

Supplementary Materials

Compound 1

Figure S1. 1D ^1H -NMR spectrum of compound **1** (methanol- d_4 , 500.18 MHz).

Figure S2. 1D ^{13}C -NMR spectra (^1H decoupled and DEPT-135) (methanol- d_4 , 125.77 MHz).

Figure S3. 2D g -COSY NMR spectrum of compound **1** (methanol- d_4 , 500.18 MHz).

Figure S4. 2D TOCSY NMR spectrum of compound **1** (methanol- d_4 , 500.18 MHz).

Figure S5. 2D ROESY NMR spectrum of compound **1** (methanol- d_4 , 500.18 MHz).

Figure S6. 2D g -HSQC-NMR spectrum of compound **1** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S7. 2D g -HSQC-TOCSY NMR spectrum of compound **1** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S8. 2D g -HMBC-NMR spectrum of compound **1** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S9. 1D TOCSY and 1D ROESY NMR subspectra of H-1($7\text{-O-}\beta\text{-GlcA}$) in compound **1** (methanol- d_4 , 500.18 MHz).

Figure S10. 1D TOCSY and 1D ROESY NMR subspectra of H-1($3\text{-O-}\beta\text{-Gal}$) in compound **1** (methanol- d_4 , 500.18 MHz).

Figure S11. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{\text{Gal-O-}}\beta\text{-Glc}$) in compound **1** (methanol- d_4 , 500.18 MHz).

Compound 2

Figure S12. 1D ^1H -NMR spectrum of compound **2** (methanol- d_4 , 500.18 MHz).

Figure S13. 1D ^{13}C -NMR spectrum (^1H decoupled) of compound **2** (methanol- d_4 , 125.77 MHz).

Figure S14. 2D g -COSY NMR spectrum of compound **2** (methanol- d_4 , 500.18 MHz).

Figure S15. 2D TOCSY NMR spectrum of compound **2** (methanol- d_4 , 500.18 MHz).

Figure S16. 2D ROESY NMR spectrum of compound **2** (methanol- d_4 , 500.18 MHz).

Figure S17. 2D g -HSQC-NMR spectrum of compound **2** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S18. 2D g -HSQC-TOCSY NMR spectrum of compound **2** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S19. 2D g -HMBC-NMR spectrum of compound **2** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S20. 1D TOCSY and 1D ROESY NMR subspectra of H-1($7\text{-O-}\beta\text{-GlcA}$) in compound **2** (methanol- d_4 , 500.18 MHz).

Figure S21. 1D TOCSY and 1D ROESY NMR subspectra of H-1($3\text{-O-}\beta\text{-Glc}$) in compound **2** (methanol- d_4 , 500.18 MHz).

Figure S22. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{\text{Glc-O-}}\beta\text{-Glc}$) in compound **2** (methanol- d_4 , 500.18 MHz).

Compound 3

Figure S23. 1D ^1H -NMR spectrum of compound **3** (methanol- d_4 , 500.18 MHz).

Figure S24. 1D ^{13}C -NMR spectra (^1H decoupled and DEPT-135) of compound **3** (methanol- d_4 , 125.77 MHz).

Figure S25. 2D g -COSY NMR spectrum of compound **3** (methanol- d_4 , 500.18 MHz).

Figure S26. 2D TOCSY NMR spectrum of compound **3** (methanol- d_4 , 500.18 MHz).

Figure S27. 2D ROESY NMR spectrum of compound **3** (methanol- d_4 , 500.18 MHz).

Figure S28. 2D g -HSQC-NMR spectrum of compound **3** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S29. 2D g -HSQC-TOCSY NMR spectrum of compound **3** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S30. 2D g -HMBC-NMR spectrum of compound **3** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S31. 1D TOCSY and 1D ROESY NMR subspectra of H-1($7-O-\beta$ -GlcA) in compound **3** (methanol- d_4 , 500.18 MHz).

Figure S32. 1D TOCSY and 1D ROESY NMR subspectra of H-1($3-O-\beta$ -Gal) in compound **3** (methanol- d_4 , 500.18 MHz).

Figure S33. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{Gal}-O-\beta$ -Glc) in compound **3** (methanol- d_4 , 500.18 MHz).

Compound 4

Figure S34. 1D ^1H -NMR spectrum of compound **4** (methanol- d_4 , 500.18 MHz).

Figure S35. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **4** (methanol- d_4 , 125.77 MHz).

Figure S36. 2D g -COSY NMR spectrum of compound **4** (methanol- d_4 , 500.18 MHz).

Figure S37. 2D TOCSY NMR spectrum of compound **4** (methanol- d_4 , 500.18 MHz).

Figure S38. 2D ROESY NMR spectrum of compound **4** (methanol- d_4 , 500.18 MHz).

Figure S39. 2D g -HSQC-NMR spectrum of compound **4** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S40. 2D g -HSQC-TOCSY NMR spectrum of compound **4** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S41. 2D g -HMBC-NMR spectrum of compound **4** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S42. 1D TOCSY and 1D ROESY NMR subspectra of H-1($7-O-\beta$ -GlcA) and H-1($3-O-\beta$ -Gal) in compound **4** (methanol- d_4 , 500.18 MHz).

Figure S43. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{Gal}-O-\beta$ -Glc) in compound **4** (methanol- d_4 , 500.18 MHz).

Compound 5

Figure S44. 1D ^1H -NMR spectrum of compound **5** (methanol- d_4 , 500.18 MHz).

Figure S45. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **5** (methanol- d_4 , 125.77 MHz).

Figure S46. 2D g -COSY NMR spectrum of compound **5** (methanol- d_4 , 500.18 MHz).

Figure S47. 2D TOCSY NMR spectrum of compound **5** (methanol- d_4 , 500.18 MHz).

Figure S48. 2D ROESY NMR spectrum of compound **5** (methanol- d_4 , 500.18 MHz).

Figure S49. 2D g -HSQC-NMR spectrum of compound **5** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S50. 2D g -HSQC-TOCSY NMR spectrum of compound **5** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S51. 2D g -HMBC-NMR spectrum of compound **5** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S52. 1D TOCSY and 1D ROESY NMR subspectra of H-1($7-O-\beta$ -GlcA) and H-1($3-O-\beta$ -Gal) in compound **5** (methanol- d_4 , 500.18 MHz).

Figure S53. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{\text{Gal}}\text{-O-}\beta\text{-Glc}$) in compound **5** (methanol- d_4 , 500.18 MHz).

Compound 6

Figure S54. 1D ^1H -NMR spectrum of compound **6** (methanol- d_4 , 500.18 MHz).

Figure S55. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **6** (methanol- d_4 , 125.77 MHz).

Figure S56. 2D g -COSY NMR spectrum of compound **6** (methanol- d_4 , 500.18 MHz).

Figure S57. 2D TOCSY NMR spectrum of compound **6** (methanol- d_4 , 500.18 MHz).

Figure S58. 2D ROESY NMR spectrum of compound **6** (methanol- d_4 , 500.18 MHz).

Figure S59. 2D g -HSQC-NMR spectrum of compound **6** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S60. 2D g -HSQC-TOCSY NMR spectrum of compound **6** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S61. 2D g -HMBC-NMR spectrum of compound **6** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S62. 1D TOCSY and 1D ROESY NMR subspectra of H-1($7\text{-O-}\beta\text{-GlcA}$) in compound **6** (methanol- d_4 , 500.18 MHz).

Figure S63. 1D TOCSY and 1D ROESY NMR subspectra of H-1($3\text{-O-}\beta\text{-Gal}$) in compound **6** (methanol- d_4 , 500.18 MHz).

Figure S64. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{\text{Gal}}\text{-O-}\beta\text{-Glc}$) in compound **6** (methanol- d_4 , 500.18 MHz).

Compound 7

Figure S65. 1D ^1H -NMR spectrum of compound **7** (methanol- d_4 , 500.18 MHz).

Figure S66. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **7** (methanol- d_4 , 125.77 MHz).

Figure S67. 2D g -COSY NMR spectrum of compound **7** (methanol- d_4 , 500.18 MHz).

Figure S68. 2D TOCSY NMR spectrum of compound **7** (methanol- d_4 , 500.18 MHz).

Figure S69. 2D ROESY NMR spectrum of compound **7** (methanol- d_4 , 500.18 MHz).

Figure S70. 2D g -HSQC-NMR spectrum of compound **7** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S71. 2D g -HSQC-TOCSY NMR spectrum of compound **7** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S72. 2D g -HMBC-NMR spectrum of compound **7** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S73. 1D TOCSY and 1D ROESY NMR subspectra of H-1($7\text{-O-}\beta\text{-GlcA}$) in compound **7** (methanol- d_4 , 500.18 MHz).

Figure S74. 1D TOCSY and 1D ROESY NMR subspectra of H-1($3\text{-O-}\beta\text{-Gal}$) in compound **7** (methanol- d_4 , 500.18 MHz).

Figure S75. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{\text{Gal}}\text{-O-}\beta\text{-Glc}$) in compound **7** (methanol- d_4 , 500.18 MHz).

Figure S76. 1D ^1H -NMR spectrum of compound **8** (methanol- d_4 , 500.18 MHz).

Compound 8

Figure S77. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **8** (methanol- d_4 , 125.77 MHz).

Figure S78. 2D *g*-COSY NMR spectrum of compound **8** (methanol- d_4 , 500.18 MHz).

Figure S79. 2D TOCSY NMR spectrum of compound **8** (methanol- d_4 , 500.18 MHz).

Figure S80. 2D ROESY NMR spectrum of compound **8** (methanol- d_4 , 500.18 MHz).

Figure S81. 2D *g*-HSQC-NMR spectrum of compound **8** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S82. 2D *g*-HSQC-TOCSY NMR spectrum of compound **8** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S83. 2D *g*-HMBC-NMR spectrum of compound **8** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S84. 1D TOCSY and 1D ROESY NMR subspectra of H-1($7\text{-O-}\beta\text{-GlcA}$) in compound **8** (methanol- d_4 , 500.18 MHz).

Figure S85. 1D TOCSY and 1D ROESY NMR subspectra of H-1($3\text{-O-}\beta\text{-Gal}$) in compound **8** (methanol- d_4 , 500.18 MHz).

Figure S86. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{\text{Gal}}\text{-O-}\beta\text{-Glc}$) in compound **8** (methanol- d_4 , 500.18 MHz).

Compound 9

Figure S87. 1D ^1H -NMR spectrum of compound **9** (methanol- d_4 , 500.18 MHz).

Figure S88. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **9** (methanol- d_4 , 125.77 MHz).

Figure S89. 2D *g*-COSY NMR spectrum of compound **9** (methanol- d_4 , 500.18 MHz).

Figure S90. 2D TOCSY NMR spectrum of compound **9** (methanol- d_4 , 500.18 MHz).

Figure S91. 2D ROESY NMR spectrum of compound **9** (methanol- d_4 , 500.18 MHz).

Figure S92. 2D *g*-HSQC-NMR spectrum of compound **9** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S93. 2D *g*-HSQC-TOCSY NMR spectrum of compound **9** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S94. 2D *g*-HMBC-NMR spectrum of compound **9** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S95. 1D TOCSY and 1D ROESY NMR subspectra of H-1($7\text{-O-}\beta\text{-GlcA}$) in compound **9** (methanol- d_4 , 500.18 MHz).

Figure S96. 1D TOCSY and 1D ROESY NMR subspectra of H-1($3\text{-O-}\beta\text{-Gal}$) in compound **9** (methanol- d_4 , 500.18 MHz).

Figure S97. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{\text{Gal}}\text{-O-}\beta\text{-Glc}$) in compound **9** (methanol- d_4 , 500.18 MHz).

Compound 10

Figure S98. 1D ^1H -NMR spectrum of compound **10** (methanol- d_4 , 500.18 MHz).

Figure S99. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **10** (methanol- d_4 , 125.77 MHz).

Figure S100. 2D *g*-COSY NMR spectrum of compound **10** (methanol- d_4 , 500.18 MHz).

- Figure S101.** 2D TOCSY NMR spectrum of compound **10** (methanol- d_4 , 500.18 MHz).
- Figure S102.** 2D ROESY NMR spectrum of compound **10** (methanol- d_4 , 500.18 MHz).
- Figure S103.** 2D g -HSQC-NMR spectrum of compound **10** (methanol- d_4 , 500.18 MHz, 125.77 MHz).
- Figure S104.** 2D g -HSQC-TOCSY NMR spectrum of compound **10** (methanol- d_4 , 500.18 MHz, 125.77 MHz).
- Figure S105.** 2D g -HMBC-NMR spectrum of compound **10** (methanol- d_4 , 500.18 MHz, 125.77 MHz).
- Figure S106.** 1D TOCSY and 1D ROESY NMR subspectra of H-1($7-O-\beta$ -GlcA) in compound **10** (methanol- d_4 , 500.18 MHz).
- Figure S107.** 1D TOCSY and 1D ROESY NMR subspectra of H-1($3-O-\beta$ -Gal) in compound **10** (methanol- d_4 , 500.18 MHz).
- Figure S108.** 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{\text{Gal}}-O-\beta$ -Glc) in compound **10** (methanol- d_4 , 500.18 MHz).

Compound 11

- Figure S109.** 1D ^1H -NMR spectrum of compound **11** (methanol- d_4 , 500.18 MHz).
- Figure S110.** 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **11** (methanol- d_4 , 125.77 MHz).
- Figure S111.** 2D g -COSY NMR spectrum of compound **11** (methanol- d_4 , 500.18 MHz).
- Figure S112.** 2D TOCSY NMR spectrum of compound **11** (methanol- d_4 , 500.18 MHz).
- Figure S113.** 2D ROESY NMR spectrum of compound **11** (methanol- d_4 , 500.18 MHz).
- Figure S114.** 2D g -HSQC-NMR spectrum of compound **11** (methanol- d_4 , 500.18 MHz, 125.77 MHz).
- Figure S115.** 2D g -HSQC-TOCSY NMR spectrum of compound **11** (methanol- d_4 , 500.18 MHz, 125.77 MHz).
- Figure S116.** 2D g -HMBC-NMR spectrum of compound **11** (methanol- d_4 , 500.18 MHz, 125.77 MHz).
- Figure S117.** 1D TOCSY and 1D ROESY NMR subspectra of H-1($7-O-\alpha$ -Rha) and H-6($7-O-\alpha$ -Rha) in compound **11** (methanol- d_4 , 500.18 MHz).
- Figure S118.** 1D TOCSY and 1D ROESY NMR subspectra of H-1($3-O-\beta$ -Gal) in compound **11** (methanol- d_4 , 500.18 MHz).
- Figure S119.** 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{\text{Gal}}-O-\beta$ -Glc) in compound **11** (methanol- d_4 , 500.18 MHz).
- Figure S120.** 1D TOCSY and 1D ROESY NMR subspectra of H-1($6^{\text{Gal}}-O-\alpha$ -Rha) and H-6($6^{\text{Gal}}-O-\alpha$ -Rha) in compound **11** (methanol- d_4 , 500.18 MHz).

Compound 12

- Figure S121.** 1D ^1H -NMR spectrum of compound **12** (methanol- d_4 , 500.18 MHz).
- Figure S122.** 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **12** (methanol- d_4 , 125.77 MHz).
- Figure S123.** 2D g -COSY NMR spectrum of compound **12** (methanol- d_4 , 500.18 MHz).
- Figure S124.** 2D TOCSY NMR spectrum of compound **12** (methanol- d_4 , 500.18 MHz).

Figure S125. 2D ROESY NMR spectrum of compound **12** (methanol- d_4 , 500.18 MHz).

Figure S126. 2D g -HSQC-NMR spectrum of compound **12** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S127. 2D g -HSQC-TOCSY NMR spectrum of compound **12** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S128. 2D g -HMBC-NMR spectrum of compound **12** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S129. 1D TOCSY and 1D ROESY NMR subspectra of H-1($7-O-\beta$ -GlcA) in compound **12** (methanol- d_4 , 500.18 MHz).

Figure S130. 1D TOCSY NMR subspectrum of H-2($3-O-\beta$ -Gal) in compound **12** (methanol- d_4 , 500.18 MHz).

Figure S131. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{Gal}-O-\beta$ -Glc) in compound **12** (methanol- d_4 , 500.18 MHz).

Compound 13

Figure S132. 1D ^1H -NMR spectrum of compound **13** (methanol- d_4 , 500.18 MHz).

Figure S133. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **13** (methanol- d_4 , 125.77 MHz).

Figure S134. 2D g -COSY NMR spectrum of compound **13** (methanol- d_4 , 500.18 MHz).

Figure S135. 2D TOCSY NMR spectrum of compound **13** (methanol- d_4 , 500.18 MHz).

Figure S136. 2D ROESY NMR spectrum of compound **13** (methanol- d_4 , 500.18 MHz).

Figure S137. 2D g -HSQC-NMR spectrum of compound **13** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S138. 2D g -HSQC-TOCSY NMR spectrum of compound **13** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S139. 2D g -HMBC-NMR spectrum of compound **13** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S140. 1D TOCSY and 1D ROESY NMR subspectra of H-1($7-O-\beta$ -GlcA) in compound **13** (methanol- d_4 , 500.18 MHz).

Figure S141. 1D TOCSY and 1D ROESY NMR subspectra of H-1($3-O-\beta$ -Gal) in compound **13** (methanol- d_4 , 500.18 MHz).

Figure S142. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{Gal}-O-\beta$ -Glc) in compound **13** (methanol- d_4 , 500.18 MHz).

Compound 14

Figure S143. 1D ^1H -NMR spectrum of compound **14** (methanol- d_4 , 500.18 MHz).

Figure S144. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **14** (methanol- d_4 , 125.77 MHz).

Figure S145. 2D g -COSY NMR spectrum of compound **14** (methanol- d_4 , 500.18 MHz).

Figure S146. 2D TOCSY NMR spectrum of compound **14** (methanol- d_4 , 500.18 MHz).

Figure S147. 2D ROESY NMR spectrum of compound **14** (methanol- d_4 , 500.18 MHz).

Figure S148. 2D g -HSQC-NMR spectrum of compound **14** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S149. 2D *g*-HSQC-TOCSY NMR spectrum of compound **14** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

Figure S150. 2D *g*-HMBC-NMR spectrum of compound **14** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

Figure S151. 1D TOCSY and 1D ROESY NMR subspectra of H-1_(7-*O*-β-GlcA) in compound **14** (methanol-*d*₄, 500.18 MHz).

Figure S152. 1D TOCSY and 1D ROESY NMR subspectra of H-1_(3-*O*-β-Gal) in compound **14** (methanol-*d*₄, 500.18 MHz).

Figure S153. 1D TOCSY and 1D ROESY NMR subspectra of H-1_(2^{Gal}-*O*-β-Glc) in compound **14** (methanol-*d*₄, 500.18 MHz).

Compound 15

Figure S154. 1D ¹H-NMR spectrum of compound **15** (methanol-*d*₄, 500.18 MHz).

Figure S155. 1D ¹³C-NMR spectra (1H decoupled and DEPT-135) of compound **15** (methanol-*d*₄, 125.77 MHz).

Figure S156. 2D *g*-COSY NMR spectrum of compound **15** (methanol-*d*₄, 500.18 MHz).

Figure S157. 2D TOCSY NMR spectrum of compound **15** (methanol-*d*₄, 500.18 MHz).

Figure S158. 2D ROESY NMR spectrum of compound **15** (methanol-*d*₄, 500.18 MHz).

Figure S159. 2D *g*-HSQC-NMR spectrum of compound **15** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

Figure S160. 2D *g*-HSQC-TOCSY NMR spectrum of compound **15** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

Figure S161. 2D *g*-HMBC-NMR spectrum of compound **15** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

Figure S162. 1D TOCSY and 1D ROESY NMR subspectra of H-1_(7-*O*-β-GlcA) in compound **15** (methanol-*d*₄, 500.18 MHz).

Figure S163. 1D TOCSY NMR subspectrum of H-2_(3-*O*-β-Gal) in compound **15** (methanol-*d*₄, 500.18 MHz).

Figure S164. 1D TOCSY and 1D ROESY NMR subspectra of H-1_(2^{Gal}-*O*-β-Glc) in compound **15** (methanol-*d*₄, 500.18 MHz).

Compound 16

Figure S165. 1D ¹H-NMR spectrum of compound **16** (methanol-*d*₄, 500.18 MHz).

Figure S166. 1D ¹³C-NMR spectra (1H decoupled and DEPT-135) of compound **16** (methanol-*d*₄, 125.77 MHz).

Figure S167. 2D *g*-COSY NMR spectrum of compound **16** (methanol-*d*₄, 500.18 MHz).

Figure S168. 2D ROESY NMR spectrum of compound **16** (methanol-*d*₄, 500.18 MHz).

Figure S169. 2D *g*-HSQC-NMR spectrum of compound **16** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

Figure S170. 2D *g*-HMBC-NMR spectrum of compound **16** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

Figure S171. 1D TOCSY and 1D ROESY NMR subspectra of H-1_(3-*O*-α-Rha) and H-6_(3-*O*-α-Rha) in compound **16** (methanol-*d*₄, 500.18 MHz).

Compound 17

Figure S172. 1D ^1H -NMR spectrum of compound **17** (methanol- d_4 , 500.18 MHz).

Figure S173. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **17** (methanol- d_4 , 125.77 MHz).

Figure S174. 2D *g*-COSY NMR spectrum of compound **17** (methanol- d_4 , 500.18 MHz).

Figure S175. 2D TOCSY NMR spectrum of compound **17** (methanol- d_4 , 500.18 MHz).

Figure S176. 2D ROESY NMR spectrum of compound **17** (methanol- d_4 , 500.18 MHz).

Figure S177. 2D *g*-HSQC-NMR spectrum of compound **17** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S178. 2D *g*-HSQC-TOCSY NMR spectrum of compound **17** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S179. 2D *g*-HMBC-NMR spectrum of compound **17** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S180. 1D TOCSY and 1D ROESY NMR subspectra of H-1($7\text{-O-}\beta\text{-GlcA}$) in compound **17** (methanol- d_4 , 500.18 MHz).

Figure S181. 1D TOCSY subspectrum of H-2($3\text{-O-}\beta\text{-Gal}$) in compound **17** (methanol- d_4 , 500.18 MHz).

Figure S182. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{\text{Gal}}\text{-O-}\beta\text{-Glc}$) in compound **17** (methanol- d_4 , 500.18 MHz).

Compound 18

Figure S183. 1D ^1H -NMR spectrum of compound **18** (methanol- d_4 , 500.18 MHz).

Figure S184. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **18** (methanol- d_4 , 125.77 MHz).

Figure S185. 2D *g*-COSY NMR spectrum of compound **18** (methanol- d_4 , 500.18 MHz).

Figure S186. 2D TOCSY NMR spectrum of compound **18** (methanol- d_4 , 500.18 MHz).

Figure S187. 2D ROESY NMR spectrum of compound **18** (methanol- d_4 , 500.18 MHz).

Figure S188. 2D *g*-HSQC-NMR spectrum of compound **18** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S189. 2D *g*-HSQC-TOCSY NMR spectrum of compound **18** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S190. 2D *g*-HMBC-NMR spectrum of compound **18** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S191. 1D TOCSY and 1D ROESY NMR subspectra of H-1($7\text{-O-}\beta\text{-GlcA}$) in compound **18** (methanol- d_4 , 500.18 MHz).

Figure S192. 1D TOCSY and 1D ROESY NMR subspectra of H-1($3\text{-O-}\beta\text{-Gal}$) in compound **18** (methanol- d_4 , 500.18 MHz).

Figure S193. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{\text{Gal}}\text{-O-}\beta\text{-Glc}$) in compound **18** (methanol- d_4 , 500.18 MHz).

Figure S194. UPLC-MS chromatograms of phenolic acid reference standards.

Figure S195. UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound **4**.

Figure S196. The UV spectrum of the putative 3,4,5-trihydroxycinnamic acid.

- Figure S197.** UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 5.
- Figure S198.** UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 6.
- Figure S199.** UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 7.
- Figure S200.** UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 8.
- Figure S201.** UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 9.
- Figure S202.** UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 10.
- Figure S203.** UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 11.
- Figure S204.** UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 12.
- Figure S205.** UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 13.
- Figure S206.** UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 14.
- Figure S207.** UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 15.
- Figure S208.** UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 17.
- Figure S209.** UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 18.
- Figure S210.** UPLC-MS chromatograms of the sugar standards.
- Figure S211.** UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound 1.
- Figure S212.** UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound 3.
- Figure S213.** UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound 4.
- Figure S214.** UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound 5.
- Figure S215.** UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound 6.
- Figure S216.** UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound 7.
- Figure S217.** UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound 8.

Figure S218. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **9**.

Figure S219. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **10**.

Figure S220. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **11**.

Figure S221. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **12**.

Figure S222. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **13**.

Figure S223. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **14**.

Figure S224. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **15**.

Figure S225. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **17**.

Figure S226. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **18**.

Figure S227. UPLC-MS chromatograms of the methanol extract of lentil seeds (var. Tina), and the UV spectrum of the dominant phenolic compound.

Compound 1

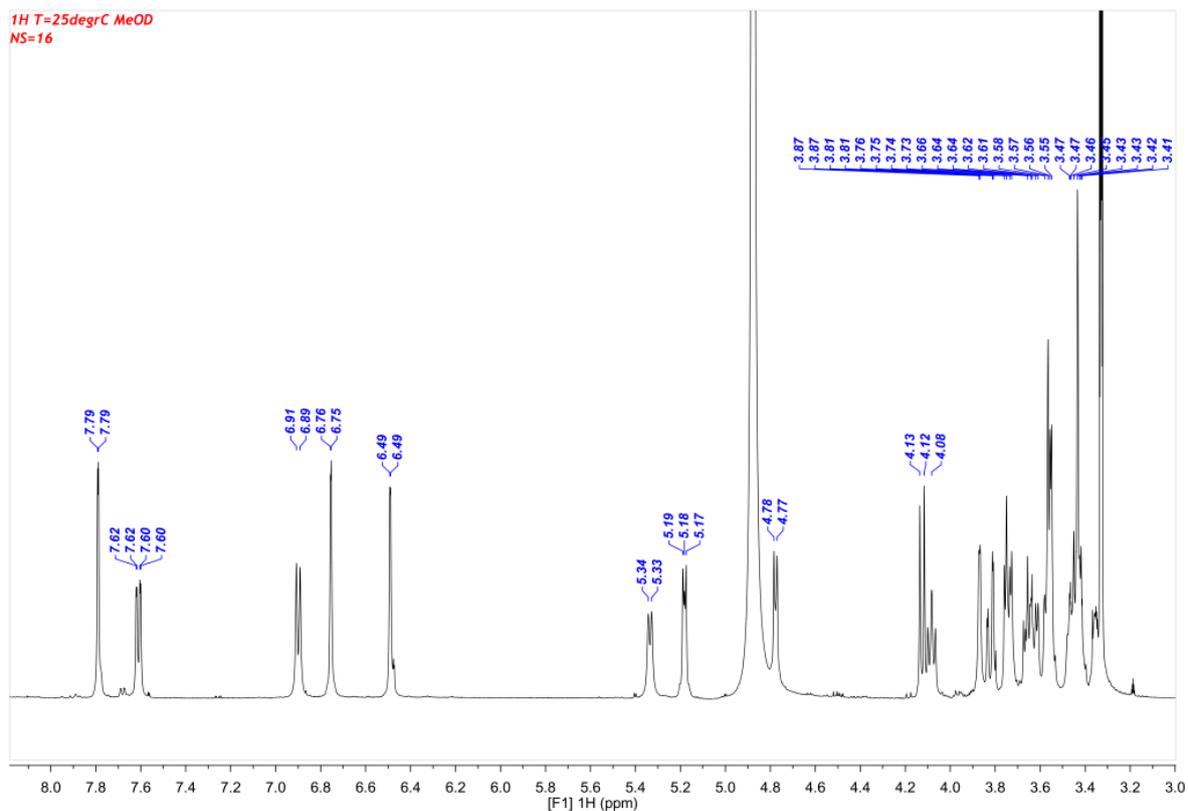
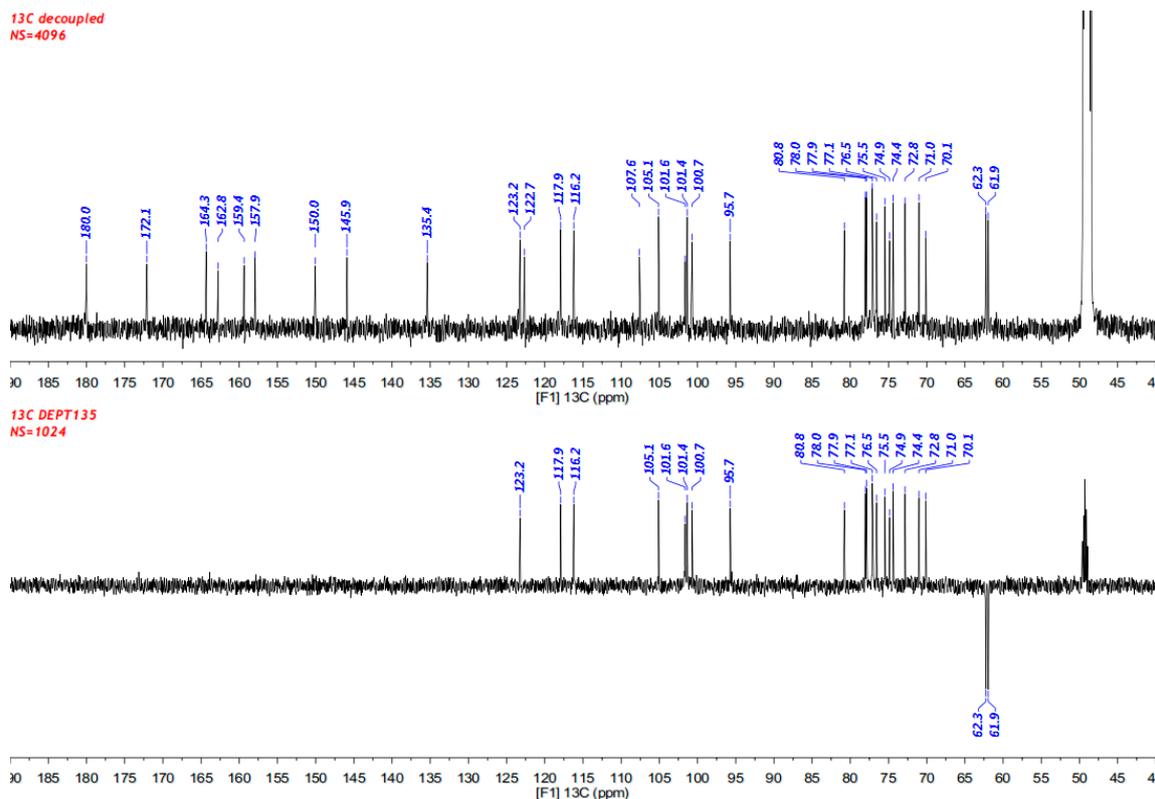
Figure S1. 1D ^1H -NMR spectrum of compound 1 (methanol- d_4 , 500.18 MHz).Figure S2. 1D ^{13}C -NMR spectra (^1H decoupled and DEPT-135) (methanol- d_4 , 125.77 MHz).

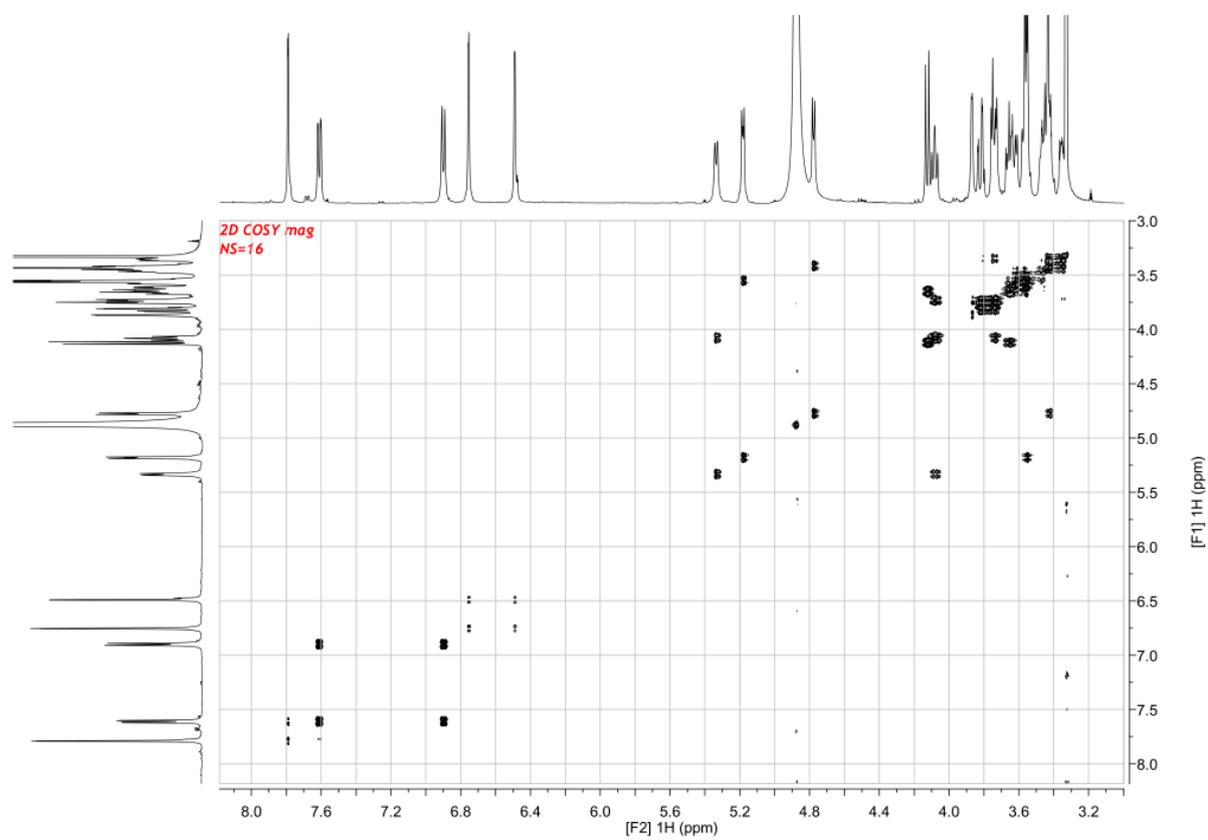
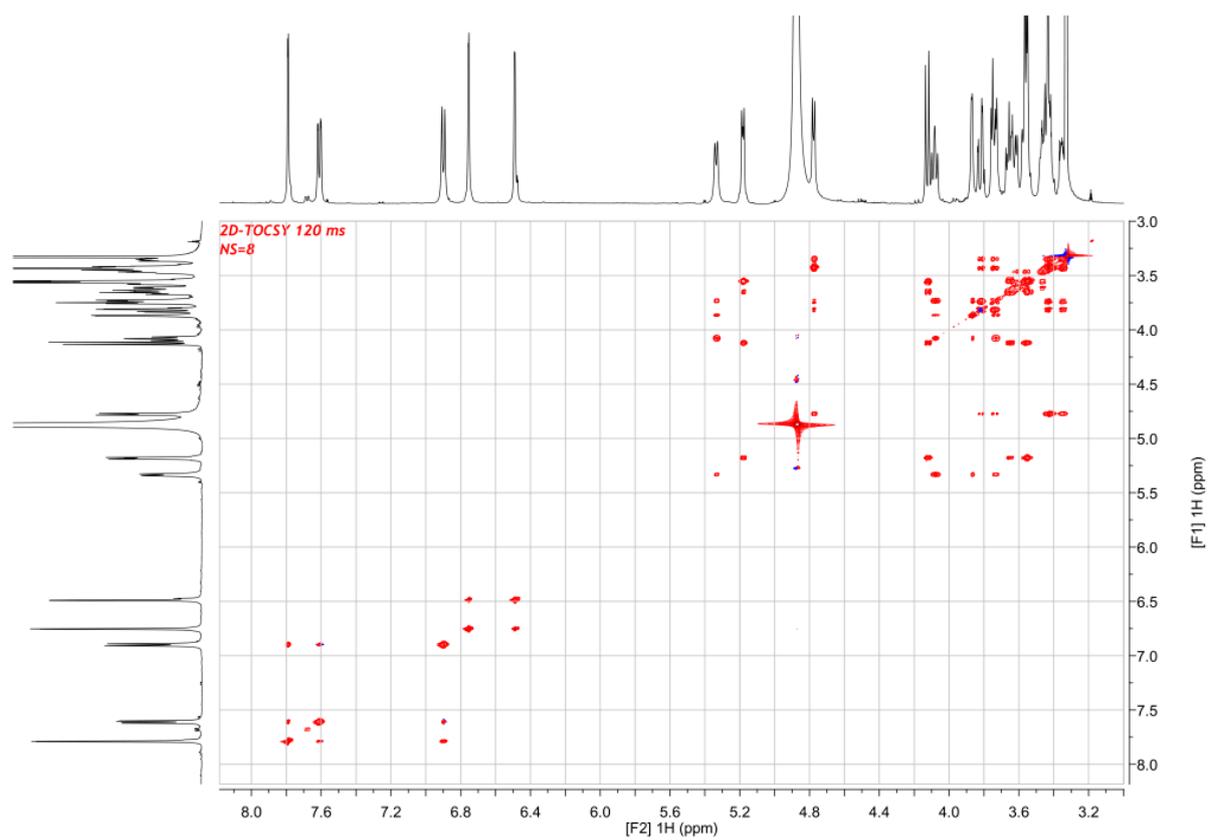
Figure S3. 2D g-COSY NMR spectrum of compound **1** (methanol- d_4 , 500.18 MHz).**Figure S4.** 2D TOCSY NMR spectrum of compound **1** (methanol- d_4 , 500.18 MHz).

