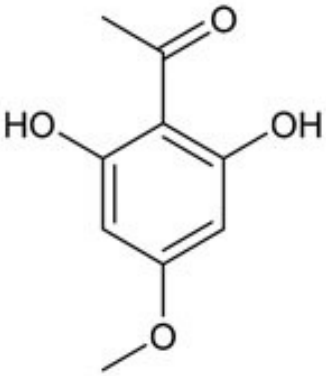
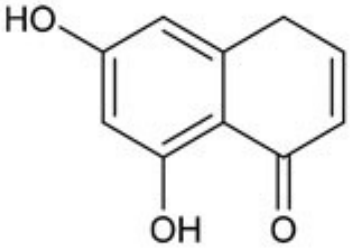


No.	R
(221)	OCH_3
(222)	H



(224)



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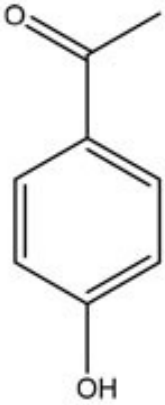

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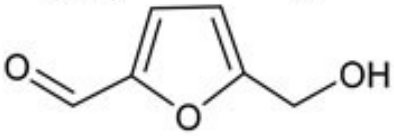
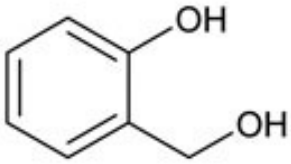
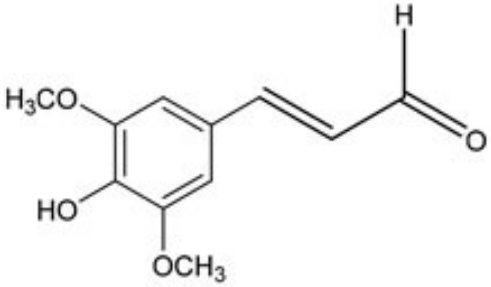


(227)



(228)



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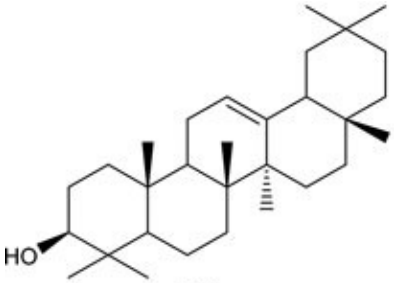

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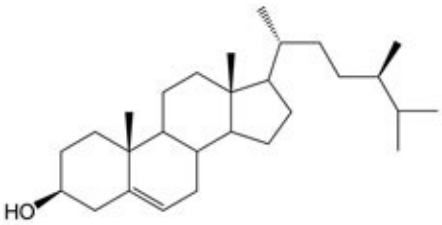

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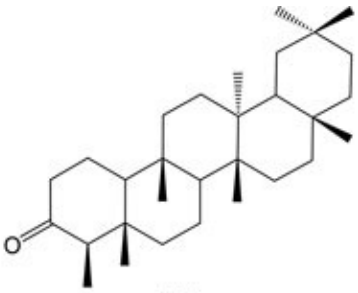

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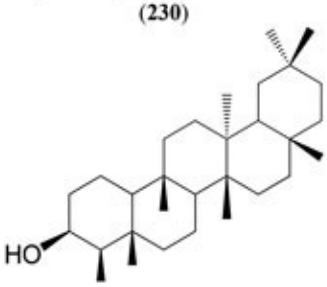

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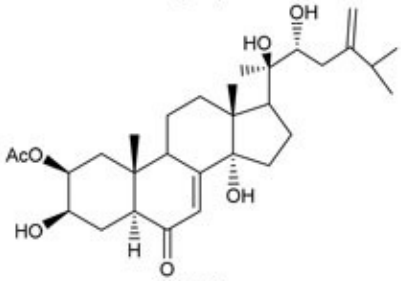

