KU LEUVEN

FACULTEIT WETENSCHAPPEN

Antimicrobial activity of *Camellia oleifera* leaves infected with the fungus *Exobasidium gracile*

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EXTRA EXPLANATORY PAGE

During the first weeks of the second semester, I spent an average of about 2-3 hours for four days of the week in the lab. I was able to learn a lot from my supervisor and other master and PhD students during that time. Besides testing the antimicrobial activity of the plant that was originally assigned to me, I also helped out my supervisor by testing the silica gel column fractions of two other plants and retesting a collection of crude plant extracts to confirm earlier results. This allowed for me to become really familiar with the experimental work to study the antimicrobial properties of medicinal plants. My practical work mainly focused on the preparation and testing of plant extracts or purified fractions of a plant using 96-well plates, reading out the results and analyzing the data. I also learned to understand the larger trends in the method of bio-assay guided isolation to study medicinal plants; how one selects potential plant candidates (by for example looking at the traditional use of the plant as a medicine), starts testing the crude extracts and then follows the active compounds with several purification steps to eventually isolate and determine the structure of individual bioactive compounds. This, in combination with the necessary practical skills, is the most valuable thing I learned. Normally, as mentioned in the project proposal, I would also perform some HPLC work to start isolating some of the active compounds in my plant. However, in consultation with my supervisor, we agreed that the given time frame of the experimental work was too short for this and it would not be worthwhile. As a replacement, I performed more work on testing the activity of extracts/fractions given to me and also constructed a compound database for my plant. The compound database serves as a basis for anyone who wants to start doing HPLC work on a plant, considering the compounds that you isolate with HPLC will most likely be found in that database as well and can thus be compared with it. Besides this, a greater insight is formed of the chemical composition of the plant and the surrounding literature. Although I did not perform any HPLC work myself, I did learn quite a lot from observing my supervisor and other master and PhD students using the HPLC machinery and explaining to me how they interpreted the data.

ABSTRACT

Camellia oleifera is a widely cultivated commercial crop of great economic and cultural importance in the southeast of China. *Exobasidium gracile* is a parasitic fungus commonly known to infect *Camellia* crops, causing abnormal leaf formation and damaging the quality of harvests. Notably, the infected leaf is used as a food or tea by local people for medicinal and health purposes. Hence, this project aims to determine the antimicrobial properties of extracts from *C. oleifera* leaves infected by *E. gracile*, partially purified with silica gel column chromatography. As part of a larger experiment in bio-assay guided isolation, the goal of this project was to select the most active fractions from the silica gel column in an attempt to isolate the individual bioactive compounds in the future. My supervisor for this project, Haibo Hu, already prepared and tested crude extracts from the infected leaves, showing significant inhibition against several human pathogens. Silica gel column fractions were tested against a Gram-positive bacterium (*Staphylococcus aureus*), a Gram-negative bacterium (*Escherichia coli*) and a fungus (*Candida albicans*). Growth inhibition was measured using absorption spectrophotometry in 96-well plates. Meanwhile, a compound database of the *Camellia* genus was constructed to aid in future identification of active compounds and gain greater insights in the chemical composition of infected leaves. The results demonstrated that many silica gel column fractions were highly active against *S. aureus*, while few active fractions were found against *E. coli* and *C. albicans*.

"The student declares that the submitted text (including graphs) is original work, written using the wording of the student and reflecting the student's English language proficiency. The text acknowledges, to the best of the ability and knowledge of the student, previous ideas and data."

1. INTRODUCTION

Camellia oleifera is a plant species belonging to the family of Theaceae. In the southeast of China, this plant is extensively cultivated with an annual output of approximately 560 million tons (Xie *et al*. 2018). The seeds of *C. oleifera* are used for making a high quality edible oil, commonly referred to as tea seed oil. Compared to olive oil, it has higher antioxidant activity, a healthier fatty acid composition and superior cooking qualities. Traditionally, the oil has also been used as a medicine for stomachaches and burn injuries (C. P. Lee and Yen 2006). *C. oleifera* is also often found in botanical gardens due to the aesthetic pleasure of its flowers. Ultimately, this plant is of great economic and cultural importance in China. *Exobasidium* is a genus of basidiomycetous fungi comprising about 170 species, all known to be plant pathogens (C. K. Lee *et al*. 2015). *Exobasidium gracile* is one such fungus with economic relevance because it infects *C. oleifera* crops. Infections of *C. oleifera* with *E. gracile* cause an abnormal formation of leaves (Fig. 1a, b and c), which damages the plant, ruins the quality of the harvests and can sometimes lead to major crop losses (C. K. Lee *et al*. 2015; Dong *et al*. 2019; B.N. CHAKRABORTY 2012).Locally, in the Hunan province of China, the infected leaves are used by local folk as a health food and are reported to have a sweet and refreshing taste (Dong *et al*. 2019).

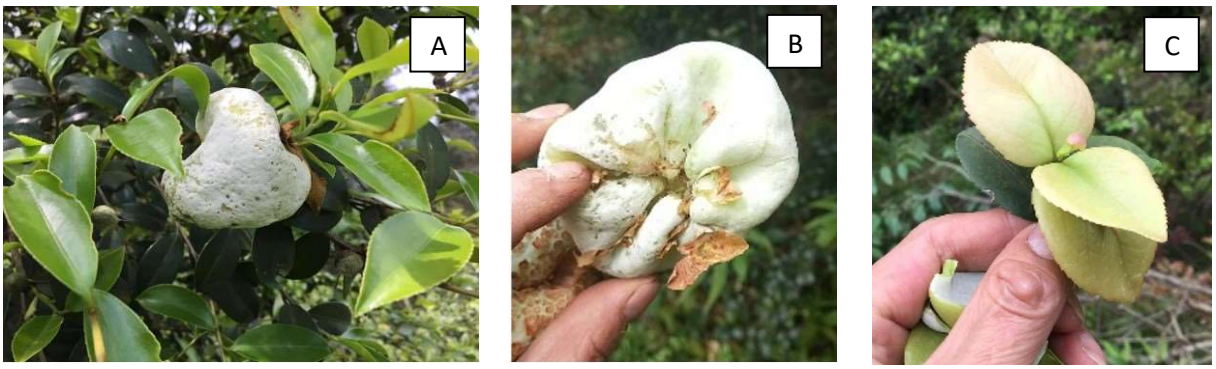

Figure 1. *C. oleifera* infected with *E. gracile.* **A, B:** Infected fruits **C:** Infected leaves, commonly referred to as "hypertrophied leaves" *(Photographs by Haibo Hu)*

In commercial cultivation of *C. oleifera*, infection of the leaves occurs especially in the beginning of summer, when the plant starts producing more leaves. Often, the potential functional use of the infected leaves is neglected. One study, conducted by Dong *et al*. (2019), showed that the infected leaves had higher antioxidant activity and possessed greater phenol and total sugar contents than healthy leaves. Dong *et al* (2019) further isolated two bioactive polysaccharides from the fungus *E. gracile* and showed that they had significant immunoregulatory activity by activating macrophages in the blood. Finally, Dong *et al* (2019) concluded that the infected leaves were worthy of further investigation and could be used as a functional food in the form of a tea beverage. A commercial and functional use for the leaves in the form of an antibiotic or health food would make sense, but requires more research.

Although the literature on the antimicrobial activity of infected leaves of *C. oleifera* is non-existent, numerous studies have reported significant inhibition of bacterial and fungal growth from non-infected *C. oleifera* seed, oil and saponin extracts (Feás *et al*. 2013; X. F. Zhang *et al*. 2014; Ye *et al*. 2015; Zhu *et al*. 2019; Zhao *et al*. 2020; D. Zhang *et al*. 2020; Qiu *et al*. 2020). In combination with the local use of the infected leaves as a health food, this is a

strong indicator that antimicrobial or other bioactive compounds might be found in the infected leaves, therefore justifying the investigation of its antimicrobial properties.

Thus, in this project, infected leaf extracts by different solvents were tested against human pathogens to figure out the best solvent for extracting. Secondly, infected leaves were extracted by the selected solvent for silica gel column separation. Then, the silica gel column fractions were also assessed against the related microorganisms, including a Gram-positive bacterium (*Staphylococcus aureus*), a Gram-negative bacterium (*Escherichia coli*) and a fungus (*Candida albicans*). Meanwhile, a compound database and literature study of secondary metabolites in the *Camellia* genus was also performed to aid in further purification of the extracts and gain greater insights in the chemical composition of the infected leaves.

2. SPECIFIC AIMS

The World Health Organization considers the phenomenon of antibiotic resistance as one of the biggest threats to global health, food security and development today. This makes the need for new antibiotics more crucial than ever. An interest has grown in the antimicrobial properties of natural substances, due to their high complexity and wide variety. Hence, this project will aim to determine the antimicrobial properties of *Camellia oleifera* leaves infected with the parasitic fungus *Exobasidium gracile*.

3. MATERIALS AND METHODS

3.1 Overall study design

This project was part of a larger bio-assay guided isolation experiment, one of the successful methods for investigating traditional plant medicines as a source for new drugs. Crude extracts from a wide range of plants are tested and active ones (>50% growth inhibition) are further purified until the individual compounds can be isolated. The structure of these compounds is then determined by mass spectrometry (MS) and nuclear magnetic resonance (NMR) spectroscopy (Fig. 2).

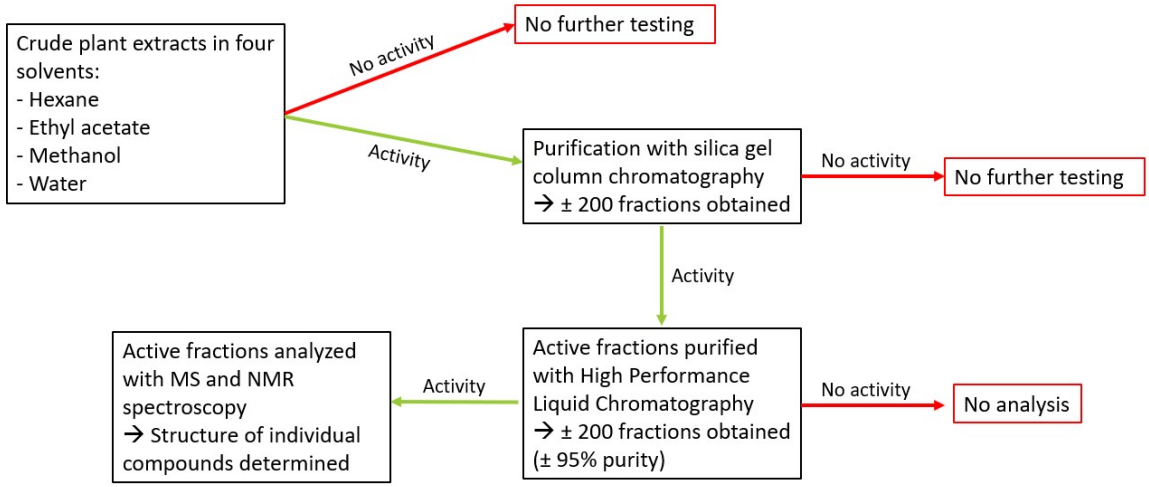

Figure 2: Schematic representation of the overall study design.

In this project, silica gel column fractions of one plant (infected leaves of *C. oleifera*) were prepared and tested. Active fractions were then selected for further analysis.

3.2 Culturing bacteria and fungus

S. aureus (ATCC 6538) and *E. coli* (ATCC 47076) were inoculated onto Luria Bertani (LB) agar Petri dishes and incubated overnight at 37°C. Then, bacteria were inoculated into a liquid LB medium and again incubated overnight at 37°C in a shaking incubator. Once liquid media were colonized, the bacteria were diluted to the desired density (OD = 0,003) for testing using absorption spectrophotometry. *C. albicans* (SC 5314) was prepared in the same way using Yeast Peptone Dextrose (YPD) agar and liquid medium.

3.3 Preparation and testing of crude plant extracts

Crude extracts were prepared in bulk and tested by Haibo Hu, followed by a repetition of the experiment by myself. Grinded and dried plant powder were added to four different solvents: hexane, ethyl acetate, methanol and water. Bulk extracts were then sonicated four times over 24 hours to improve the extraction of the compounds. 1,5 mL of the crude

extracts was transferred to pre-weighed Eppendorf tubes, and allowed to dry in a fume hood. Water extracts would easily get contaminated with microorganisms, and were therefore dried in a Speedvac. To make sure no contaminants remained, water extracts were dissolved in ethanol (70%) after the drying process and then allowed to dry again. Once dried, DMSO was added to the Eppendorf tubes to obtain a final concentration of 20 mg/mL. Extracts that did not dissolve completely were sonicated for ±15 minutes to get everything into solution. Extracts were then tested against several human pathogens. The inhibition values and the IC_{50} of active fractions were also calculated.

3.4 Silica gel column chromatography and sample preparation

The silica gel separation was performed using a manually prepared silica gel column with a solid phase of silica powder mixed with a solution of 95% hexane and 5% ethyl acetate. The mobile phase consisted of hexane (A), ethyl acetate (B), methanol (C) and 25% acetic acid in methanol (D) with a gradient from 95% A and 5% B to 100% D, a 5-20% concentration step every minute and a flow rate of 40 mL/min. Fractions were collected in 50 mL falcon tubes. In total, 193 fractions were obtained.

A 1,5 mL aliquot of each collected fraction was transferred to Eppendorf tubes. Fractions were then left to dry overnight in a fume hood. 150 µL of DMSO (dimethyl sulfoxide) was added to the tubes to dissolve the dried residues. DMSO is a widely available and one of the most commonly used solvents for dissolving a wide variety of compounds. However, other solvents such as DMF (dimethylformamide) or chloroform could be used. Fractions that did not dissolve completely were sonicated for ±15 minutes.