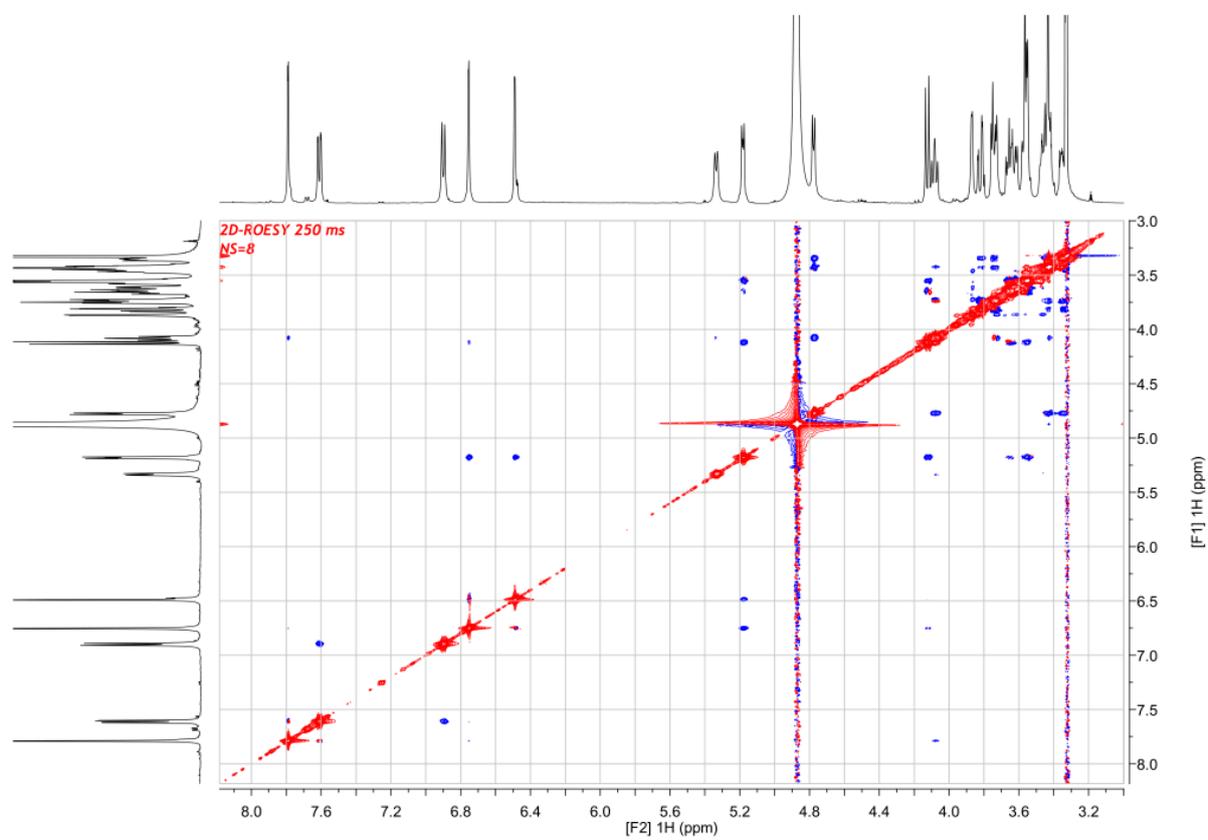
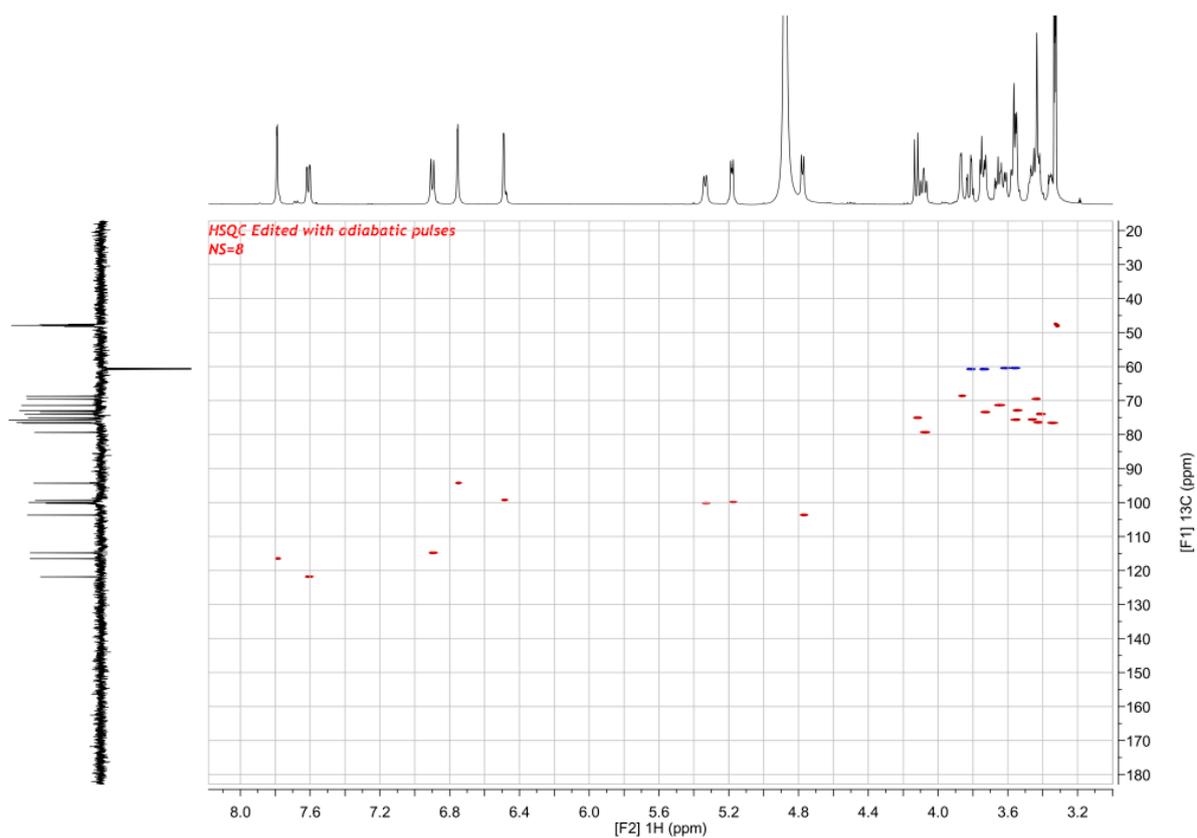
Figure S5. 2D ROESY NMR spectrum of compound **1** (methanol- d_4 , 500.18 MHz).**Figure S6.** 2D g-HSQC-NMR spectrum of compound **1** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S7. 2D *g*-HSQC-TOCSY NMR spectrum of compound **1** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

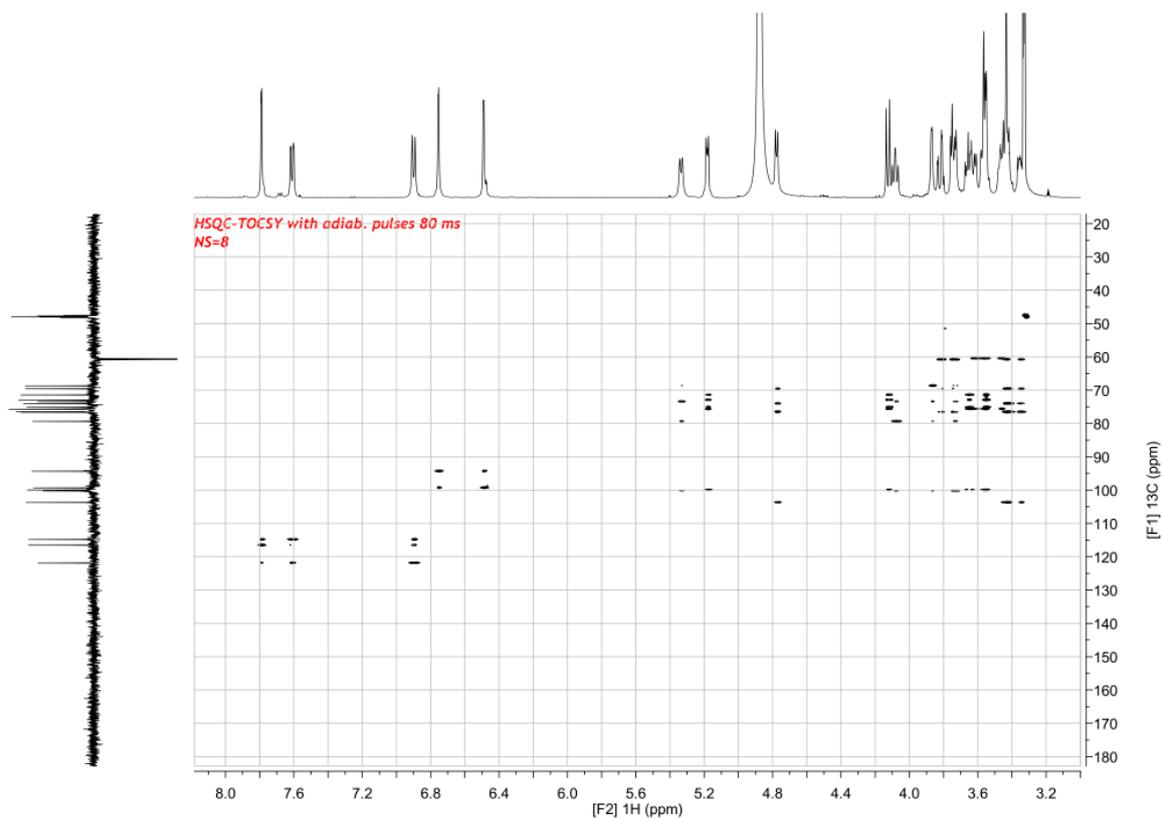


Figure S8. 2D *g*-HMBC-NMR spectrum of compound **1** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

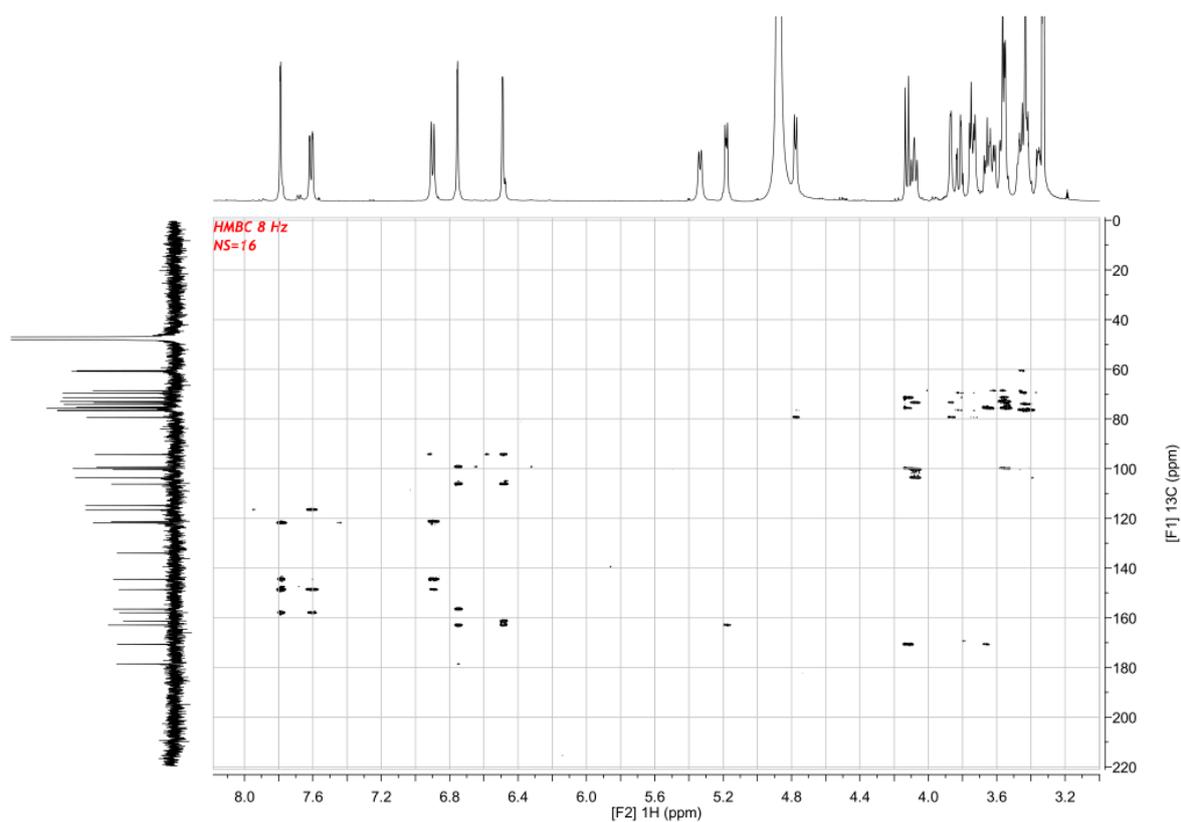


Figure S9. 1D TOCSY and 1D ROESY NMR subspectra of H-1(7-*O*- β -GlcA) in compound **1** (methanol-*d*₄, 500.18 MHz).

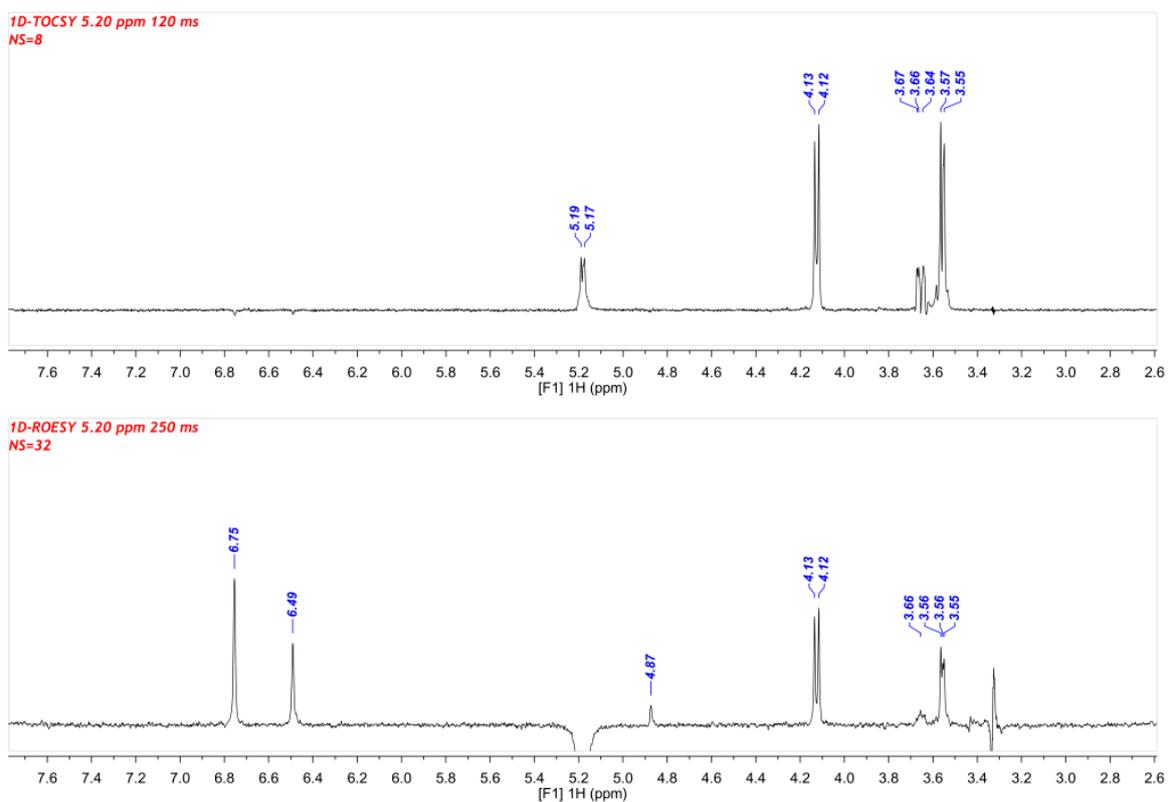


Figure S10. 1D TOCSY and 1D ROESY NMR subspectra of H-1(3-*O*- β -Gal) in compound **1** (methanol-*d*₄, 500.18 MHz).

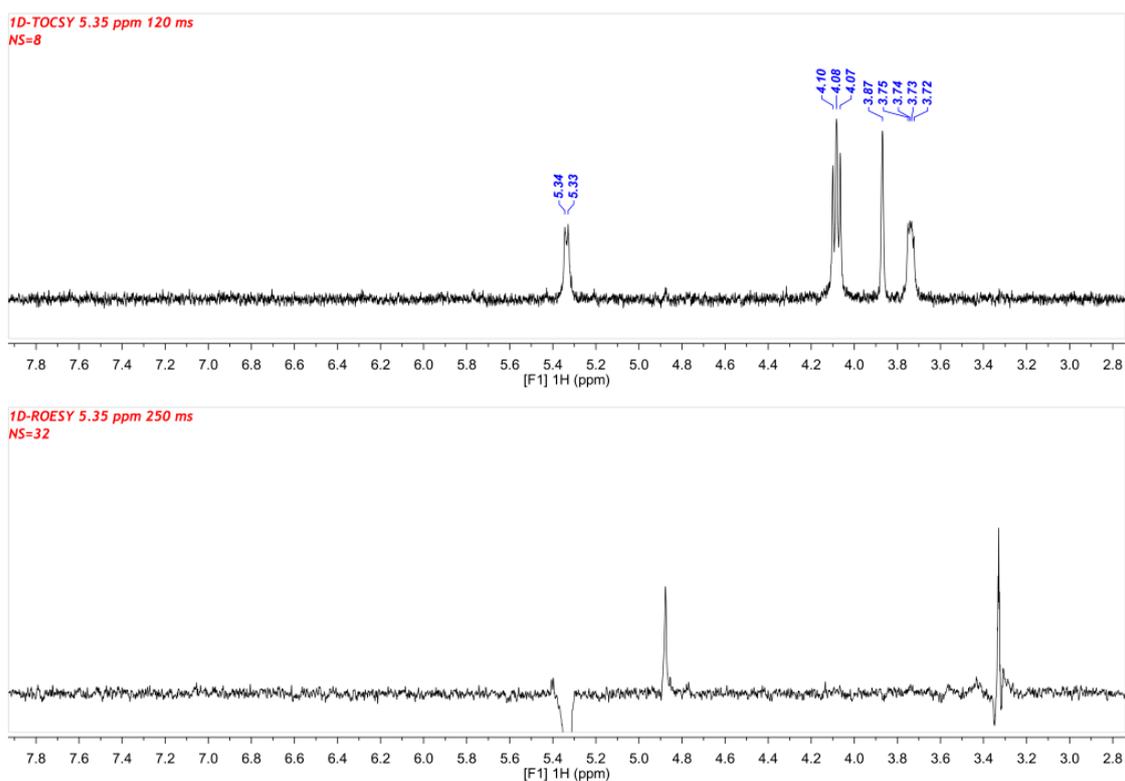
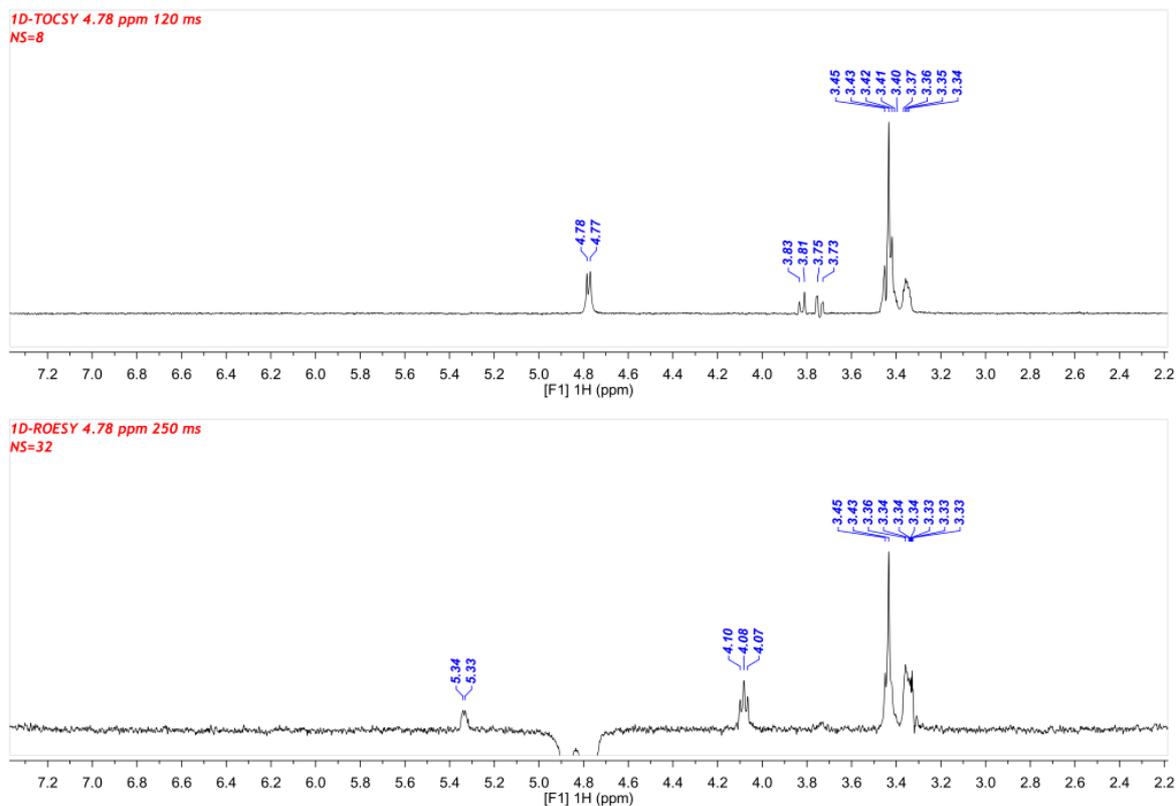


Figure S11. 1D TOCSY and 1D ROESY NMR subspectra of H-1(₂^{Gal}-O-β-Glc) in compound **1** (methanol-*d*₄, 500.18 MHz).



Compound 2

Figure S12. 1D ¹H-NMR spectrum of compound **2** (methanol-*d*₄, 500.18 MHz).

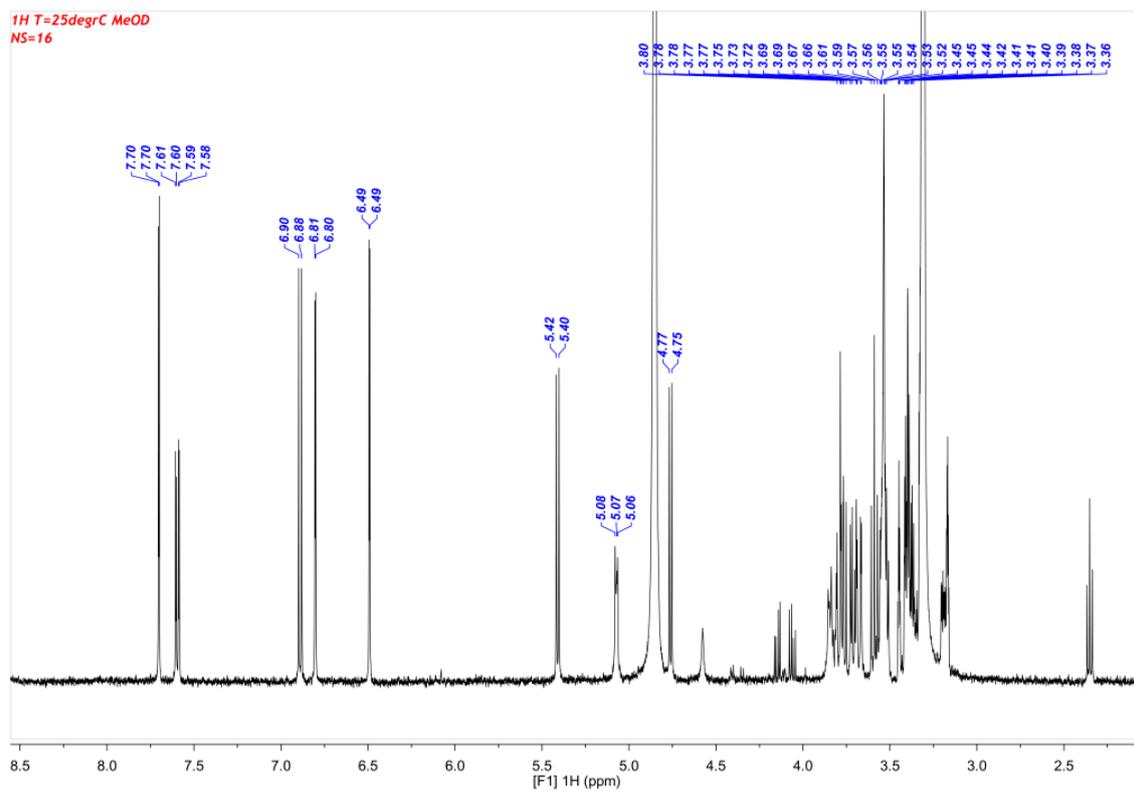


Figure S13. 1D ^{13}C -NMR spectrum (^1H decoupled) of compound **2** (methanol- d_4 , 125.77 MHz).

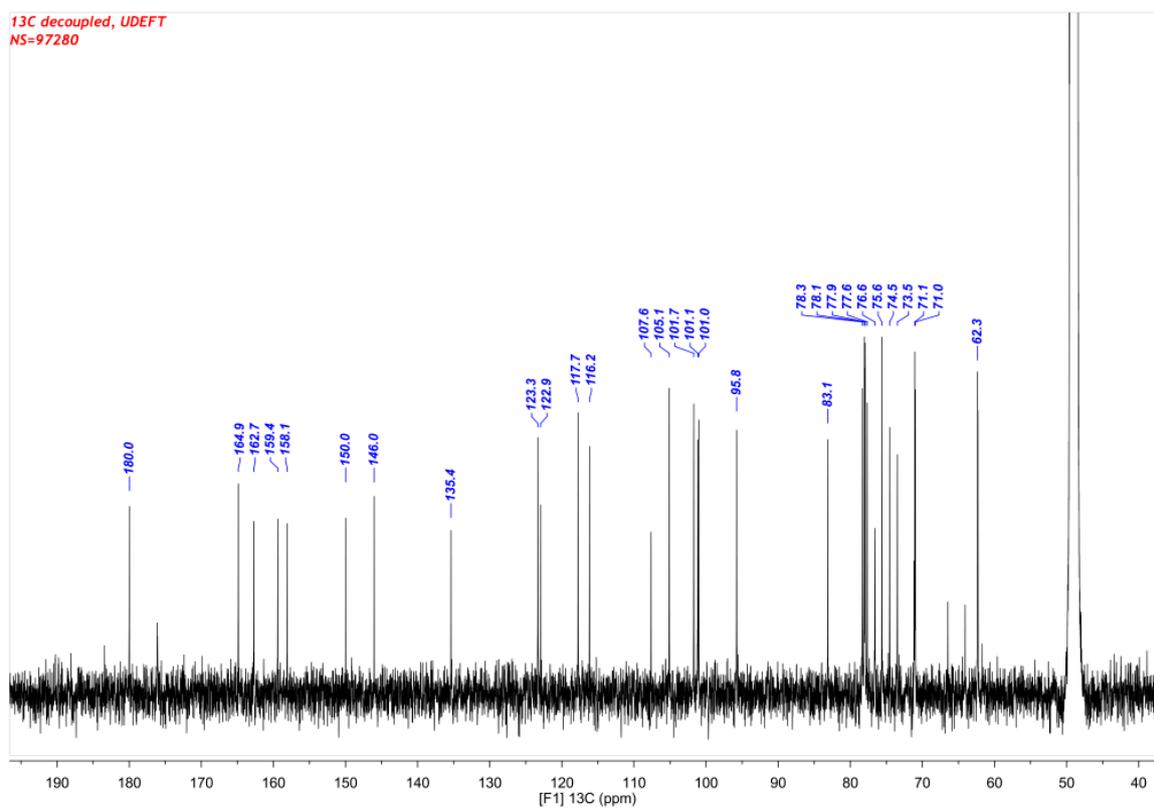


Figure S14. 2D g -COSY NMR spectrum of compound **2** (methanol- d_4 , 500.18 MHz).

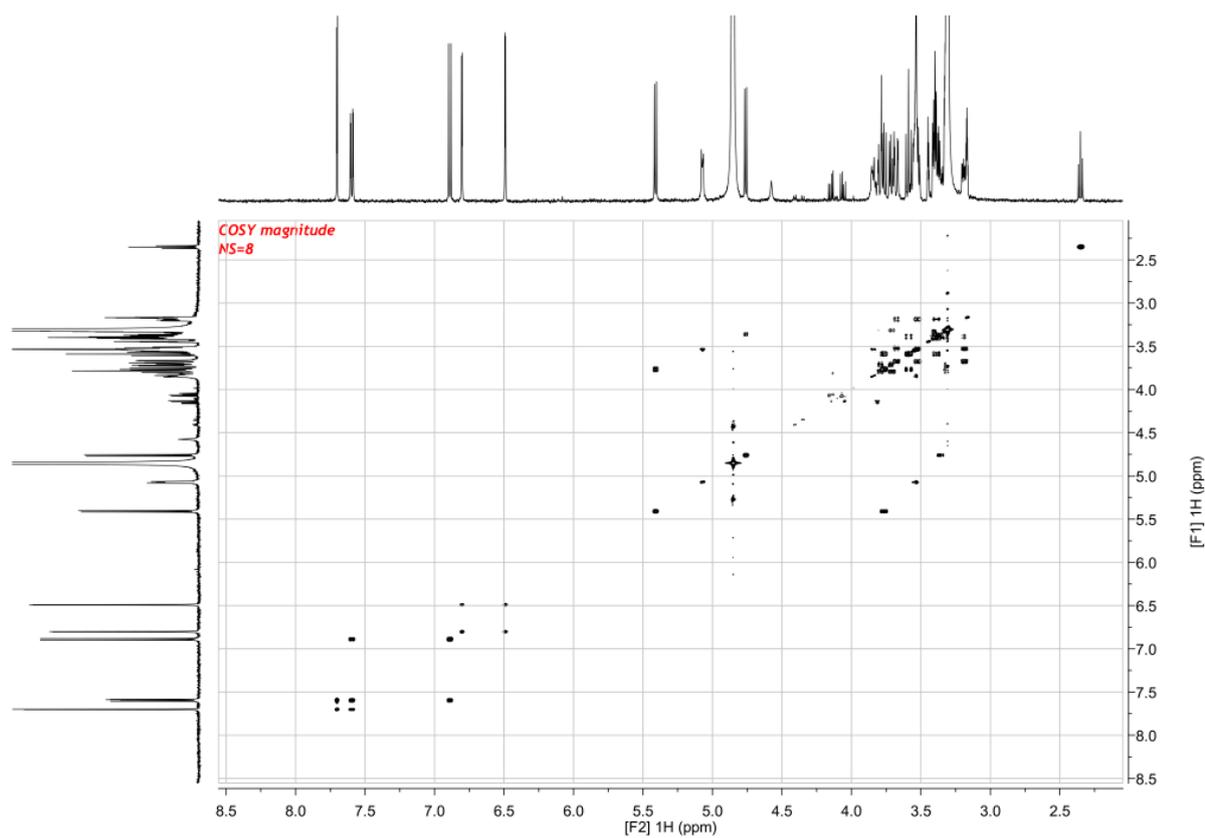


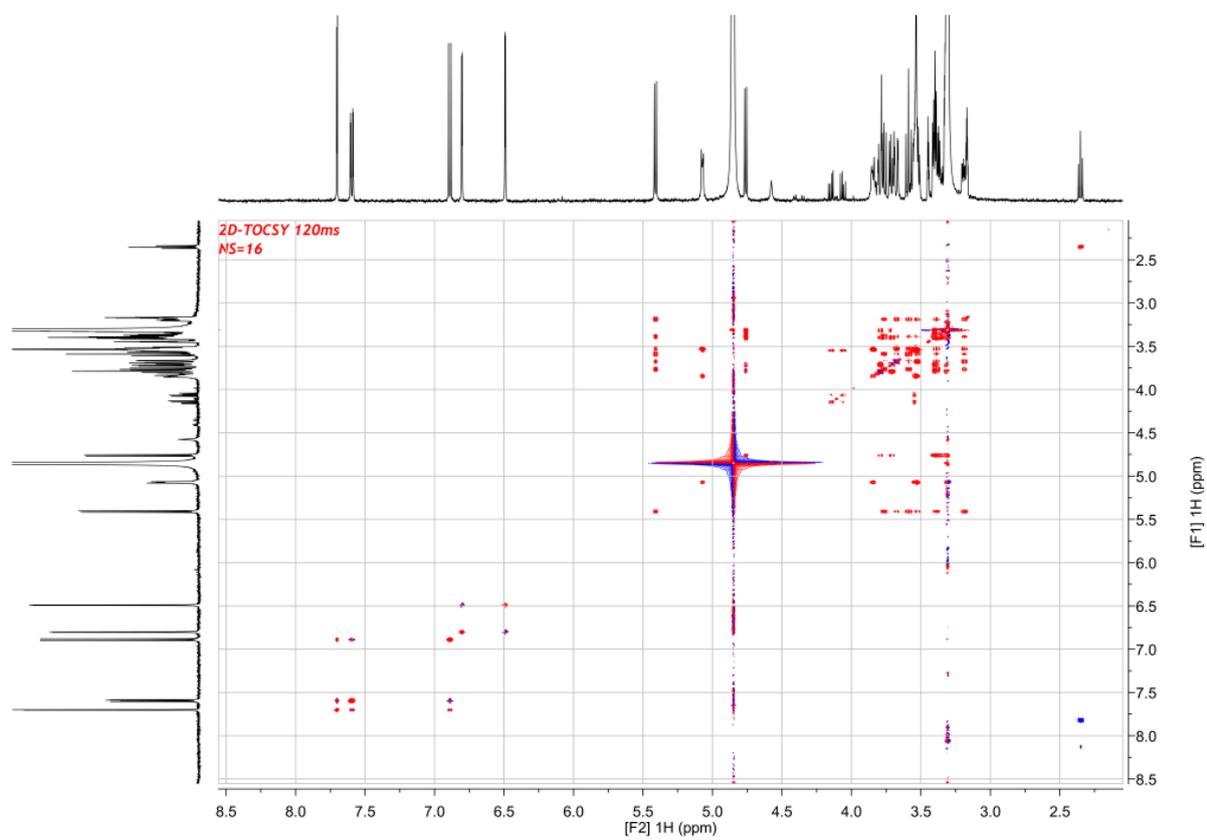
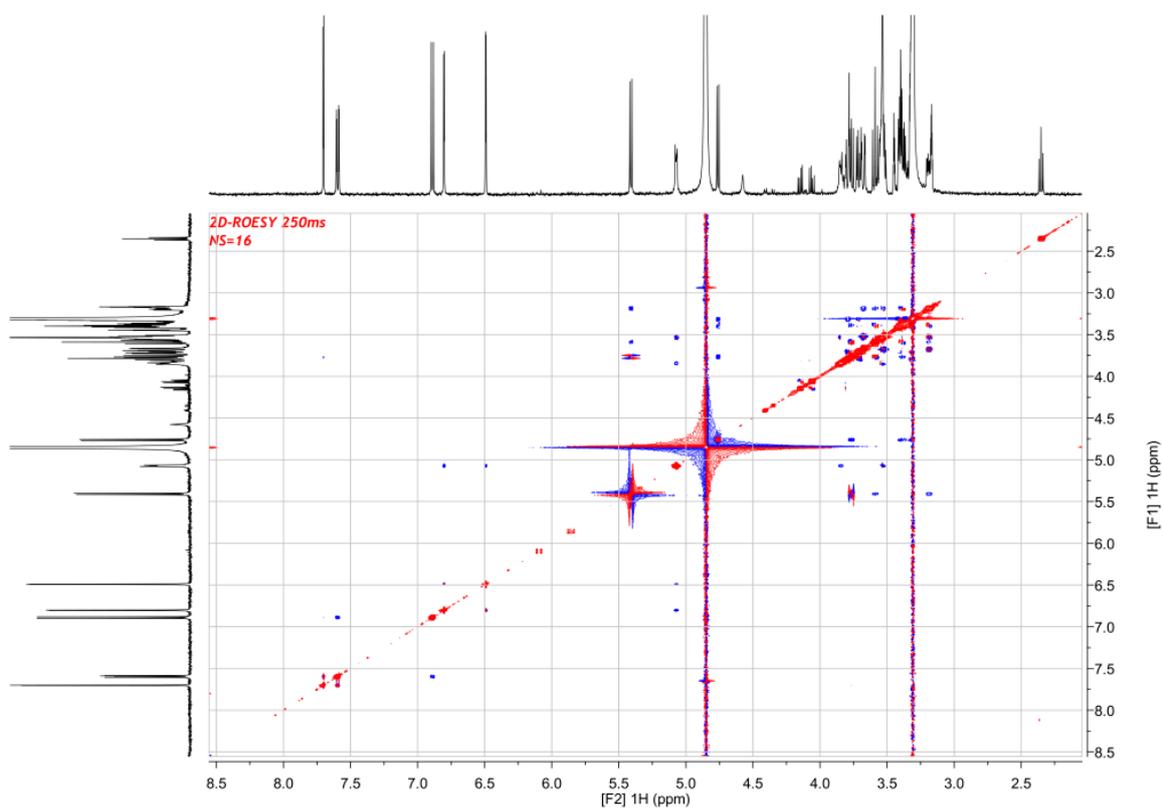
Figure S15. 2D TOCSY NMR spectrum of compound **2** (methanol- d_4 , 500.18 MHz).**Figure S16.** 2D ROESY NMR spectrum of compound **2** (methanol- d_4 , 500.18 MHz).