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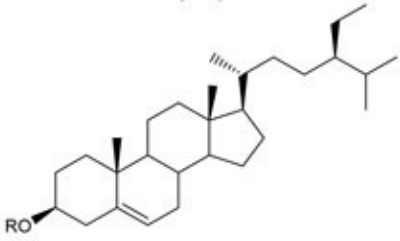
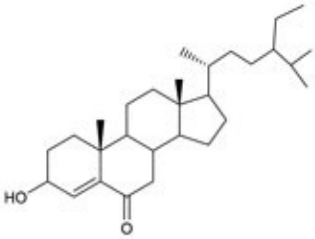


No.	R
(235)	H
(236)	Ac
(237)	Glc.



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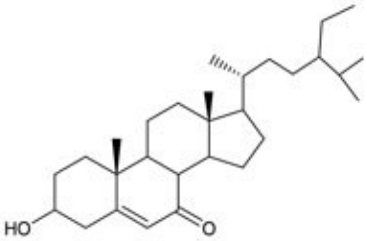

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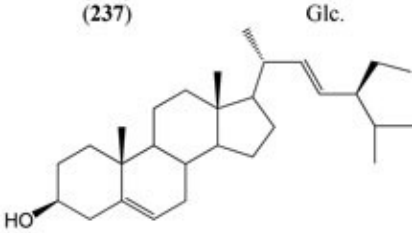

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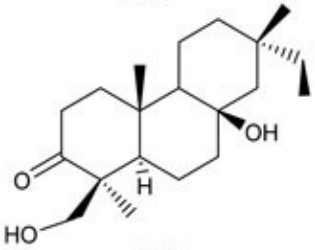

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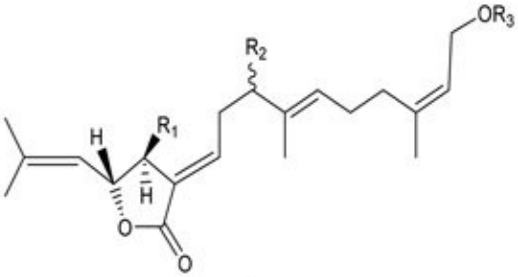
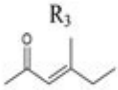
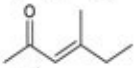
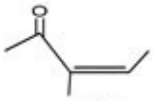
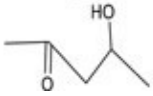
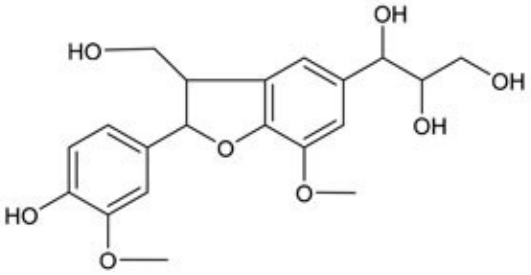


No.	R_1	R_2	R_3
(242)	OH	H	
(243)	OH	OAc	
(244)	OH	OAc	
(245)	OH	H	



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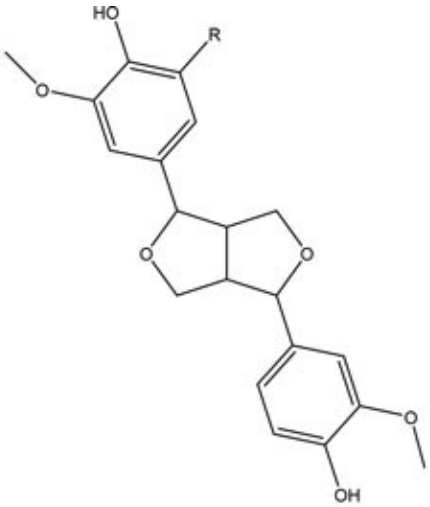
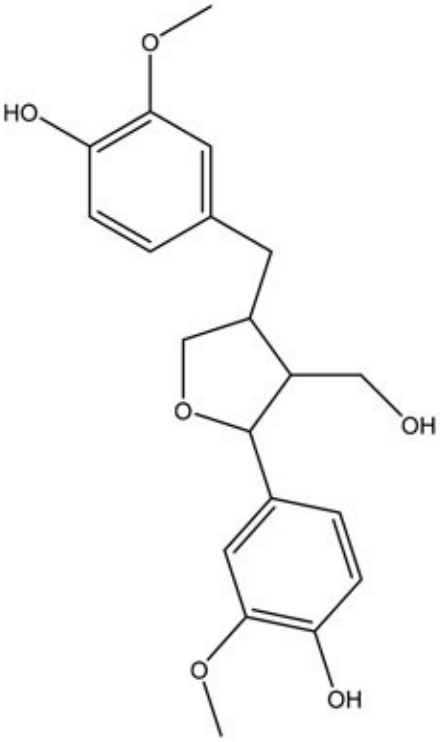