3.5 Testing silica gel column fractions in 96-well plates

After the preparation of silica gel column fractions and culturing of the bacteria or fungus, both were added to 96-well plates (Fig. 3). For the bacteria (*S. aureus* and *E. coli*), 10 µL of each fraction and 190 µL of diluted liquid culture were added to the wells. Fungi are typically more sensitive to DMSO than bacteria (fungi tolerate maximum 2% DMSO and bacteria up to 5% DMSO), thus only 4 µL of each fraction and 196 µL of liquid medium was added to the wells for *C. albicans*.

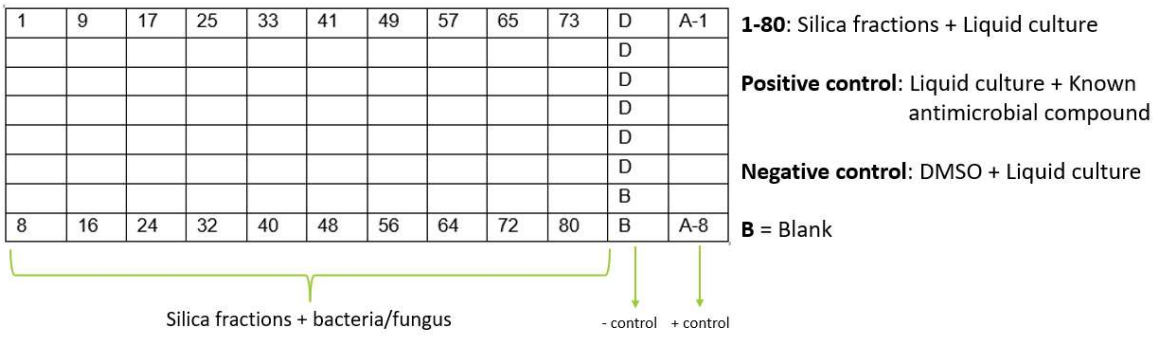

Figure 3: Lay-out of the 96-well plates for testing the silica fractions.

Taking into account the effect of DMSO on the growth of the bacteria or fungus, a negative control was added for each plate. In these wells, only DMSO and liquid culture was added. A positive control was also used to compare the effect of the fractions to a known antimicrobial compound. Ciprofloxacin and miconazole were used for bacteria and fungus respectively. Control plates containing only the fractions and liquid medium (no bacteria or fungus) were also prepared to correct for the color of the extracts later. The preparation of the plates was performed in sterile conditions under a laminar flow hood to prevent any contamination. Once prepared, the plates were put in a shaking incubator at 37°C for 20-22 hours.

3.6 Absorption spectrophotometry and calculation of inhibition values

The growth of the bacteria and fungus were quantified by determining the optical density (OD) in each well. This was done using an absorption spectrophotometer in combination with the *SkanIt Plate Reader Software* by Thermo Fisher Scientific (Waltham, Massachusetts, United States). Inhibition values for each fraction were calculated as follows:

$$IV = 100 - \frac{OD - OD_c}{OD_{NC}} * 100$$

OD represents the optical density measured in the plates containing extract and liquid culture. OD_C is the optical density measured in the control plates with extract and only medium (no bacteria or fungus). These values were subtracted from one another to correct for the color of the fractions, which might contribute to a higher OD value and give false negative results. OD_{NC} is the mean of the OD values from the negative controls in each specific plate.

Besides quantifying the growth of the bacteria or fungus using spectrophotometry, a visual analysis of the plates after incubation was also performed to determine if growth inhibition occurred. Wells where the bacteria or fungus grow normally appear rather cloudy or turbid. Wells where the micro-organisms did not grow appear very clear. This was also a great indicator to determine the activity of a fraction and was always taken into consideration. The difference in visual appearance can be clearly noticed between negative and positive controls (Fig. 4).

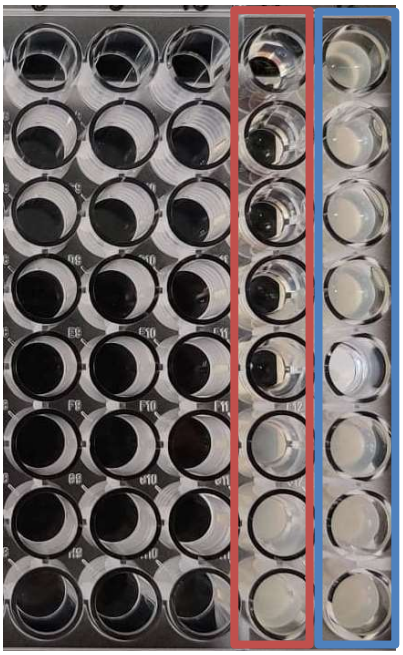

Figure 4: The positive control (red, left) contains a known antibacterial compound (ciprofloxacin), the concentration decreases from top to bottom. The negative control (blue, right) contains only DMSO and liquid culture.

3.7 Compound Database

In preparation for the identification of individual compounds in the future, a compound database of all known secondary metabolites in the *Camellia* genus was constructed (Appendix 1). Compounds were searched in the *Dictionary of Natural Products* with "*Camellia*" as key word (Fig. 5). In total, 486 compounds were found. Each compound was then searched on *PubChem* to obtain its chemical structure. Finally, a literature search for each compound was performed on *Google Scholar* and *SciFinder* with "*Camellia*" and *"[compound name]"* as key words. For the genus *Exobasidium*, no compounds could be found n the *Dictionary of Natural Products.*

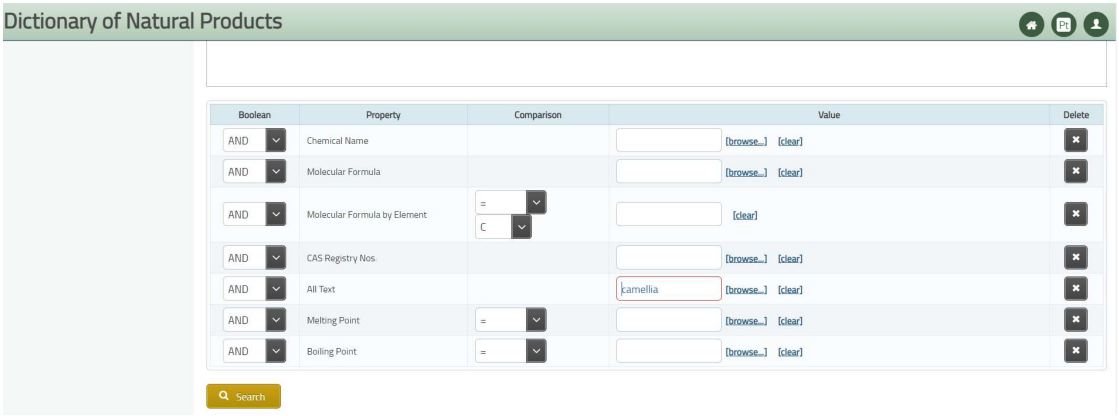

Figure 5: Compound search on the *Dictionary of Natural Products* for the genus *Camellia.*

4. RESULTS

4.1 Crude extracts

Crude extracts showed significant activity against several human pathogens (Fig. 6). 100% inhibition of the growth of *S. aureus* (SA) was found in the hexane and ethyl acetate extracts. For *C. albicans* (CA), just over 50% growth inhibition was found in the hexane and methanol extracts. No activity was found for *E. coli* (EC).

Latin name	No.	SA	SE	ML	LI	EF	BC	EC	PA	SS	AB	EA	BD	SF	SLE	AH	CA	CP	CAU	CG	SC
infected leaf of Camellia oleifera Abel	**hexane**	107	20	104	102	-14	65	27	28	45	-4	13	89	16	9	40	59	23	11	8	62
	ethyl actate	102	21	92	91	81	71	36	17	49	-6	6	100	28	-15	48	31	18	-4	11	12
	methanol	40	25	77	26	-34	69	19	12	-13	13	2	93	12	-1	39	52	95	101	100	101
	water	23	-26	16	38	-16	-16	-5	22	-4	18	4	16	-19	5	54	-50	-12	-2	6	28

Figure 6: Inhibition values of crude extracts from the infected leaves against 6 Gram-positive bacteria (red), 9 Gram-negative bacteria (black) and 5 fungi (blue).
Gram-positive bacteria: *Staphylococcus aureus* (ATCC6538, Rosenbach), *Staphylococcus epidermidis* (ATCC 1457), *Micrococcus luteus* (DPMB 3), *Listeria innocua* (LMG 11387), *Enterococcus faecalis* (HC-1909-5) and *Bacillus cereus* (LMG9610);
Gram-negative bacteria: *Escherichia coli* (ATCC 47076), *Pseudomonas aeruginosa* (PAO1), *Shigella sonnei* (LMG 10473), *Acinetobacter baumannii* (RUH134), *Enterobacter aerogenes* (ATCC 13048), *Brevundimonas diminuta* (a gift from Prof. Rob Lavigne's lab in KU Leuven), *Shigella flexneri* (LMG10472), *Salmonella enterica* subsp. *enterica* (ATCC 13076) and *Aeromonas hydrophila* (ATCC 7966);
Fungi: *Candida albicans* (SC 5314), *Candida parapsilosis* (ATCC 22019), *Candida auris* (OS299), *Candida glabrata* (ATCC 2001) and *Saccharomyces cerevisiae* (ATCC 7754).

4.2 Silica gel column fractions

Silica gel column fractions 46-105 showed high growth inhibition (up to 100%) of the Gram-positive bacterium *S. aureus* (SA) (Fig. 7; G1, G2 and G3). Several fractions in the same range also showed some activity against the Gram-negative bacterium *E. coli* (EC) (Fig. 7; G1 G2 and G3). However, the growth inhibition was not visually clear, as was the case with *S. aureus* (Fig. 8). Fraction 56 did show some visual activity for *E. coli* (Fig. 8) and had an inhibition value of 99%. No significant growth inhibition was found for the fungus *C. albicans* (CA).

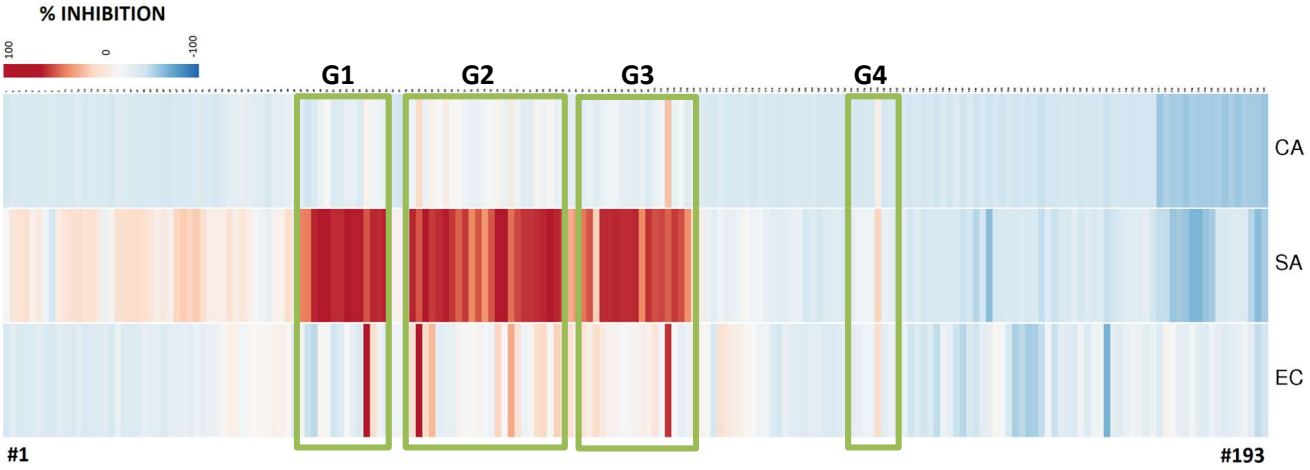

Figure 7: Heat map of the inhibition values of the silica fractions. Red = high inhibition, blue = low inhibition