Figure S17. 2D *g*-HSQC-NMR spectrum of compound **2** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

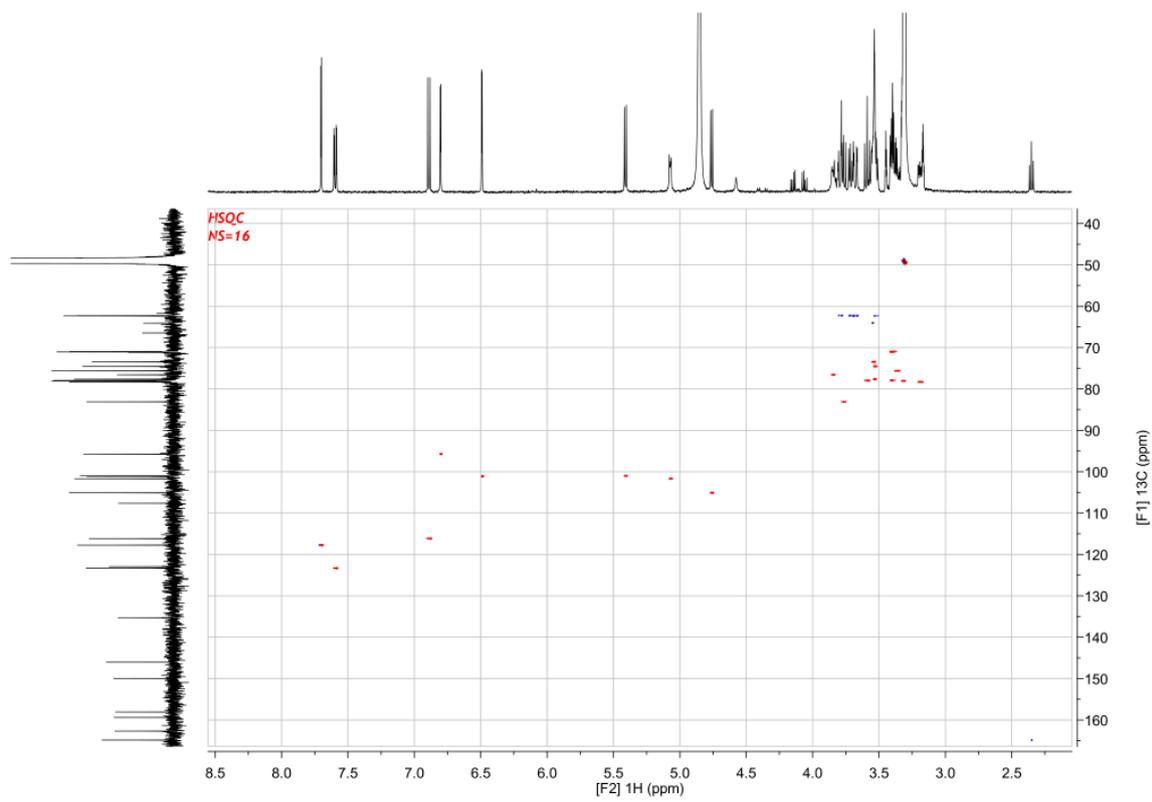


Figure S18. 2D *g*-HSQC-TOCSY NMR spectrum of compound **2** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

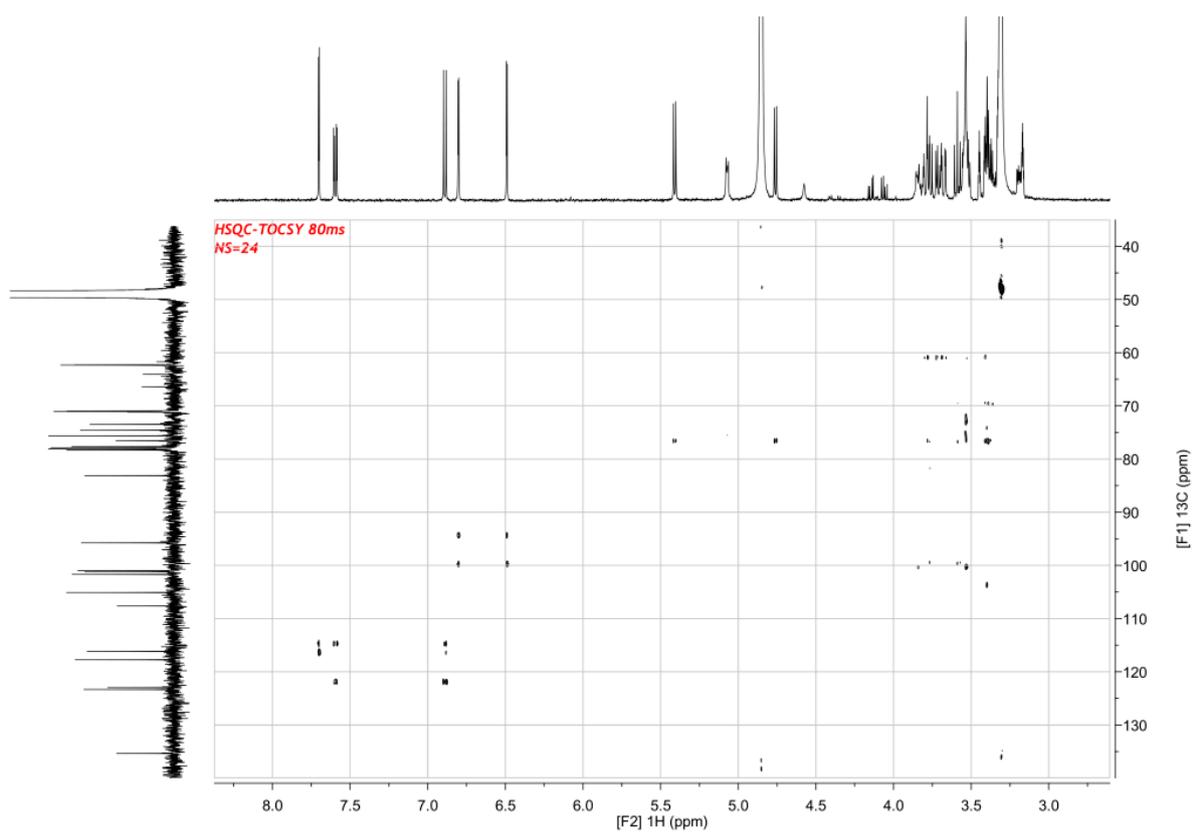


Figure S19. 2D g-HMBC-NMR spectrum of compound **2** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

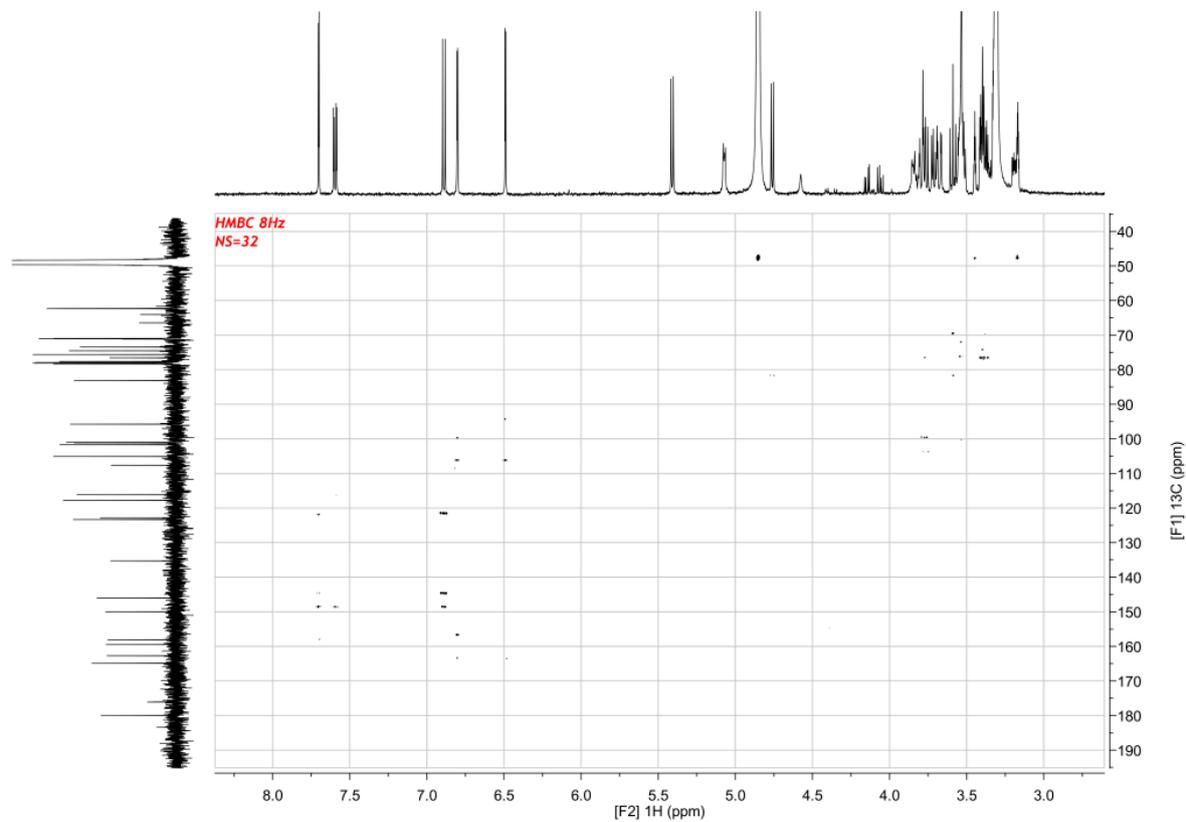


Figure S20. 1D TOCSY and 1D ROESY NMR subspectra of H-1(7-*O*- β -GlcA) in compound **2** (methanol- d_4 , 500.18 MHz).

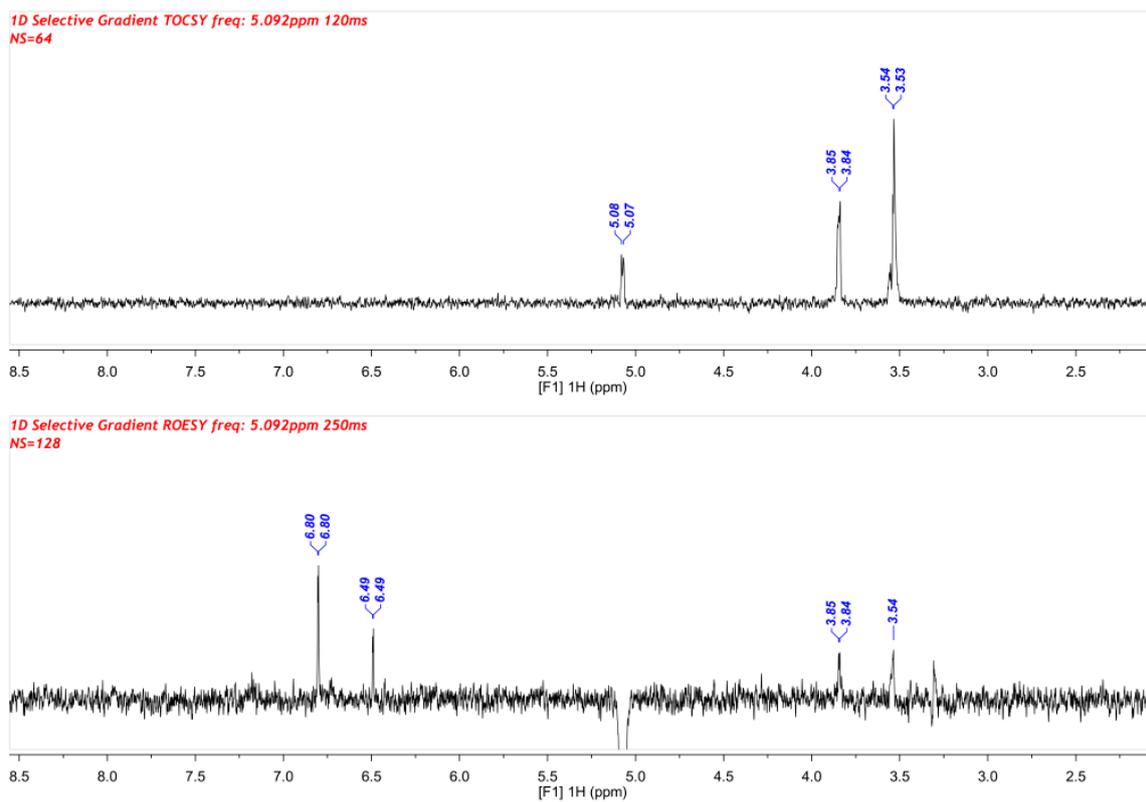


Figure S21. 1D TOCSY and 1D ROESY NMR subspectra of H-1(3-*O*- β -Glc) in compound **2** (methanol-*d*₄, 500.18 MHz).

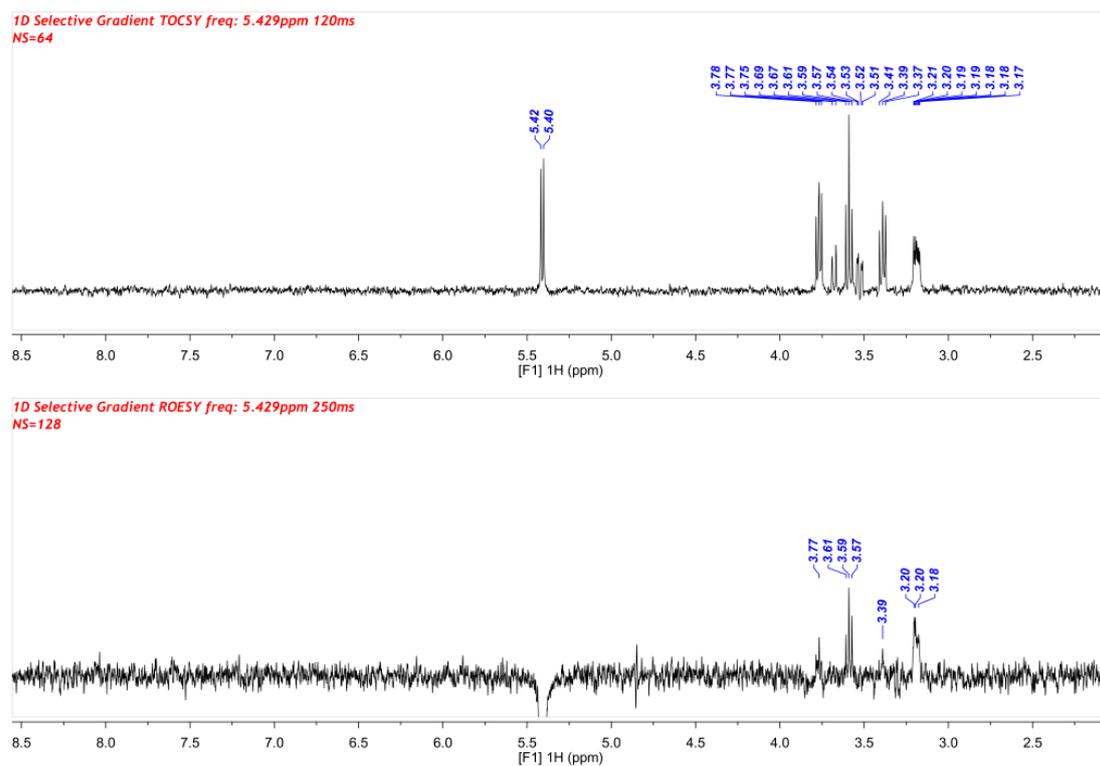
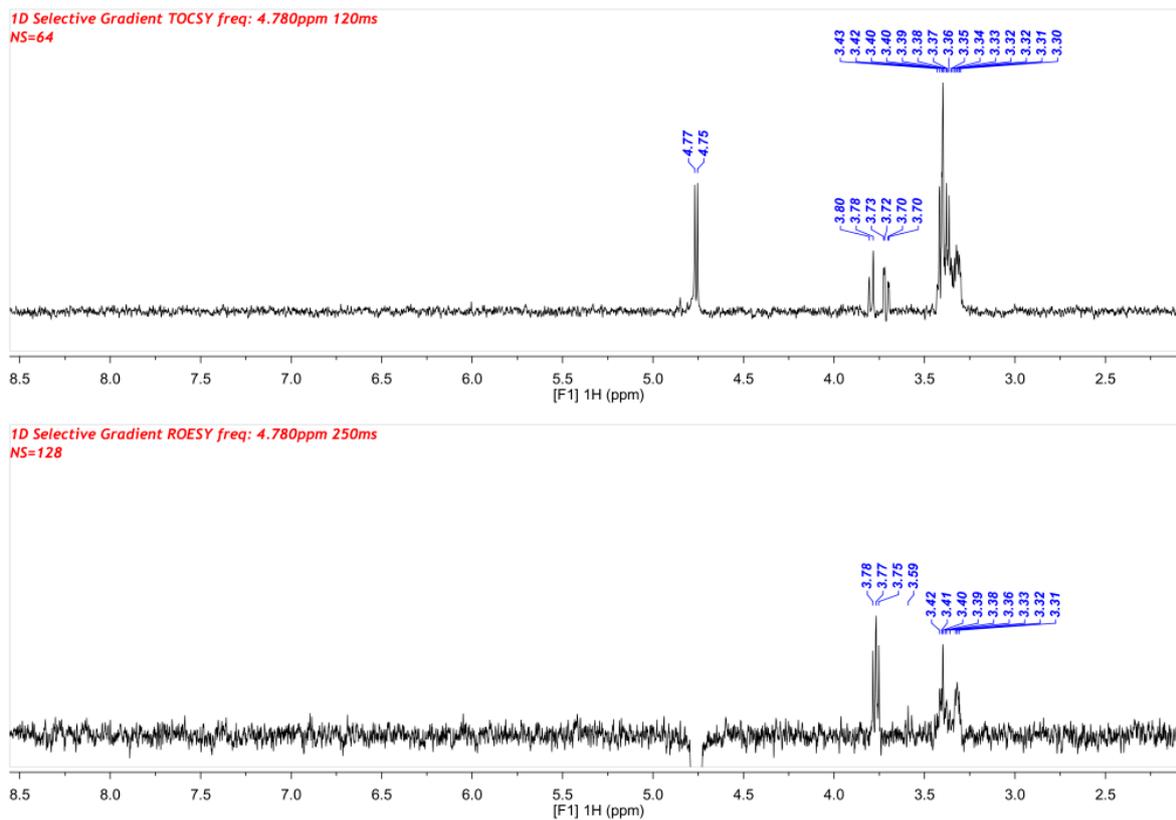


Figure S22. 1D TOCSY and 1D ROESY NMR subspectra of H-1(2^{Glc}-*O*- β -Glc) in compound **2** (methanol-*d*₄, 500.18 MHz).



Compound 3

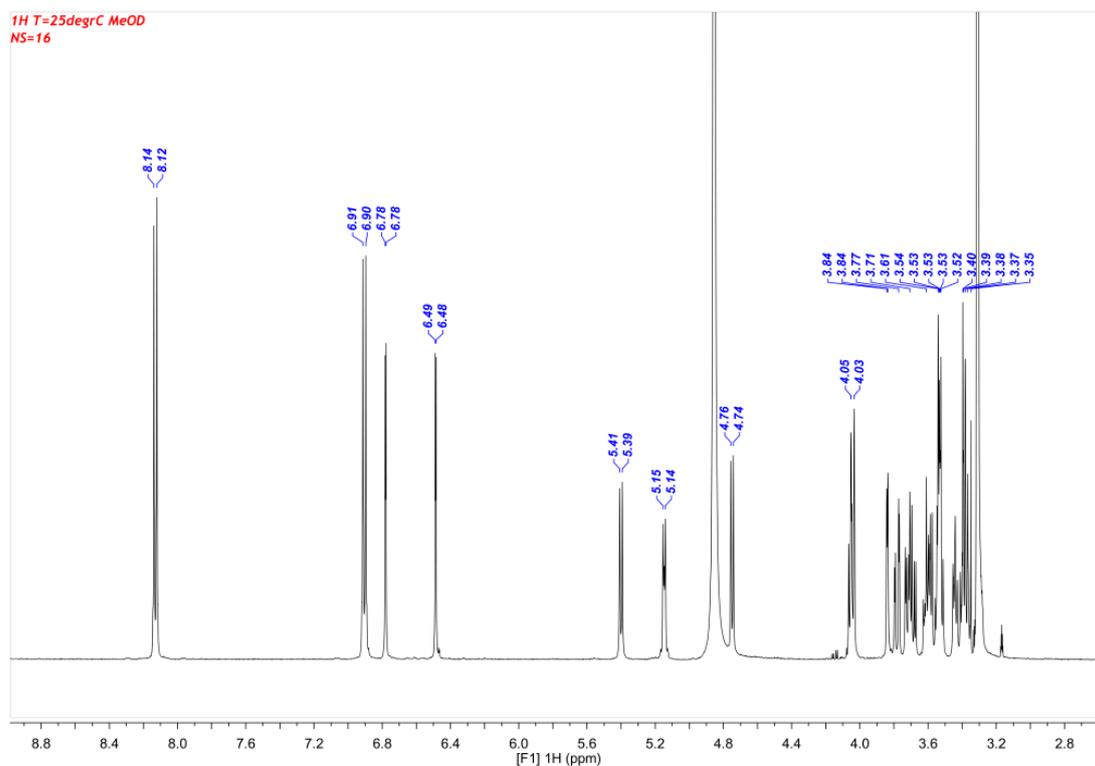
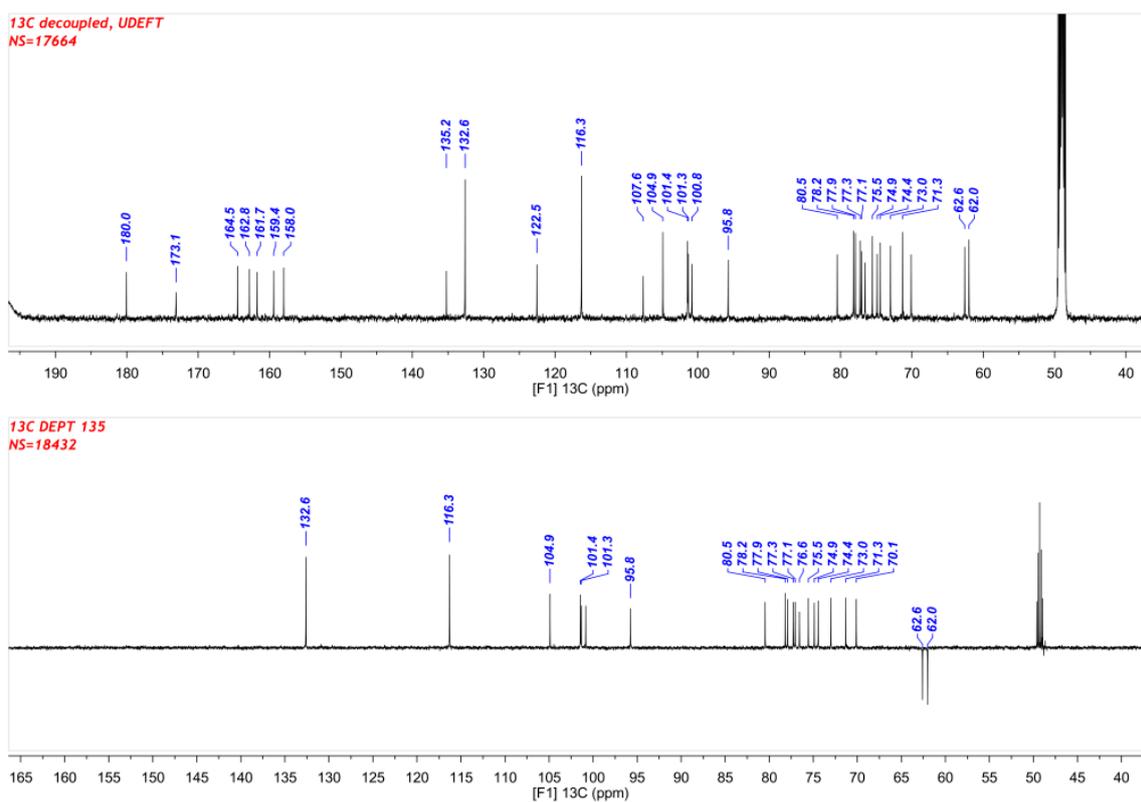
Figure S23. 1D ^1H -NMR spectrum of compound 3 (methanol- d_4 , 500.18 MHz).Figure S24. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound 3 (methanol- d_4 , 125.77 MHz).

Figure S27. 2D ROESY NMR spectrum of compound **3** (methanol- d_4 , 500.18 MHz).

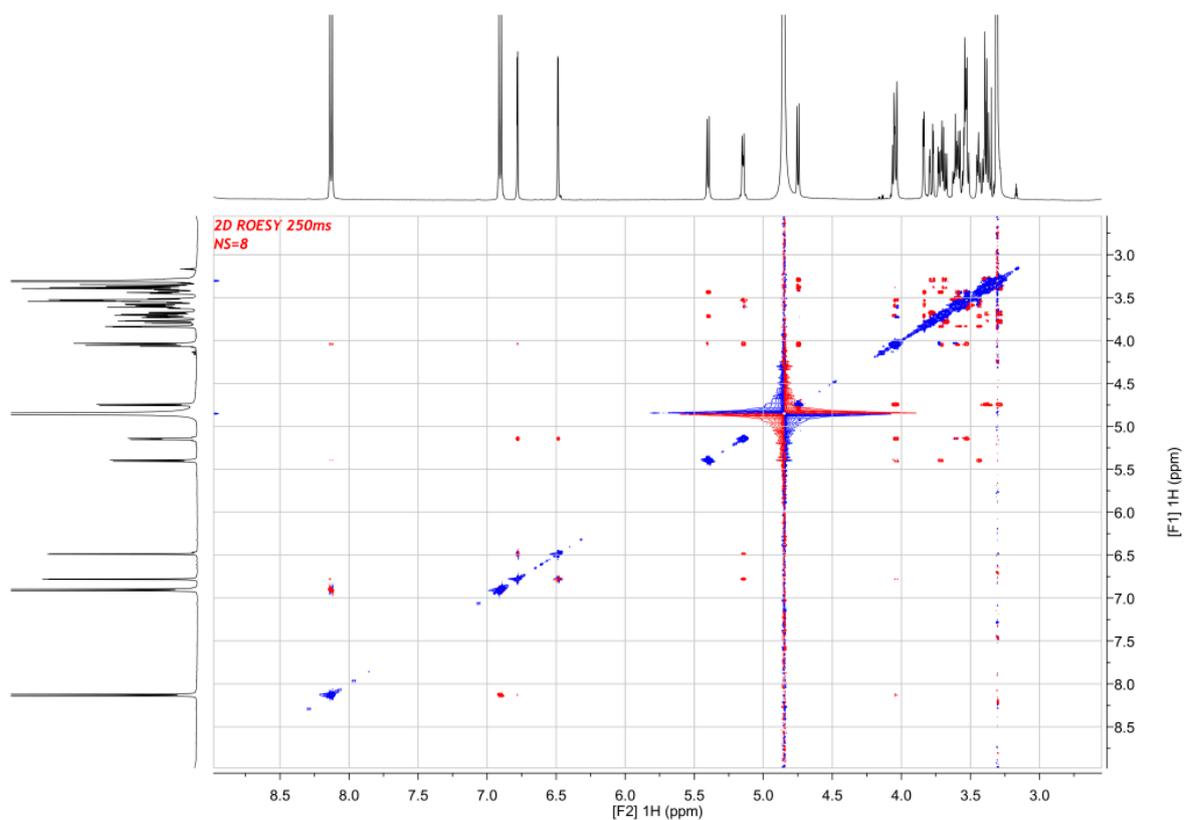


Figure S28. 2D g -HSQC-NMR spectrum of compound **3** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

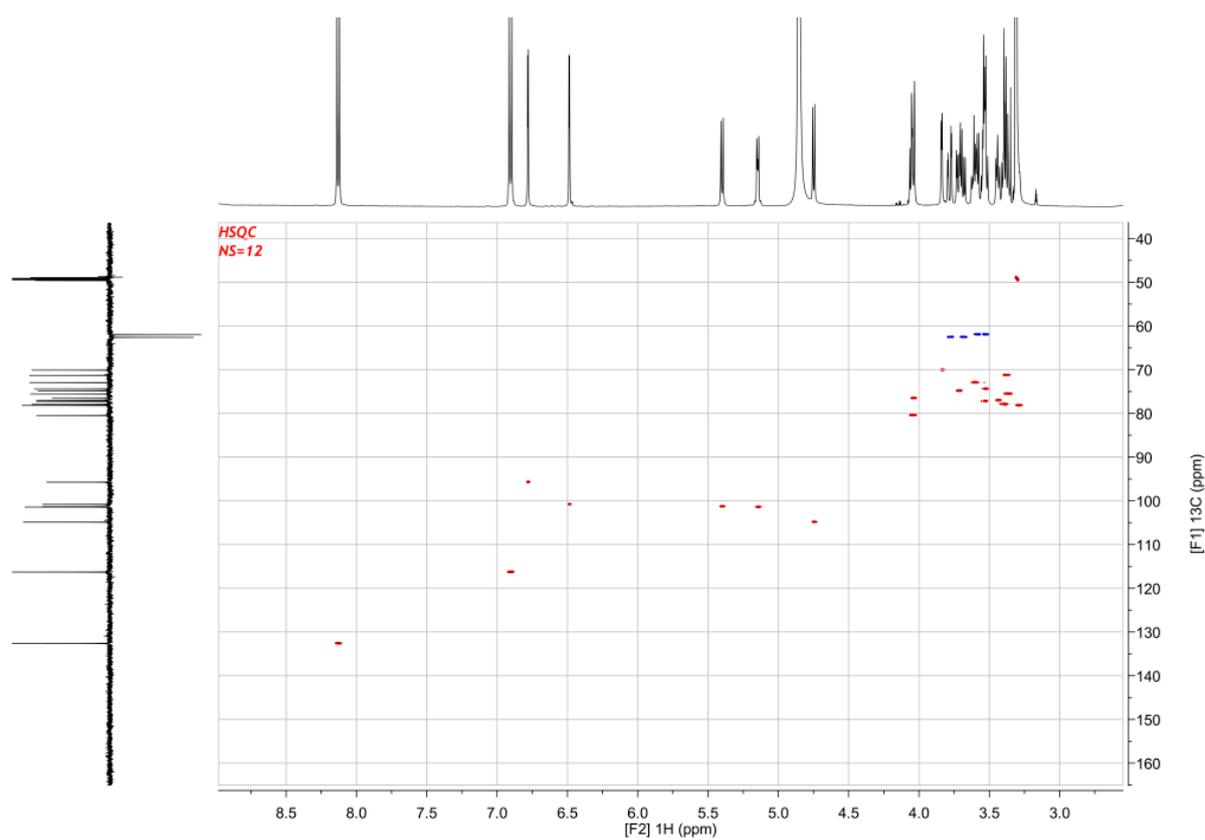


Figure S29. 2D *g*-HSQC-TOCSY NMR spectrum of compound **3** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

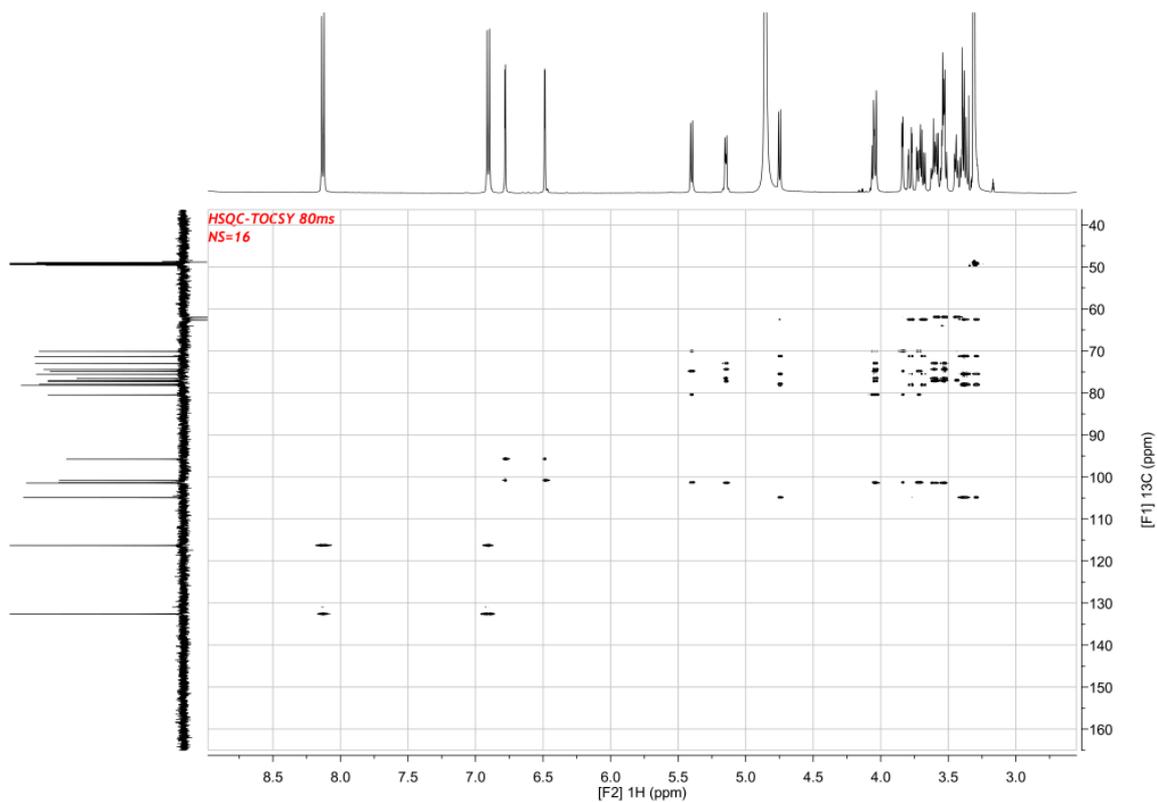


Figure S30. 2D *g*-HMBC-NMR spectrum of compound **3** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

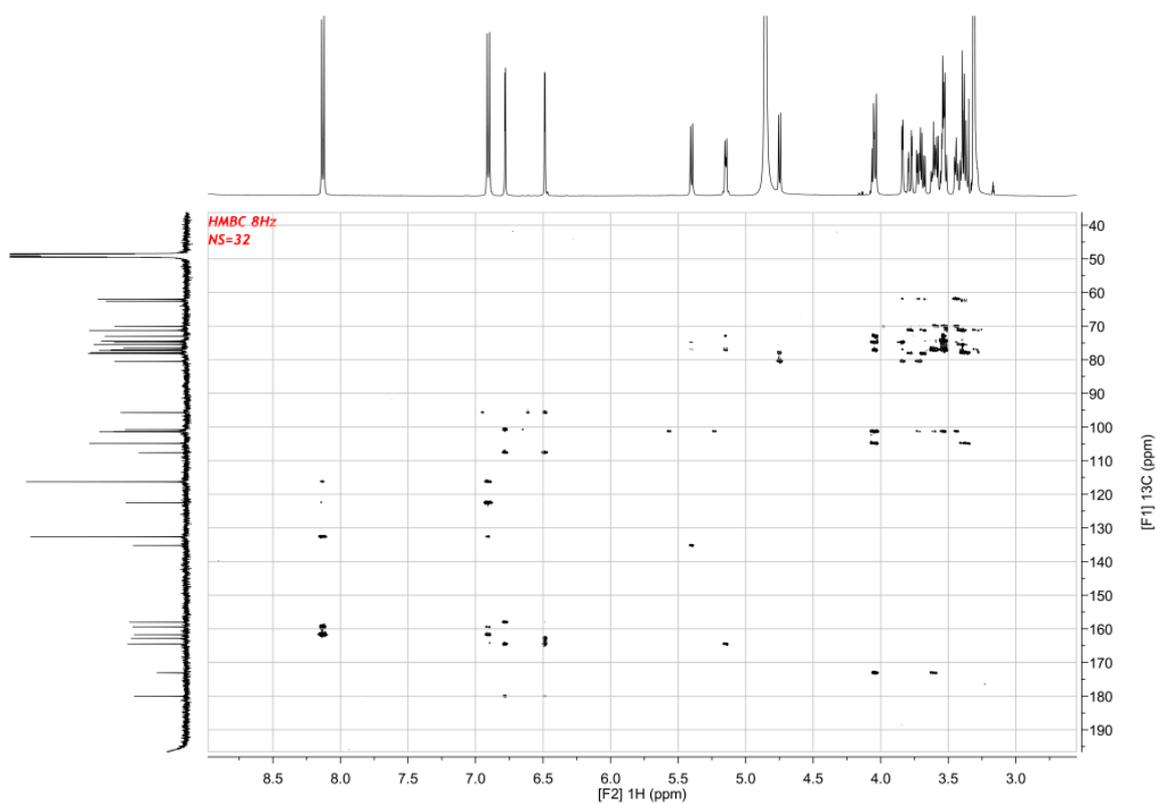


Figure S31. 1D TOCSY and 1D ROESY NMR subspectra of H-1(7-*O*- β -GlcA) in compound **3** (methanol-*d*₄, 500.18 MHz).