No.	R
(248)	**H**
(252)	OCH_3



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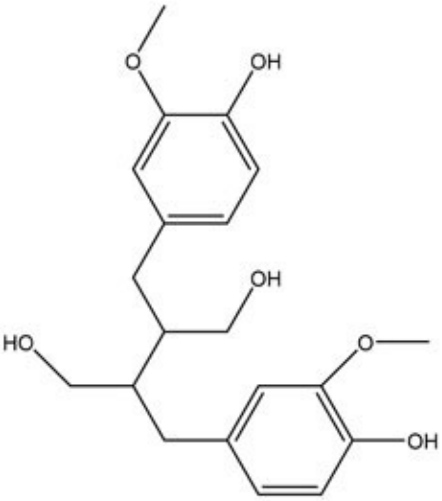

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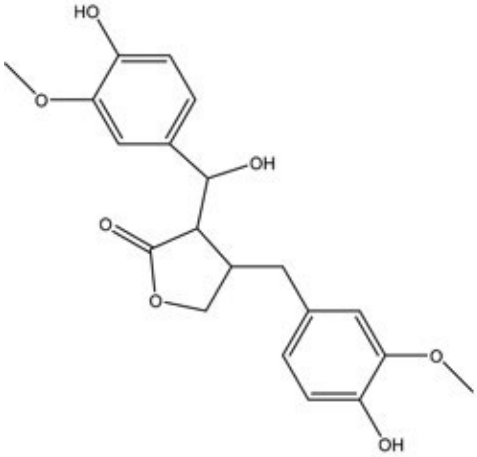

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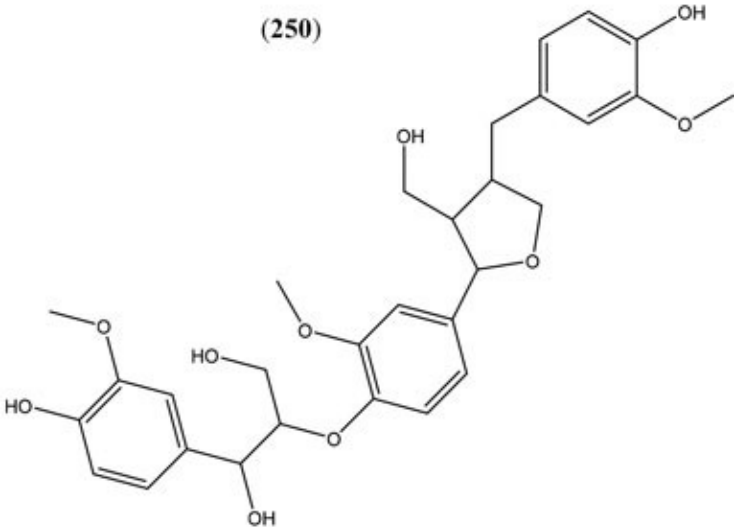

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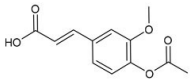

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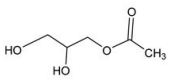