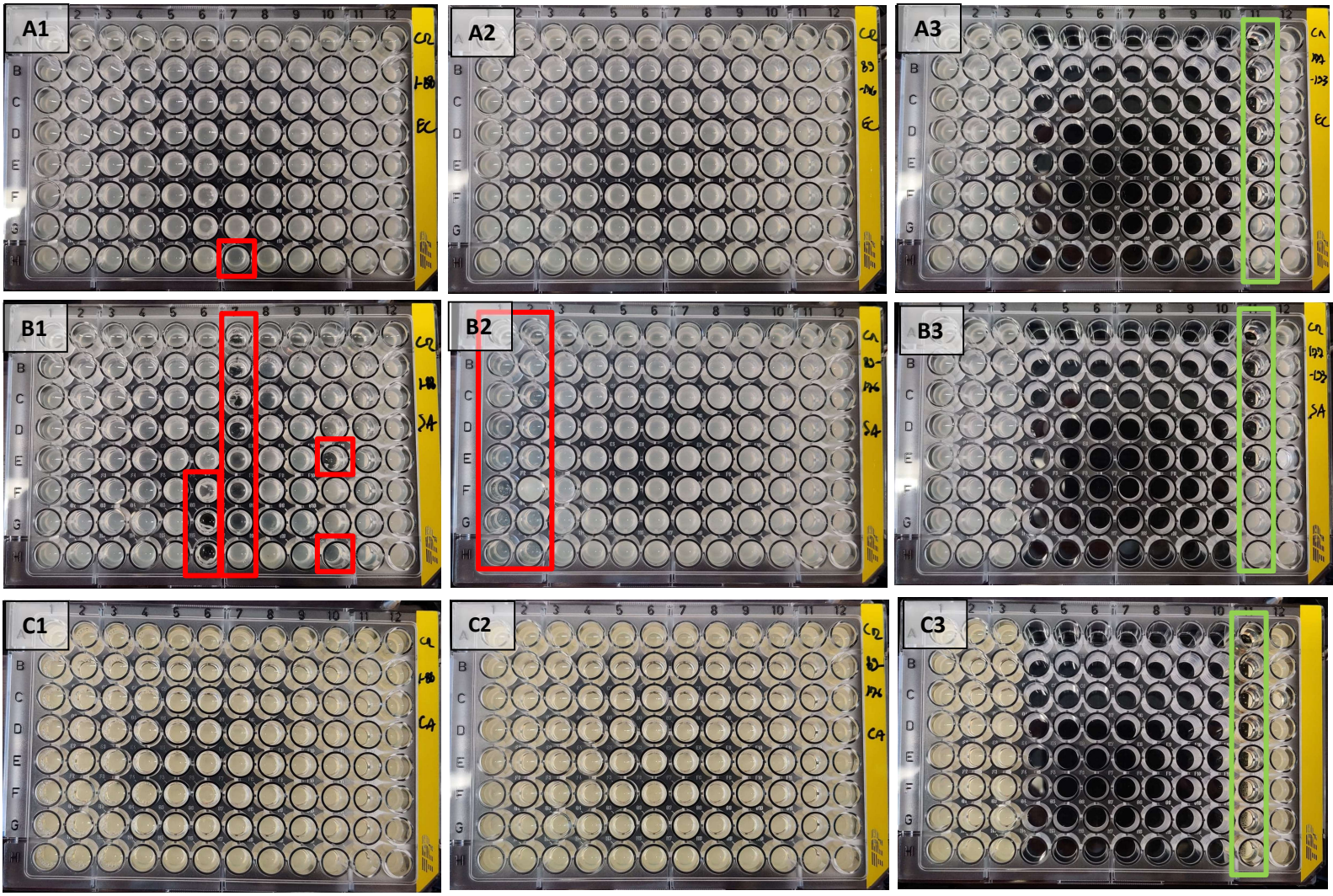

Figure 8: Plates after incubation. The last column of each plate contains the negative control. Plates A3, B3 and C3 contain the positive control (marked in green). Wells where visual activity could be distinguished are marked in red.
A1-A3: Fractions 1-193 after incubation with *E. coli*. All wells appear cloudy/turbid. Hence, almost no visual activity can be distinguished.
B1-B3: Fractions 1-193 after incubation with *S. aureus*. Some wells appear very clear and see-through, like the positive controls. This indicates significant growth inhibition.
C1-C3: Fractions 1-193 after incubation with *C. albicans*. No visual activity can be distinguished.

5. DISCUSSION

The extracts of infected leaves of *C. oleifera* partially purified by silica gel column chromatography showed high inhibition against the Gram-positive bacterium *S. aureus*. One fraction (#56) showed significant growth inhibition of *E. coli* that could also be noted visually. No significant activity was found for the fungus *C. albicans* (Fig. 7 and 8). It should be noted that some fractions seem to show some activity against *E. coli* and *C. albicans* according to the heat map (for example Fig. 7; G3 and G4). However, it is highly likely that this is due to the very high OD value of the control (high contribution of the extract to the OD value) for these specific fractions, since no activity could be discerned visually. Based on spectrophotometric results and visual analysis of the plates, it was concluded that fractions 47, 48, 52, 77 and 94 be further separated and tested.

Earlier testing of the crude extracts showed significant activity against *S. aureus* and *C. albicans* (Fig. 6), especially in the hexane and ethyl acetate solvents. Besides this, crude extracts also showed great activity against other Gram-positive bacteria and several fungi. No activity was found for *E. coli* in the crude extracts. The activity against *S. aureus* is therefore strongly confirmed by the testing of the silica gel column fractions. However, contrary to the crude extracts, no activity in the purified fractions was found for *C. albicans* and fraction 56 did show significant growth inhibition of *E. coli*. It could be hypothesized that the activity against *C. albicans* was caused by a synergy of compounds in the crude extracts, and thus the activity was lost in the purification process. It is also possible that some of the bioactive compounds have simply degraded over time. For *E. coli*, it seems surprising that no activity was seen in the crude extracts and one silica gel column fraction did show significant growth inhibition. Most likely, it is due to an active compound that is present at low concentrations in the crude extracts and got concentrated in fraction 56. Anyhow, a repetition of the experiments should be performed to confirm these results.

In combination with the earlier findings of Dong. *et al* (2019), who showed that the infected leaves have greater antioxidant activity, higher phenol and sugar contents and possess immunoregulatory effects by activating macrophages in the blood, the results of this project support the potential commercialization of the infected leaves as a functional health food. The local use of infected leaves as a health food in the Hunan province of China (Dong *et al*. 2019) further supports this notion and also indicates safe oral use of the infected leaves. Ultimately, the infected leaves should definitely be considered and further investigated as a natural source of antibiotics.

Although it was shown that the infected leaves contain certain antimicrobial compounds, it is unclear what the effect of the leaf infection is on the antimicrobial activity. Is the activity generated by the leaves or by the fungus, or both? If produced by the leaves, does *E. gracile* reduce or increase the concentrations of the bioactive compounds? Does *E. gracile* produce antimicrobial compounds of its own? Oil and saponin extracts of *C. oleifera* seeds (not the leaves) do show significant inhibition of *E. coli* (Ye *et al*. 2015; Qiu *et al*. 2020; Zhu *et al*. 2019; Zhao *et al*. 2020; X. F. Zhang *et al*. 2014; Feás *et al*. 2013), and activity against *C. albicans* by *C. oleifera* oil extracts has also been shown by Feás *et al*. (2013). We cannot say, however, if this difference in results is due to the infection of the leaf or the variation in chemical composition between the leaves and the seeds (which are expected to differ considerably). In *Camellia sinensis* leaves infected by *Exobasidium vexans*, a decrease in antifungal activity was noticed in comparison to healthy leaves (B.N. CHAKRABORTY 2012). This indicates that it is possible that *E. gracile* has a negative effect on the antimicrobial activity, but we cannot say this with certainty. To study this, the healthy leaves of *C. oleifera* and the mycelium of *E. gracile* should also be tested separately, followed by a comparison of all the results. Besides this, a thorough chemical analysis of the compounds produced by *E. gracile* is yet to be performed. This would give greater insights in the chemical composition of the infected leaves. Dong. *et al* (2019) already showed the presence of very complex bioactive polysaccharides produced by *E. gracile*, a study of its chemical composition might therefore be very rewarding.

The next step in this project would be to select the most promising fractions and further purify them with High Performance Liquid Chromatography (HPLC) or other purification

techniques. The activity can then be traced down to the individual compounds, which will be further analyzed and their structure determined.

6. CONCLUSION

Testing of the crude extracts of the infected leaves of C. oleifera demonstrated its antimicrobial activity against a wide range of Gram-positive bacteria and some fungi. Silica gel column fractions further confirmed the activity against *S. aureus*, which can be generalized to other Gram-positive bacteria, but no activity was found against *E. coli* and the fungus *C. albicans*. Fractions 47, 48, 52, 77 and 94 from the silica gel column were selected for further analysis. The results indicate that the infected leaves are a great candidate as a natural source of antimicrobial compounds and should be further investigated as such. Furthermore, it seems reasonable to say that the infected leaves could be used as a functional health food, as suggested by Dong *et al* (2019), for preventing bacterial or fungal infections.

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APPENDIX 1 – COMPOUND DATABASE

#	COMPOUND NAME	MOLECULAR FORMULA	STRUCTURE AVAILABLE	SOURCES
1	Acetophenone	C_8H_8O	1	[1]
2	2-Acetylpyridine	C_7H_7NO	1	
3	2-Acetylpyrrole	C_6H_7NO	1	
4	Achilleol A; $\Delta^{1(10)}$-Isomer	$C_{30}H_{50}O$	1	
5	Achilleol B; $\Delta^{1(10)}$-Isomer	$C_{30}H_{50}O$	1	
6	Adenosine nucleosidase		0	
7	Amelliaone A	$C_{25}H_{26}O_5$	0	
8	Amelliaone B	$C_{24}H_{24}O_5$	0	
9	Amelliaone B; 4'-Deoxy	$C_{24}H_{24}O_4$	0	
10	Amelliaone D	$C_{25}H_{26}O_5$	0	
11	Amelliaone E	$C_{24}H_{24}O_5$	0	
12	8-*C*-Ascorbylepigallocatechin 3-*O*-gallate	$C_{28}H_{24}O_{17}$	1	
13	Assamicain A	$C_{44}H_{36}O_{22}$	1	
14	Assamicain A; 1'-Epimer	$C_{44}H_{36}O_{22}$	0	
15	Assamicain C	$C_{44}H_{36}O_{22}$	1	
16	Benzyl alcohol; *O*-[β-D-Xylopyranosyl-(1→6)-D-glucopyranoside]	$C_{18}H_{26}O_{10}$	0	[2]
17	Benzyl formate	$C_8H_8O_2$	1	
18	2,2',6,6'-Biphenyltetrol	$C_{12}H_{10}O_4$	1	
19	1,5-Bis(1,3-benzodioxol-5-yl)tetrahydro-4*H*-furo[3,4-*d*][1,3]dioxane	$C_{20}H_{18}O_7$	0	
20	2,3:4,6-Bis(hexahydroxydiphenoyl)glucose; $(S,S)_{axial}$-form	$C_{34}H_{24}O_{22}$	0	
21	2-Butyl-4,5-dimethyl-3(2*H*)-furanone; (ξ)-form	$C_{10}H_{16}O_2$	0	
22	Cabraleahydroxylactone; 3-Epimer	$C_{27}H_{44}O_3$	1	
23	1(10),4-Cadinadiene; (6β,7β)-form	$C_{15}H_{24}$	0	
24	Caffeine	$C_8H_{10}N_4O_2$	1	
25	Caffeine synthase		0	
26	Camellianin D	$C_{83}H_{62}O_{50}$	1	
27	Camelliatannin C	$C_{49}H_{38}O_{28}$	1	[3]
28	Camelliatannin D	$C_{83}H_{62}O_{50}$	1	[3]
29	Camelliatannin E	$C_{49}H_{38}O_{28}$	1	[3]
30	Camelliatannin F	$C_{48}H_{34}O_{26}$	1	[3]
31	Camelliatannin G	$C_{49}H_{34}O_{29}$	1	[3]
32	Camelliatannin G; 5α-Carboxy-5β-hydroxy-3-oxo analogue	$C_{49}H_{34}O_{29}$	1	[3]
33	Camelliatannin H	$C_{68}H_{48}O_{44}$	0	[3]
34	Camelliin A	$C_{68}H_{48}O_{44}$	1	
35	Camelliin A; 1-*O*-(3,4,5-Trihydroxybenzoyl)(1β-)	$C_{75}H_{52}O_{48}$	0	
36	Camelliin B	$C_{75}H_{52}O_{48}$	0	
37	Camellimidazole A	$C_{15}H_{24}N_8O_2$	0	

38	Camellimidazole B	$C_{17}H_{29}N_9O_2$	1	
39	Camellimidazole C	$C_{15}H_{24}N_8O_2$	1	
40	Camelliol B	$C_{30}H_{52}O$	1	
41	Chafuroside A	$C_{21}H_{18}O_9$	1	
42	Chafuroside B	$C_{21}H_{18}O_9$	1	
43	Cyanidin 3-glycosides; Disaccharides, 3-*O*-[β-D-Xylopyranosyl-(1→2)-6-*O*-acetyl-β-D-galactopyranoside]	$C_{28}H_{31}O_{16}$	0	[4]
44	Cyanidin 3-glycosides; Disaccharides, 3-*O*-[β-D-Xylopyranosyl-(1→2)-6-*O*-acetyl-β-D-glucopyranoside]	$C_{28}H_{31}O_{16}$	0	[4]
45	Cyanidin 3-glycosides; Disaccharides, 3-*O*-[β-D-Xylopyranosyl-(1→2)-[3,4-dihydroxy-*E*-cinnamoyl-(→6)]-β-D-galactopyranoside]	$C_{35}H_{35}O_{18}$	0	[4]
46	Cyanidin 3-glycosides; Disaccharides, 3-*O*-[β-D-Xylopyranosyl-(1→2)-[4-hydroxy-*E*-cinnamoyl-(→6)]-β-D-galactopyranoside]	$C_{35}H_{35}O_{17}$	0	[4]
47	Cyanidin 3-glycosides; Disaccharides, 3-*O*-[β-D-Xylopyranosyl-(1→2)-[4-hydroxy-*Z*-cinnamoyl-(→6)]-β-D-galactopyranoside]	$C_{35}H_{35}O_{17}$	0	[4]
48	Cyanidin 3-glycosides; Monosaccharides, 3-*O*-[3,4-Dihydroxy-*E*-cinnamoyl-(→6)-β-D-galactopyranoside]	$C_{30}H_{27}O_{14}$	0	[4]
49	Cyanidin 3-glycosides; Monosaccharides, 3-*O*-[4-Hydroxy-*E*-cinnamoyl-(→6)-β-D-galactopyranoside]	$C_{30}H_{27}O_{13}$	0	[4]
50	Cyanidin 3-glycosides; Monosaccharides, 3-*O*-[4-Hydroxy-*Z*-cinnamoyl-(→6)-β-D-galactopyranoside]	$C_{30}H_{27}O_{13}$	0	[4]
51	2,7'-Cyclo-8,8'-lignan-3,3',4,4',5,5',9,9'-octol; (7'*S*,8*R*,8'*R*)-form, 3,3',5,5'-Tetra-Me ether, 9'-*O*-[4-hydroxy-3,5-dimethoxy-*E*-cinnamoyl-(→6)-β-D-glucopyranoside]	$C_{39}H_{48}O_{17}$	0	
52	Dammara-13(17),24-dien-3-ol; (3β,20*R*)-form	$C_{30}H_{50}O$	0	
53	Dammara-13(17),24-dien-3-ol; (3β,20*S*)-form	$C_{30}H_{50}O$	0	
54	Dammara-20,24-dien-3-ol; 3β-form, 24*R*,25-Epoxide	$C_{30}H_{50}O_2$	0	
55	Dammara-20,24-dien-3-ol; 3β-form, 24*S*,25-Epoxide	$C_{30}H_{50}O_2$	0	
56	Dehydrotheasinensin C	$C_{30}H_{26}O_{15}$	1	[5] Study on compounds in *Camellia* genus
57	Delphinidin 3-glycosides; 3-*O*-[3,4-Dihydroxy-*E*-cinnamoyl-(→6)-β-D-glucopyranoside]	$C_{30}H_{27}O_{15}$	0	
58	Delphinidin 3-glycosides; 3-*O*-[4-Hydroxy-*E*-cinnamoyl-(→6)-β-D-galactopyranoside]	$C_{30}H_{27}O_{14}$	0	
59	Delphinidin 3-glycosides; 3-*O*-[4-Hydroxy-*Z*-cinnamoyl-(→6)-β-D-glucopyranoside]	$C_{30}H_{27}O_{14}$	0	
60	7,9':7',9-Diepoxy-8,8'-lignan-3,3',4,4',5,5'-hexol; (7*S*,7'*S*,8*R*,8'*R*)-form, 3,3'-Di-Me ether	$C_{20}H_{22}O_8$	0	
61	3,12-Dihydroxy-11,22-dioxo-12-ursen-24-oic acid; 3β-form	$C_{30}H_{44}O_6$	0	
62	4,8-Dihydroxy-2*H*-furo[2,3-*h*]-1-benzopyran-2-one; 8-Me ether	$C_{12}H_8O_5$	0	