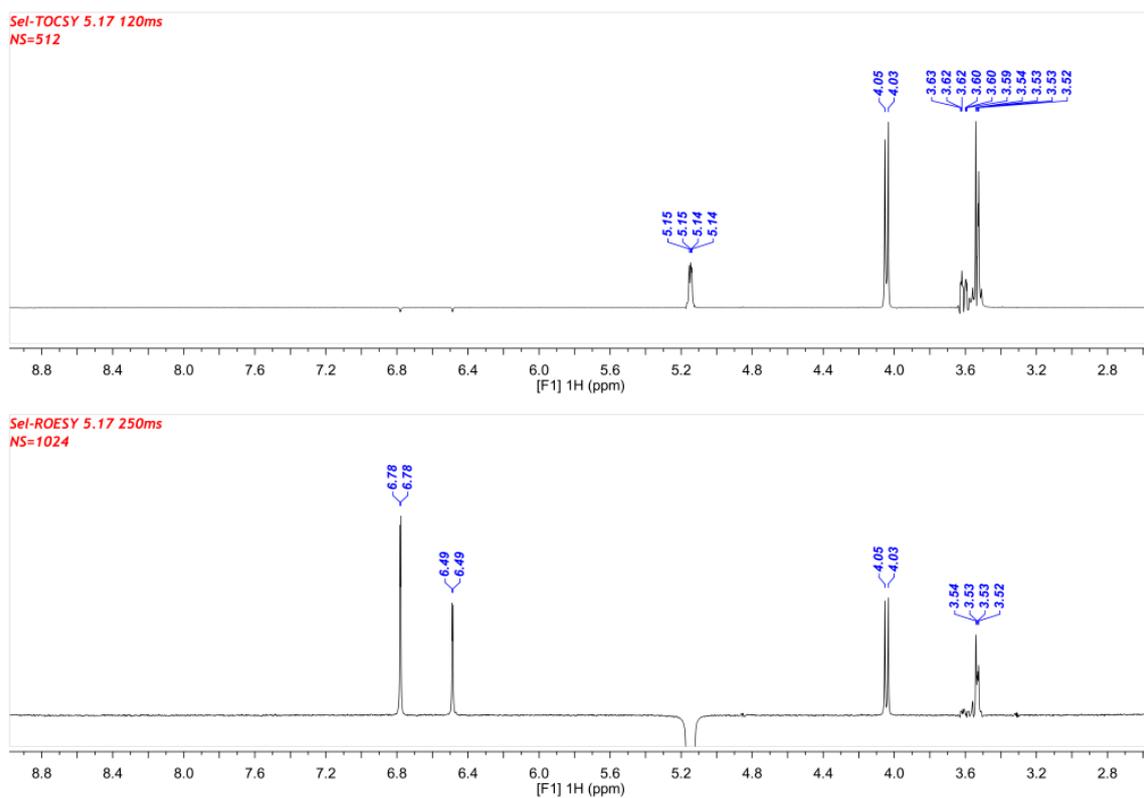


Figure S32. 1D TOCSY and 1D ROESY NMR subspectra of H-1(3-*O*- β -Gal) in compound **3** (methanol-*d*₄, 500.18 MHz).

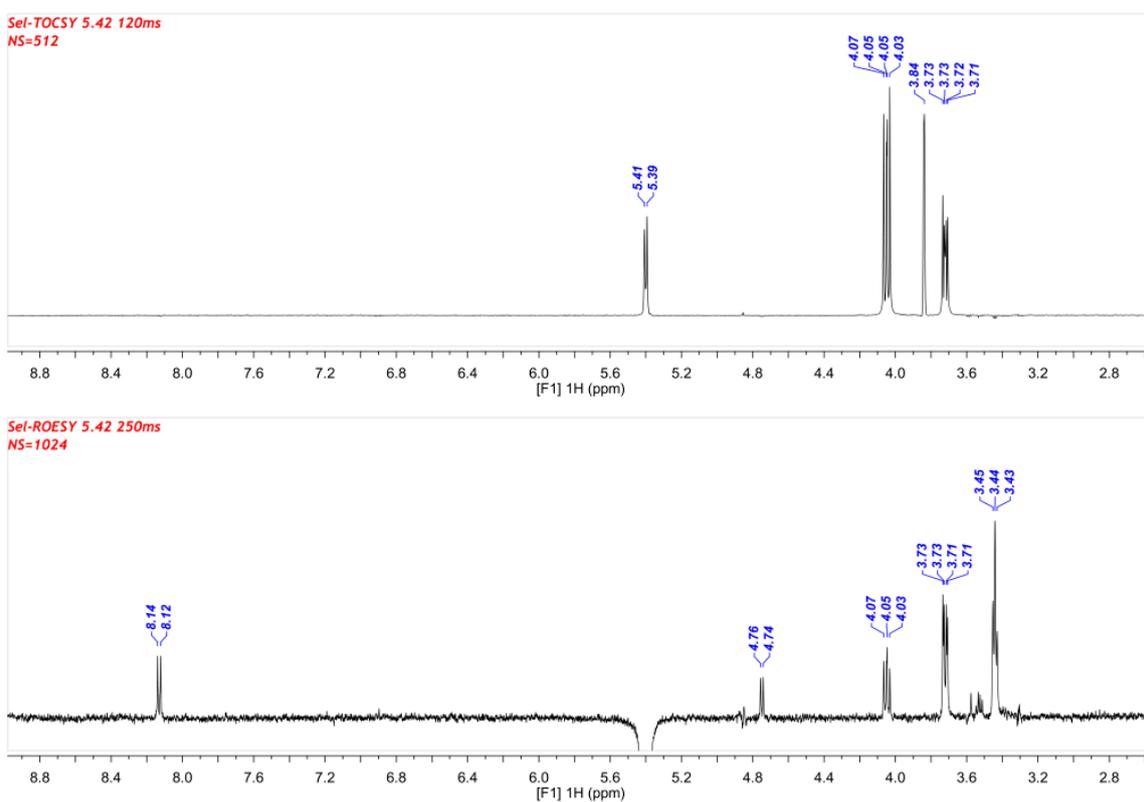
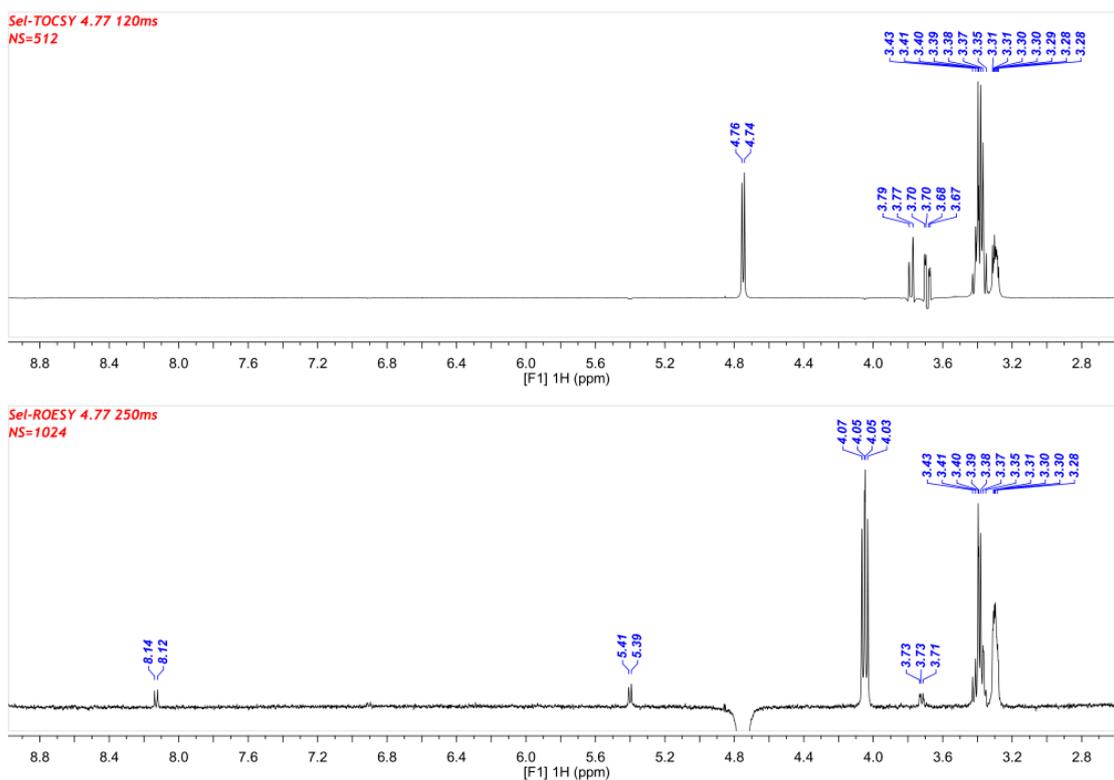


Figure S33. 1D TOCSY and 1D ROESY NMR subspectra of H-1(₂Gal-*O*-β-Glc) in compound **3** (methanol-*d*₄, 500.18 MHz).



Compound 4

Figure S34. 1D ¹H-NMR spectrum of compound **4** (methanol-*d*₄, 500.18 MHz).

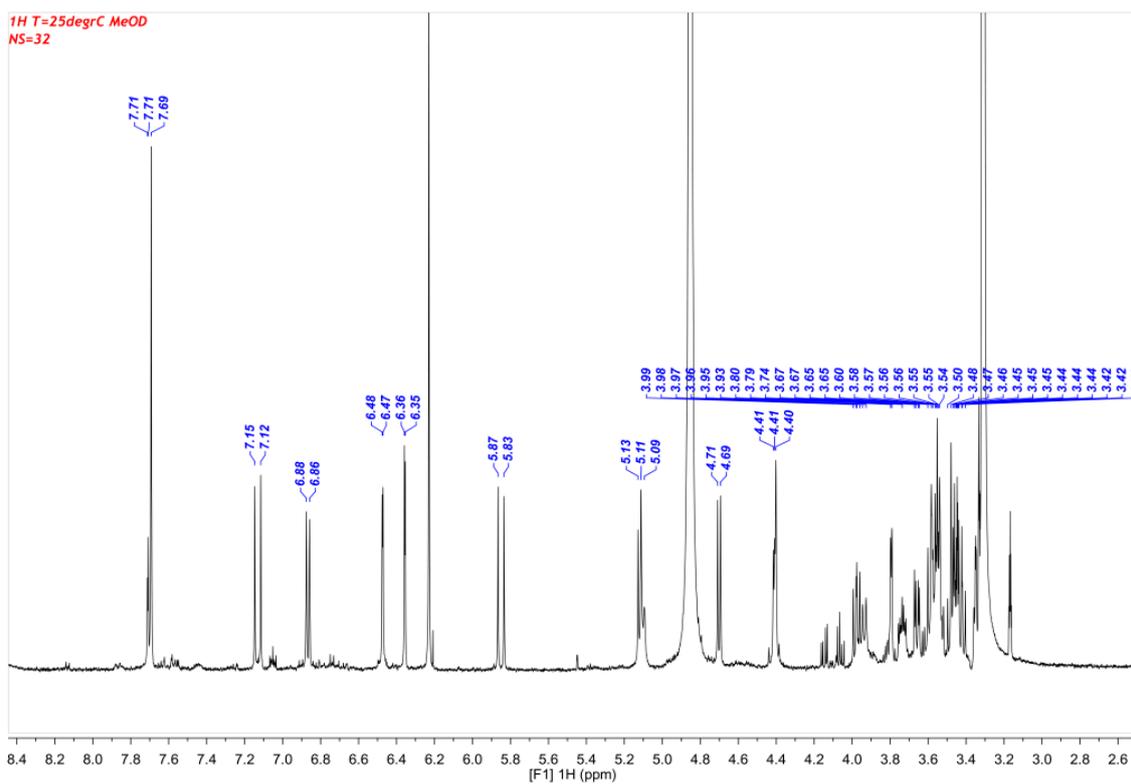


Figure S35. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **4** (methanol- d_4 , 125.77 MHz).

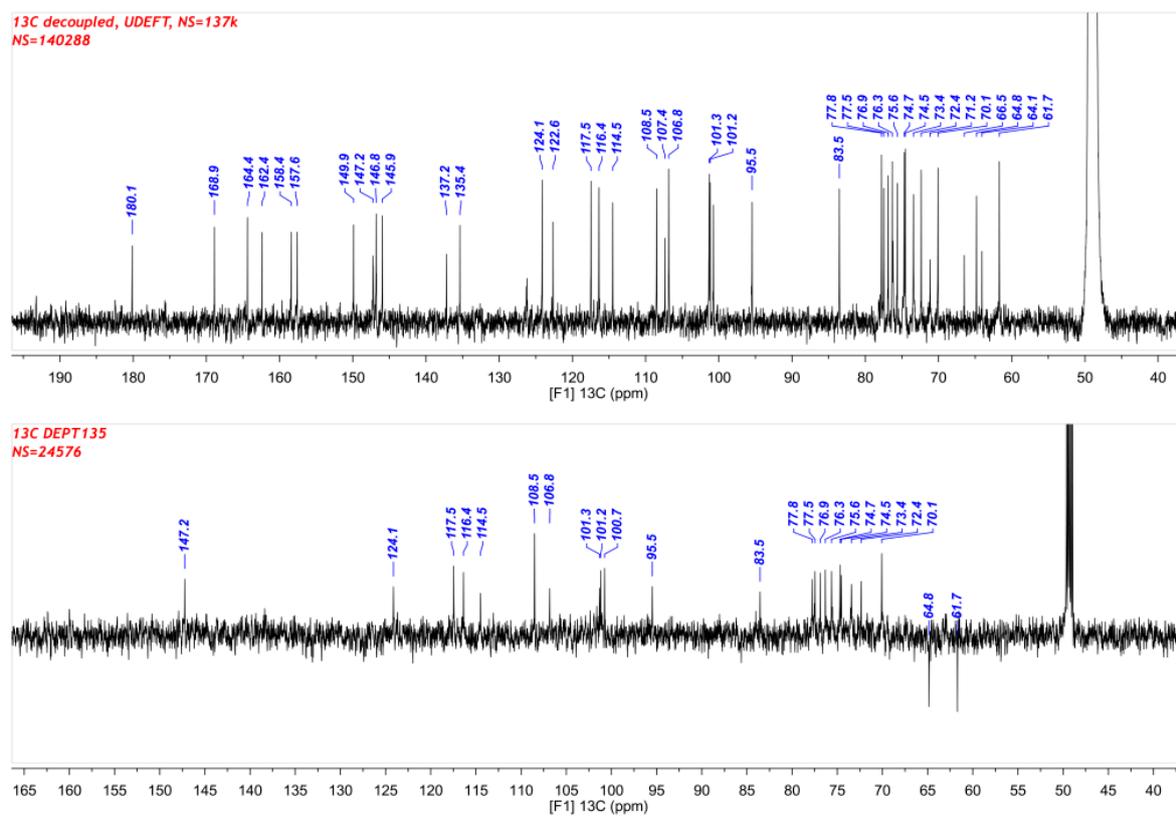


Figure S36. 2D g-COSY NMR spectrum of compound **4** (methanol- d_4 , 500.18 MHz).

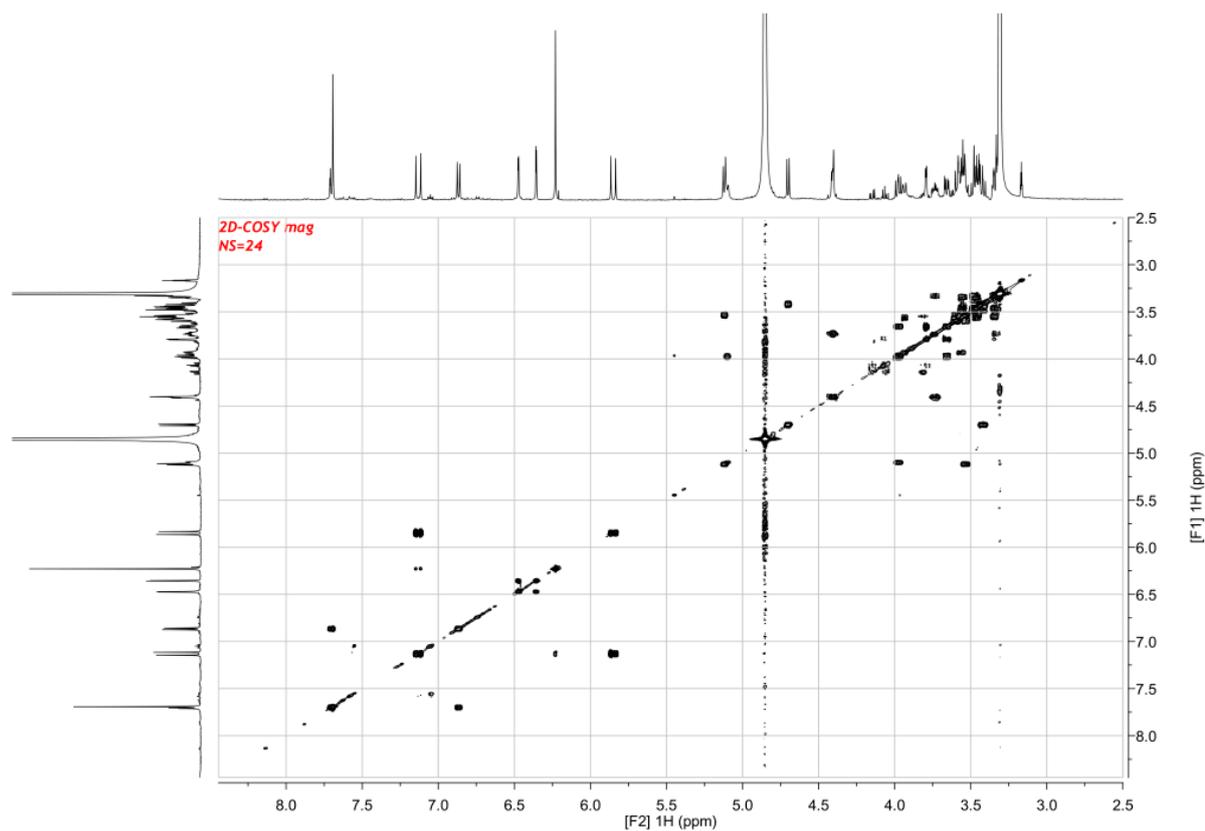


Figure S37. 2D TOCSY NMR spectrum of compound **4** (methanol- d_4 , 500.18 MHz).

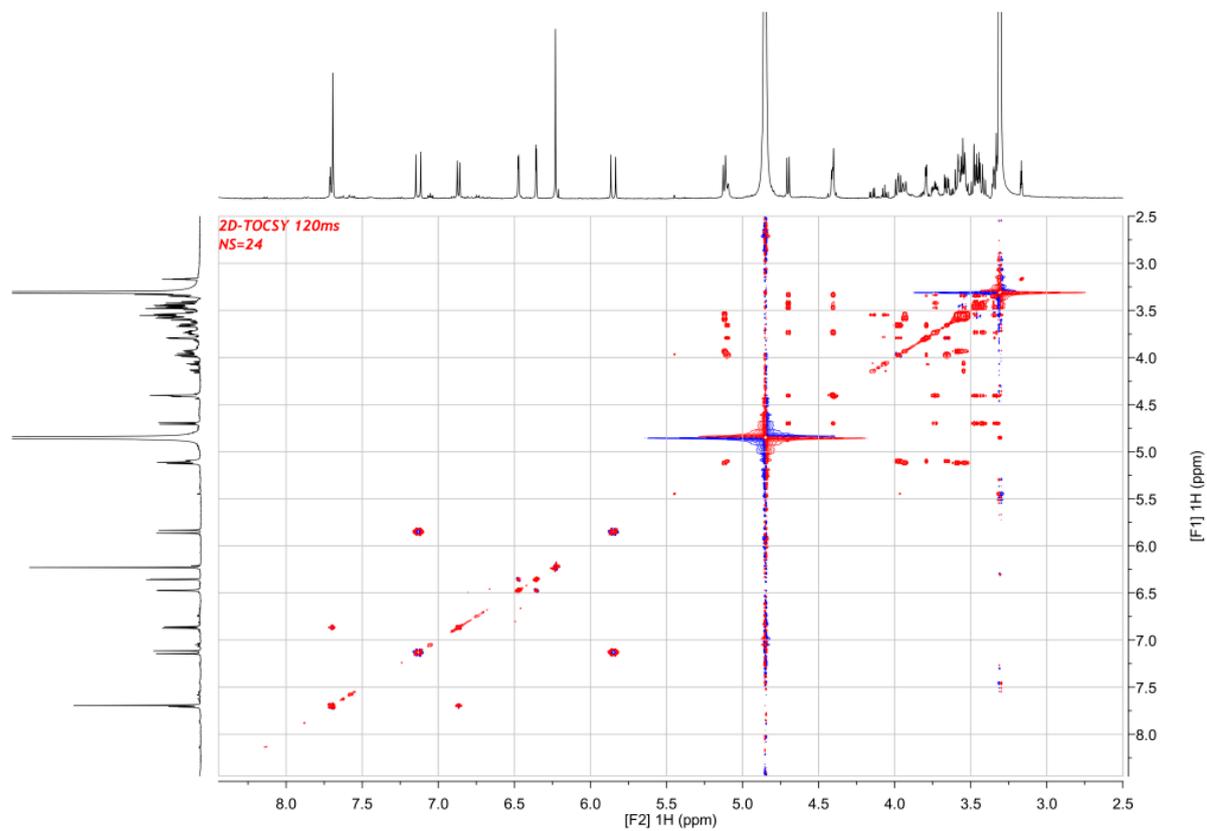


Figure S38. 2D ROESY NMR spectrum of compound **4** (methanol- d_4 , 500.18 MHz).

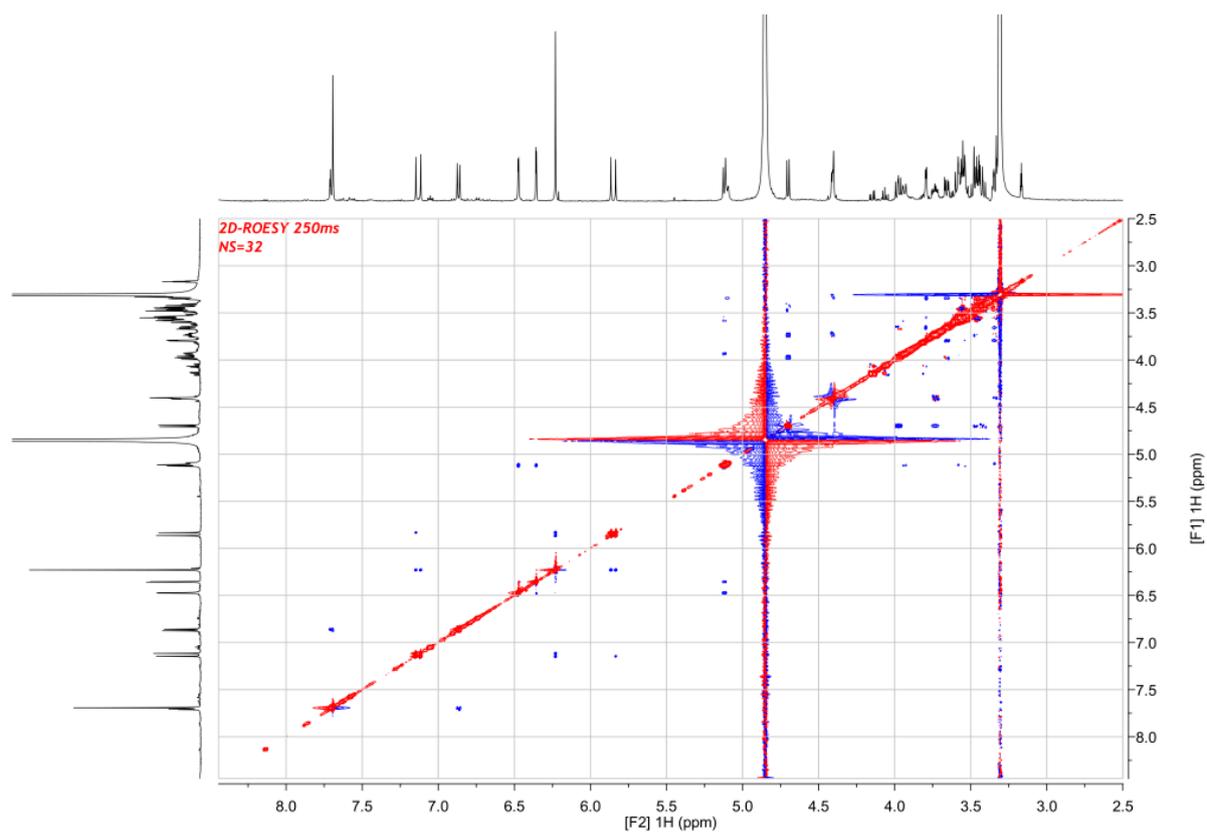


Figure S39. 2D *g*-HSQC-NMR spectrum of compound **4** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

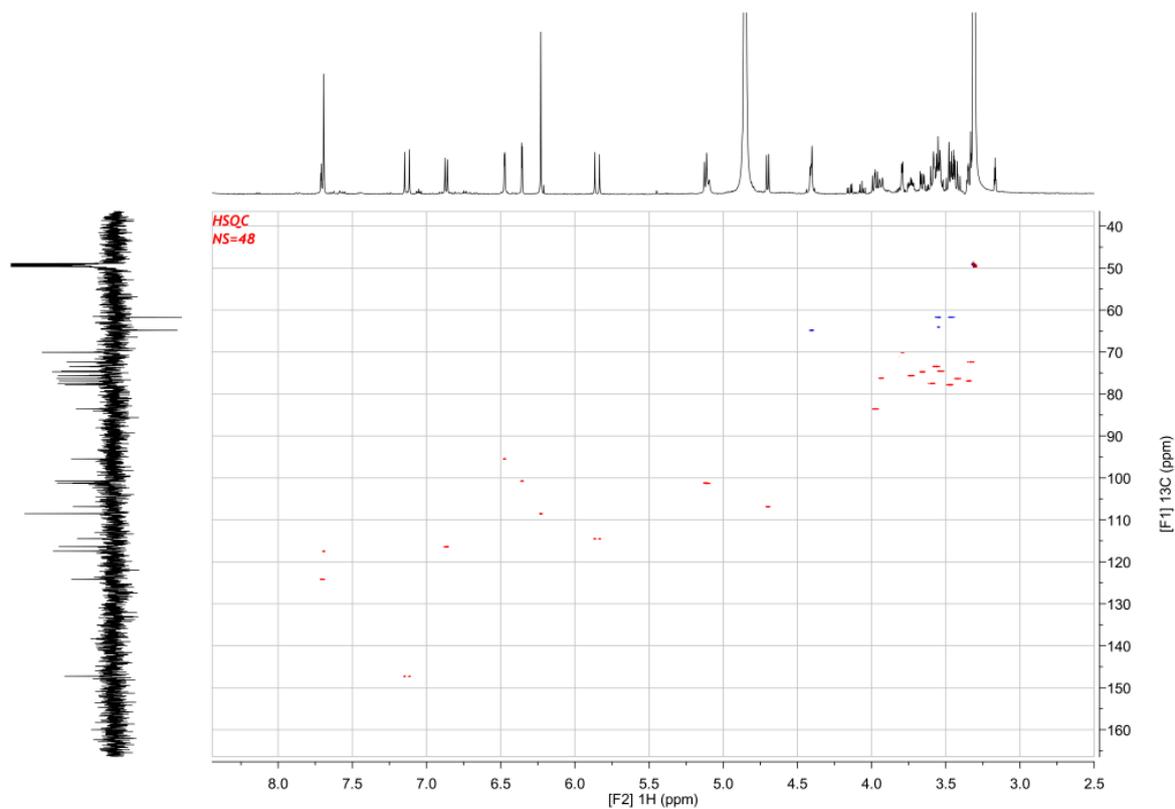


Figure S40. 2D *g*-HSQC-TOCSY NMR spectrum of compound **4** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

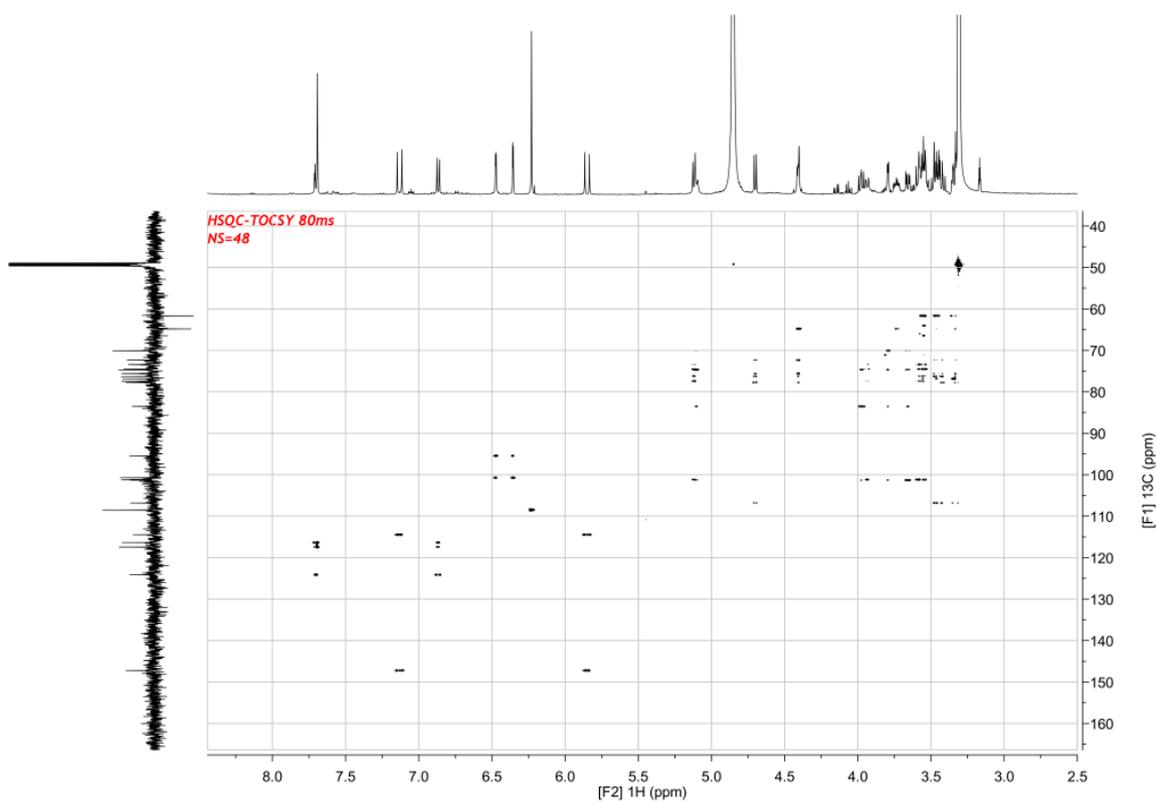


Figure S41. 2D *g*-HMBC-NMR spectrum of compound **4** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

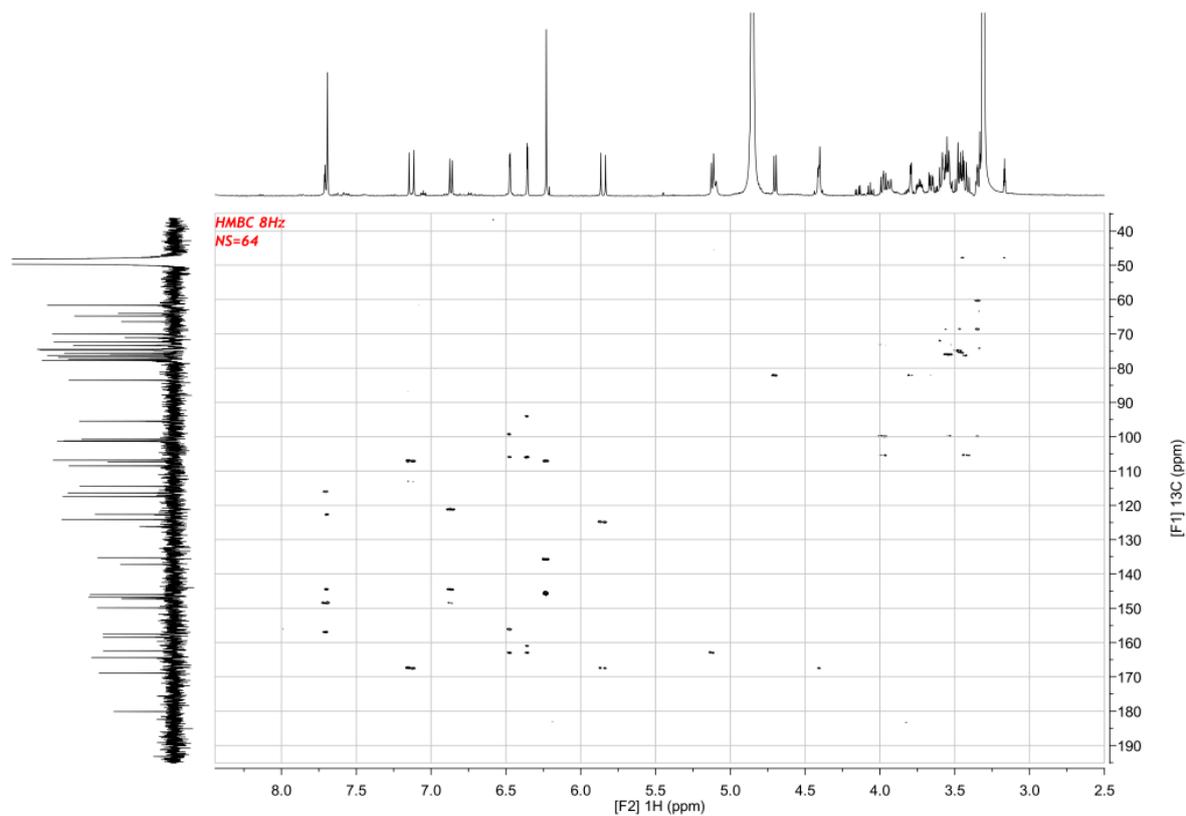


Figure S42. 1D TOCSY and 1D ROESY NMR subspectra of H-1(7-*O*- β -GlcA) and H-1(3-*O*- β -Gal) in compound **4** (methanol-*d*₄, 500.18 MHz).