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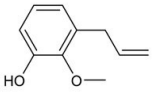

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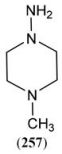

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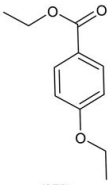

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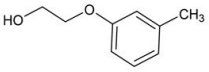

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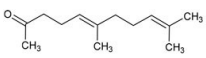

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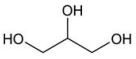

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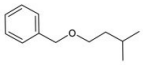

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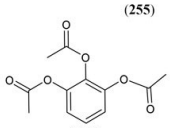

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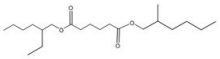

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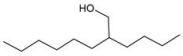

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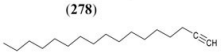

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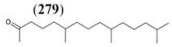

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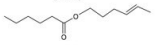

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CH_3-$(CH_2)_{34}$- CH_3

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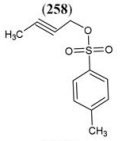

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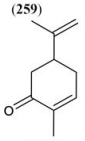

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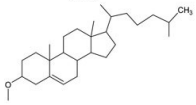

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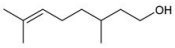

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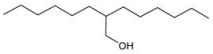

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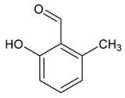

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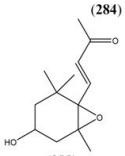

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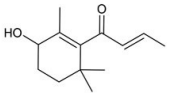

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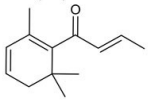

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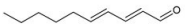

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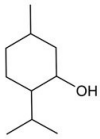

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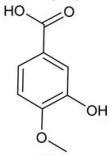

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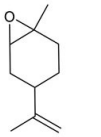

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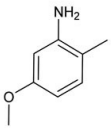

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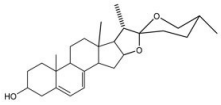

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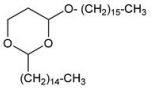

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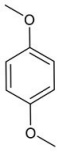

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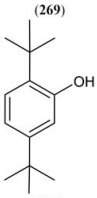

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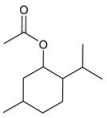

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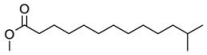

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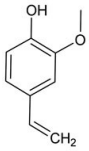

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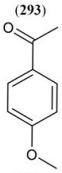

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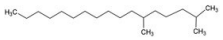

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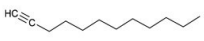

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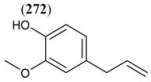

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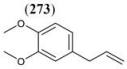

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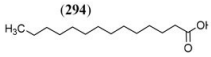

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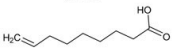
CH_3-$(CH_2)_{17}$- CH_3

(299)



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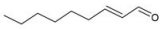

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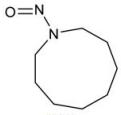
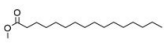
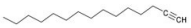


(302)

(303)



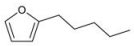
(304)



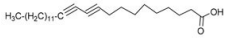
(305)

CH_3-$(CH_2)_{48}$- CH_2-OH

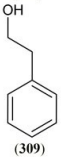
(306)



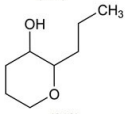
(307)



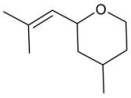
(308)



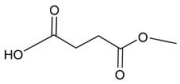
(309)



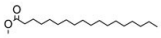
(310)



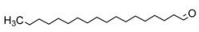
(311)



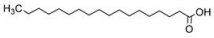
(312)



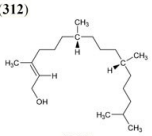
(313)



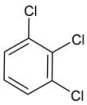
(314)



(315)



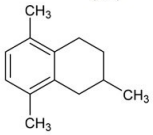
(316)



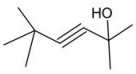
(317)

CH_3-$(CH_2)_{41}$- CH_3

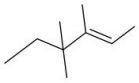
(318)