63	8,9-Dihydroxy-4-megastigmen-3-one; (6*S*,8ξ,9ξ)-form, 8-*O*-β-D-Glucopyranoside	$C_{19}H_{32}O_8$	0
64	3,4-Dihydroxy-5-(3-methyl-2-butenyl)benzoic acid; Me ester, 3-*O*-β-D-glucopyranoside	$C_{19}H_{26}O_9$	0
65	3,17-Dihydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form	$C_{29}H_{46}O_3$	0
66	3,17-Dihydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 17-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-β-D-galactopyranosyl-(1→4)-[α-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{55}H_{86}O_{25}$	0
67	3,17-Dihydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 16α-Alcohol	$C_{29}H_{48}O_3$	0
68	3,17-Dihydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 16α-Alcohol, 3-*O*-[β-D-glucopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{53}H_{86}O_{24}$	0
69	3,17-Dihydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 3-*O*-[β-D-Galactopyranosyl-(1→2)-β-D-xylopyranosyl-(1→2)-[β-D-galactopyranosyl-(1→3)]-β-D-glucuronopyranoside]	$C_{52}H_{82}O_{23}$	0
70	3,17-Dihydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 3-*O*-[β-D-Galactopyranosyl-(1→3)-β-D-xylopyranosyl-(1→2)-[β-D-galactopyranosyl-(1→3)]-β-D-glucuronopyranoside]	$C_{52}H_{82}O_{23}$	0
71	3,17-Dihydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 3-*O*-[β-D-Glucopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[4-*O*-acetyl-β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{55}H_{86}O_{25}$	0
72	3,17-Dihydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 3-*O*-[β-D-Glucopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{53}H_{84}O_{24}$	0
73	3,17-Dihydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 3-*O*-[β-D-Glucopyranosyl-(1→2)-β-D-galactopyranosyl-(1→4)-[α-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{53}H_{84}O_{24}$	0
74	3,17-Dihydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 3-Ketone	$C_{29}H_{44}O_3$	0
75	3,17-Dihydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 3-*O*-[α-L-Rhamnopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{53}H_{84}O_{23}$	0
76	3,17-Dihydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 3-*O*-[β-D-Xylopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[4-*O*-acetyl-β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{54}H_{84}O_{24}$	0
77	3,17-Dihydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 3-*O*-[β-D-Xylopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{52}H_{82}O_{23}$	0

78	3,17-Dihydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 3-*O*-[β-D-Xylopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{53}H_{84}O_{23}$	0	
79	17,29-Dihydroxy-28-nor-16-oxo-3,4-seco-4(23),12-oleanadien-3-oic acid; 17β-form	$C_{29}H_{44}O_5$	0	
80	3,16-Dihydroxy-12-oleananone; (3β,16β)-form, 3-Ac	$C_{32}H_{52}O_4$	0	
81	1-(3,5-Dihydroxyphenyl)-2-(4-hydroxyphenyl)ethane; 3,5-Di-Me ether, 4'-*O*-β-D-glucopyranoside	$C_{22}H_{28}O_8$	0	
82	1-(3,5-Dihydroxyphenyl)-2-(4-hydroxyphenyl)ethane; 3,5-Di-Me ether, 4'-*O*-[α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{28}H_{38}O_{12}$	0	
83	1-(3,5-Dihydroxyphenyl)-2-(4-hydroxyphenyl)ethane; 4'-*O*-β-D-Glucopyranoside	$C_{20}H_{24}O_8$	0	
84	3,7-Dimethyl-1,6-octadien-3-ol; (*R*)-form, 3-*O*-[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{21}H_{36}O_{10}$	0	
85	3,7-Dimethyl-2,6-octadien-1-ol; (*E*)-form, *O*-[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{21}H_{36}O_{10}$	0	
86	Diphenylamine	$C_{12}H_{11}N$	1	
87	Ellagic acid; 2,3-Methylene ether, 7-*O*-β-D-glucopyranoside	$C_{21}H_{16}O_{13}$	0	
88	13,26-Epoxy-3,11-dihydroxy-12-oleananone; (3β,11α,13β)-form	$C_{30}H_{48}O_4$	0	
89	4,7'-Epoxy-3,8'-lignan-3',4',5,5',9,9'-hexol; (7'*R*,8'*S*)-form, 3',5-Di-Me ether	$C_{20}H_{24}O_7$	0	
90	4,7'-Epoxy-3,8'-lignan-3',4',5,9,9'-pentol; (7'*R*,8'*R*)-form, 3',5-Di-Me ether, 9-*O*-β-D-glucopyranoside	$C_{26}H_{34}O_{11}$	0	
91	4,7'-Epoxy-3,8'-lignan-3',4',5,9,9'-pentol; (7'*S*,8'*R*)-form, 3',5-Di-Me ether, 4'-*O*-β-D-glucopyranoside	$C_{26}H_{34}O_{11}$	0	
92	3,9-Epoxy-5-megastigmene; (3*R*,9*R*)-form	$C_{13}H_{22}O$	0	
93	6-Ethenyl-3,4,5,6-tetrahydro-2,2,6-trimethyl-2*H*-pyran-3-ol; (3*S*,6*S*)-form, *O*-[β-D-Apiofuranosyl-(1→6)-β-D-glucopyranoside]	$C_{21}H_{36}O_{11}$	0	
94	6-Ethenyl-3,4,5,6-tetrahydro-2,2,6-trimethyl-2*H*-pyran-3-ol; (3*S*,6*S*)-form, *O*-[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{21}H_{36}O_{11}$	0	
95	Eupha-7,24-dien-3-ol; 3β-form, 24*R*,25-Epoxide	$C_{30}H_{50}O_2$	0	
96	Eupha-7,24-dien-3-ol; 3β-form, 24*S*,25-Epoxide	$C_{30}H_{50}O_2$	0	
97	8-Formyl-3',4',5',6,7-pentahydroxyflavone; 6,7-Di-Me ether	$C_{18}H_{14}O_8$	0	
98	Fuzhuanin A	$C_{15}H_{12}O_8$	1	[5], [6]
99	Fuzhuanin B	$C_{13}H_{14}O_6$	1	[5], [6]
100	Fuzhuanin C	$C_{16}H_{20}O_7$	1	[5], [6]
101	Fuzhuanin D	$C_{16}H_{16}O_8$	1	[5], [6]
102	Galtamycinone; 4'-*O*-(2*E*,4*E*-Decadienoyl)	$C_{35}H_{36}O_9$	0	
103	8-*C*-β-D-Glucopyranosyl-3,3',4',5,7-pentahydroxyflavan; (2*R*,3*R*)-form	$C_{21}H_{24}O_{11}$	0	
104	6-*C*-β-D-Glucopyranosyl-4',5,7-trihydroxyflavone; 2''-Sulfate	$C_{21}H_{20}O_{13}S$	0	

105	8-*C*-β-D-Glucopyranosyl-4',5,7-trihydroxyflavone; 2''-Sulfate	$C_{21}H_{20}O_{13}S$	0	
106	Guanine deaminase		0	[7]
107	Guanosine deaminase		0	[7]
108	4',4''',5,5'',7,7''-Hexahydroxy-8,8''-biflavone; (ξ)-form, 3,3''-Dihydroxy	$C_{30}H_{18}O_{12}$	0	
109	4,6-(Hexahydroxydiphenoyl)glucose; $(S)_{axial}$-β-D-Pyranose-form, 1,2-Bis-*O*-(3,4,5-trihydroxybenzoyl)	$C_{34}H_{26}O_{22}$	0	
110	3,3',4',5,5',7-Hexahydroxyflavan; (2*R*,3*R*)-form, 3-*O*-*E*-Cinnamoyl	$C_{24}H_{20}O_8$	0	
111	3,3',4',5,5',7-Hexahydroxyflavan; (2*R*,3*R*)-form, 3-*O*-(3,4-Dihydroxy-*E*-cinnamoyl)	$C_{24}H_{20}O_{10}$	0	
112	3,3',4',5,5',7-Hexahydroxyflavan; (2*R*,3*R*)-form, 3-*O*-(3,4-Dihydroxy-5-methoxybenzoyl)	$C_{23}H_{20}O_{11}$	0	
113	3,3',4',5,5',7-Hexahydroxyflavan; (2*R*,3*R*)-form, 3-*O*-(3,5-Dihydroxy-4-methoxybenzoyl)	$C_{23}H_{20}O_{11}$	0	
114	3,3',4',5,5',7-Hexahydroxyflavan; (2*R*,3*R*)-form, 3-*O*-(4-Hydroxy-*E*-cinnamoyl)	$C_{24}H_{20}O_9$	0	
115	3,3',4',5,5',7-Hexahydroxyflavan; (2*R*,3*R*)-form, 3-*O*-(4-Hydroxy-*Z*-cinnamoyl)	$C_{24}H_{20}O_9$	0	
116	3,3',4',5,5',7-Hexahydroxyflavan-6-carboxylic acid; (2*S*,3*R*)-form	$C_{16}H_{14}O_9$	0	
117	3,3',4',5,5',7-Hexahydroxyflavan-(2→7,4→8)-3,3',4',5,5',7-hexahydroxyflavan; (2*S*,2'*R*,3*R*,3'*R*,4α)-form, 3'-*O*-(3,4,5-Trihydroxybenzoyl)	$C_{37}H_{28}O_{18}$	0	
118	3,3',4',5,5',7-Hexahydroxyflavan-(4→8)-3,3',4',5,5',7-hexahydroxyflavan; (2*R*,2'*R*,3*R*,3'*R*,4α)-form, 3''-Deoxy, 3,3'-bis-*O*-(3,4,5-trihydroxybenzoyl)	$C_{44}H_{34}O_{21}$	0	
119	3,3',4',5,5',7-Hexahydroxyflavan-(4→8)-3,3',4',5,5',7-hexahydroxyflavan; (2*R*,2'*R*,3*R*,3'*R*,4α)-form, 3''-Deoxy, 3'-*O*-(3,4,5-trihydroxybenzoyl)	$C_{37}H_{30}O_{17}$	0	
120	3,3',4',5,5',7-Hexahydroxyflavan-(4→8)-3,3',4',5,5',7-hexahydroxyflavan; (2*R*,2'*R*,3*S*,3'*R*,4β)-form	$C_{30}H_{26}O_{14}$	0	
121	3,3',4',5,5',7-Hexahydroxyflavan-(4→8)-3,3',4',5,5',7-hexahydroxyflavan; (2*R*,2'*R*,3*S*,3'*R*,4β)-form, 3''-Deoxy	$C_{30}H_{26}O_{13}$	0	
122	3,3',4',5,5',7-Hexahydroxyflavan-(4→8)-3,3',4',5,5',7-hexahydroxyflavan; (2*R*,2'*R*,3*S*,3'*R*,4β)-form, 3'''-Deoxy	$C_{30}H_{26}O_{13}$	0	
123	3,3',4',5,5',7-Hexahydroxyflavan-(4→8)-3,3',4',5,5',7-hexahydroxyflavan; (2*R*,2'*R*,3*S*,3'*R*,4β)-form, 3''-Deoxy, 3'-*O*-(3,4,5-trihydroxybenzoyl)	$C_{37}H_{30}O_{17}$	0	
124	3,3',4',5,5',7-Hexahydroxyflavan-(4→8)-3,3',4',5,5',7-hexahydroxyflavan; (2*R*,2'*R*,3*S*,3'*R*,4β)-form, 3'-*O*-(3,4,5-Trihydroxybenzoyl)	$C_{37}H_{30}O_{18}$	0	
125	3,3',4',5,5',7-Hexahydroxyflavanone; (2*RS*,3*RS*)-form	$C_{15}H_{12}O_8$	0	
126	3,3',4',5,5',7-Hexahydroxyflavan-(2→7,4→8)-3,3',4',5,7-pentahydroxyflavan; (2*S*,2'*R*,3*R*,3'*R*,4α)-form, 3'-*O*-(3,4,5-Trihydroxybenzoyl)	$C_{37}H_{28}O_{17}$	0	
127	3,3',4',5,5',7-Hexahydroxyflavone; 3-*O*-[β-D-Glucopyranosyl-(1→3)-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{33}H_{40}O_{22}$	0	

