

## SUPPLEMENTARY MATERIAL

### **Phenylalkyl glycosides from the flowers of *Brugmansia arborea* L. and their radical scavenging effect and protective effect on pancreatic islets damaged by alloxan in zebrafish (*Danio rerio*) larvae**

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Figure S1. <sup>1</sup>H NMR spectrum of brugmansioside C (**6**) in CD<sub>3</sub>OD (600 MHz)

Figure S2. <sup>13</sup>C NMR spectrum of brugmansioside C (**6**) in CD<sub>3</sub>OD (150 MHz)

Figure S3. gHMBC spectrum of brugmansioside C (**6**) in CD<sub>3</sub>OD

Figure S4. gHSQC spectrum of brugmansioside C (**6**) in CD<sub>3</sub>OD

Figure S5. HRFABMS spectrum of brugmansioside C (**6**)

Figure S6. IR spectrum of brugmansioside C (**6**)

[illegible]

140.2732  
138.9653  
130.9477  
130.5974  
130.2016  
128.6643  
128.5531  
128.5140  
128.4343  
128.3455  
127.5538  
127.3569  
105.2095  
104.7512  
104.6910  
104.6539  
83.2351  
80.9523  
77.8798  
77.8004  
77.0389  
76.6984  
75.2676  
75.2079  
75.1773  
74.9360  
72.5305  
71.9947  
71.8702  
71.7500  
71.6309  
70.3493  
69.9867  
66.6338  
66.8866  
62.8405  
62.7223  
65.5819  
64.9735  
62.980  
61.543  
60.0123  
48.8713  
46.7274  
33.3882  
19.1960  
17.4485

3AFB-9-8-15-3  
13C NMR  
MeOD

Current Data Parameters  
NAME PNC03015  
EXPNO 52  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20150916  
Time\_ 10.27  
INSTRUM spect  
PROBHD 5 mm BBO BB-1H  
PULPROG zgpg30  
TD 65536  
SOLVENT CDCl3  
NS 27173  
DS 0  
SWH 42372.883 kHz  
FIDRES 0.646559 Hz  
AQ 0.733856 sec  
RG 1824.6  
DA 1.1100 usec  
DE 6.00 usec  
TE 307.2 K  
D1 2.00000000 sec  
DELTA 1.89999998 sec  
TDS 1

CHANNEL f1  
NUC1 13C  
P1 7.00 usec  
PL1 2.20 dB  
SFO1 150.9194580 MHz

CHANNEL f2  
CPDPRG2 waitz 16  
NUC2  
PCPD2 80.00 usec  
P2 0.00 dB  
PL2 12.48 dB  
PL12 16.00 dB  
SFO2 600.1324000 MHz

F2 - Processing parameters  
SF 150.9025740 MHz  
WIDW 0  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

[illegible]

BAFB-9-8-15-3  
HSQC  
MeOD

Current Data Parameters  
NAME: BAFB-9-8-15-3  
PROCNO: 1

F2 - Acquisition Parameters  
Date\_ : 20130811  
Time : 21:34  
F2PROC: 1000 MHz  
F2PROC-C: 1000 MHz  
F2SOLVENT: DMSO-d6  
F2NS: 12  
F2AQ: 12

F1 - Acquisition Parameters  
NAME: BAFB-9-8-15-3  
PROCNO: 1  
F1PROC: 1000 MHz  
F1PROC-C: 1000 MHz  
F1SOLVENT: DMSO-d6  
F1NS: 12  
F1AQ: 12

===== CHANNEL f1 =====  
NUC1: 13C  
P1: 12.00 usec  
PL1: 0.00 dB  
PL12: 100.00 dB  
PC1: 100.00 usec  
===== CHANNEL G2 =====  
NUC2: 1H  
P2: 12.00 usec  
PL2: 0.00 dB  
PL12: 100.00 dB  
PC2: 100.00 usec

===== CHANNEL G1 =====  
NUC1: 13C  
P1: 12.00 usec  
PL1: 0.00 dB  
PL12: 100.00 dB  
PC1: 100.00 usec

===== CHANNEL G2 =====  
NUC2: 1H  
P2: 12.00 usec  
PL2: 0.00 dB  
PL12: 100.00 dB  
PC2: 100.00 usec

===== CHANNEL G3 =====  
NUC3: 13C  
P3: 12.00 usec  
PL3: 0.00 dB  
PL12: 100.00 dB  
PC3: 100.00 usec

===== CHANNEL G4 =====  
NUC4: 1H  
P4: 12.00 usec  
PL4: 0.00 dB  
PL12: 100.00 dB  
PC4: 100.00 usec

===== CHANNEL G5 =====  
NUC5: 13C  
P5: 12.00 usec  
PL5: 0.00 dB  
PL12: 100.00 dB  
PC5: 100.00 usec

===== CHANNEL G6 =====  
NUC6: 1H  
P6: 12.00 usec  
PL6: 0.00 dB  
PL12: 100.00 dB  
PC6: 100.00 usec