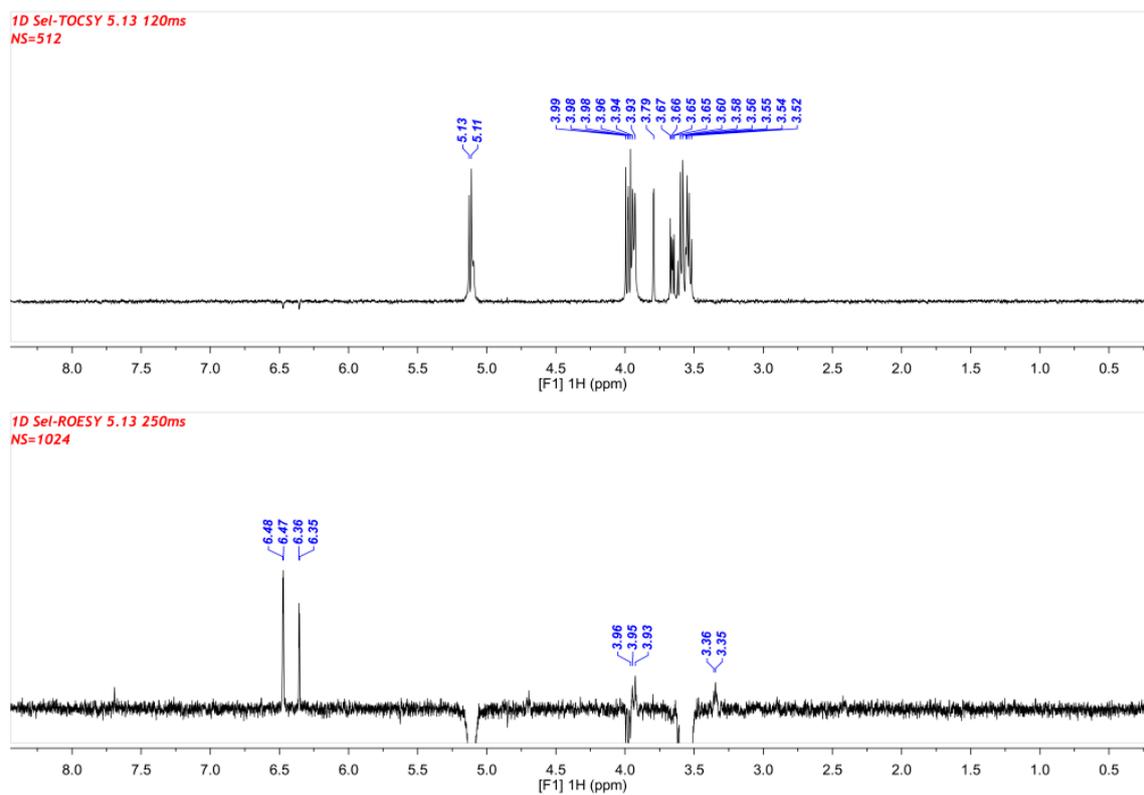
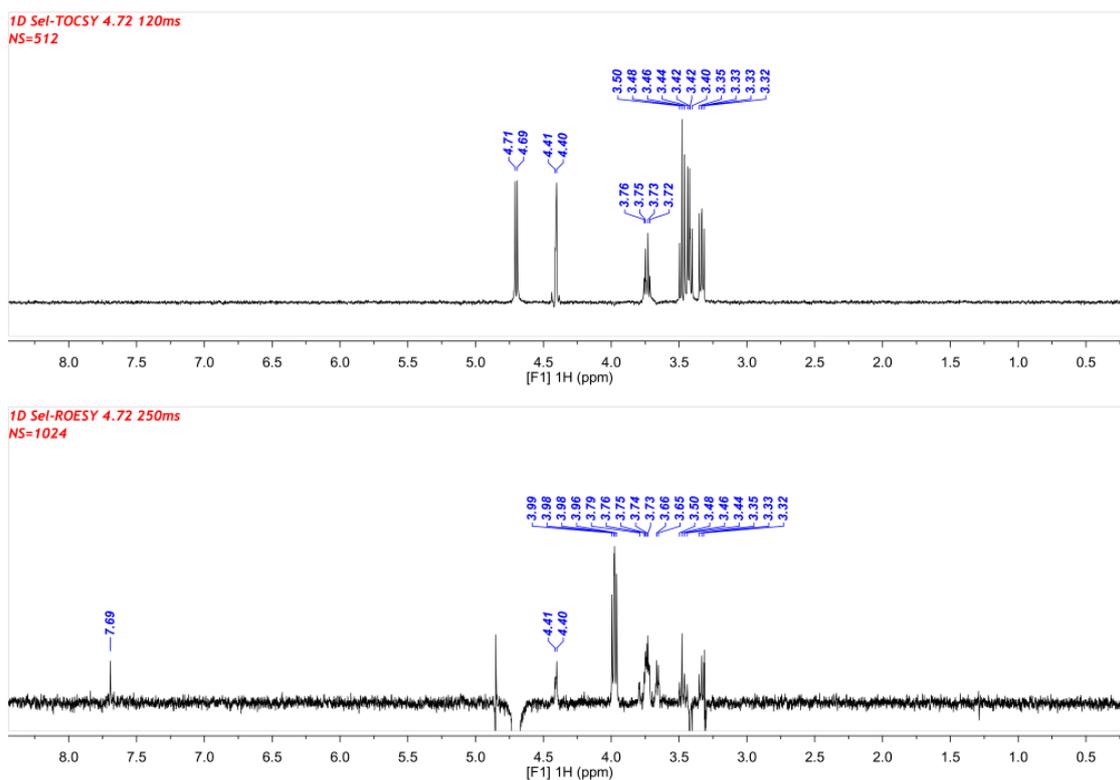


Figure S43. 1D TOCSY and 1D ROESY NMR subspectra of H-1(₂Gal-*O*-β-Glc) in compound **4** (methanol-*d*₄, 500.18 MHz).



Compound **5**

Figure S44. 1D ¹H-NMR spectrum of compound **5** (methanol-*d*₄, 500.18 MHz).

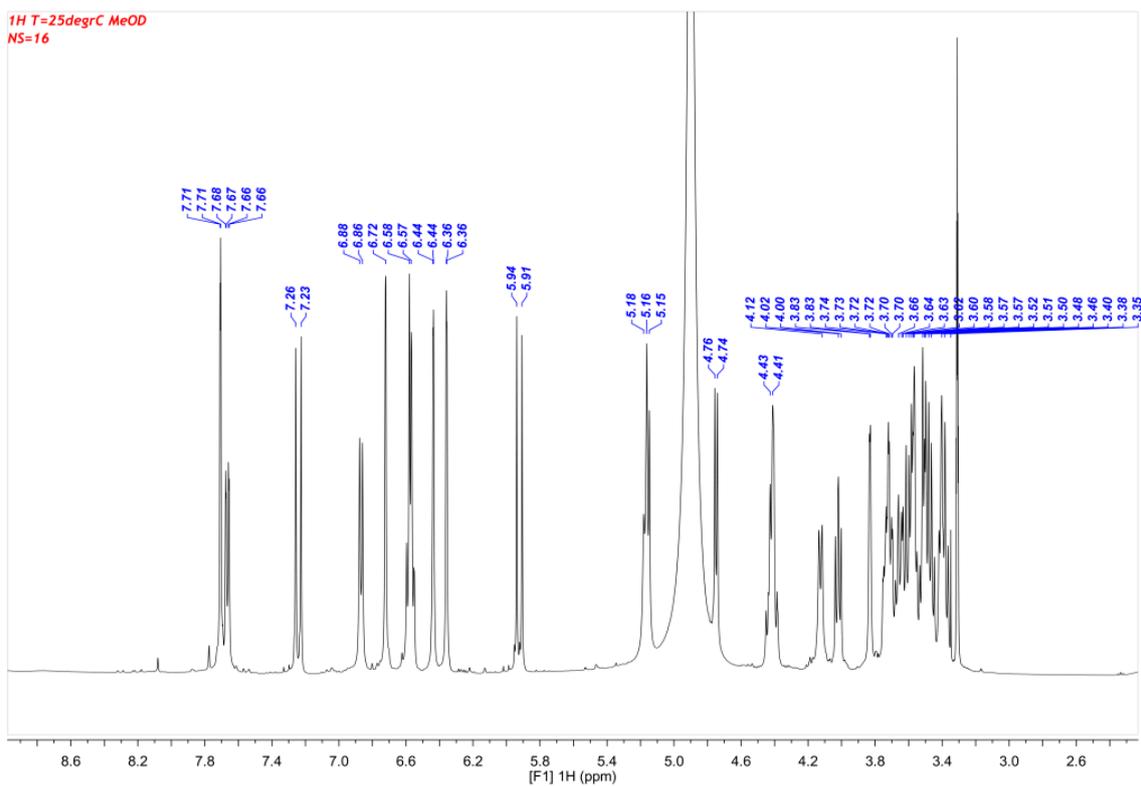


Figure S45. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **5** (methanol- d_4 , 125.77 MHz).

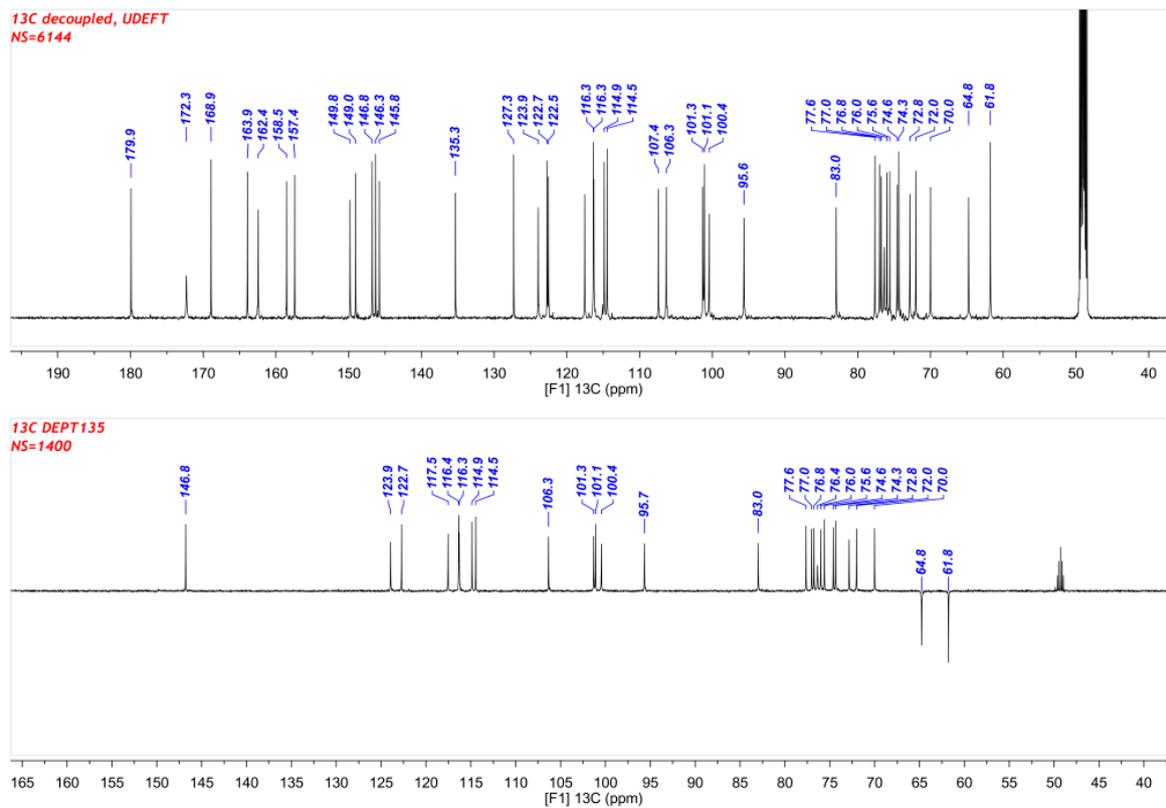


Figure S46. 2D g -COSY NMR spectrum of compound **5** (methanol- d_4 , 500.18 MHz).

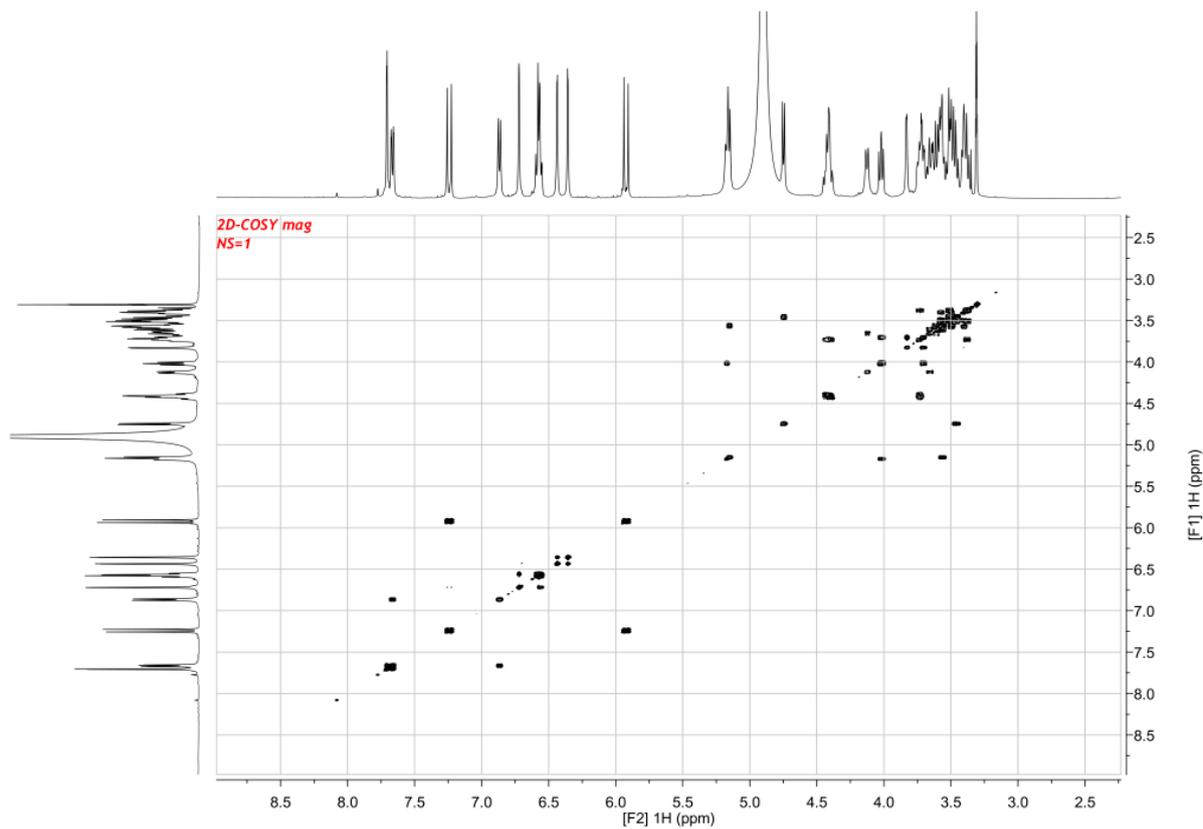


Figure S47. 2D TOCSY NMR spectrum of compound **5** (methanol- d_4 , 500.18 MHz).

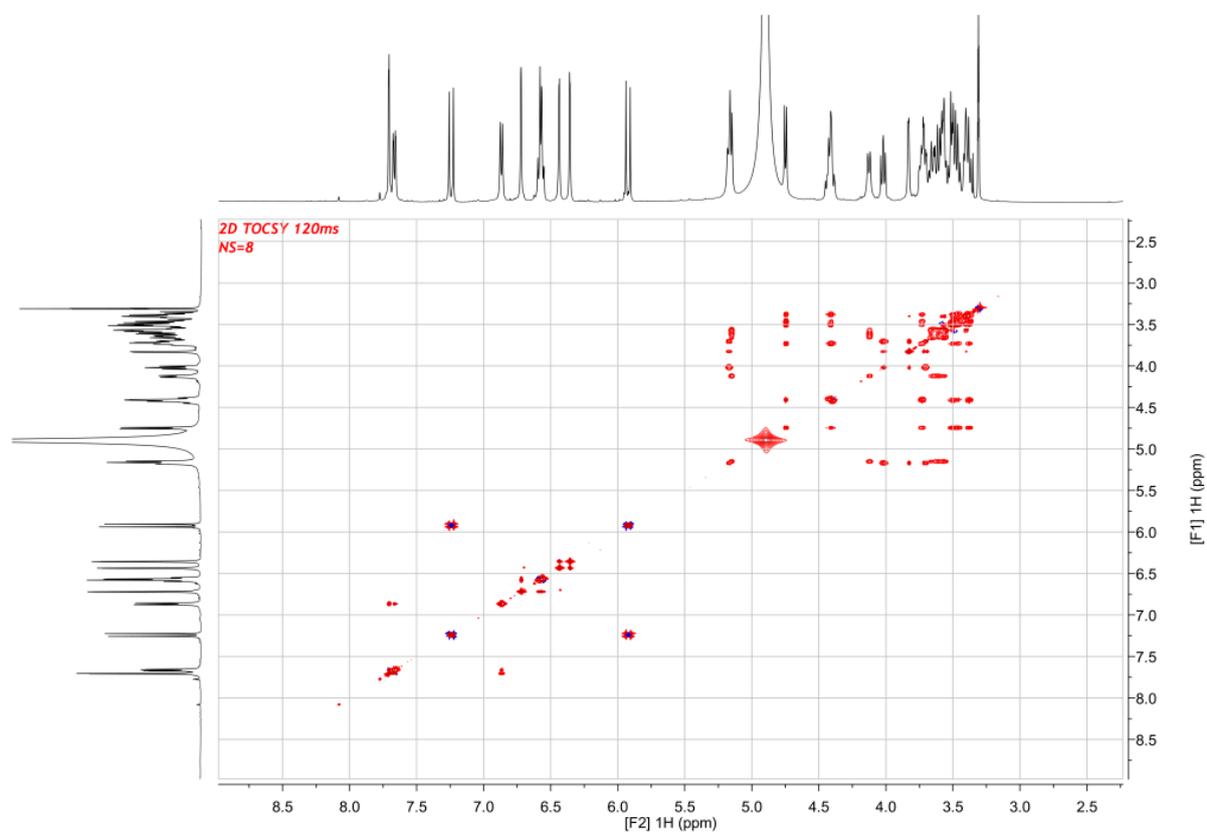


Figure S48. 2D ROESY NMR spectrum of compound **5** (methanol- d_4 , 500.18 MHz).

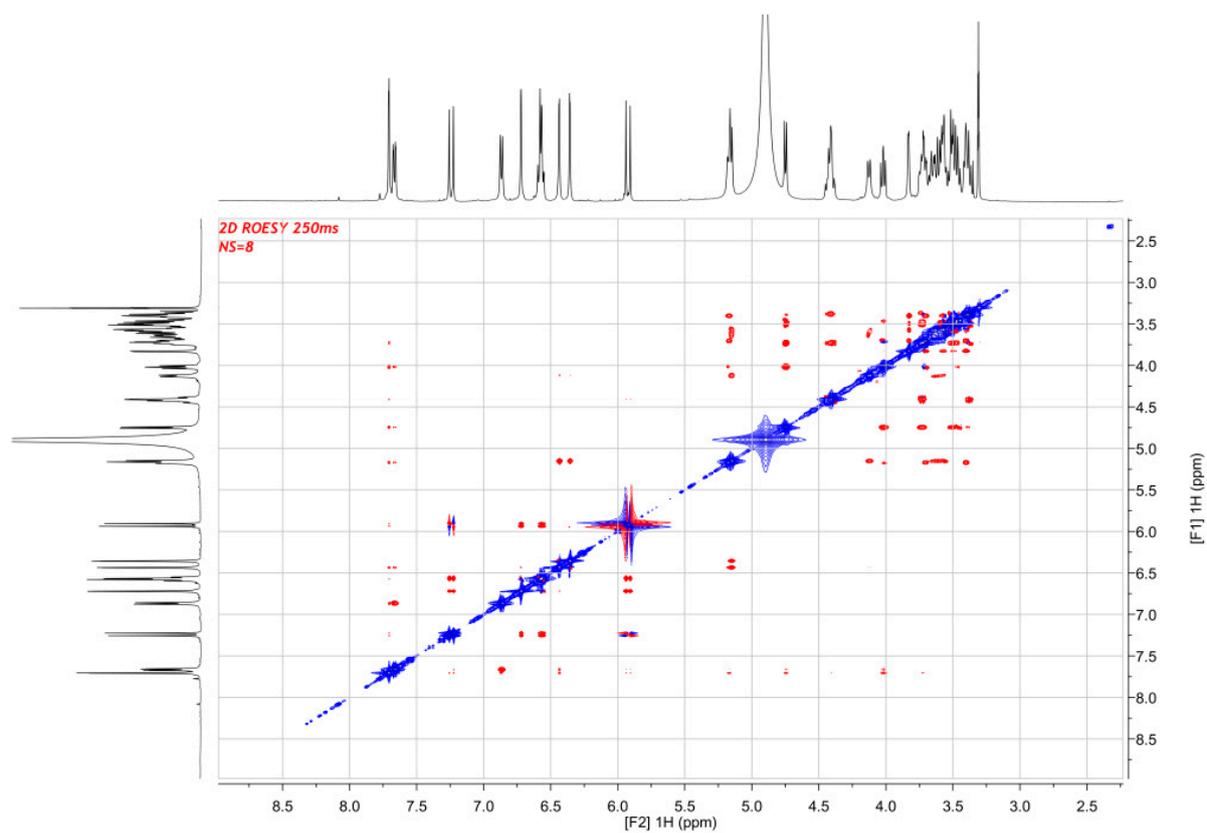


Figure S49. 2D *g*-HSQC-NMR spectrum of compound **5** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

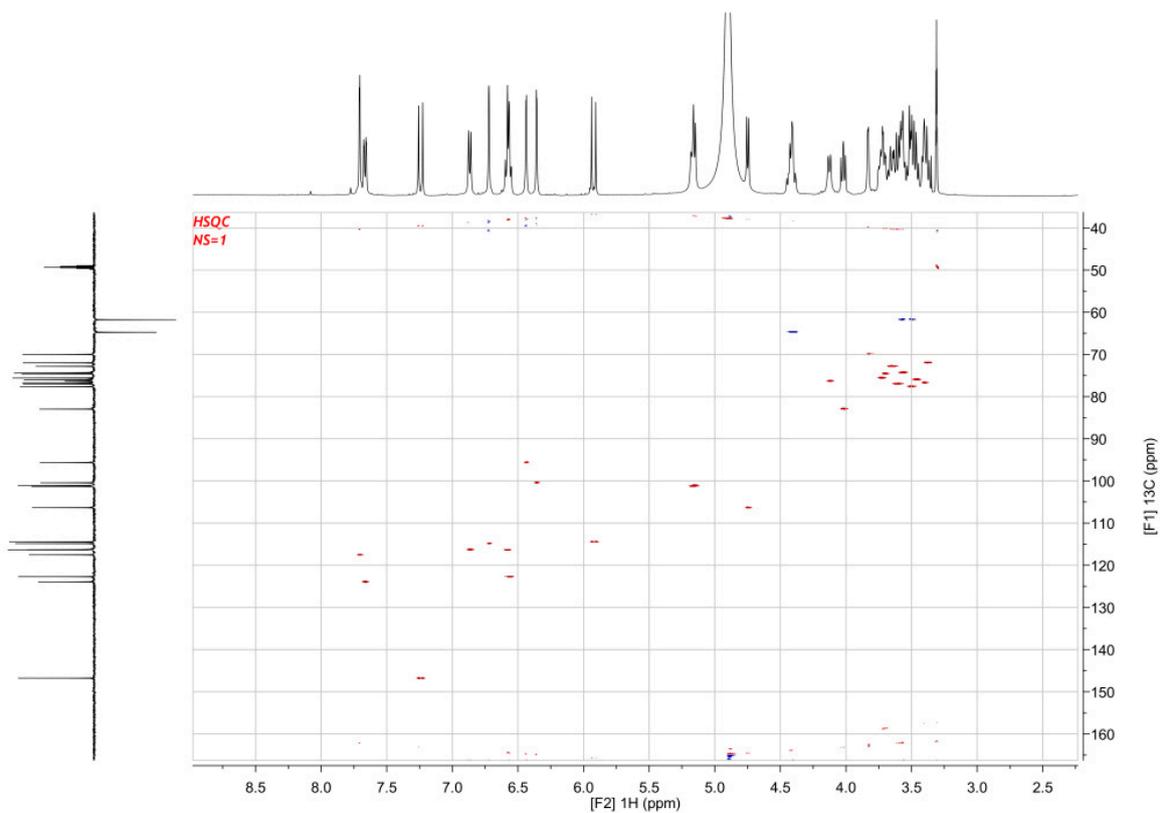


Figure S50. 2D *g*-HSQC-TOCSY NMR spectrum of compound **5** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

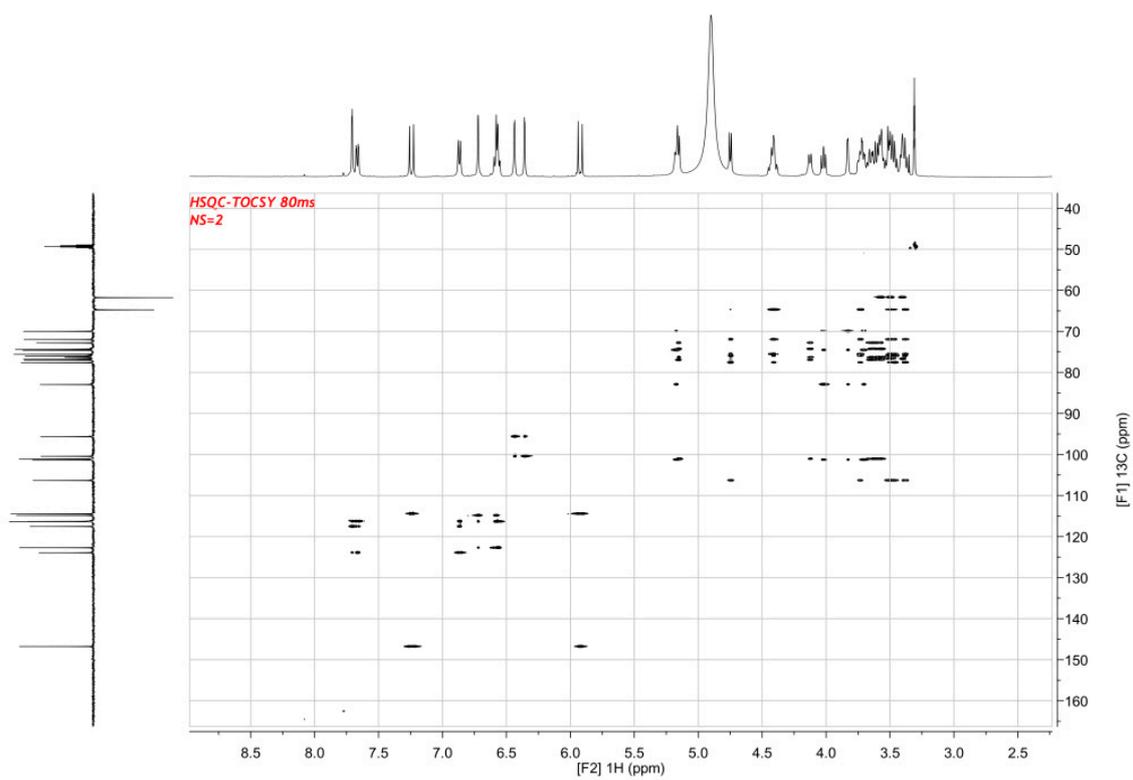


Figure S51. 2D *g*-HMBC-NMR spectrum of compound **5** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

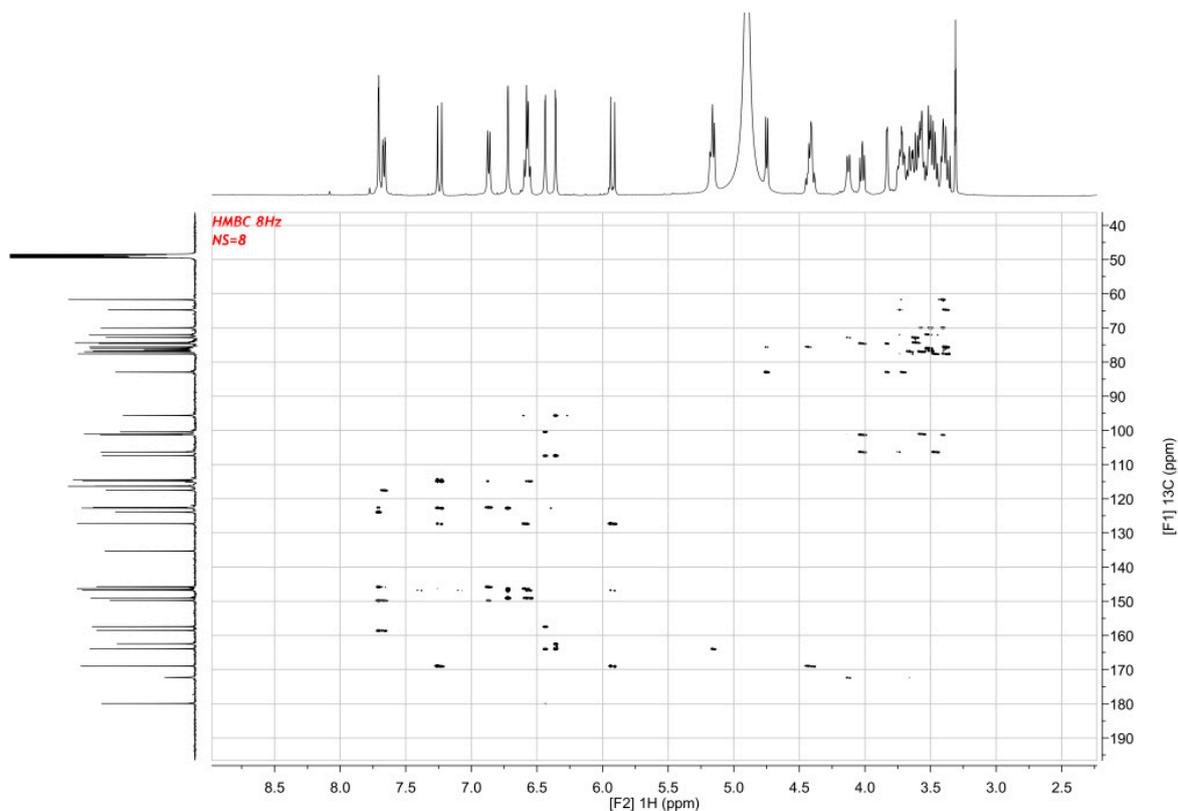


Figure S52. 1D TOCSY and 1D ROESY NMR subspectra of H-1(7-*O*- β -GlcA) and H-1(3-*O*-Gal) in compound **5** (methanol-*d*₄, 500.18 MHz).