128	3,15,16,21,22,28-Hexahydroxy-12-oleanen-23-oic acid; (3β,15α,16α,21β,22α)-form, 21-Angeloyl, 22-*O*-(2-methylbutanoyl), 16-Ac, 23-Me ester, 3-*O*-[α-L-arabinopyranosyl-(1→3)-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{55}H_{84}O_{21}$	0	
129	3,15,16,21,22,28-Hexahydroxy-12-oleanen-23-oic acid; (3β,15α,16α,21β,22α)-form, 21-Angeloyl, 22-*O*-(2-methylbutanoyl), 23-Me ester, 3-*O*-[α-L-arabinopyranosyl-(1→3)-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{53}H_{82}O_{20}$	0	
130	3,15,16,21,22,28-Hexahydroxy-12-oleanen-23-oic acid; (3β,15α,16α,21β,22α)-form, 21,22-Diangeloyl, 23-Me ester, 3-*O*-[α-L-arabinopyranosyl-(1→3)-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{53}H_{80}O_{20}$	0	
131	3,3',4',5,5',7-Hexahydroxy-6-(5-oxo-2-pyrrolidinyl)flavan; (2*R*,2''*R*,3*R*)-form, *N*-Et, 3-*O*-(3,4,5-trihydroxybenzoyl)	$C_{28}H_{27}NO_{12}$	0	
132	3,3',4',5,5',7-Hexahydroxy-6-(5-oxo-2-pyrrolidinyl)flavan; (2*R*,2''*S*,3*R*)-form, *N*-Et, 3-*O*-(3,4,5-trihydroxybenzoyl)	$C_{28}H_{27}NO_{12}$	0	
133	3-Hexen-1-ol; (*Z*)-form, *O*-[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{17}H_{30}O_{10}$	0	
134	2-Hydroxyacetophenone; *O*-β-D-Glucopyranoside	$C_{14}H_{18}O_7$	0	
135	4-Hydroxybenzoic acid; Et ester, 4-*O*-sulfo	$C_9H_{10}O_6S$	0	[8]
136	3-Hydroxy-2-butanone; (ξ)-form, Hexanoyl	$C_{10}H_{18}O_3$	0	
137	3-Hydroxy-3-methyl-2,4-nonanedione	$C_{10}H_{18}O_3$	1	[9]
138	3-Hydroxy-28-nor-12-oleanen-16-one; (3β,17α)-form, 17,18-Didehydro, 3-ketone	$C_{29}H_{42}O_2$	0	
139	3-Hydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 17,18-Didehydro	$C_{29}H_{44}O_2$	0	
140	3-Hydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 17,18-Didehydro, 3-*O*-[β-D-glucopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{53}H_{82}O_{23}$	0	
141	3-Hydroxy-28-nor-12-oleanen-16-one; (3β,17β)-form, 17,18-Didehydro, 3-*O*-[β-D-xylopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{53}H_{82}O_{22}$	0	
142	2-Hydroxy-3-octanone; (ξ)-form, Ac	$C_{10}H_{18}O_3$	0	
143	Kaempferol 3-glycosides; Diglycosides, 3-*O*-[β-D-Galactopyranosyl-(1→2)-β-D-glucopyranoside]	$C_{27}H_{30}O_{16}$	0	[10]–[12]
144	Kaempferol 3-glycosides; Tetra- and higher glycosides, 3-*O*-[β-D-Glucopyranosyl-(1→3)-α-L-rhamnopyranosyl-(1→6)-[β-D-glucopyranosyl-(1→3)][4-hydroxy-*E*-cinnamoyl-(→2)]-β-D-glucopyranoside]	$C_{48}H_{56}O_{27}$	0	
145	Kaempferol 3-glycosides; Tetra- and higher glycosides, 3-*O*-[β-D-Glucopyranosyl-(1→3)-α-L-rhamnopyranosyl-(1→6)-[β-D-xylopyranosyl-(1→2)]-β-D-glucopyranoside]	$C_{38}H_{48}O_{24}$	0	
146	Kaempferol 3-glycosides; Tetra- and higher glycosides, 3-O-[β-D-Glucopyranosyl-(1→3)-α-L-rhamnopyranosyl-	$C_{47}H_{54}O_{26}$	0	

	(1→6)-[α-L-arabinopyranosyl-(1→3)][4-hydroxy-*E*-cinnamoyl-(→2)]-β-D-glucopyranoside]		
147	Kaempferol 3-glycosides; Triglycosides, 3-*O*-[2-*O*-Acetyl-α-L-rhamnopyranosyl-(1→3)-4-*O*-acetyl-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{37}H_{44}O_{21}$	0
148	Kaempferol 3-glycosides; Triglycosides, 3-*O*-[3-*O*-Acetyl-α-L-rhamnopyranosyl-(1→3)-4-*O*-acetyl-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{37}H_{44}O_{21}$	0
149	Kaempferol 3-glycosides; Triglycosides, 3-*O*-[4-*O*-Acetyl-α-L-rhamnopyranosyl-(1→3)-2,4-di-*O*-acetyl-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{39}H_{46}O_{22}$	0
150	Kaempferol 3-glycosides; Triglycosides, 3-*O*-[3,4-Di-*O*-acetyl-α-L-rhamnopyranosyl-(1→3)-2,4-di-*O*-acetyl-α-L-rhamnopyranosyl-(1→ 6)-β-D-glucopyranoside]	$C_{41}H_{48}O_{23}$	0
151	Kaempferol 3-glycosides; Triglycosides, 3-*O*-[β-D-Galactopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→6)]-β-D-glucopyranoside]	$C_{33}H_{40}O_{20}$	0
152	Kaempferol 3-glycosides; Triglycosides, 3-*O*-[β-D-Glucopyranosyl-(1→3)-α-L-rhamnopyranosyl-(1→6)-β-D-galactopyranoside]	$C_{33}H_{40}O_{20}$	0
153	Kaempferol 3-glycosides; Triglycosides, 3-*O*-[β-D-Glucopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→6)]-β-D-glucopyranoside]	$C_{33}H_{40}O_{20}$	0
154	Kaempferol 3-glycosides; Triglycosides, 3-*O*-[β-D-Glucopyranosyl-(1→3)-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{33}H_{40}O_{20}$	0
155	Kaempferol 3-glycosides; Triglycosides, 3-O-α-L-[Rhamnopyranosyl-(1→6)-[α-L-arabinopyranosyl-(1→3)][4-hydroxy-*E*-cinnamoyl-(→2)]-β-D-glucopyranoside]	$C_{41}H_{44}O_{21}$	0
156	Kaempferol 3-glycosides; Triglycosides, 3-*O*-[α-L-Rhamnopyranosyl-(1→3)-4-*O*-acetyl-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{35}H_{42}O_{20}$	0
157	Kaempferol 3-glycosides; Triglycosides, 3-*O*-[α-L-Rhamnopyranosyl-(1→3)-2,4-di-*O*-acetyl-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{37}H_{44}O_{21}$	0
158	Kaempferol 3-glycosides; Triglycosides, 3-*O*-[α-L-Rhamnopyranosyl-(1→3)-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{33}H_{40}O_{19}$	0
159	Kaempferol 3-glycosides; Triglycosides, 3-*O*-[2,3,4-Tri-*O*-acetyl-α-L-rhamnopyranosyl-(1→3)-4-*O*-acetyl-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{41}H_{48}O_{23}$	0
160	Kaempferol 3-glycosides; Triglycosides, 3-*O*-[2,4,6-Tri-*O*-acetyl-α-L-rhamnopyranosyl-(1→3)-2,4-di-*O*-acetyl-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{43}H_{50}O_{24}$	0
161	Kaempferol 3-glycosides; Triglycosides, 3-*O*-[β-D-Xylopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→6)]-β-D-glucopyranoside]	$C_{32}H_{38}O_{19}$	0
162	7,21-Lemmaphylladien-3-ol; 3β-form	$C_{30}H_{50}O$	0
163	Liberine	$C_8H_{10}N_4O_3$	1
164	Liberine; 7-Me	$C_9H_{12}N_4O_3$	0

165	Linalyl oxide; *O*-[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{21}H_{36}O_{11}$	0	[13]
166	Malabathrin A; Di-*O*-degalloyl	$C_{49}H_{36}O_{27}$	0	
167	5,7-Megastigmadien-9-one	$C_{13}H_{20}O$	1	
168	5-Megastigmene-3,9-diol; (3β,9*R*)-form, 9-*O*-[β-D-Apiofuranosyl-(1→6)-β-D-glucopyranoside]	$C_{24}H_{42}O_{11}$	0	
169	2-Methoxy-4-(2-propenyl)phenol	$C_{10}H_{12}O_2$	1	
170	2-Methoxy-4-(2-propenyl)phenol; *O*-[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{21}H_{30}O_{11}$	0	
171	*N*-Methyl nucleosidase		0	
172	7-Methylxanthosine synthase		0	
173	*Serratia marcescens* Nuclease		0	
174	3'-Nucleotidase		0	
175	Octanoic acid	$C_8H_{16}O_2$	1	[14]
176	12-Oleanene-3,16-diol; (3β,16β)-form, 3-Ac	$C_{32}H_{52}O_3$	0	
177	12-Oleanene-3,15,16,21,22,23,28-heptol; (3β,15α,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 22-*O*-(2-methylbutanoyl)	$C_{40}H_{62}O_9$	0	
178	12-Oleanene-3,15,16,21,22,23,28-heptol; (3β,15α,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 22-*O*-(2-methylbutanoyl), 16-Ac, 3-*O*-[α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]	$C_{53}H_{80}O_{20}$	0	
179	12-Oleanene-3,15,16,21,22,23,28-heptol; (3β,15α,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 22-*O*-(2-methylbutanoyl), 3-*O*-[α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]	$C_{51}H_{78}O_{19}$	0	
180	12-Oleanene-3,15,16,21,22,23,28-heptol; (3β,15α,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 22-*O*-(2-methylbutanoyl), 3-*O*-[β-D-xylopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{63}H_{98}O_{29}$	0	
181	12-Oleanene-3,15,16,21,22,23,28-heptol; (3β,15α,16α,21β,22α)-form, 23-Aldehyde, 21,22-diangeloyl	$C_{40}H_{60}O_9$	0	
182	12-Oleanene-3,15,16,21,22,23,28-heptol; (3β,15α,16α,21β,22α)-form, 23-Aldehyde, 21,22-diangeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{63}H_{96}O_{29}$	0	
183	12-Oleanene-3,15,16,21,22,23,28-heptol; (3β,15α,16α,21β,22α)-form, 23-Aldehyde, 21,22-diangeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{64}H_{98}O_{29}$	0	
184	12-Oleanene-3,15,16,21,22,23,28-heptol; (3β,15α,16α,21β,22α)-form, 21-Angelolyl, 22-*O*-(2-methylbutanoyl), 3-*O*-[α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]	$C_{51}H_{80}O_{19}$	0	
185	12-Oleanene-3,15,16,21,22,23,28-heptol; (3β,15α,16α,21β,22α)-form, 21-Angeloyl, 22-*O*-(2-	$C_{53}H_{82}O_{20}$	0	

	methylbutanoyl), 16-Ac, 3-*O*-[α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]		
186	12-Oleanene-3,15,16,21,22,23,28-heptol; (3β,15α,16α,21β,22α)-form, 21-Angeloyl, 22-*O*-(2-methylbutanoyl), 15,16-di-Ac, 3-*O*-[α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]	$C_{55}H_{84}O_{21}$	0
187	12-Oleanene-3,15,16,21,22,23,28-heptol; (3β,15α,16α,21β,22α)-form, 22-Angeloyl, 15,16,21-tri-Ac, 3-*O*-[α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]	$C_{52}H_{78}O_{21}$	0
188	12-Oleanene-3,15,16,21,22,23,28-heptol; (3β,15α,16α,21β,22α)-form, 23-Carboxylic acid, 21-angeloyl, 22-*O*-(2-methylbutanoyl), 16-Ac, 23-Me ester, 3-*O*-[α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]	$C_{54}H_{82}O_{21}$	0
189	12-Oleanene-3,15,16,21,22,23,28-heptol; (3β,15α,16α,21β,22α)-form, 21,22-Diangeloyl, 3-*O*-[α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]	$C_{51}H_{78}O_{19}$	0
190	12-Oleanene-3,15,16,21,22,23,28-heptol; (3β,15α,16α,21β,22α)-form, 21,22-Diangeloyl, 15,16-di-Ac, 3-*O*-[α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]	$C_{55}H_{82}O_{21}$	0
191	12-Oleanene-3,15,16,21,22,23,28-heptol; (3β,15α,16α,21β,22α)-form, 22-*O*-(2-Methylbutanoyl), 15,16,21-tri-Ac, 3-*O*-[α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]	$C_{52}H_{80}O_{21}$	0
192	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21α,22α)-form, 21,22-Diangeloyl, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{64}H_{100}O_{28}$	0
193	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21-Angeloyl, 22-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{94}O_{27}$	0
194	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21-Angeloyl, 22-*O*-(2-methylbutanoyl), 3-*O*-[α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]	$C_{51}H_{80}O_{18}$	0
195	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21-Angeloyl, 22-*O*-(2-methylbutanoyl), 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{63}H_{100}O_{27}$	0
196	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21-Angeloyl, 22-*O*-(2-methylbutanoyl), 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{62}H_{98}O_{27}$	0
197	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21-Angeloyl, 22-*O*-(2-	$C_{63}H_{100}O_{28}$	0

	methylbutanoyl), 3-*O*-[β-D-xylopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]		
198	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21,22-Diangeloyl, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{63}H_{98}O_{27}$	0
199	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21,22-Diangeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{62}H_{96}O_{27}$	0
200	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21,22-Diangeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{63}H_{98}O_{28}$	0
201	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21,22-Ditigloyl	$C_{40}H_{62}O_{8}$	0
202	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21,22-Ditigloyl, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{63}H_{98}O_{27}$	0
203	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21,22-Ditigloyl, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{64}H_{100}O_{28}$	0
204	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21,22-Ditigloyl, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{64}H_{100}O_{28}$	0
205	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21,22-Ditigloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{62}H_{96}O_{27}$	0
206	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21-Tigloyl, 22-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{94}O_{27}$	0
207	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21-Tigloyl, 22-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{94}O_{27}$	0
208	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21-Tigloyl, 22-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{92}O_{27}$	0
209	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 21-Tigloyl, 22-angeloyl, 3-	$C_{64}H_{100}O_{28}$	0

