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Iridoids in Hydrangeaceae

Chrysoula Gousiadou^a, Hong-Qing Li^b, Charlotte Gotfredsen^a, Søren Rosendal Jensen^{a,*}

^aDepartment of Chemistry, Technical University of Denmark, DK-2800, Lyngby, Denmark

^bSchool of Life Science, East China Normal University, Shanghai, China

Abstract

The distribution of the iridoid and secoiridoid glucosides as well as the known biosynthetic pathways to these compounds in the family Hydrangeaceae has been reviewed. Loganin and secologanin and derivatives of these are common in the few genera investigated. However, the genus *Deutzia* is characteristic in containing more simple iridoids in which C-10 has been lost during biosynthesis, such compounds are otherwise only reported from *Mentzelia* (Loasaceae). In the present work, also *Kirengeshoma* and *Jamesia* have been investigated. The former contains loganin and secoiridoids, including the alkaloid demethylalangiside. The latter contains no iridoids, but the known glucosides arbutin, picein and prunasin. The taxonomic relationships between Hydrangeaceae and the closely related Cornaceae and Loasaceae is discussed and found to agree very well with recent DNA sequence results.

* Corresponding author. Tel.: +45-45252103; fax: +45-45933968.

E-mail address: srj@kemi.dtu.dk (S.R. Jensen).

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Figure S1

^1H NMR (CD_3OD , 500 MHz)
of 6-OH-sweroside (**37**)

PPM

AH.052
DATE 16-7-99SF 50.323
SY 50.0
O1 -1400.000
SI 16384
TD 16384
SW 11904.762
HZ/PT 1.453PW 4.0
RD 0.0
AQ .688
RG 400
NS 4131
TE 297FW 14900
O2 3000.000
DP 18H CPDLB 3.000
GB 0.0
CX 27.00
CY 0.0
F1 200.026P
F2 -2.464P
HZ/CM 377.406
PPM/CM 7.500
SR -6597.70

155.817

131.095

122.185

102.240

99.123

98.410

77.119

76.336

73.941

73.393

71.389

70.367

63.079

61.491

39.819

34.508

Figure S2
 ^{13}C NMR (D_2O , 50 MHz)
of 6-OH-sweroside (37)

2901
CHG-CH-2E
STANDARD 1H OBSERVE

Figure S3
 ^1H NMR (CD_3OD , 500 MHz)
of demethylalangiside (**38**)

7.04
7.02
6.85
6.83

4.97
4.95
4.75

Figure S5
 ^1H NMR (D_2O , 500 MHz)
of arbutin (**40**)

PPM

AH876I
DATE 16-7-4

SF 50.323
SY 50.0
O1 9000.000
SI 16384
TD 16384
SW 15151.515
HZ/PT 1.850

PW 4.0
RD 1.000
AQ .541
RG 200
NS 8
TE 297

FW 19000
O2 3000.000
DP 18H CPD

LB 3.000
GB 0.0
CX 27.00
CY 0.0
F1 200.023P
F2 -15.976P
HZ/CM 402.585
PPM/CM 8.000
SR 3391.57

152.211
151.377

119.644
119.105
117.433
116.950

102.975
101.591

77.384
76.908
76.186
74.296
73.592
72.406
70.753
70.079
62.110
61.481
60.935

Figure S6
 ^{13}C NMR (D_2O , 50 MHz) of
arbutin (**40**)

Figure S7
 ^1H NMR (D_2O , 500 MHz)
of picein (**41**)

AH876LM
DATE 14-9-11

SF 50.323
SY 50.0
O1 9000.000
SI 16384
TD 16384
SW 15151.515
HZ/PT 1.850

PW 4.0
RD 1.000
AQ .541
RG 320
NS 55424
TE 297

FW 19000
O2 3000.000
DP 18H CPD

LB 3.500
GB 0.0
CX 27.00
CY 0.0
F1 220.017P
F2 4.018P
HZ/CM 402.585
PPM/CM 8.000
SR 3391.57

PPM
203.641

161.877

132.381
132.134

117.728
117.072

100.381

77.243
76.504
73.845
70.390

61.527

27.032

Figure S8
 ^{13}C NMR (D_2O , 50 MHz)
of picein (41)

AEH-876o-1h
AEH-876 O
STANDARD 1H OBSERVE

AEH-876o-13c
AEH-876 O
STANDARD 1H OBSERVE

12