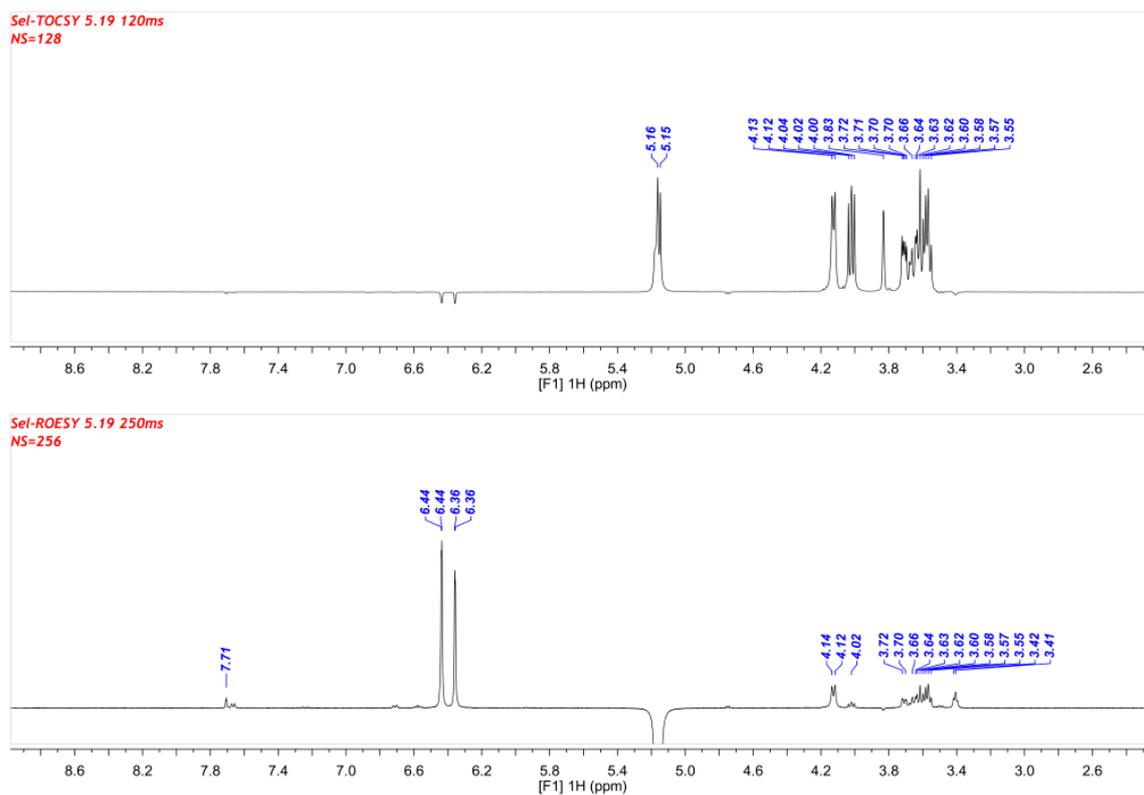
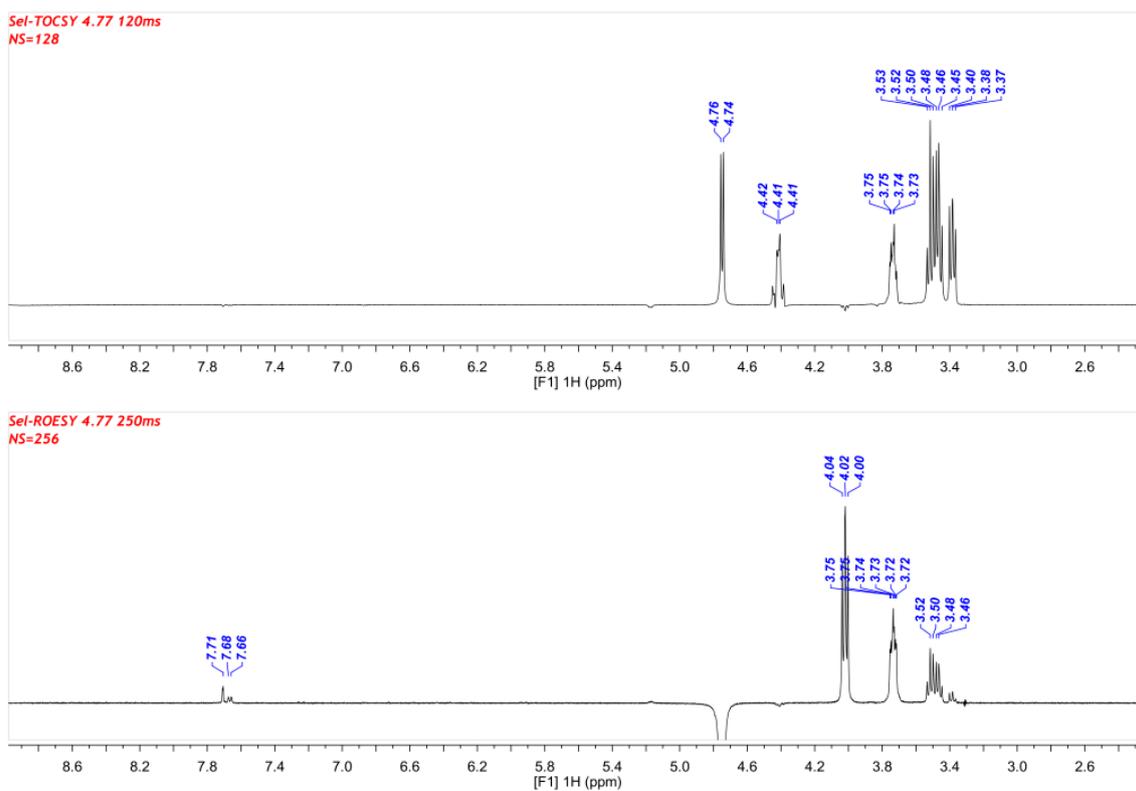


Figure S53. 1D TOCSY and 1D ROESY NMR subspectra of H-1(₂Gal-*O*-β-Glc) in compound **5** (methanol-*d*₄, 500.18 MHz).



Compound 6

Figure S54. 1D ¹H-NMR spectrum of compound **6** (methanol-*d*₄, 500.18 MHz).

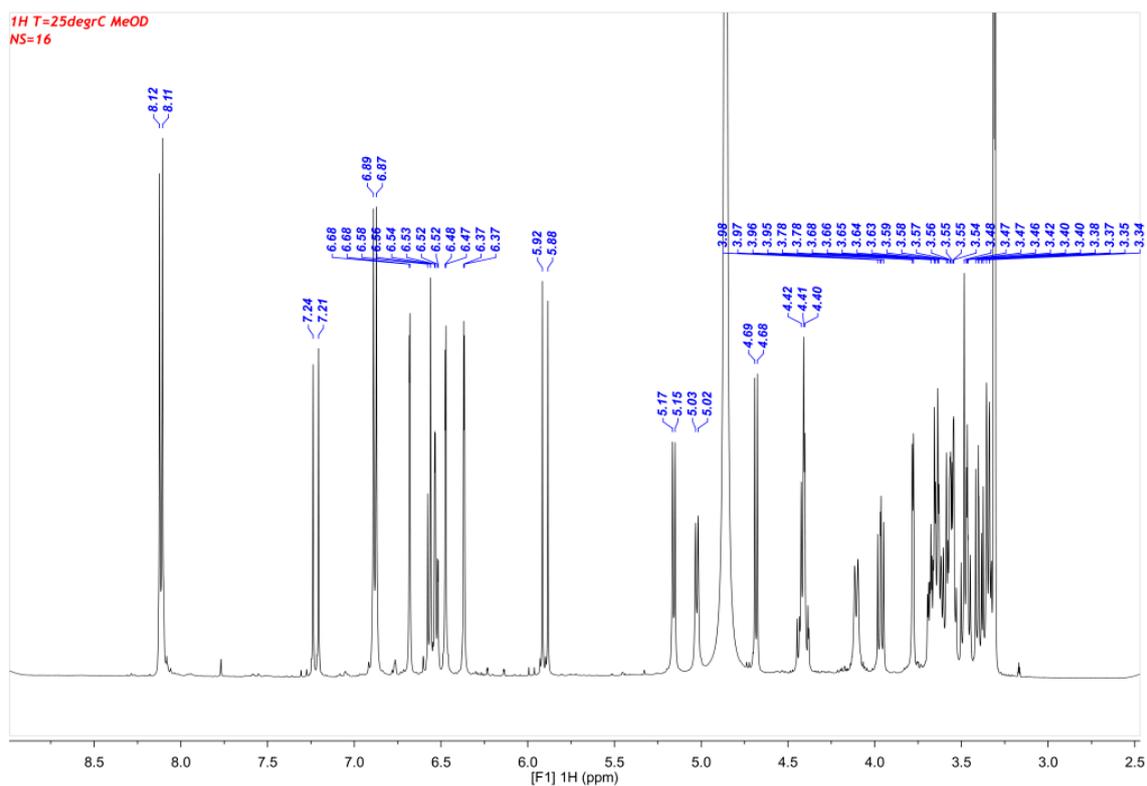
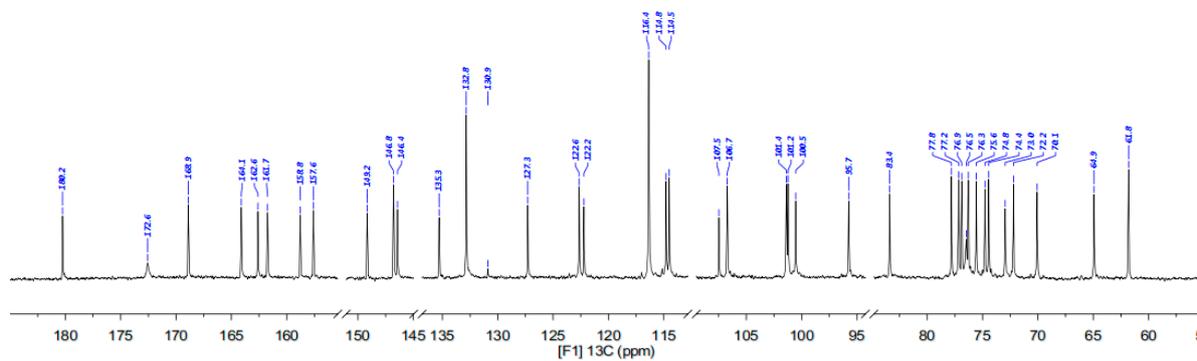


Figure S55. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **6** (methanol- d_4 , 125.77 MHz).

13C decoupled, UDEFT
NS=27648



13C DEPT135
NS=30720

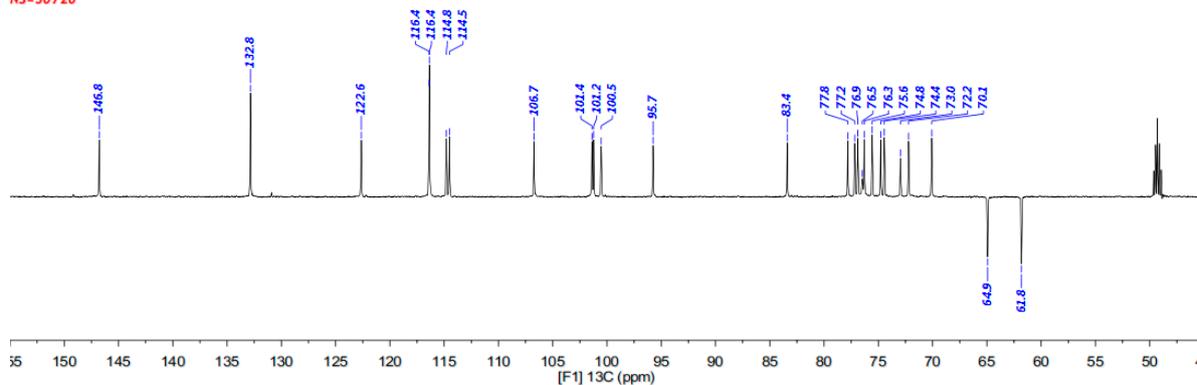


Figure S56. 2D g-COSY NMR spectrum of compound **6** (methanol- d_4 , 500.18 MHz).

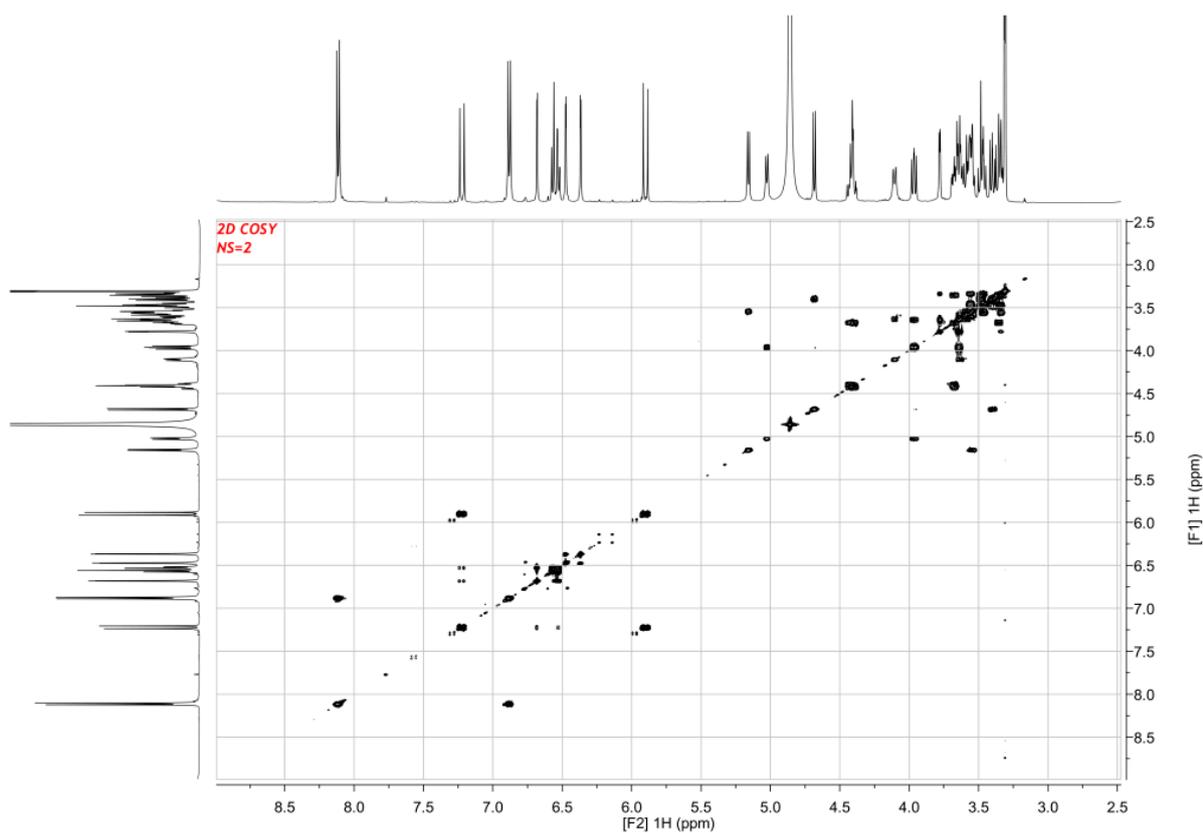


Figure S57. 2D TOCSY NMR spectrum of compound **6** (methanol- d_4 , 500.18 MHz).

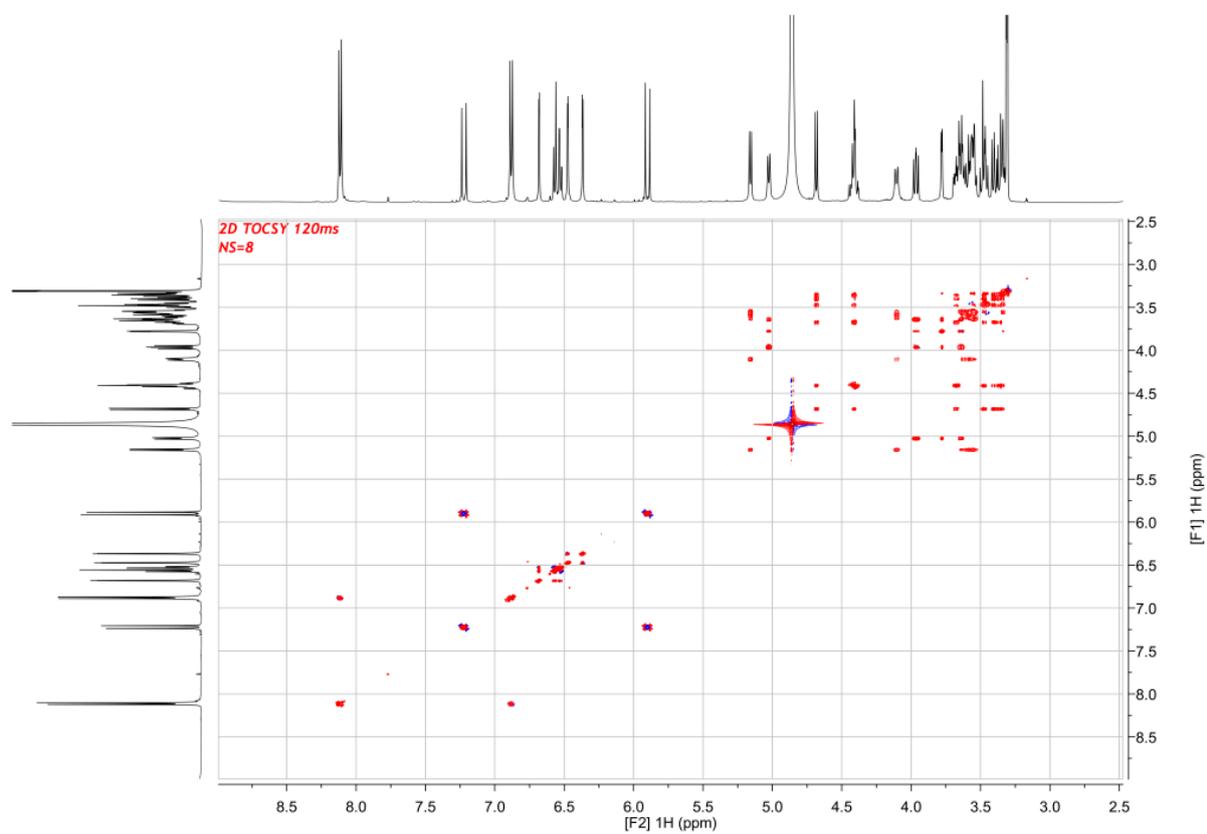


Figure S58. 2D ROESY NMR spectrum of compound **6** (methanol- d_4 , 500.18 MHz).

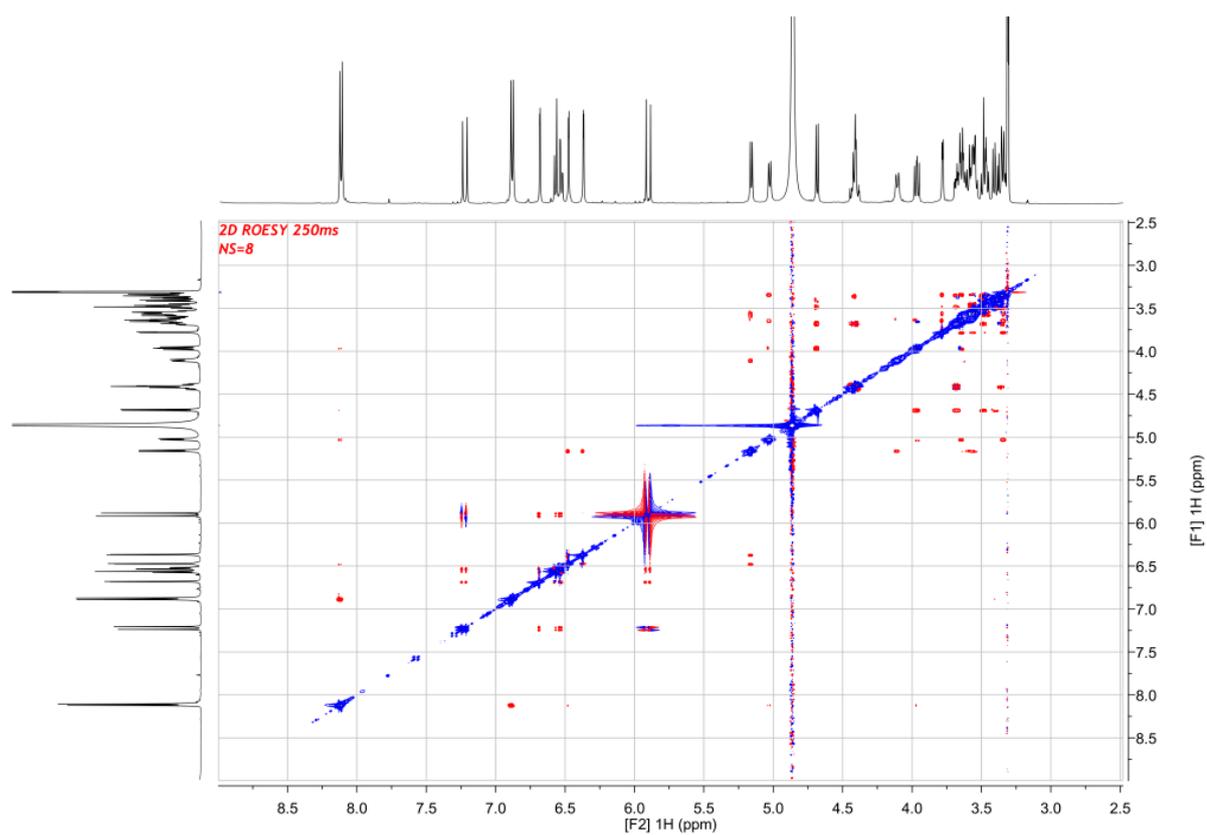


Figure S59. 2D *g*-HSQC-NMR spectrum of compound **6** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

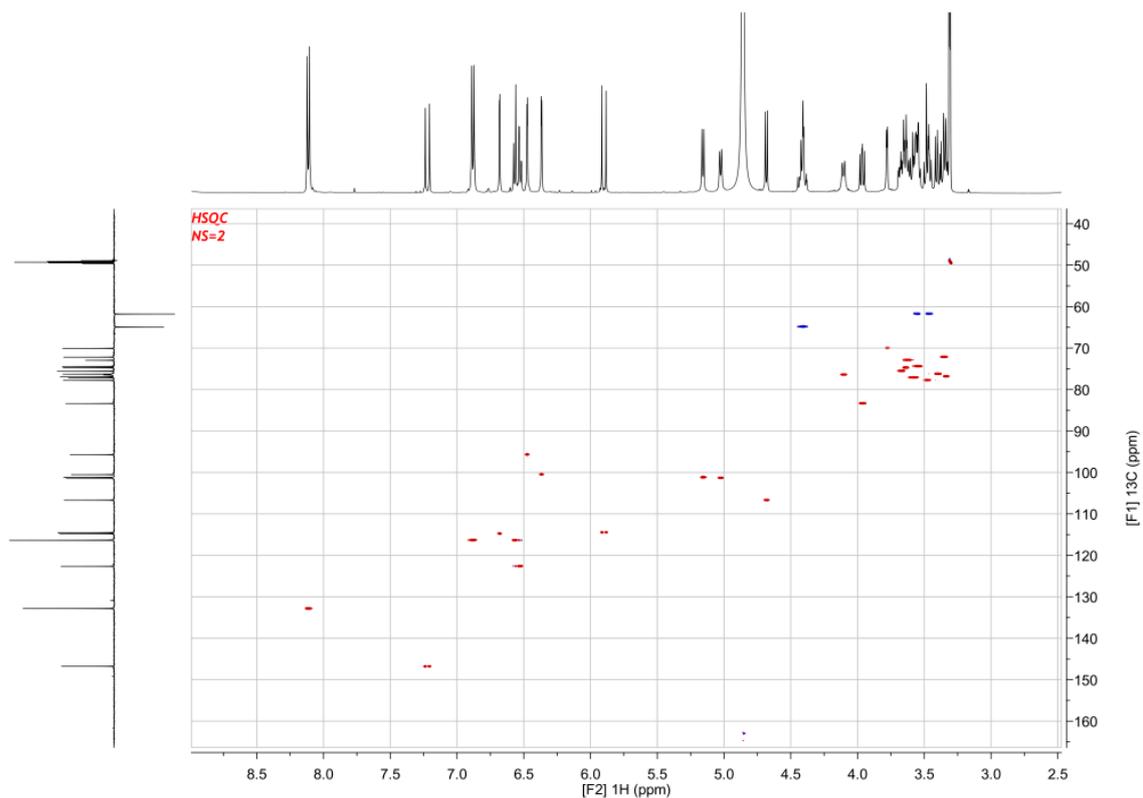


Figure S60. 2D *g*-HSQC-TOCSY NMR spectrum of compound **6** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

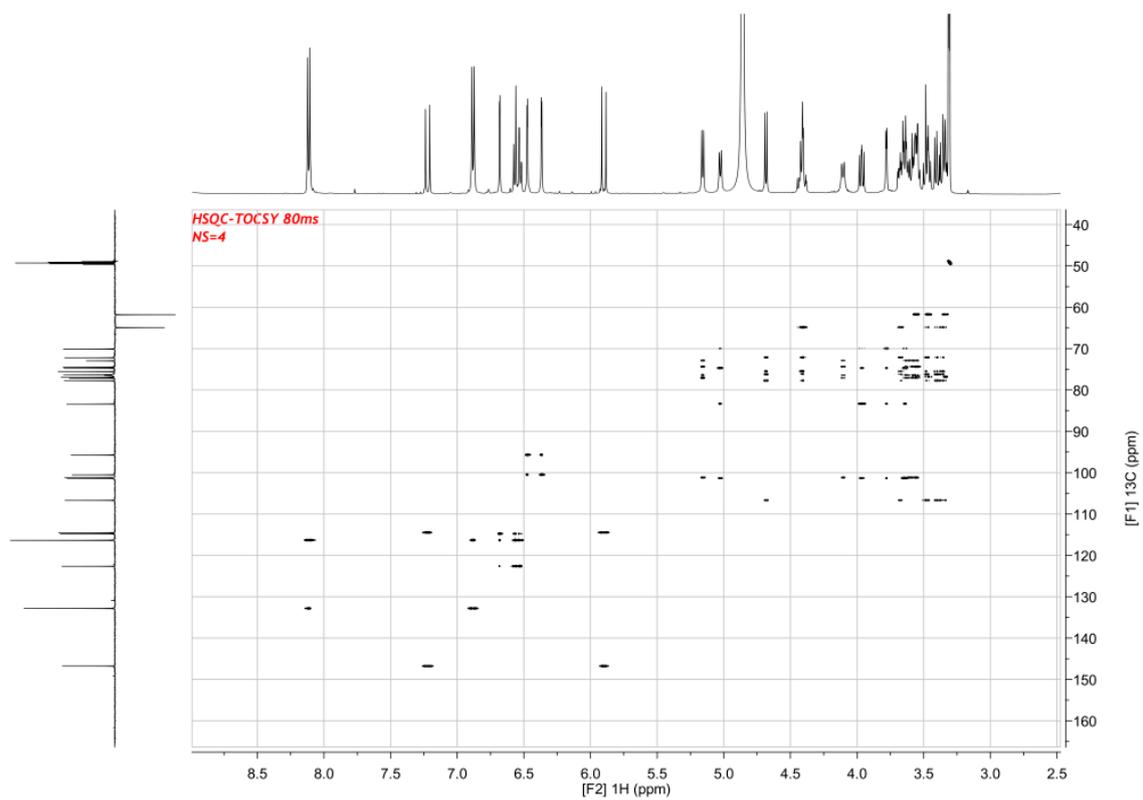


Figure S61. 2D *g*-HMBC-NMR spectrum of compound **6** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

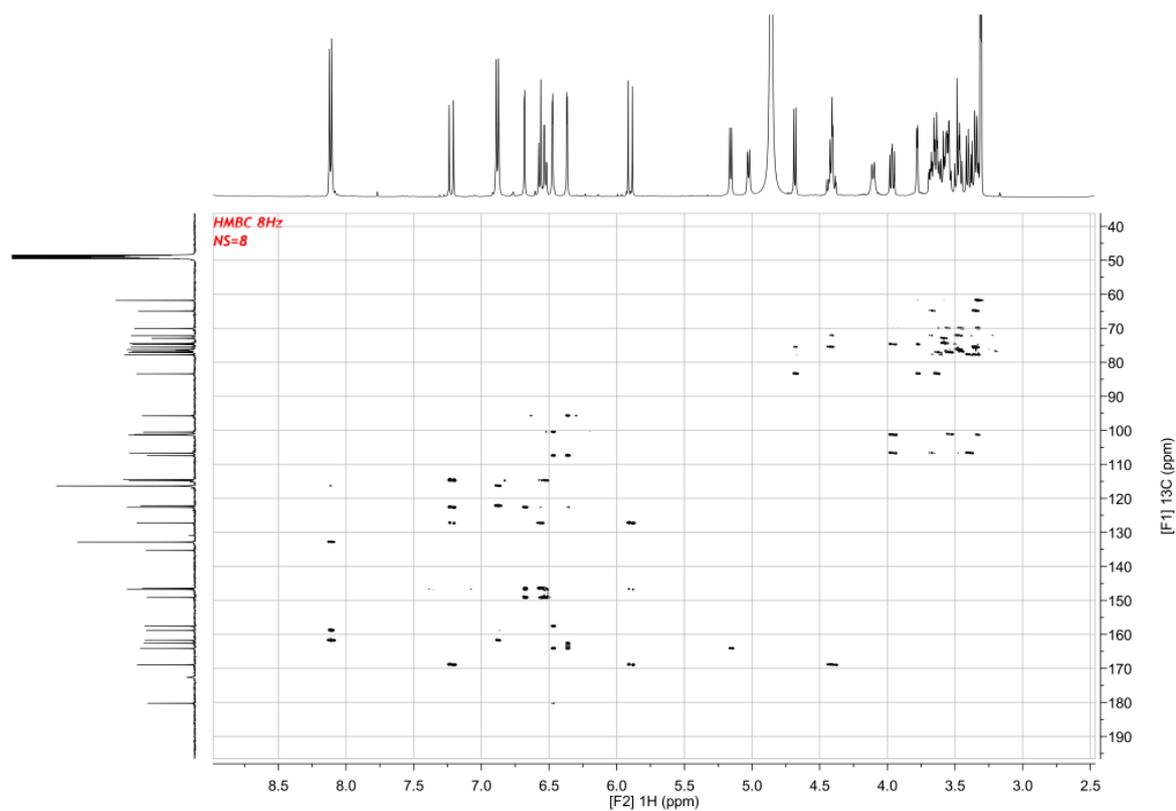


Figure S62. 1D TOCSY and 1D ROESY NMR subspectra of H-1(*7-O*-β-GlcA) in compound **6** (methanol-*d*₄, 500.18 MHz).

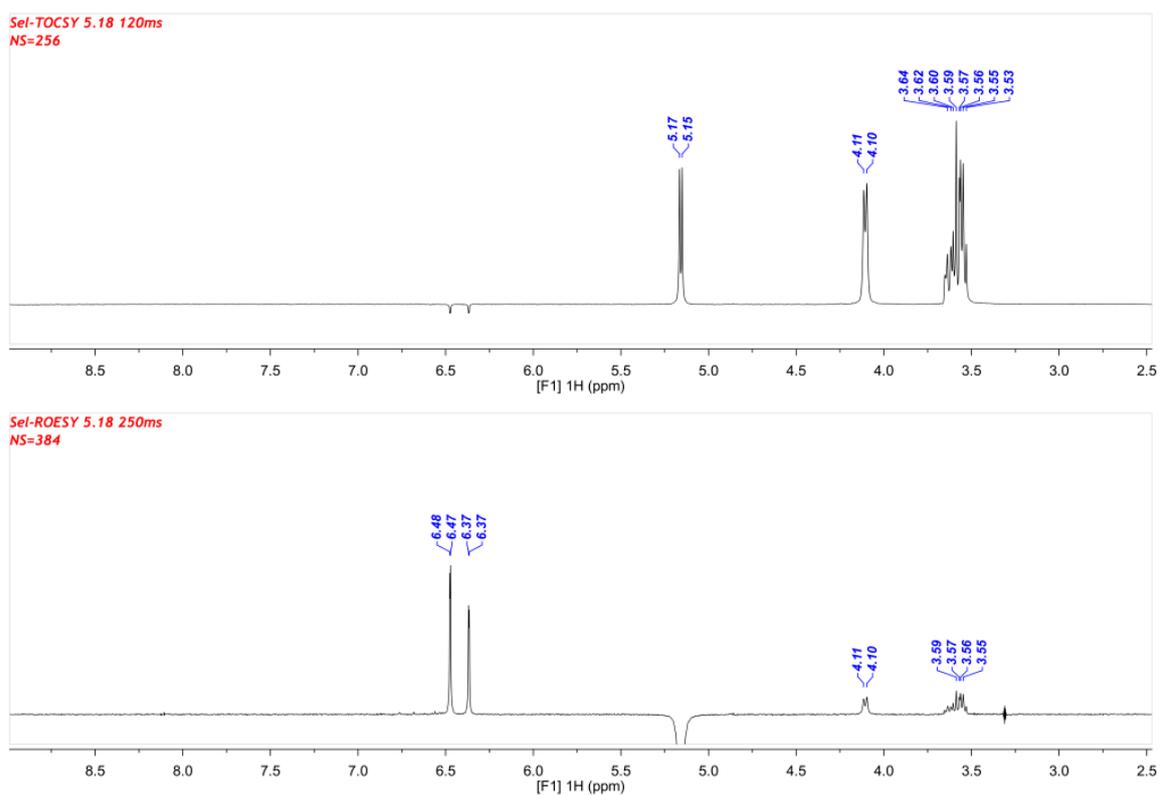


Figure S63. 1D TOCSY and 1D ROESY NMR subspectra of H-1(3-*O*- β -Gal) in compound **6** (methanol-*d*₄, 500.18 MHz).

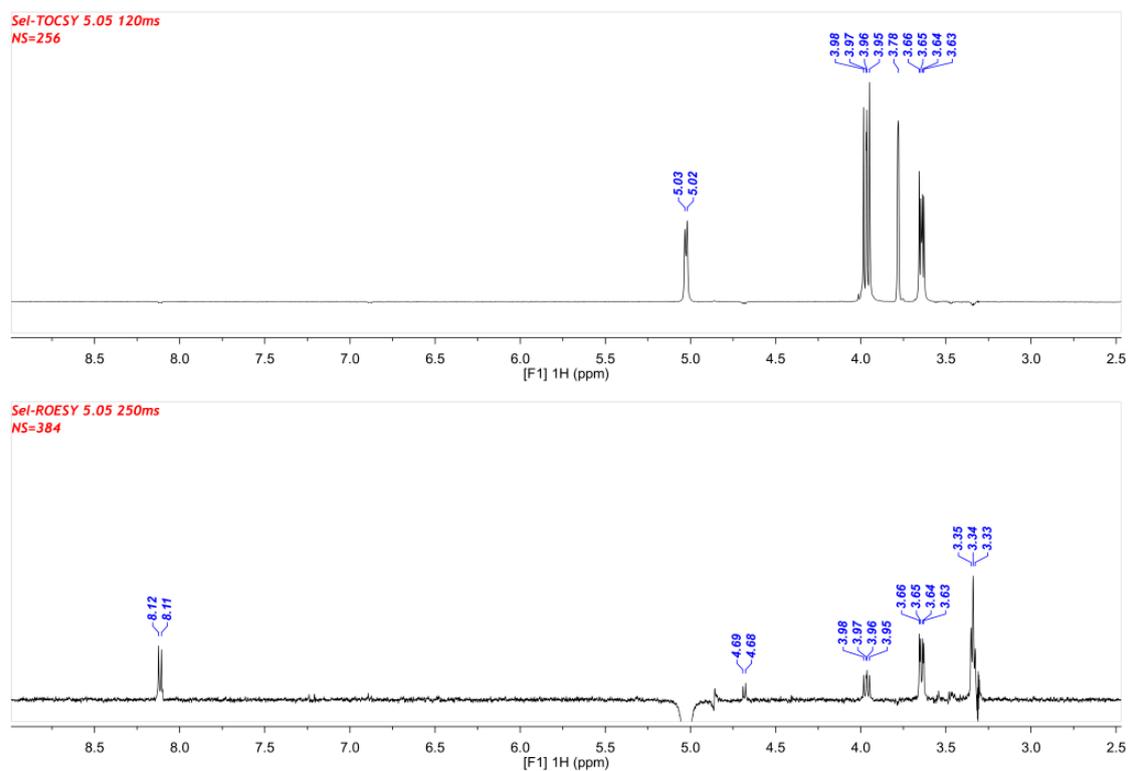
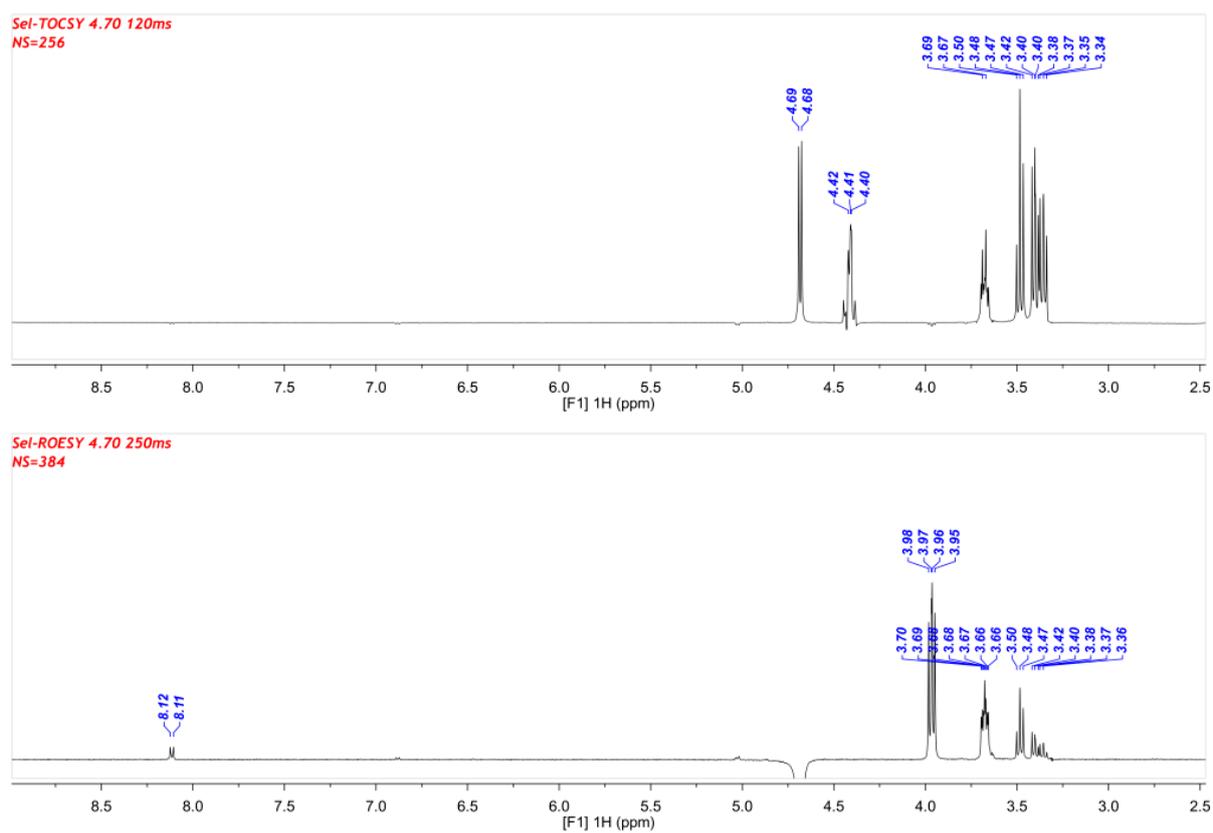


Figure S64. 1D TOCSY and 1D ROESY NMR subspectra of H-1(2^{Gal}-*O*- β -Glc) in compound **6** (methanol-*d*₄, 500.18 MHz).