	O-[α-L-rhamnopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]		
210	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 22-Tigloyl, 21-angeloyl, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{64}H_{100}O_{28}$	0
211	12-Oleanene-3,15,16,21,22,28-hexol; (3β,15α,16α,21β,22α)-form, 22-Tigloyl, 21-angeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{62}H_{96}O_{27}$	0
212	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form	$C_{30}H_{50}O_6$	0
213	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde	$C_{30}H_{48}O_6$	0
214	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 22-angeloyl	$C_{35}H_{54}O_7$	0
215	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 28-Ac, 3-*O*-[α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{54}H_{82}O_{23}$	0
216	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 22-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{92}O_{28}$	0
217	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 28-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{92}O_{28}$	0
218	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 16-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{90}O_{27}$	0
219	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 22-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{90}O_{27}$	0
220	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 28-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{90}O_{27}$	0
221	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 16,22-di-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{62}H_{94}O_{29}$	0
222	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 16,28-di-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{62}H_{94}O_{29}$	0

223	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 16,22-di-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{61}H_{92}O_{28}$	0
224	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 16,28-di-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{61}H_{92}O_{28}$	0
225	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 22-*O*-(2-methylbutanoyl)	$C_{40}H_{62}O_{8}$	0
226	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-angeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{57}H_{88}O_{26}$	0
227	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 22-*E*-cinnamoyl, 21-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{65}H_{94}O_{28}$	0
228	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21,22-diangeloyl, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{63}H_{96}O_{28}$	0
229	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21,22-diangeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{62}H_{94}O_{27}$	0
230	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21,22-diangeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{63}H_{96}O_{28}$	0
231	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-*O*-(2*Z*-hexenoyl), 28-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{61}H_{94}O_{28}$	0
232	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-*O*-(2*Z*-hexenoyl), 16,22-di-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{62}H_{94}O_{28}$	0
233	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-*O*-(3-methylbutanoyl), 16,22-di-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{61}H_{94}O_{28}$	0
234	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-tigloyl, 22-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{92}O_{28}$	0

235	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-tigloyl, 28-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{92}O_{28}$	0
236	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-tigloyl, 16-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{90}O_{27}$	0
237	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-tigloyl, 22-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{90}O_{27}$	0
238	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-tigloyl, 28-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{90}O_{27}$	0
239	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 22-tigloyl, 21-angeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{62}H_{94}O_{27}$	0
240	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-tigloyl, 16,28-di-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{61}H_{92}O_{28}$	0
241	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 21-tigloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{57}H_{88}O_{26}$	0
242	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Aldehyde, 22-tigloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{57}H_{88}O_{26}$	0
243	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 22-Angeloyl	$C_{35}H_{56}O_{7}$	0
244	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21-Angeloyl, 16-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{94}O_{28}$	0
245	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21-Angeloyl, 28-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{94}O_{28}$	0
246	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21-Angeloyl, 22-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{92}O_{27}$	0
247	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21-Angeloyl, 28-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{92}O_{27}$	0

248	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 22-Angeloyl, 16,21-di-Ac, 3-*O*-[α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]	$C_{50}H_{76}O_{19}$	0
249	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21-Angeloyl, 16,22-di-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{62}H_{96}O_{29}$	0
250	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21-Angeloyl, 16,22-di-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{61}H_{94}O_{28}$	0
251	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21-Angeloyl, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{58}H_{92}O_{27}$	0
252	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21-Angeloyl, 22-*O*-(2-methylbutanoyl), 16-Ac, 3-*O*-[α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]	$C_{53}H_{82}O_{19}$	0
253	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21-Angeloyl, 22-*O*-(2-methylbutanoyl), 16-Ac, 3-*O*-[α-L-arabinopyranosyl-(1→3)-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{54}H_{84}O_{19}$	0
254	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21-Angeloyl, 22-*O*-(2-methylbutanoyl), 16-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→3)-α-L-arabinopyranosyl-(1→3)-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{60}H_{94}O_{23}$	0
255	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21-Angeloyl, 22-*O*-(2-methylbutanoyl), 16-Ac, 3-*O*-[β-D-xylopyranosyl-(1→3)-α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]	$C_{58}H_{90}O_{23}$	0
256	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 22-Angeloyl, 21-*O*-(2-methylbutanoyl), 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{62}H_{98}O_{27}$	0
257	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21-Angeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)- [β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{57}H_{90}O_{26}$	0
258	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Carboxylic acid, 21-angeloyl, 22-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside], Me ester	$C_{60}H_{92}O_{28}$	0
259	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Carboxylic acid, 21-angeloyl, 28-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside], Me ester	$C_{60}H_{92}O_{28}$	0
260	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 23-Carboxylic acid, 21-angeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-	$C_{58}H_{90}O_{27}$	0

	galactopyranosyl-(1→2)]-β-D-glucuronopyranoside], Me ester		
261	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21,22-Diangeloyl, 16-Ac, 3-*O*-[α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]	$C_{53}H_{80}O_{19}$	0
262	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21,22-Diangeloyl, 16-Ac, 3-*O*-[α-L-arabinopyranosyl-(1→3)-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{54}H_{82}O_{19}$	0
263	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21,22-Diangeloyl, 16-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→3)-α-L-arabinopyranosyl-(1→3)-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{60}H_{92}O_{23}$	0
264	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21,22-Diangeloyl, 16-Ac, 3-*O*-[β-D-xylopyranosyl-(1→3)-α-L-arabinopyranosyl-(1→3)-β-D-glucuronopyranoside]	$C_{58}H_{88}O_{23}$	0
265	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21,22-Diangeloyl, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{63}H_{98}O_{28}$	0
266	12-Oleanene-3,16,21,22,23,28-hexol; (3β,16α,21β,22α)-form, 21,22-Diangeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{62}H_{96}O_{27}$	0
267	12-Oleanene-3,16,21,22,24,28-hexol; (3β,16α,21β,22α)-form, 24-Aldehyde		0
268	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 16-Ac	$C_{32}H_{52}O_6$	0
269	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 28-Angeloyl	$C_{35}H_{56}O_6$	0
270	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 22-Angeloyl, 15-Ac	$C_{37}H_{58}O_7$	0
271	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 22-Angeloyl, 16-Ac	$C_{37}H_{58}O_7$	0
272	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 22-Angeloyl, 3-*O*-[β-D-galactopyranosyl-(1→2)-β-D-xylopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{58}H_{92}O_{26}$	0
273	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 22-Angeloyl, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{94}O_{26}$	0
274	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 22-Angeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{57}H_{90}O_{25}$	0
275	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 22-Angeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{58}H_{92}O_{26}$	0

276	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 22-*O*-(2*Z*-Hexenoyl), 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{94}O_{26}$	0
277	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 22-*O*-(2*Z*-Hexenoyl), 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{96}O_{26}$	0
278	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 3-Ketone, 15-Ac	$C_{32}H_{50}O_6$	0
279	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 3-Ketone, 16-Ac	$C_{32}H_{50}O_6$	0
280	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 16-*O*-(2*S*-Methylbutanoyl), 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{96}O_{26}$	0
281	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 22-Tigloyl, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{94}O_{26}$	0
282	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 28-Tigloyl, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{94}O_{26}$	0
283	12-Oleanene-3,15,16,22,28-pentol; (3β,15α,16α,22α)-form, 22-Tigloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{57}H_{90}O_{25}$	0
284	12-Oleanene-3,16,21,22,28-pentol; (3α,16α,21α,22α)-form, 21,22-Ditigloyl, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-glucopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{64}H_{100}O_{27}$	0
285	12-Oleanene-3,16,21,22,28-pentol; (3α,16α,21α,22α)-form, 21,22-Ditigloyl, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-glucopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{64}H_{100}O_{27}$	0
286	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21α,22α)-form, 21-Angeloyl, 22-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{61}H_{96}O_{27}$	0
287	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 22-Angeloyl	$C_{35}H_{56}O_6$	0
288	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Angeloyl, 22-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{94}O_{26}$	0
289	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Angeloyl, 28-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{94}O_{26}$	0

290	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Angeloyl, 22-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside], 28-*O*-β-D-glucopyranoside	$C_{66}H_{104}O_{31}$	0
291	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Angeloyl, 22-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{94}O_{26}$	0
292	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Angeloyl, 22-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{92}O_{26}$	0
293	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Angeloyl, 28-Ac, 3-*O*-[[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)]-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{92}O_{26}$	0
294	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 22-Angeloyl, 21-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{92}O_{26}$	0
295	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Angeloyl, 16,22-di-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{62}H_{96}O_{28}$	0
296	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Angeloyl, 16,28-di-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{62}H_{96}O_{28}$	0
297	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Angeloyl, 16,22-di-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{62}H_{96}O_{27}$	0
298	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Angeloyl, 16,22-di-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{61}H_{94}O_{27}$	0
299	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Angeloyl, 22-*O*-(2-methylbutanoyl), 3-*O*-[β-D-xylopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{63}H_{100}O_{27}$	0
300	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Angeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{57}H_{90}O_{25}$	0
301	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-*E*-Cinnamoyl, 22-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{63}H_{92}O_{26}$	0

302	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-*E*-Cinnamoyl, 28-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{63}H_{92}O_{26}$	0
303	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 22-*E*-Cinnamoyl, 21-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{63}H_{92}O_{26}$	0
304	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 22-*E*-Cinnamoyl, 21-angeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{66}H_{96}O_{26}$	0
305	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 22-Cinnamoyl, 16,21-di-Ac, 3-*O*-[β-D-galactopyranosyl-(1→2)-[α-D-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)]-β-D-glucuronopyranoside]	$C_{66}H_{96}O_{27}$	0
306	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-*E*-Cinnamoyl, 16,22-di-Ac, 3-*O*-[β-D-galactopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)]-β-D-glucuronopyranoside]	$C_{65}H_{94}O_{27}$	0
307	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-*Z*-Cinnamoyl, 16,22-di-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{65}H_{94}O_{27}$	0
308	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21,22-Ditigloyl	$C_{40}H_{62}O_{7}$	0
309	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 22-Tigloyl	$C_{35}H_{56}O_{6}$	0
310	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Tigloyl, 22-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{94}O_{26}$	0
311	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Tigloyl, 28-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{94}O_{26}$	0
312	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Tigloyl, 22-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside], 28-*O*-β-D-glucopyranoside	$C_{66}H_{104}O_{31}$	0
313	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Tigloyl, 22-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{94}O_{26}$	0
314	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Tigloyl, 28-Ac, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{60}H_{94}O_{26}$	0
315	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Tigloyl, 22-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-	$C_{59}H_{92}O_{26}$	0