===== CHANNEL G7 =====  
NUC7: 13C  
P7: 12.00 usec  
PL7: 0.00 dB  
PL12: 100.00 dB  
PC7: 100.00 usec

===== CHANNEL G8 =====  
NUC8: 1H  
P8: 12.00 usec  
PL8: 0.00 dB  
PL12: 100.00 dB  
PC8: 100.00 usec

===== CHANNEL G9 =====  
NUC9: 13C  
P9: 12.00 usec  
PL9: 0.00 dB  
PL12: 100.00 dB  
PC9: 100.00 usec

===== CHANNEL G10 =====  
NUC10: 1H  
P10: 12.00 usec  
PL10: 0.00 dB  
PL12: 100.00 dB  
PC10: 100.00 usec

===== CHANNEL G11 =====  
NUC11: 13C  
P11: 12.00 usec  
PL11: 0.00 dB  
PL12: 100.00 dB  
PC11: 100.00 usec

===== CHANNEL G12 =====  
NUC12: 1H  
P12: 12.00 usec  
PL12: 0.00 dB  
PL12: 100.00 dB  
PC12: 100.00 usec

===== CHANNEL G13 =====  
NUC13: 13C  
P13: 12.00 usec  
PL13: 0.00 dB  
PL12: 100.00 dB  
PC13: 100.00 usec

===== CHANNEL G14 =====  
NUC14: 1H  
P14: 12.00 usec  
PL14: 0.00 dB  
PL12: 100.00 dB  
PC14: 100.00 usec

===== CHANNEL G15 =====  
NUC15: 13C  
P15: 12.00 usec  
PL15: 0.00 dB  
PL12: 100.00 dB  
PC15: 100.00 usec

===== CHANNEL G16 =====  
NUC16: 1H  
P16: 12.00 usec  
PL16: 0.00 dB  
PL12: 100.00 dB  
PC16: 100.00 usec

===== CHANNEL G17 =====  
NUC17: 13C  
P17: 12.00 usec  
PL17: 0.00 dB  
PL12: 100.00 dB  
PC17: 100.00 usec

===== CHANNEL G18 =====  
NUC18: 1H  
P18: 12.00 usec  
PL18: 0.00 dB  
PL12: 100.00 dB  
PC18: 100.00 usec

===== CHANNEL G19 =====  
NUC19: 13C  
P19: 12.00 usec  
PL19: 0.00 dB  
PL12: 100.00 dB  
PC19: 100.00 usec

===== CHANNEL G20 =====  
NUC20: 1H  
P20: 12.00 usec  
PL20: 0.00 dB  
PL12: 100.00 dB  
PC20: 100.00 usec

===== CHANNEL G21 =====  
NUC21: 13C  
P21: 12.00 usec  
PL21: 0.00 dB  
PL12: 100.00 dB  
PC21: 100.00 usec

===== CHANNEL G22 =====  
NUC22: 1H  
P22: 12.00 usec  
PL22: 0.00 dB  
PL12: 100.00 dB  
PC22: 100.00 usec

===== CHANNEL G23 =====  
NUC23: 13C  
P23: 12.00 usec  
PL23: 0.00 dB  
PL12: 100.00 dB  
PC23: 100.00 usec

===== CHANNEL G24 =====  
NUC24: 1H  
P24: 12.00 usec  
PL24: 0.00 dB  
PL12: 100.00 dB  
PC24: 100.00 usec

===== CHANNEL G25 =====  
NUC25: 13C  
P25: 12.00 usec  
PL25: 0.00 dB  
PL12: 100.00 dB  
PC25: 100.00 usec

===== CHANNEL G26 =====  
NUC26: 1H  
P26: 12.00 usec  
PL26: 0.00 dB  
PL12: 100.00 dB  
PC26: 100.00 usec

===== CHANNEL G27 =====  
NUC27: 13C  
P27: 12.00 usec  
PL27: 0.00 dB  
PL12: 100.00 dB  
PC27: 100.00 usec

===== CHANNEL G28 =====  
NUC28: 1H  
P28: 12.00 usec  
PL28: 0.00 dB  
PL12: 100.00 dB  
PC28: 100.00 usec

===== CHANNEL G29 =====  
NUC29: 13C  
P29: 12.00 usec  
PL29: 0.00 dB  
PL12: 100.00 dB  
PC29: 100.00 usec

===== CHANNEL G30 =====  
NUC30: 1H  
P30: 12.00 usec  
PL30: 0.00 dB  
PL12: 100.00 dB  
PC30: 100.00 usec

===== CHANNEL G31 =====  
NUC31: 13C  
P31: 12.00 usec  
PL31: 0.00 dB  
PL12: 100.00 dB  
PC31: 100.00 usec

===== CHANNEL G32 =====  
NUC32: 1H  
P32: 12.00 usec  
PL32: 0.00 dB  
PL12: 100.00 dB  
PC32: 100.00 usec

===== CHANNEL G33 =====  
NUC33: 13C  
P33: 12.00 usec  
PL33: 0.00 dB  
PL12: 100.00 dB  
PC33: 100.00 usec