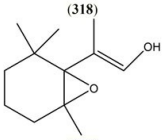
(319)



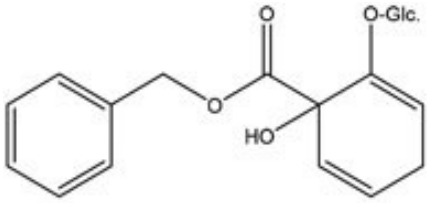
(320)



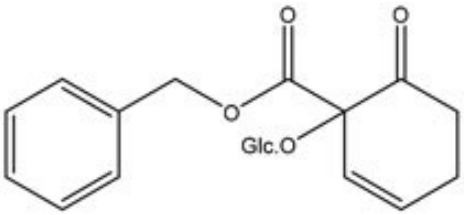
(321)



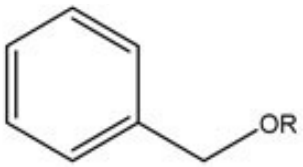
(322)



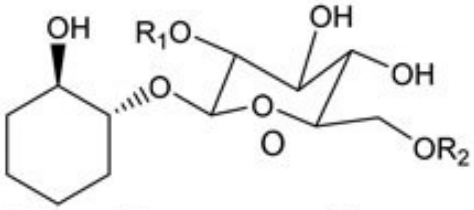
(172)



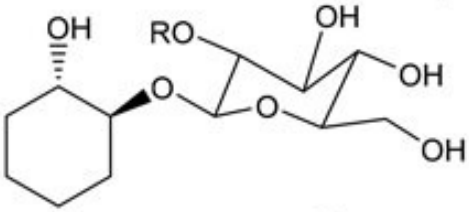
(173)



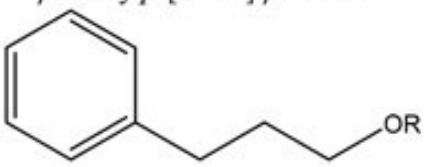
No.	R
(174)	*β*-D-Api*f*-[1→ 6]-*β*-D-Glc.
(175)	*β*-D-Xyl*p*-[1→ 6]-*β*-D-Glc.



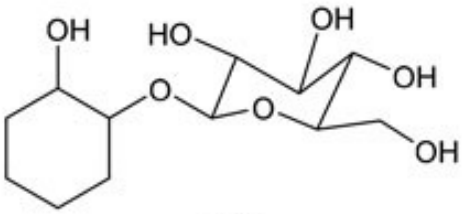
No.	R_1	R_2
(179)	H	H



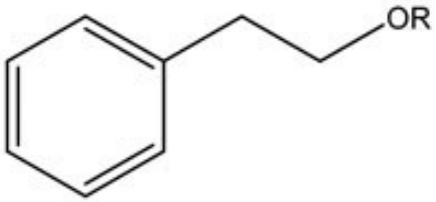
No.	R
(180)	H



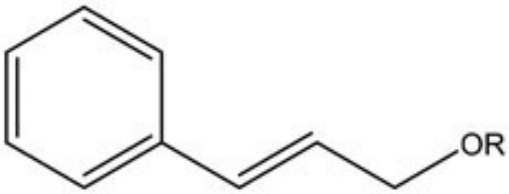
No.	R
(177)	*α*-L-Ara*f*-[1→ 6]-*β*-D-Glc.
(178)	*α*-L-Ara*p*-[1→ 6]-*β*-D-Glc.
(185)	*β*-D-Api*f*-[1→ 6]-*β*-D-Glc.