	α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]		
316	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Tigloyl, 28-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{92}O_{26}$	0
317	12-Oleanene-3,16,21,22,28-pentol; (3β,16α,21β,22α)-form, 21-Tigloyl, 16,22-di-Ac, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{61}H_{94}O_{27}$	0
318	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form	$C_{30}H_{50}O_5$	0
319	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 23-Aldehyde	$C_{30}H_{48}O_5$	0
320	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 23-Aldehyde, 22-angeloyl, 3-*O*-[β-D-galactopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{59}H_{92}O_{26}$	0
321	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 23-Aldehyde, 22-angeloyl, 3-*O*-[β-D-galactopyranosyl-(1→2)-[β-D-galactopyranosyl-(1→3)]-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{54}H_{84}O_{22}$	0
322	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 23-Aldehyde, 22-angeloyl, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{58}H_{90}O_{26}$	0
323	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 23-Aldehyde, 22-angeloyl, 3-*O*-[β-D-glucopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{60}H_{94}O_{27}$	0
324	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 23-Aldehyde, 16-angeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{57}H_{88}O_{25}$	0
325	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 23-Aldehyde, 22-angeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{57}H_{88}O_{25}$	0
326	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 23-Aldehyde, 28-angeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{57}H_{88}O_{25}$	0
327	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 23-Aldehyde, 28-*E*-cinnamoyl, 3-*O*-[β-D-galactopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{63}H_{92}O_{26}$	0
328	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 23-Aldehyde, 22-*O*-(2*Z*-hexenoyl), 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-	$C_{58}H_{90}O_{25}$	0

	galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]		
329	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 23-Aldehyde, 22-tigloyl, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{58}H_{90}O_{26}$	0
330	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 22-Angeloyl, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{58}H_{92}O_{26}$	0
331	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 22-Angeloyl, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{57}H_{90}O_{25}$	0
332	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 23-Carboxylic acid, 22-angeloyl, Me ester, 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{58}H_{90}O_{26}$	0
333	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 22-*O*-(2*Z*-Hexenoyl), 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{58}H_{92}O_{25}$	0
334	12-Oleanene-3,16,22,23,28-pentol; (3β,16α,22α)-form, 22-Tigloyl, 3-*O*-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{58}H_{92}O_{26}$	0
335	12-Oleanene-3,15,16,28-tetrol; (3β,15α,16α)-form	$C_{30}H_{50}O_4$	0
336	12-Oleanene-3,16,22,28-tetrol; (3β,16α,22α)-form	$C_{30}H_{50}O_4$	0
337	12-Oleanene-3,16,22,28-tetrol; (3β,16α,22α)-form, 22-Angeloyl, 3-*O*-[β-D-galactopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)]-β-D-glucuronopyranoside]	$C_{58}H_{92}O_{25}$	0
338	12-Oleanene-3,16,22,28-tetrol; (3β,16α,22α)-form, 22-Angeloyl, 3-*O*-[β-D-glucopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{60}H_{96}O_{26}$	0
339	12-Oleanene-3,16,22,28-tetrol; (3β,16α,22α)-form, 22-Angeloyl, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{94}O_{25}$	0
340	12-Oleanene-3,16,22,28-tetrol; (3β,16α,22α)-form, 16-*O*-(2*S*-Methylbutanoyl), 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{59}H_{96}O_{25}$	0
341	12-Oleanene-3,16,22,28-tetrol; (3β,16α,22α)-form, 22-Tigloyl, 3-*O*-[β-D-galactopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)]-β-D-glucuronopyranoside]	$C_{58}H_{92}O_{25}$	0
342	12-Oleanene-3,16,22,28-tetrol; (3β,16α,22α)-form, 22-Tigloyl, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-	$C_{59}H_{94}O_{25}$	0

	D-glucuronopyranoside]		
343	12-Oleanene-3,16,22,28-tetrol; (3β,16β,22α)-form	$C_{30}H_{50}O_4$	0
344	12-Oleanene-3,11,16-triol; (3β,11α,16β)-form, 11-Ketone, 3-Ac	$C_{32}H_{50}O_4$	0
345	12-Oleanene-3,16,28-triol; (3β,16α)-form, 3-*O*-[β-D-Glucopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{54}H_{88}O_{24}$	0
346	12-Oleanene-3,16,28-triol; (3β,16α)-form, 3-*O*-[α-L-Rhamnopyranosyl-(1→2)-β-D-glucuronopyranoside]	$C_{42}H_{68}O_{13}$	0
347	12-Oleanene-3,16,28-triol; (3β,16α)-form, 3-*O*-[α-L-Rhamnopyranosyl-(1→2)-6-*O*-methyl-β-D-glucuronopyranoside]	$C_{43}H_{70}O_{13}$	0
348	12-Oleanene-3,16,28-triol; (3β,16β)-form, 28-Aldehyde, 3-*O*-[β-D-glucopyranosyl-(1→2)-β-D-galactopyranosyl-(1→3)-[β-D-galactopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{54}H_{86}O_{24}$	0
349	12-Oleanene-3,22,28-triol; (3β,22α)-form	$C_{30}H_{50}O_3$	0
350	Oolongtheanin	$C_{36}H_{28}O_{17}$	1
351	4,8'-Oxylignan-3,3',4',7',9,9'-hexol; (7'*R*,8'*R*)-form, 3'-Me ether, 9-*O*-β-D-glucopyranoside	$C_{25}H_{34}O_{12}$	0
352	4,8'-Oxylignan-3,3',4',7',9,9'-hexol; (7'*S*,8'*S*)-form, 3,3'-Di-Me ether, 7'-*O*-β-D-glucopyranoside	$C_{26}H_{36}O_{12}$	0
353	Pentagrametin; 4',4'-Di-*O*-de-Me, 3,3-di-*O*-[α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{55}H_{60}O_{30}$	0
354	3,3',4',5,7-Pentahydroxyflavan; (2*R*,3*R*)-form, 3-*O*-(3,4-Dihydroxy-5-methoxybenzoyl)	$C_{23}H_{20}O_{10}$	0
355	3,3',4',5,7-Pentahydroxyflavan; (2*R*,3*R*)-form, 3-*O*-(3,5-Dihydroxy-4-methoxybenzoyl)	$C_{23}H_{20}O_{10}$	0
356	3,3',4',5,7-Pentahydroxyflavan; (2*R*,3*R*)-form, 3',5-Di-Me ether	$C_{17}H_{18}O_6$	0
357	3,3',4',5,7-Pentahydroxyflavan; (2*R*,3*R*)-form, 3-*O*-(4-Hydroxybenzoyl)	$C_{22}H_{18}O_8$	0
358	3,3',4',5,7-Pentahydroxyflavan; (2*R*,3*R*)-form, 3'-Me ether	$C_{16}H_{16}O_6$	0
359	3,3',4',5,7-Pentahydroxyflavan; (2*R*,3*R*)-form, 3',4'-Methylene, 5,7-di-Me ether	$C_{18}H_{18}O_6$	0
360	3,3',4',5,7-Pentahydroxyflavan; (2*R*,3*R*)-form, 3',5,7-Tri-Me ether	$C_{18}H_{20}O_6$	0
361	3,3',4',5,7-Pentahydroxyflavan; (2*R*,3*S*)-form, 5-*O*-[4-Hydroxy-3-methoxycinnamoyl-(→2)-[4-hydroxycinnamoyl-(→6)]-β-D-glucopyranoside]	$C_{40}H_{38}O_{16}$	0
362	3,3',4',5,7-Pentahydroxyflavan; (2*S*,3*R*)-form	$C_{15}H_{14}O_6$	0
363	3,3',4',5,7-Pentahydroxyflavan-6-acetic acid; (2*R*,3*S*)-form	$C_{17}H_{16}O_8$	0
364	3,3',4',5,7-Pentahydroxyflavan-8-acetic acid; (2*R*,3*S*)-form	$C_{17}H_{16}O_8$	0
365	3,3',4',5,7-Pentahydroxyflavan-8-acetic acid; (2*R*,3*S*)-form, Me ester	$C_{18}H_{18}O_8$	0
366	3,3',5,5',7-Pentahydroxyflavanone; (2*R*,3*R*)-form	$C_{15}H_{12}O_7$	0

367	3,3',4',5,7-Pentahydroxyflavan-(4→6)-3,3',4',5,7-pentahydroxyflavan; (2*R*,2'*R*,3*R*,3'*R*,4α)-form, 3''-Deoxy, 5'''-hydroxy, 3,3'-bis-*O*-(3,4,5-trihydroxybenzoyl)	$C_{44}H_{34}O_{20}$	0	
368	3,3',4',5,7-Pentahydroxyflavan-(4→6)-3,3',4',5,7-pentahydroxyflavan; (2*R*,2'*R*,3*R*,3'*R*,4α)-form, 5''-Hydroxy, 3,3'-bis-*O*-(3,4,5-trihydroxybenzoyl)	$C_{44}H_{34}O_{21}$	0	
369	3,3',4',5,7-Pentahydroxyflavan-(4→6)-3,3',4',5,7-pentahydroxyflavan; (2*R*,2'*R*,3*R*,3'*R*,4α)-form, 5'''-Hydroxy, 3,3'-bis-*O*-(3,4,5-trihydroxybenzoyl)	$C_{44}H_{34}O_{21}$	0	
370	3,4',5,7,8-Pentahydroxyflavone; 7-Me ether	$C_{16}H_{12}O_7$	0	
371	3,4',5,7,8-Pentahydroxyflavone; 7-Me ether, 3-*O*-β-D-glucopyranoside	$C_{22}H_{22}O_{12}$	0	
372	3,4',5,7,8-Pentahydroxyflavone; 7-Me ether, 3-*O*-[α-L-rhamnopyranosyl-(1→?)-β-D-glucopyranoside]	$C_{28}H_{32}O_{16}$	0	
373	3,3',4',5,7-Pentahydroxy-6-(5-oxo-2-pyrrolidinyl)flavan; (2*R*,2''*R*,3*R*)-form, *N*-Et, 3-*O*-(3,4,5-trihydroxybenzoyl)	$C_{28}H_{27}NO_{11}$	0	
374	3,3',4',5,7-Pentahydroxy-6-(5-oxo-2-pyrrolidinyl)flavan; (2*R*,2''*S*,3*R*)-form, *N*-Et, 3-*O*-(3,4,5-trihydroxybenzoyl)	$C_{28}H_{27}NO_{11}$	0	
375	3,3',4',5,7-Pentahydroxy-8-(5-oxo-2-pyrrolidinyl)flavan; (2*R*,2''*R*,3*R*)-form, *N*-Et	$C_{21}H_{23}NO_7$	0	
376	3,3',4',5,7-Pentahydroxy-8-(5-oxo-2-pyrrolidinyl)flavan; (2*R*,2''*R*,3*R*)-form, *N*-Et, 3-*O*-(3,4,5-trihydroxybenzoyl)	$C_{28}H_{27}NO_{11}$	0	
377	3,3',4',5,7-Pentahydroxy-8-(5-oxo-2-pyrrolidinyl)flavan; (2*R*,2''*R*,3*R*)-form, 5'-Hydroxy, *N*-Et	$C_{21}H_{23}NO_8$	0	
378	3,3',4',5,7-Pentahydroxy-8-(5-oxo-2-pyrrolidinyl)flavan; (2*R*,2''*R*,3*S*)-form, *N*-Et	$C_{21}H_{23}NO_7$	0	
379	3,3',4',5,7-Pentahydroxy-8-(5-oxo-2-pyrrolidinyl)flavan; (2*R*,2''*R*,3*S*)-form, 5'-Hydroxy, *N*-Et	$C_{21}H_{23}NO_8$	0	
380	3,3',4',5,7-Pentahydroxy-8-(5-oxo-2-pyrrolidinyl)flavan; (2*R*,2''*S*,3*R*)-form, *N*-Et	$C_{21}H_{23}NO_7$	0	
381	3,3',4',5,7-Pentahydroxy-8-(5-oxo-2-pyrrolidinyl)flavan; (2*R*,2''*S*,3*R*)-form, *N*-Et, 3-*O*-(3,4,5-trihydroxybenzoyl)	$C_{28}H_{27}NO_{11}$	0	
382	3,3',4',5,7-Pentahydroxy-8-(5-oxo-2-pyrrolidinyl)flavan; (2*R*,2''*S*,3*R*)-form, 5'-Hydroxy, *N*-Et	$C_{21}H_{23}NO_8$	0	
383	3,3',4',5,7-Pentahydroxy-8-(5-oxo-2-pyrrolidinyl)flavan; (2*R*,2''*S*,3*S*)-form, *N*-Et	$C_{21}H_{23}NO_7$	0	
384	3,3',4',5,7-Pentahydroxy-8-(5-oxo-2-pyrrolidinyl)flavan; (2*R*,2''*S*,3*S*)-form, 5'-Hydroxy, *N*-Et	$C_{21}H_{23}NO_8$	0	
385	3,3',4',5,7-Pentahydroxy-8-(5-oxo-2-pyrrolidinyl)flavan; (2*S*,2''*R*,3*R*)-form, *N*-Et, 3-*O*-(3,4,5-trihydroxybenzoyl)	$C_{28}H_{27}NO_{11}$	0	
386	3,3',4',5,7-Pentahydroxy-8-(5-oxo-2-pyrrolidinyl)flavan; (2*S*,2''*S*,3*R*)-form, *N*-Et, 3-*O*-(3,4,5-trihydroxybenzoyl)	$C_{28}H_{27}NO_{11}$	0	
387	1-Phenylethanol; (*R*)-form, *O*-β-D-Glucopyranoside	$C_{14}H_{20}O_6$	0	[15]
388	1-Phenylethanol; (*R*)-form, *O*-[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{19}H_{28}O_{10}$	0	[15]
389	1-Phenylethanol; (*S*)-form, *O*-β-D-Glucopyranoside	$C_{14}H_{20}O_6$	0	[15]
390	1-Phenylethanol; (*S*)-form, *O*-[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{19}H_{28}O_{10}$	0	[15]
391	1-Phenylethanol; (ξ)-form	$C_8H_{10}O$	1	[15]
392	2-Phenylethanol; *O*-[β-D-Xylopyranosyl-(1→6)-β-D-	$C_{19}H_{28}O_{10}$	0	