===== CHANNEL G34 =====  
NUC34: 1H  
P34: 12.00 usec  
PL34: 0.00 dB  
PL12: 100.00 dB  
PC34: 100.00 usec

===== CHANNEL G35 =====  
NUC35: 13C  
P35: 12.00 usec  
PL35: 0.00 dB  
PL12: 100.00 dB  
PC35: 100.00 usec

===== CHANNEL G36 =====  
NUC36: 1H  
P36: 12.00 usec  
PL36: 0.00 dB  
PL12: 100.00 dB  
PC36: 100.00 usec

===== CHANNEL G37 =====  
NUC37: 13C  
P37: 12.00 usec  
PL37: 0.00 dB  
PL12: 100.00 dB  
PC37: 100.00 usec

===== CHANNEL G38 =====  
NUC38: 1H  
P38: 12.00 usec  
PL38: 0.00 dB  
PL12: 100.00 dB  
PC38: 100.00 usec

===== CHANNEL G39 =====  
NUC39: 13C  
P39: 12.00 usec  
PL39: 0.00 dB  
PL12: 100.00 dB  
PC39: 100.00 usec

===== CHANNEL G40 =====  
NUC40: 1H  
P40: 12.00 usec  
PL40: 0.00 dB  
PL12: 100.00 dB  
PC40: 100.00 usec

===== CHANNEL G41 =====  
NUC41: 13C  
P41: 12.00 usec  
PL41: 0.00 dB  
PL12: 100.00 dB  
PC41: 100.00 usec

===== CHANNEL G42 =====  
NUC42: 1H  
P42: 12.00 usec  
PL42: 0.00 dB  
PL12: 100.00 dB  
PC42: 100.00 usec

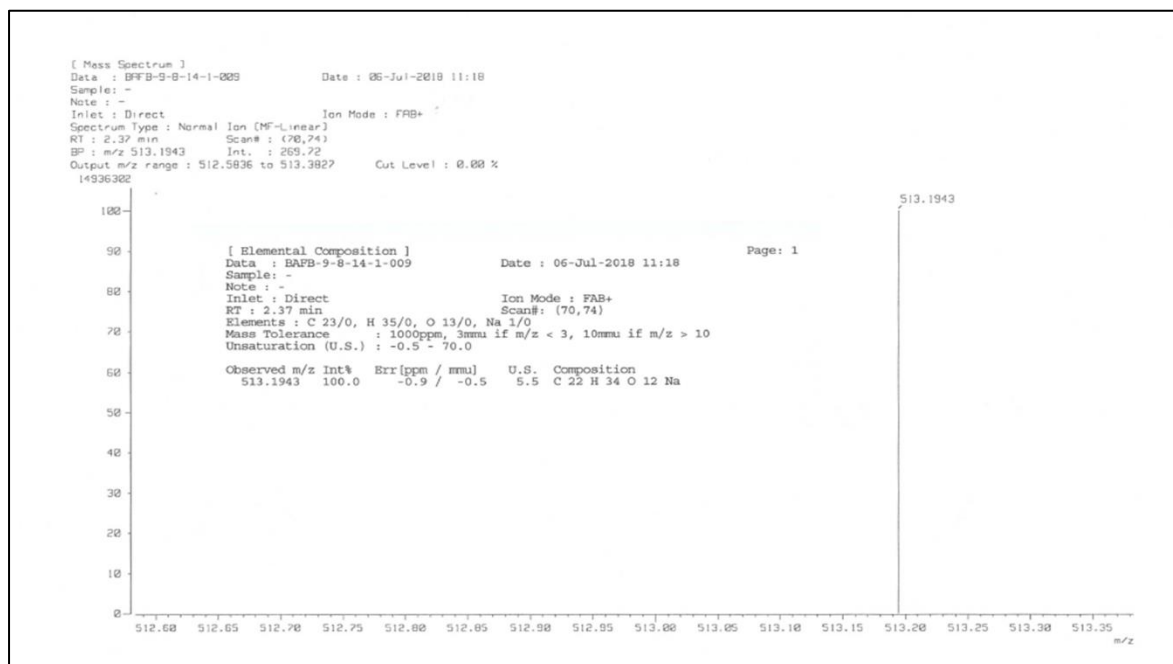
===== CHANNEL G43 =====  
NUC43: 13C  
P43: 12.00 usec  
PL43: 0.00 dB  
PL12: 100.00 dB  
PC43: 100.00 usec

===== CHANNEL G44 =====  
NUC44: 1H  
P44: 12.00 usec  
PL44: 0.00 dB  
PL12: 100.00 dB  
PC44: 100.00 usec

===== CHANNEL G45 =====  
NUC45: 13C  
P45: 12.00 usec  
PL45: 0.00 dB  
PL12: 100.00 dB  
PC45: 100.00 usec

===== CHANNEL G46 =====  
NUC46: 1H  
P46: 12.00 usec  
PL46: 0.00 dB  
PL12: 1

**Figure S5.** HRFABMS spectrum of brugmansioside C (6)



**Figure S6.** IR spectrum of brugmansioside C (6)