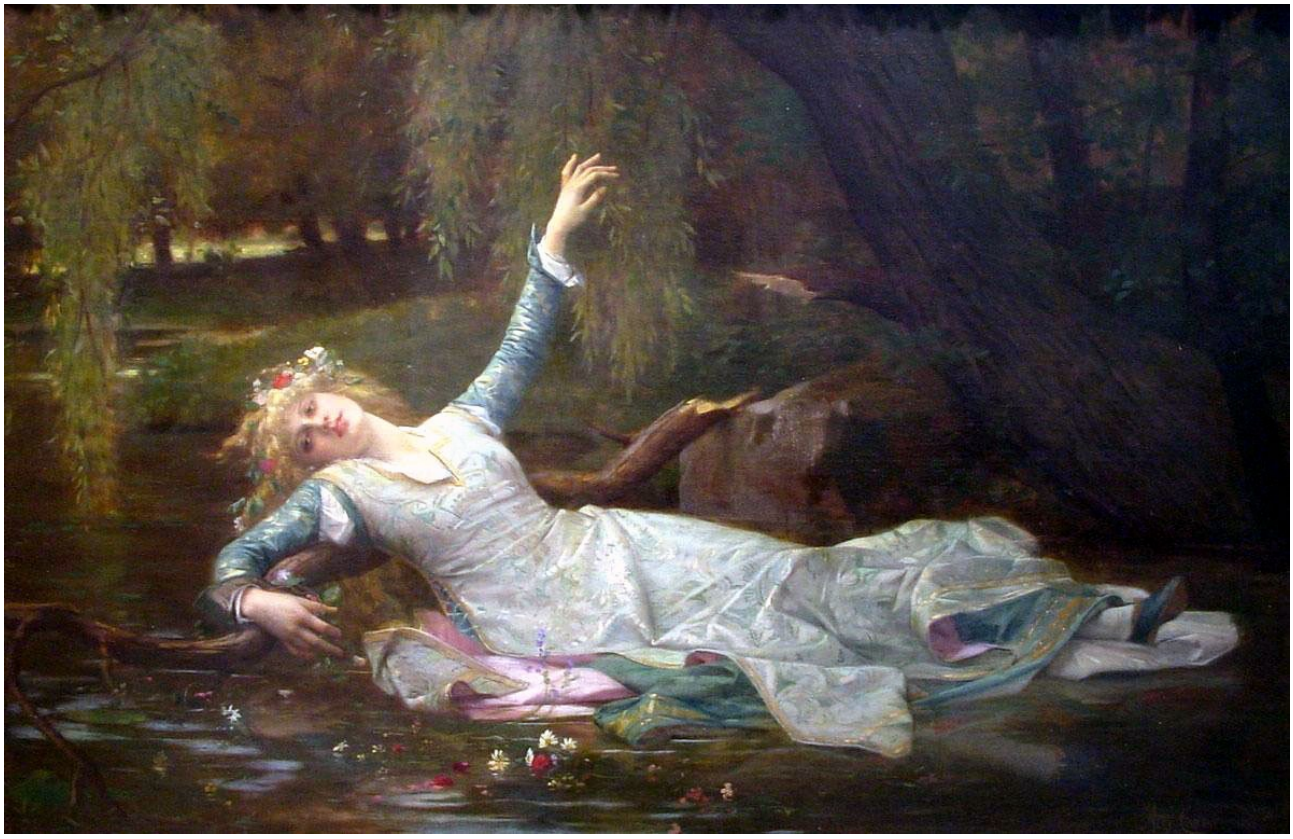
(181)



No.	R
(182)	*α*-L-Ara*f*-[1→6]-*β*-D-Glc.
(183)	*α*-L-Ara*p*-[1→6]-*β*-D-Glc.
(184)	*β*-D-Api*f*-[1→6]-*β*-D-Glc.



No.	R
(176)	α-L-Rh.-[1→ 6]-*β*-D-Glc.
(186)	L-Ara*f*-[1→ 6]-*β*-D-Glc.
(187)	β-D-Glc*p*
(188)	α-L-Ara*p*-[1→ 6]-*β*-D-Glc.



Ofèlia caiguda del salze i a punt de morir ofegada; personatge fictici de la tragèdia de Hàmlet, de SHAKESPEARE. Oli d'ALEXANDRE CABANEL (segle XIX).