Compound 7

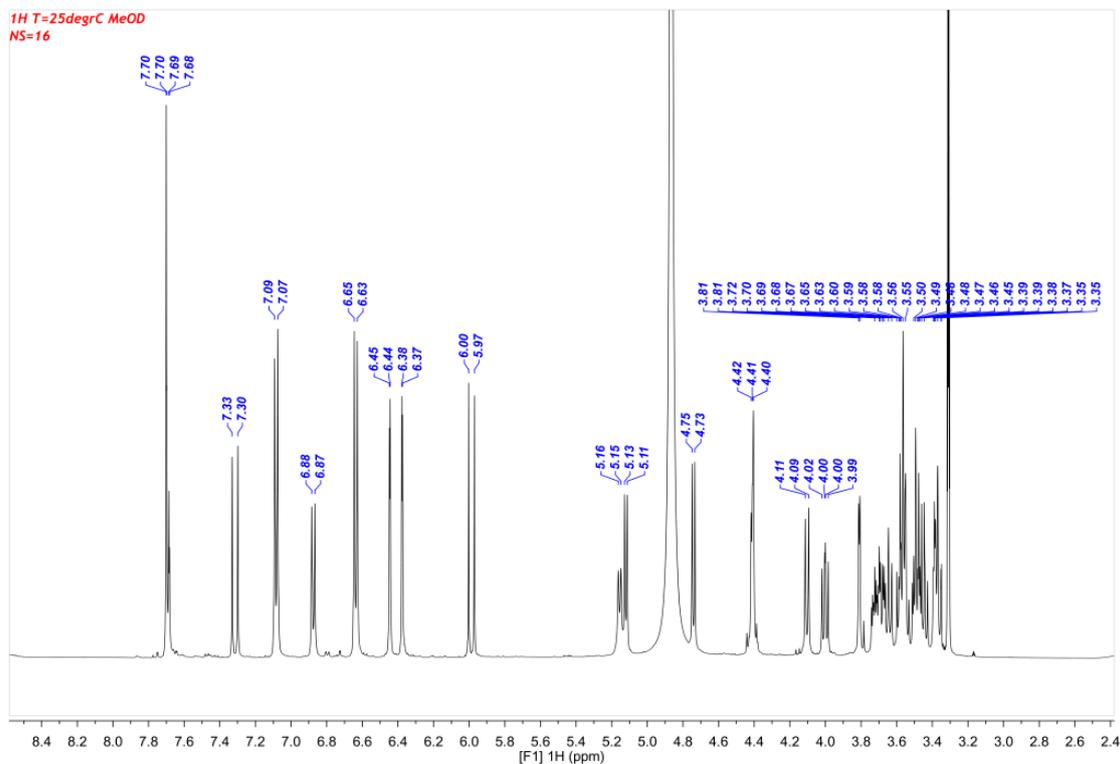
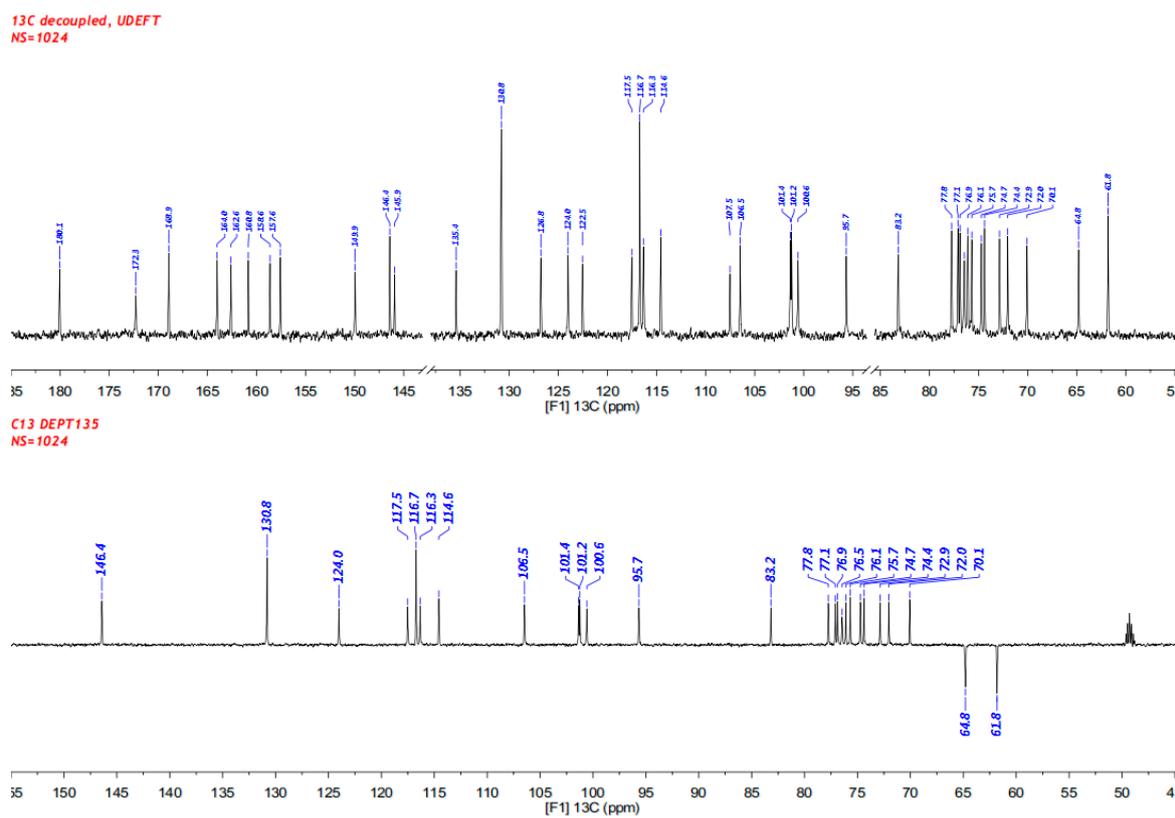
Figure S65. 1D ^1H -NMR spectrum of compound 7 (methanol- d_4 , 500.18 MHz).Figure S66. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound 7 (methanol- d_4 , 125.77 MHz).

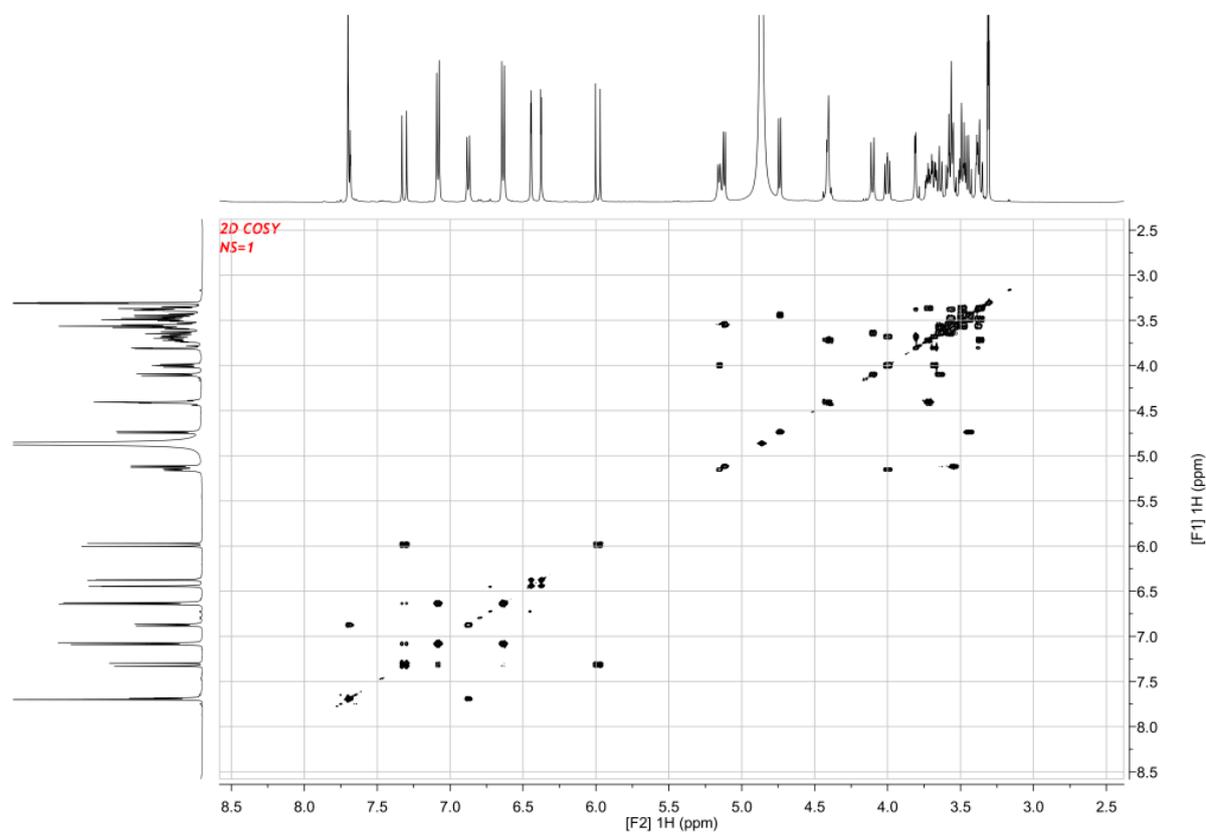
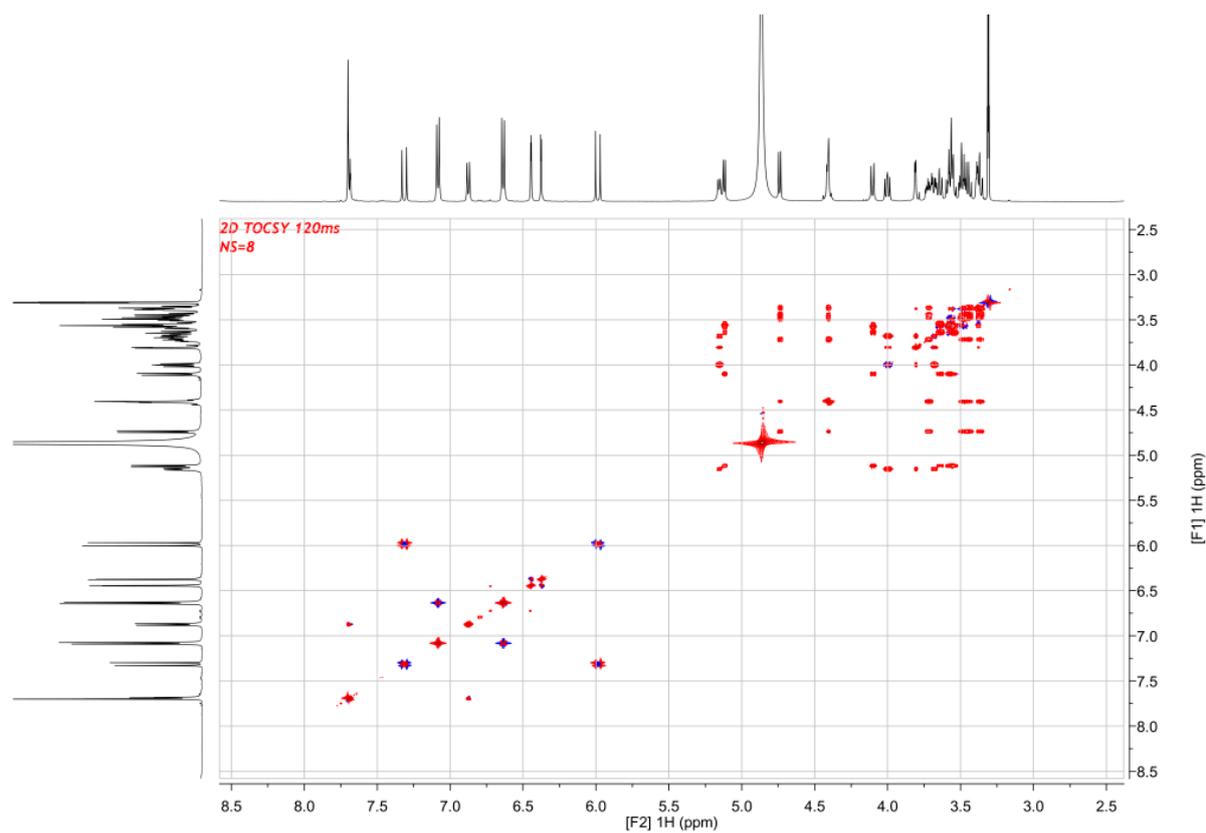
Figure S67. 2D g-COSY NMR spectrum of compound **7** (methanol- d_4 , 500.18 MHz).**Figure S68.** 2D TOCSY NMR spectrum of compound **7** (methanol- d_4 , 500.18 MHz).

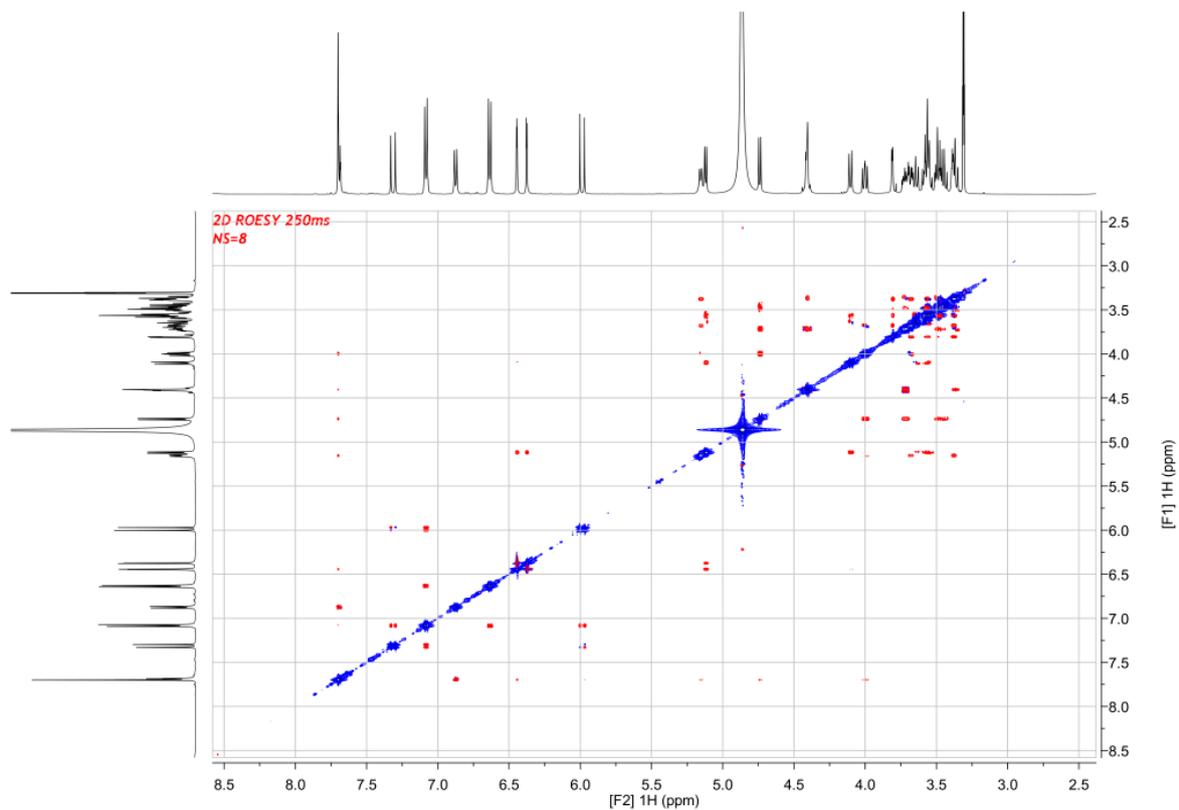
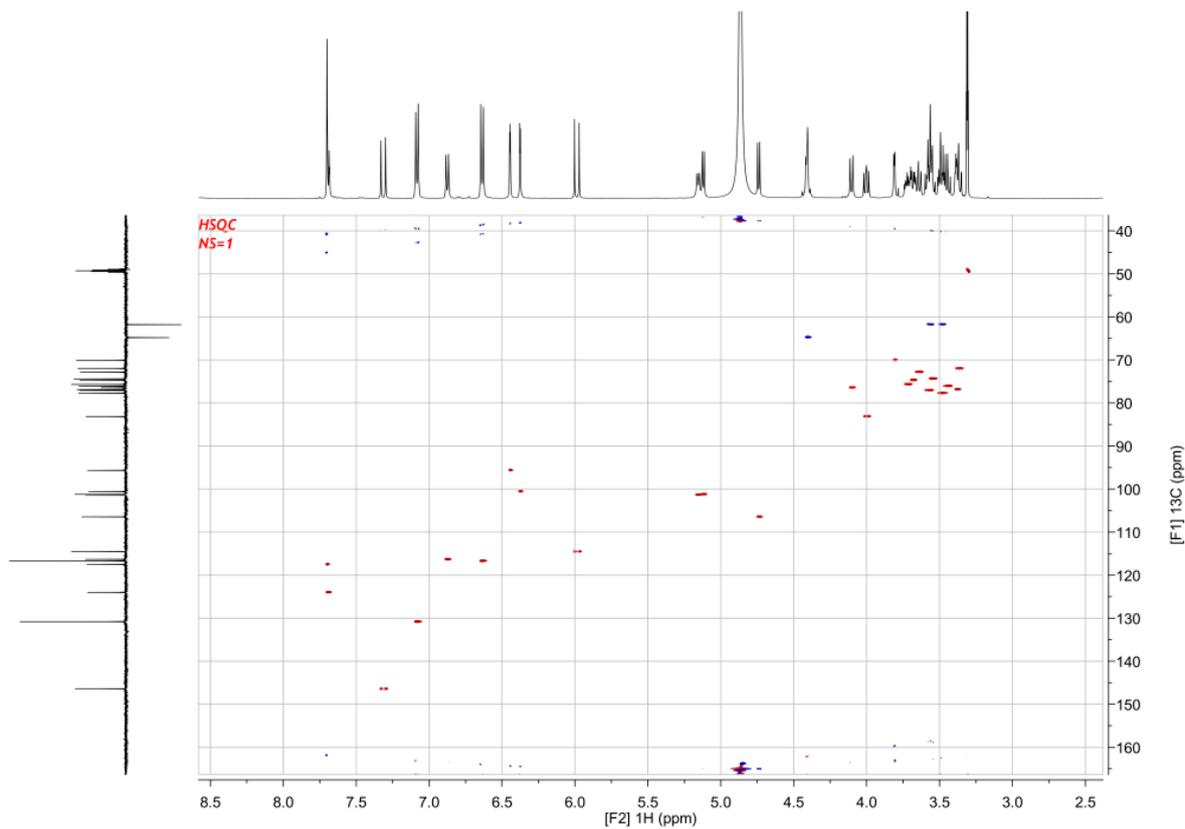
Figure S69. 2D ROESY NMR spectrum of compound **7** (methanol- d_4 , 500.18 MHz).**Figure S70.** 2D g -HSQC-NMR spectrum of compound **7** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

Figure S71. 2D *g*-HSQC-TOCSY NMR spectrum of compound **7** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

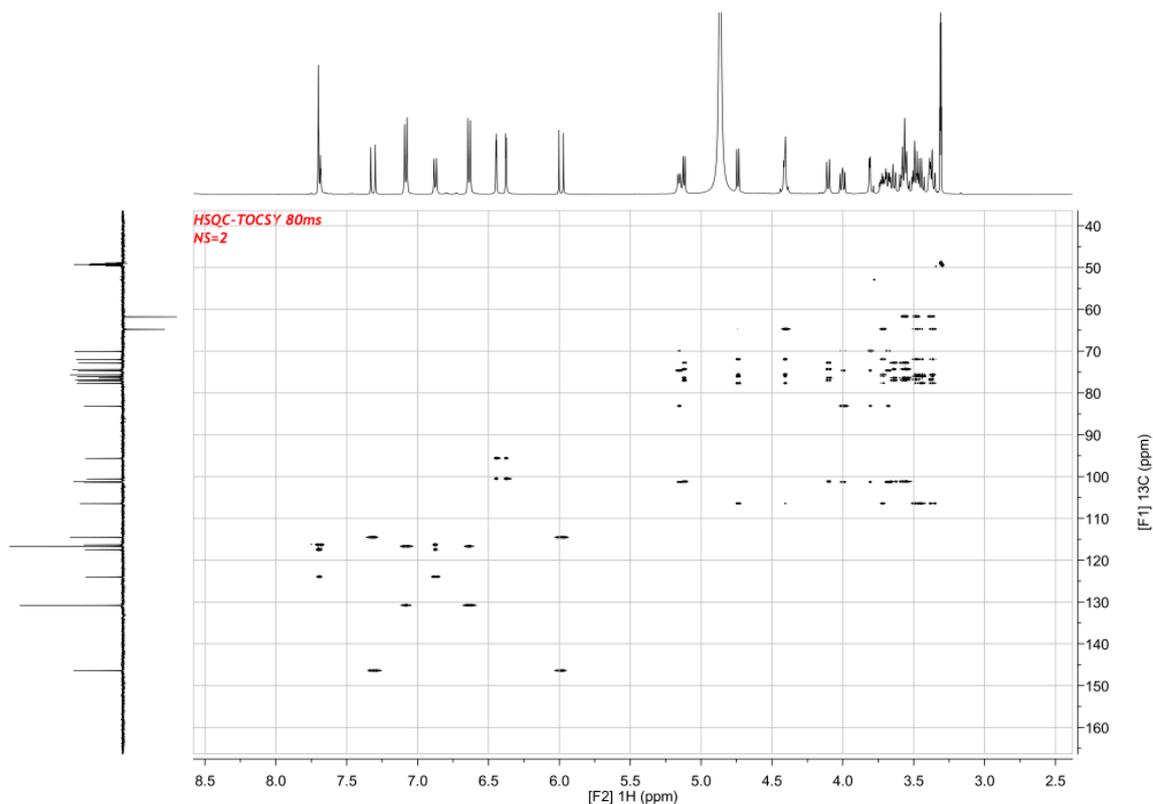


Figure S72. 2D *g*-HMBC-NMR spectrum of compound **7** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

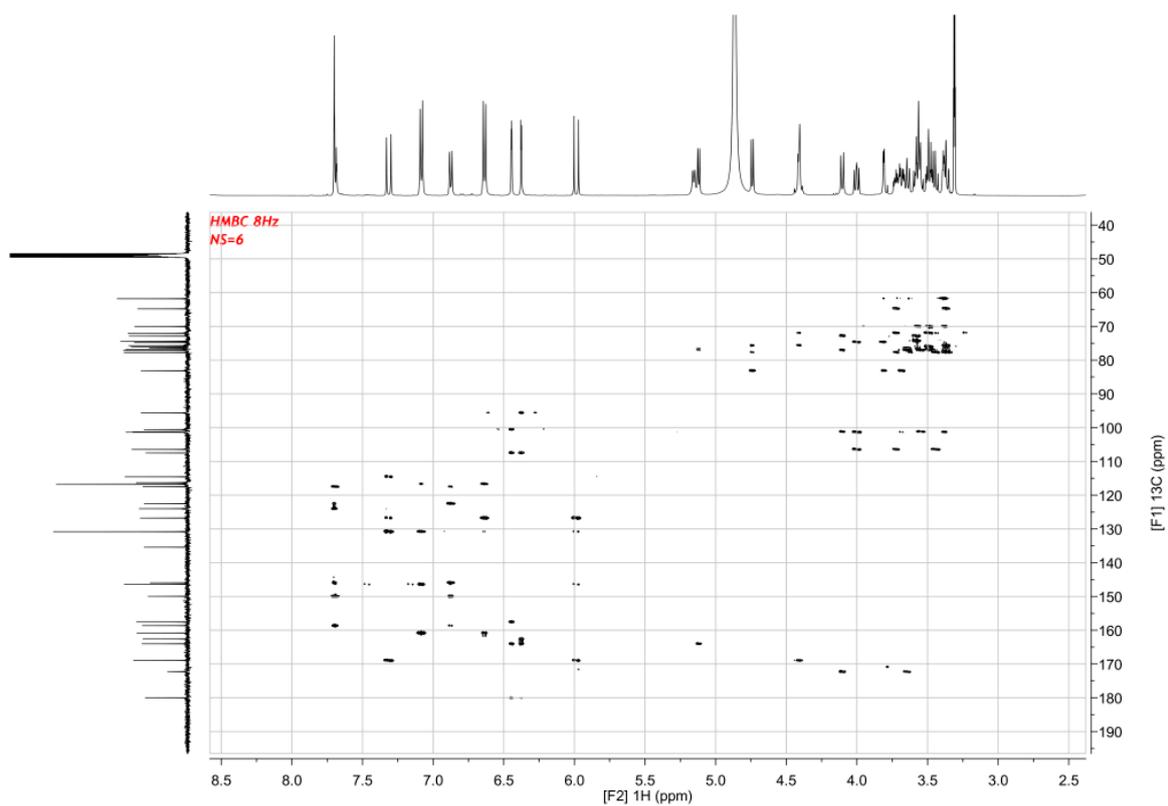


Figure S73. 1D TOCSY and 1D ROESY NMR subspectra of H-1(7-*O*- β -GlcA) in compound 7 (methanol-*d*₄, 500.18 MHz).

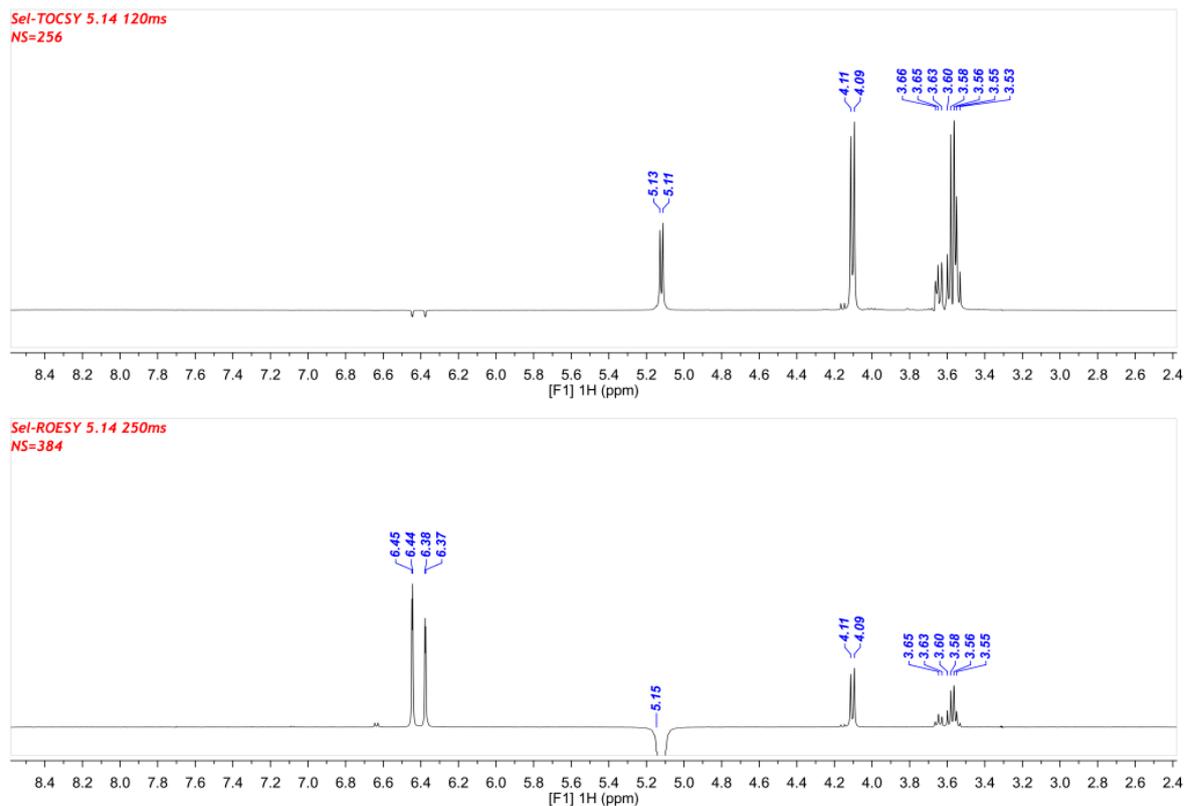


Figure S74. 1D TOCSY and 1D ROESY NMR subspectra of H-1(3-*O*- β -Gal) in compound 7 (methanol-*d*₄, 500.18 MHz).

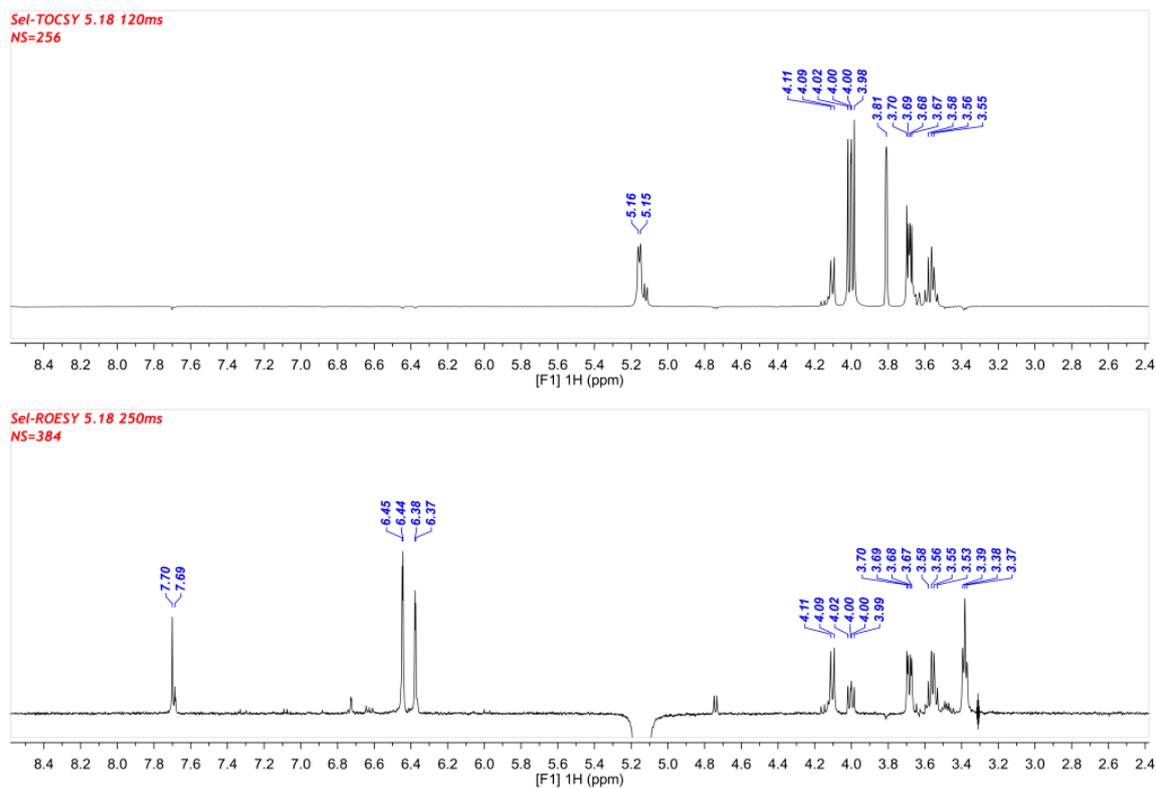
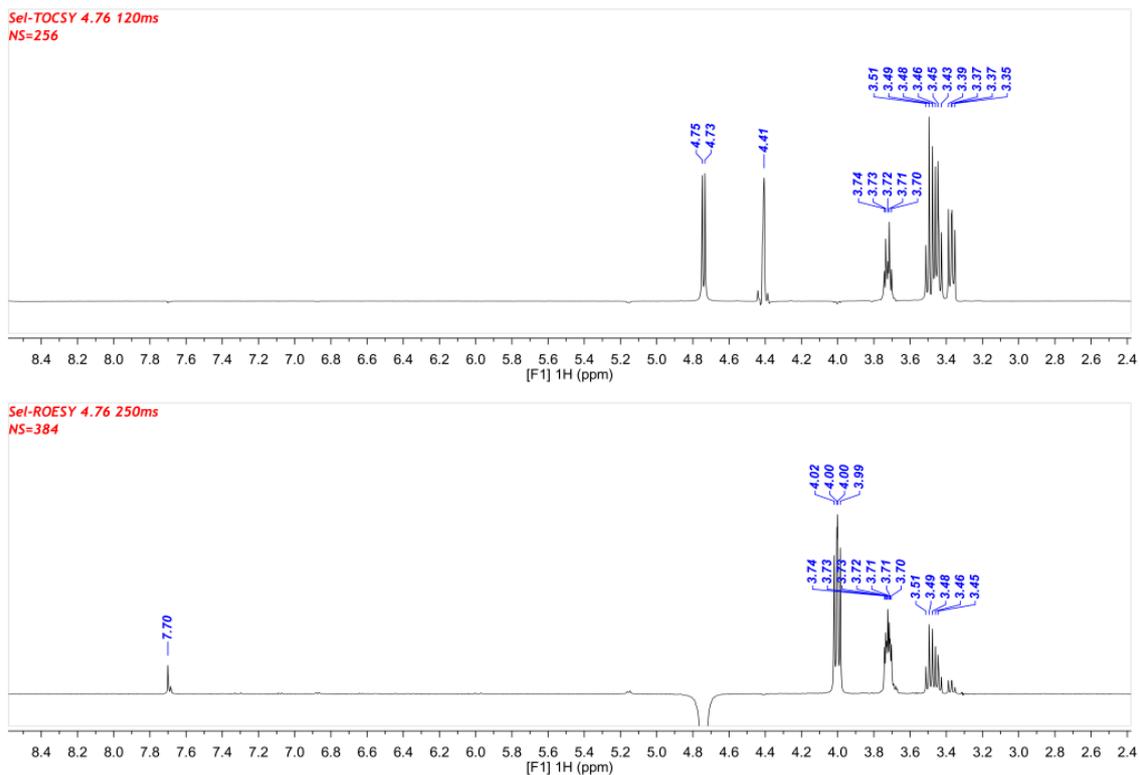


Figure S75. 1D TOCSY and 1D ROESY NMR subspectra of H-1(₂Gal-O-β-Glc) in compound **7** (methanol-*d*₄, 500.18 MHz).



Compound **8**

Figure S76. 1D ¹H-NMR spectrum of compound **8** (methanol-*d*₄, 500.18 MHz).