	glucopyranoside]			
393	Planchol A	$C_{14}H_{14}O_6$	1	
394	Planchol A; 3*a*,10*a*- or 3*b*,9*a*-Diepimer	$C_{14}H_{14}O_6$	0	
395	β-Primeverosidase		0	
396	Proepitheaflagallin	$C_{30}H_{24}O_{15}$	1	[16]
397	Proepitheaflagallin B	$C_{30}H_{24}O_{14}$	1	[16]
398	Puerin A	$C_{22}H_{24}O_7$	1	[17]
399	Puerin A; 5'-Hydroxy	$C_{22}H_{24}O_8$	0	[17]
400	Puerin C	$C_{24}H_{20}O_{11}$	0	[17]
401	Puerin C; 2,3-Diepimer	$C_{24}H_{20}O_{11}$	0	[17]
402	Puerin C; 2,10-Diepimer	$C_{24}H_{20}O_{11}$	0	[17]
403	Puerin C; 3,10-Diepimer	$C_{24}H_{20}O_{11}$	0	[17]
404	2-Pyrrolidinone; *N*-(2-Hydroxyphenyl)	$C_{10}H_{11}NO_2$	1	
405	Quercetin 3-glycosides; Disaccharides, 3-*O*-[α-L-Rhamnopyranosyl-(1→6)-[4-hydroxy-*E*-cinnamoyl-(→2)]-β-D-glucopyranoside]	$C_{36}H_{36}O_{18}$	0	
406	Quercetin 3-glycosides; Tetra- and higher saccharides, 3-*O*-[β-D-Glucopyranosyl-(1→3)-α-L-rhamnopyranosyl-(1→6)-[β-D-glucopyranosyl-(1→3)][4-hydroxy-*E*-cinnamoyl-(→2)]-β-D-glucopyranoside]	$C_{48}H_{56}O_{28}$	0	
407	Quercetin 3-glycosides; Tetra- and higher saccharides, 3-*O*-[β-D-Glucopyranosyl-(1→3)-α-L-rhamnopyranosyl-(1→6)-[4-hydroxy-*E*-cinnamoyl-(→2)][β-L-arabinopyranosyl-(1→3)]-β-D-glucopyranoside]	$C_{47}H_{54}O_{27}$	0	
408	Quercetin 3-glycosides; Trisaccharides, 3-*O*-[β-D-Glucopyranosyl-(1→3)-α-L-rhamnopyranosyl-(1→6)-β-D-galactopyranoside]	$C_{33}H_{40}O_{21}$	0	
409	Quercetin 3-glycosides; Trisaccharides, 3-*O*-[β-D-Glucopyranosyl-(1→3)-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{33}H_{40}O_{21}$	0	
410	Quercetin 3-glycosides; Trisaccharides, 3-*O*-[β-D-Glucopyranosyl-(1→3)-α-L-rhamnopyranosyl-(1→6)-[4-hydroxy-*E*-cinnamoyl-(→2)]-β-D-glucopyranoside]	$C_{42}H_{46}O_{23}$	0	
411	Quercetin 3-glycosides; Trisaccharides, 3-*O*-[α-L-Rhamnopyranosyl-(1→6)-[α-L-arabinopyranosyl-(1→3)]-[4-hydroxy-*E*-cinnamoyl-(→2)]-β-D-glucopyranoside]	$C_{41}H_{44}O_{22}$	0	
412	Quercetin 3-glycosides; Trisaccharides, 3-*O*-[β-D-Xylopyranosyl-(1→2)-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{32}H_{38}O_{20}$	0	
413	Quercetin 3-glycosides; Trisaccharides, 3-*O*-[β-D-Xylopyranosyl-(1→3)-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{32}H_{38}O_{20}$	0	
414	Quercetin 7-glycosides; 7-*O*-[3,4-Dihydroxy-*E*-cinnamoyl-(→6)-β-D-glucopyranoside]	$C_{30}H_{26}O_{15}$	0	
415	Sasanquol	$C_{30}H_{52}O$	1	[18]
416	Stenophyllanin C	$C_{49}H_{36}O_{27}$	1	
417	Stenophyllanin C; 3'-Epimer	$C_{49}H_{36}O_{27}$	0	
418	Stigmast-7-en-3-ol; (3β,5α,24*R*)-form, 3-*O*-β-D-	$C_{35}H_{60}O_6$	0	

	Glucopyranoside			
419	Teadenol A	$C_{14}H_{12}O_6$	1	
420	3,3',4,4'-Tetrahydroxydibenzamide	$C_{14}H_{11}NO_6$	0	
421	3,4',5,7-Tetrahydroxyflavan; (2*R*,3*R*)-form, 3-*O*-(3,4,5-Trihydroxybenzoyl)	$C_{22}H_{18}O_9$	0	
422	3,4',5,7-Tetrahydroxyflavanone; (2*R*,3*R*)-form	$C_{15}H_{12}O_6$	0	
423	3,4',5,7-Tetrahydroxyflavan-(4→6)-3,3',4',5,7-pentahydroxyflavan; (2*R*,2'*R*,3*R*,3'*R*,4α)-form, 3,3'-Bis-*O*-(3,4,5-trihydroxybenzoyl)	$C_{44}H_{34}O_{19}$	0	
424	3,4',5,7-Tetrahydroxyflavan-(4→8)-3,3',4',5,7-pentahydroxyflavan; (2*R*,2'*R*,3*R*,3'*R*,4α)-form, 3,3'-Bis-*O*-(3,4,5-trihydroxybenzoyl)	$C_{44}H_{34}O_{19}$	0	
425	4,7,17,29-Tetrahydroxy-28-nor-16-oxo-3,4-seco-12-oleanen-3-oic acid; (7β,17β)-form	$C_{29}H_{46}O_7$	0	
426	4,7,17,29-Tetrahydroxy-28-nor-16-oxo-3,4-seco-12-oleanen-3-oic acid; (7β,17β)-form, Me ester	$C_{30}H_{48}O_7$	0	
427	3,11,12,21-Tetrahydroxy-22-oxo-12-ursen-24-oic acid; (3β,11α,21β)-form	$C_{30}H_{46}O_7$	0	
428	Theacitrin A	$C_{37}H_{28}O_{18}$	1	
429	Theacitrin A; Degalloyl, 3'-galloyl	$C_{37}H_{28}O_{18}$	1	
430	Theacitrin A; 3'-*O*-(3,4,5-Trihydroxybenzoyl)	$C_{44}H_{32}O_{22}$	0	
431	Theacitrinin A	$C_{28}H_{20}O_{14}$	0	
432	Theacitrinin A; De-*O*-galloyl	$C_{21}H_{16}O_{10}$	0	
433	Theacitrinin B	$C_{37}H_{28}O_{18}$	1	
434	Theacoumarin A	$C_{27}H_{22}O_{11}$	0	
435	Theadibenzotropolone A	$C_{50}H_{38}O_{21}$	0	
436	Theadibenzotropolone A; 3-Epimer	$C_{50}H_{38}O_{21}$	0	
437	Theadibenzotropolone A; 3''-Epimer	$C_{50}H_{38}O_{21}$	0	
438	Theaflagallin	$C_{20}H_{16}O_9$	1	
439	Theaflavate B	$C_{36}H_{28}O_{15}$	0	
440	Theaflavate B; 3'-*O*-(3,4,5-Trihydroxybenzoyl)	$C_{43}H_{32}O_{19}$	0	
441	Theaflavic acid	$C_{21}H_{16}O_{10}$	1	
442	Theaflavic acid; 3-Epimer	$C_{21}H_{16}O_{10}$	0	
443	Theaflavic acid; 3-Epimer, 3-*O*-(3,4,5-trihydroxybenzoyl)	$C_{28}H_{20}O_{14}$	0	
444	Theaflavin	$C_{29}H_{24}O_{12}$	1	[19]
445	Theaflavin; 3,3'-Bis-*O*-(3,4,5-trihydroxybenzoyl)	$C_{43}H_{32}O_{20}$	0	
446	Theaflavin; 3-*O*-(3,4-Dihydroxy-5-methoxybenzoyl)	$C_{37}H_{30}O_{16}$	0	
447	Theaflavin; 3-*O*-(3,4-Dihydroxy-5-methoxybenzoyl), 3'-*O*-(3,4,5-trihydroxybenzoyl)	$C_{44}H_{34}O_{20}$	0	
448	Theaflavin; 3-Epimer	$C_{29}H_{24}O_{12}$	0	
449	Theaflavin; 3'-Epimer, 3-*O*-(3,4,5-trihydroxybenzoyl)	$C_{36}H_{28}O_{16}$	0	
450	Theaflavin; 3-Epimer, 3'-*O*-(3,4,5-trihydroxybenzoyl)	$C_{36}H_{28}O_{16}$	0	
451	Theaflavin; 3'-*O*-(3,4,5-Trihydroxybenzoyl)	$C_{36}H_{28}O_{16}$	0	
452	Theaflavin; 3-*O*-(3,4,5-Trihydroxybenzoyl)	$C_{36}H_{28}O_{16}$	0	
453	Theagalloflavic acid	$C_{14}H_8O_{11}$	0	

454	Theanine; (*S*)-form	$C_7H_{14}N_2O_3$	1	
455	Theasinensin C	$C_{30}H_{26}O_{14}$	1	
456	Theasinensin C; Atropisomer	$C_{30}H_{26}O_{14}$	0	
457	Theasinensin C; Atropisomer, 3,3'-bis-*O*-(3,4,5-trihydroxybenzoyl)	$C_{44}H_{34}O_{22}$	0	
458	Theasinensin C; Atropisomer, 3''-deoxy, 3,3'-bis-*O*-(3,4,5-trihydroxybenzoyl)	$C_{44}H_{34}O_{21}$	0	
459	Theasinensin C; 3''-Deoxy, 3,3'-bis-*O*-(3,4,5-trihydroxybenzoyl)	$C_{44}H_{34}O_{21}$	0	
460	Theatribenzotropolone A	$C_{71}H_{52}O_{30}$	0	
461	Theobromine	$C_7H_8N_4O_2$	1	[20]
462	Theobromine synthase		0	
463	Theophylline	$C_7H_8N_4O_2$	1	
464	Tirucalla-5,7,24-trien-3-ol; 3β-form	$C_{30}H_{48}O$	1	
465	3,11,13-Trihydroxy-12,22-dioxo-23-oleananoic acid; (3β,11α)-form	$C_{30}H_{46}O_7$	0	
466	4',5,7-Trihydroxyflavanone; (*S*)-form, *O*-Fructoside	$C_{21}H_{22}O_{10}$	0	
467	4',5,7-Trihydroxyflavanone; (*S*)-form, 7-*O*-[β-D-Glucopyranosyl-(1→2)-α-L-rhamnopyranosyl-(1→2)-β-D-glucopyranoside]	$C_{33}H_{42}O_{19}$	0	
468	4',5,7-Trihydroxyflavanone; (*S*)-form, 7-*O*-[β-D-Glucopyranosyl-(1→2)-α-L-rhamnopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→6)]-β-D-glucopyranoside]	$C_{38}H_{50}O_{23}$	0	
469	4',5,7-Trihydroxyflavanone; (*S*)-form, 7-*O*-[α-L-Rhamnopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{27}H_{32}O_{14}$	0	
470	4',5,7-Trihydroxyflavanone; (*S*)-form, 7-*O*-[α-L-Rhamnopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→6)]-β-D-glucopyranoside]	$C_{32}H_{40}O_{18}$	0	
471	4',5,7-Trihydroxyflavanone; (*S*)-form, 7-*O*-[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]	$C_{26}H_{30}O_{14}$	0	
472	4',5,7-Trihydroxyflavanone; (ξ)-form, 7-*O*-[β-D-Glucopyranosyl-(1→3)-α-L-rhamnopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→6)]-β-D-glucopyranoside]	$C_{38}H_{50}O_{23}$	0	
473	4',5,7-Trihydroxyflavone; 5-*O*-[α-L-Rhamnopyranosyl-(1→2)-6-*O*-acetyl-β-D-glucopyranoside]	$C_{29}H_{32}O_{15}$	0	
474	4',5,7-Trihydroxyflavone; 5-*O*-[α-L-Rhamnopyranosyl-(1→2)-β-D-glucopyranoside]	$C_{27}H_{30}O_{14}$	0	
475	3,5,6-Trihydroxy-7-megastigmen-9-one; (3*R*,5*S*,6*S*,7*E*)-form, 3-*O*-β-D-Glucopyranoside	$C_{19}H_{32}O_9$	0	
476	4,7,17-Trihydroxy-28-nor-16-oxo-3,4-seco-12-oleanen-3-oic acid; (7β,17β)-form, Butyl ester	$C_{33}H_{54}O_6$	0	
477	4,7,17-Trihydroxy-28-nor-16-oxo-3,4-seco-12-oleanen-3-oic acid; (7β,17β)-form, Me ester	$C_{30}H_{48}O_6$	0	
478	4,17,29-Trihydroxy-28-nor-16-oxo-3,4-seco-12-oleanen-3-oic acid; 17β-form, Butyl ester	$C_{33}H_{54}O_6$	0	
479	4,17,29-Trihydroxy-28-nor-16-oxo-3,4-seco-12-oleanen-3-oic acid; 17β-form, Me ester	$C_{30}H_{48}O_6$	0	
480	3,11,13-Trihydroxy-12-oleananone; (3β,11α,13β)-form	$C_{30}H_{50}O_4$	0	

481	3,22,28-Trihydroxy-12-oleanen-23-al; (3β,22α)-form, 22-*O*-(3-Phenylpropanoyl), 3-*O*-[β-D-xylopyranosyl-(1→2)-α-L-arabinopyranosyl-(1→3)-[β-D-glucopyranosyl-(1→2)]-β-D-glucuronopyranoside]	$C_{61}H_{90}O_{24}$	0
482	4,28,29-Trihydroxy-16-oxo-3,4-seco-12-oleanen-3-oic acid; Me ester	$C_{31}H_{50}O_6$	0
483	Uric acid; 1,3,7,9-Tetra-Me	$C_9H_{12}N_4O_3$	1
484	Xanthocerin	$C_{13}H_{12}O_5$	1
485	Xanthocerin; 10*α*-Epimer	$C_{13}H_{12}O_5$	0
486	Xanthocerin; 10*α*-Epimer, Δ^4-isomer		0

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