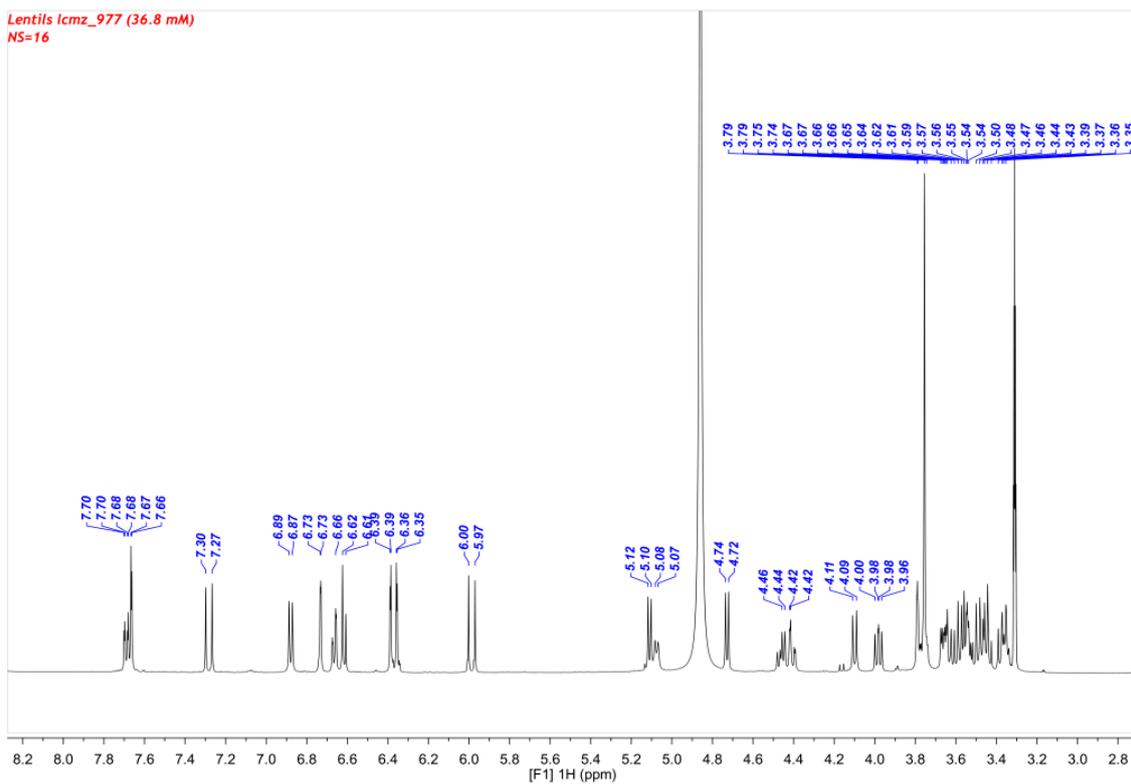
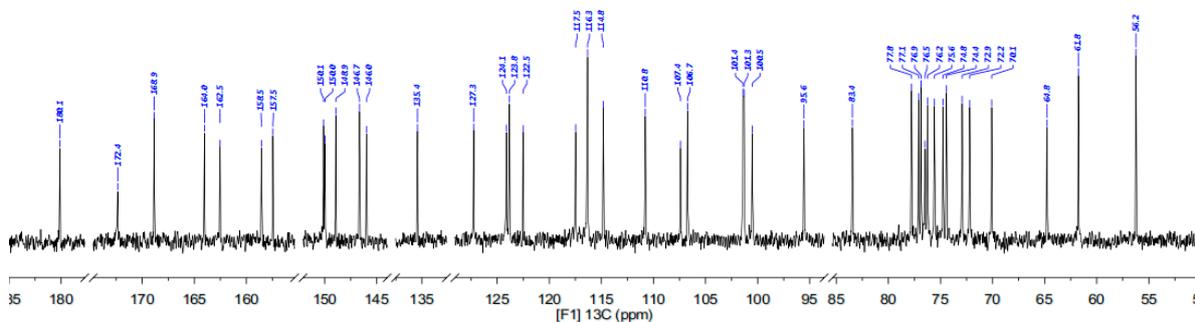


Figure S77. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **8** (methanol- d_4 , 125.77 MHz).

13C decoupled
NS=4096



13C DEPT
NS=1024

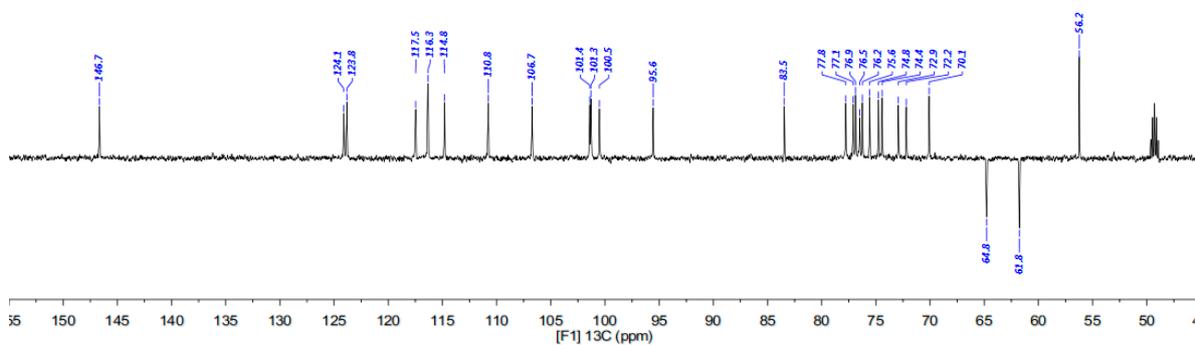


Figure S78. 2D g-COSY NMR spectrum of compound **8** (methanol- d_4 , 500.18 MHz).

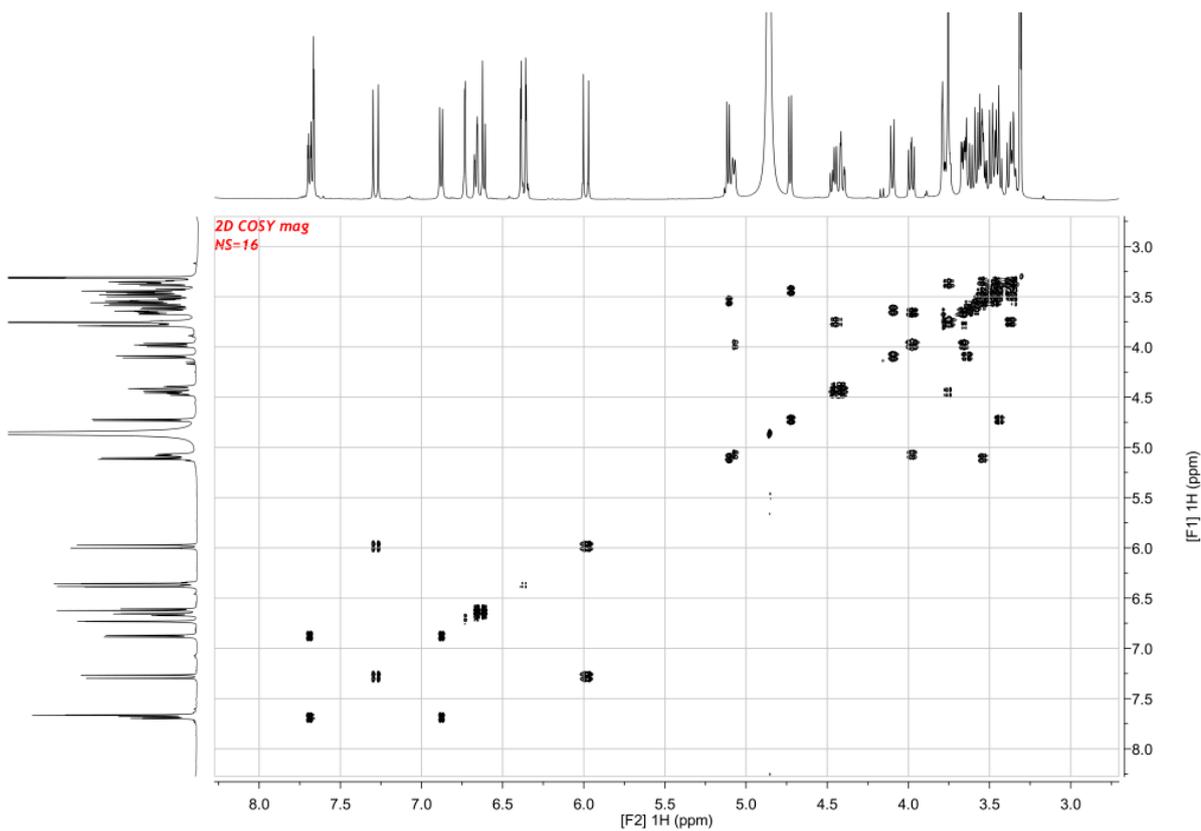


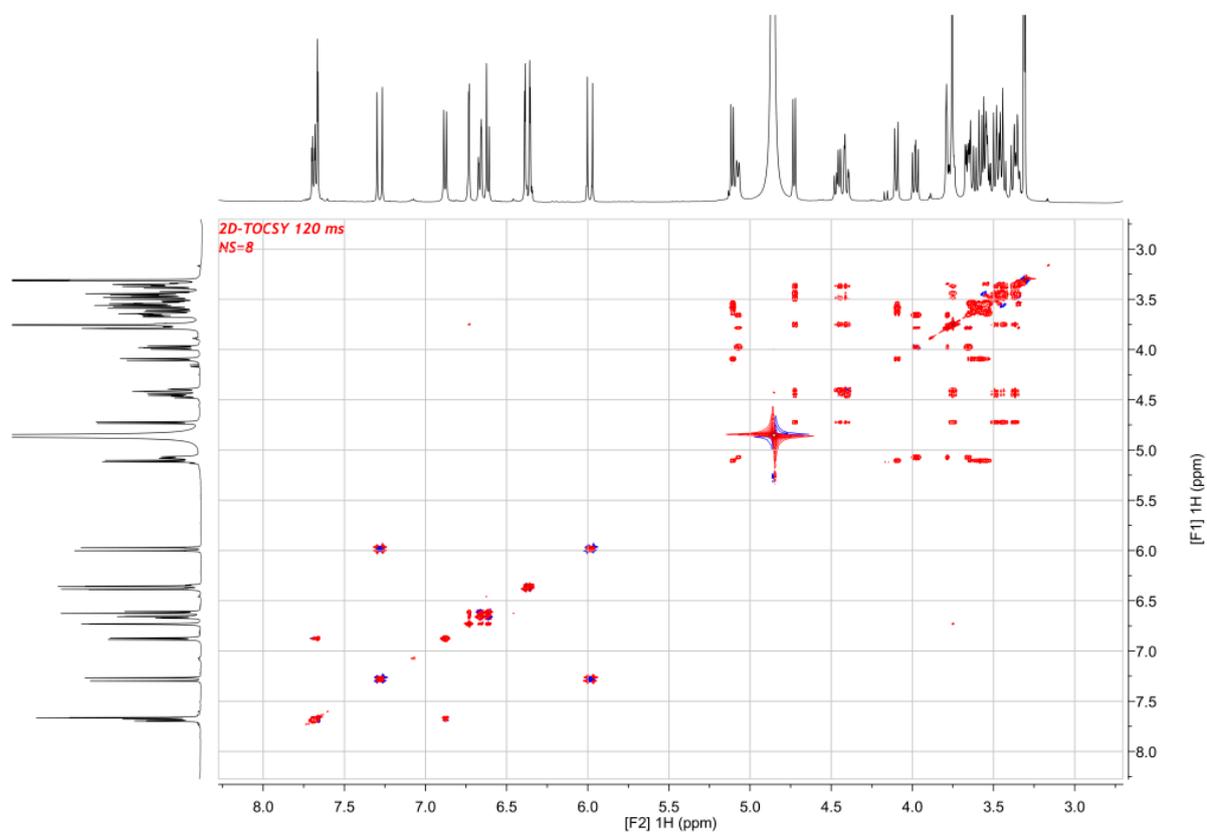
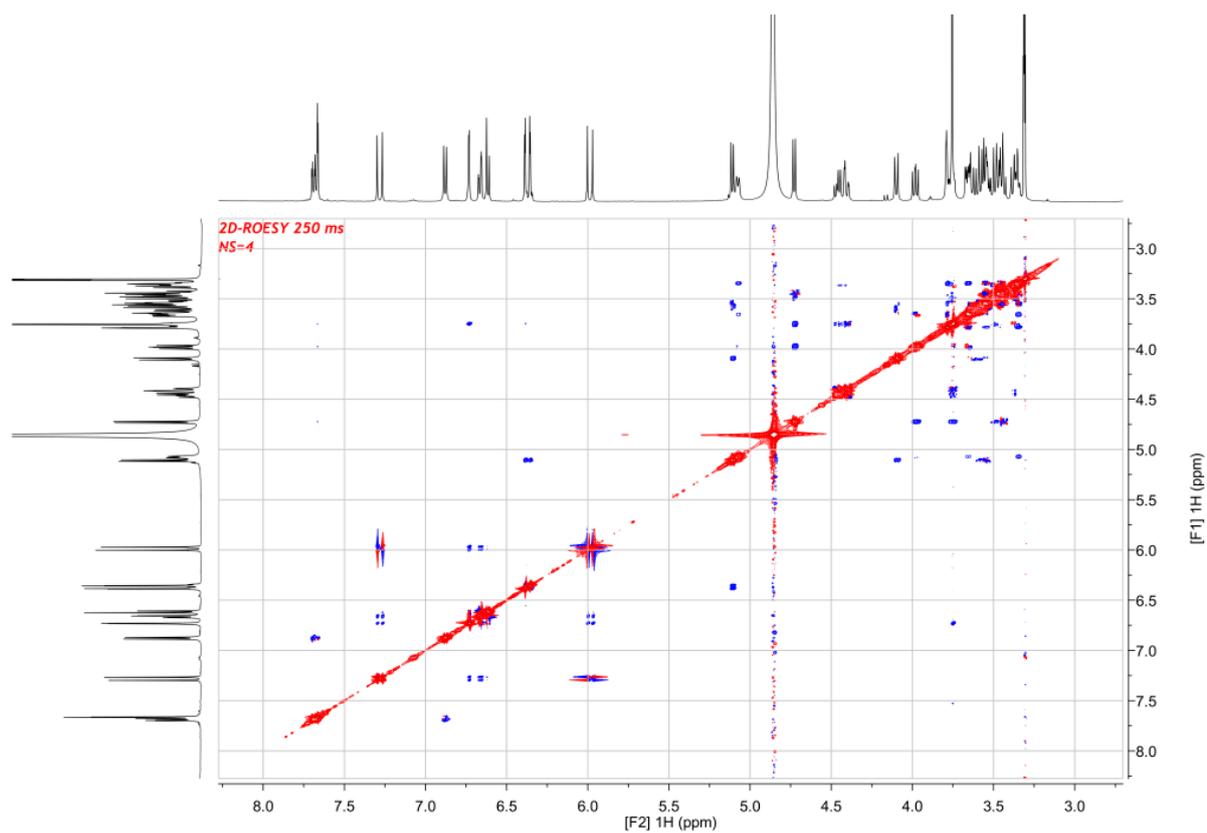
Figure S79. 2D TOCSY NMR spectrum of compound **8** (methanol- d_4 , 500.18 MHz).**Figure S80.** 2D ROESY NMR spectrum of compound **8** (methanol- d_4 , 500.18 MHz).

Figure S81. 2D *g*-HSQC-NMR spectrum of compound **8** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

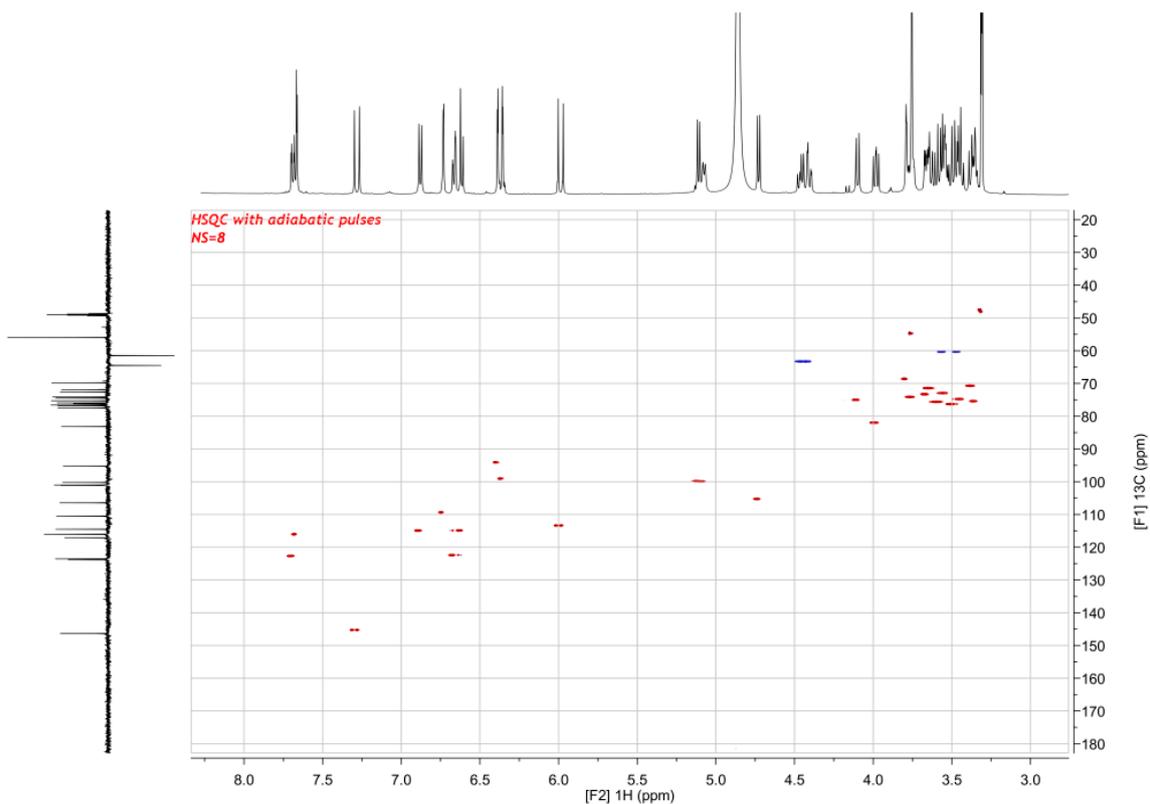


Figure S82. 2D *g*-HSQC-TOCSY NMR spectrum of compound **8** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

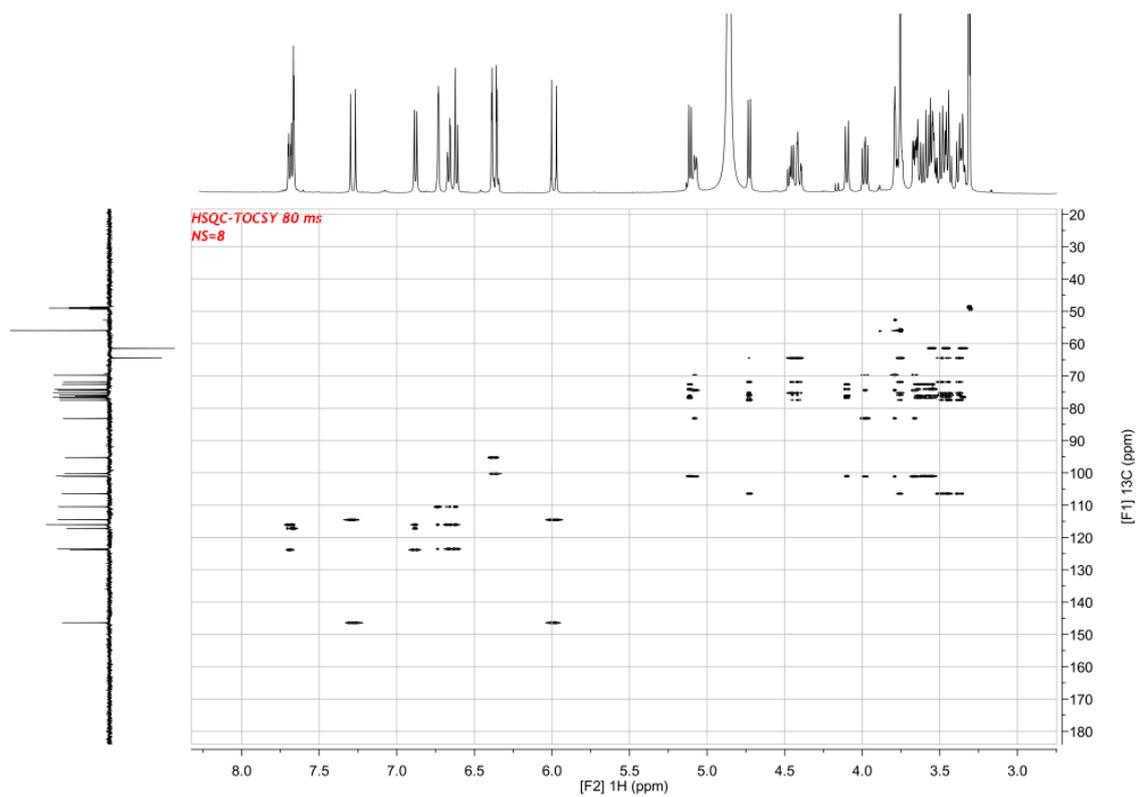


Figure S83. 2D *g*-HMBC-NMR spectrum of compound **8** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

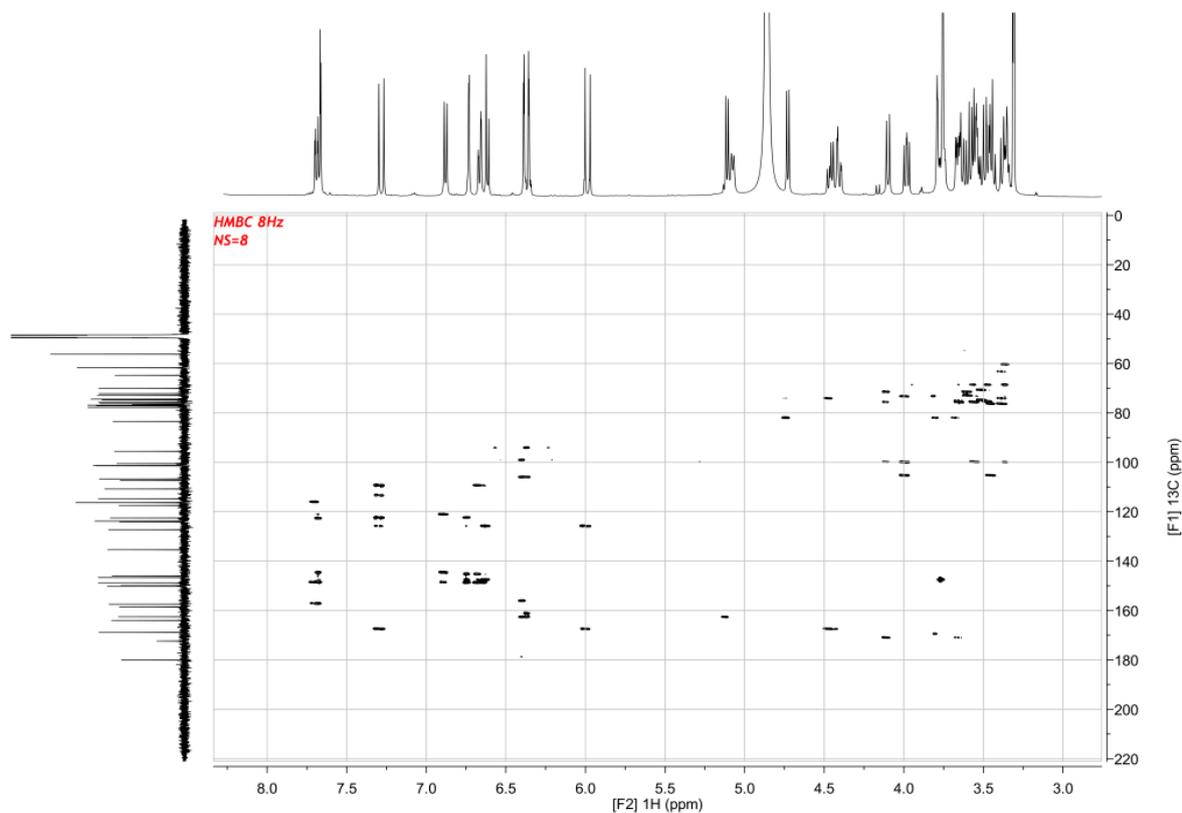


Figure S84. 1D TOCSY and 1D ROESY NMR subspectra of H-1(*7-O-β*-GlcA) in compound **8** (methanol-*d*₄, 500.18 MHz).

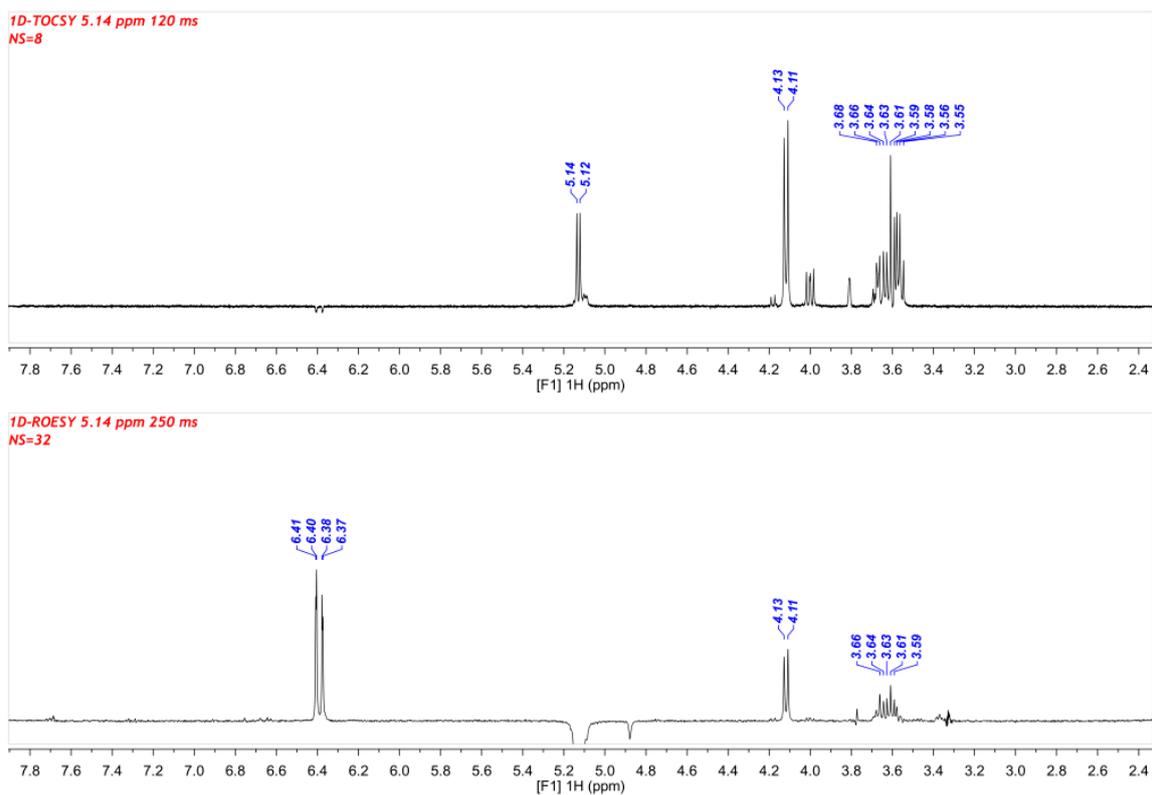


Figure S85. 1D TOCSY and 1D ROESY NMR subspectra of H-1(₃-O-β-Gal) in compound **8** (methanol-*d*₄, 500.18 MHz).

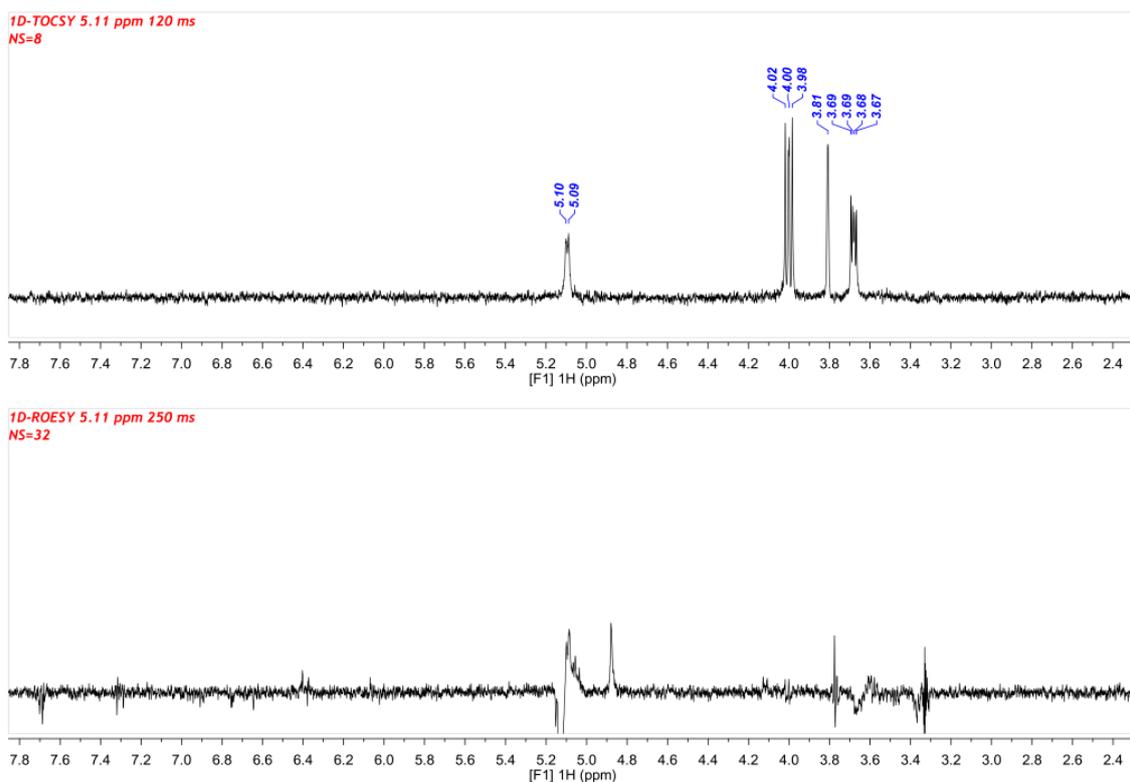
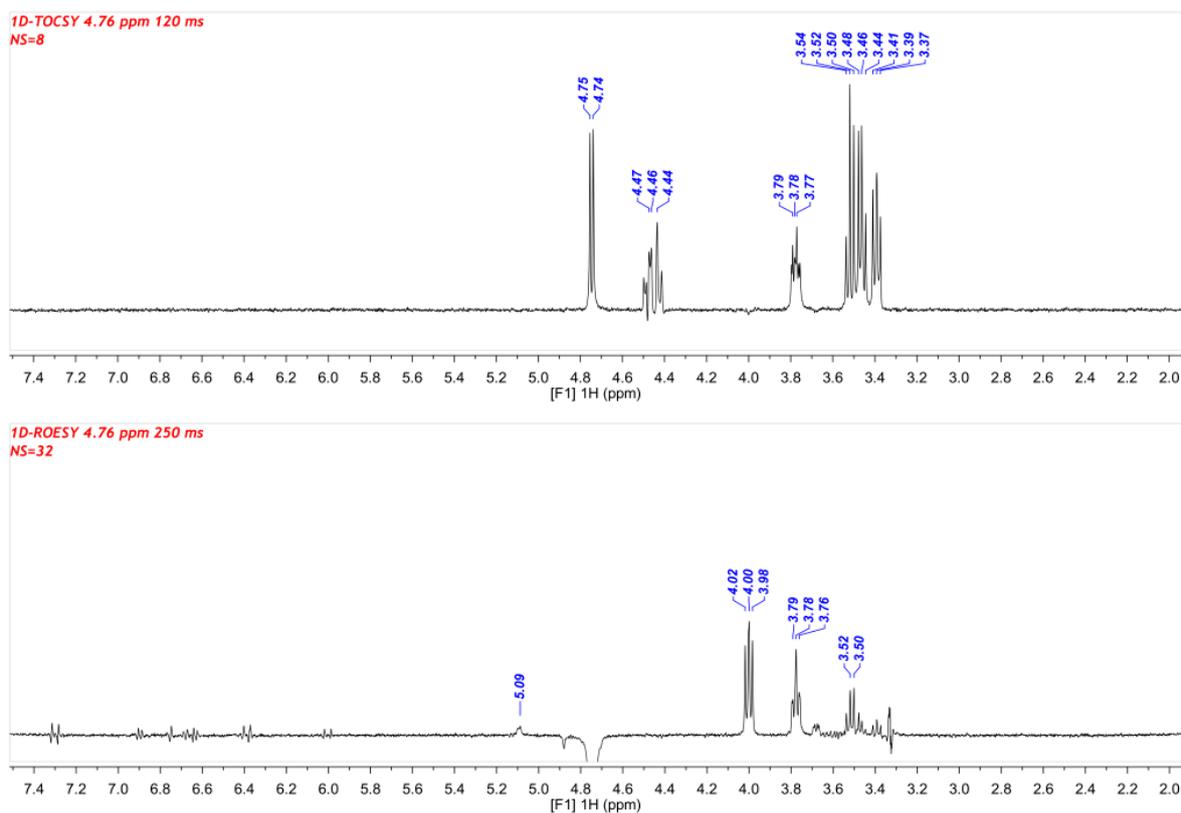


Figure S86. 1D TOCSY and 1D ROESY NMR subspectra of H-1(₂-Gal-O-β-Glc) in compound **8** (methanol-*d*₄, 500.18 MHz).



Compound 9

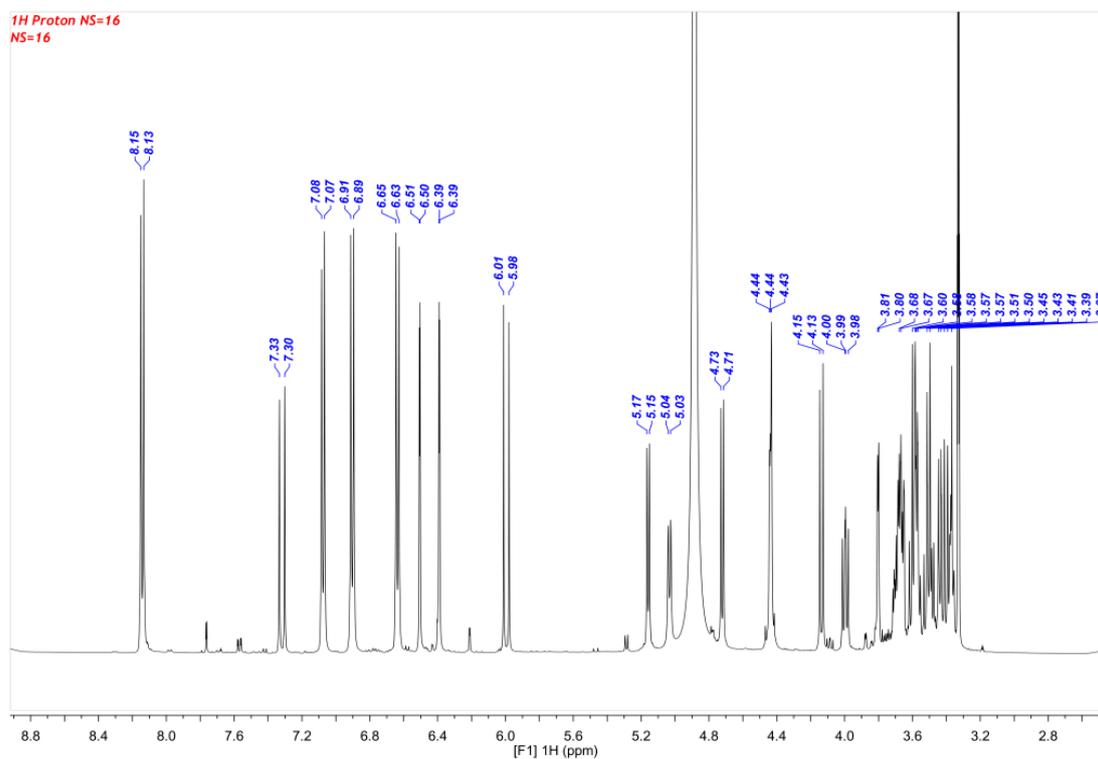
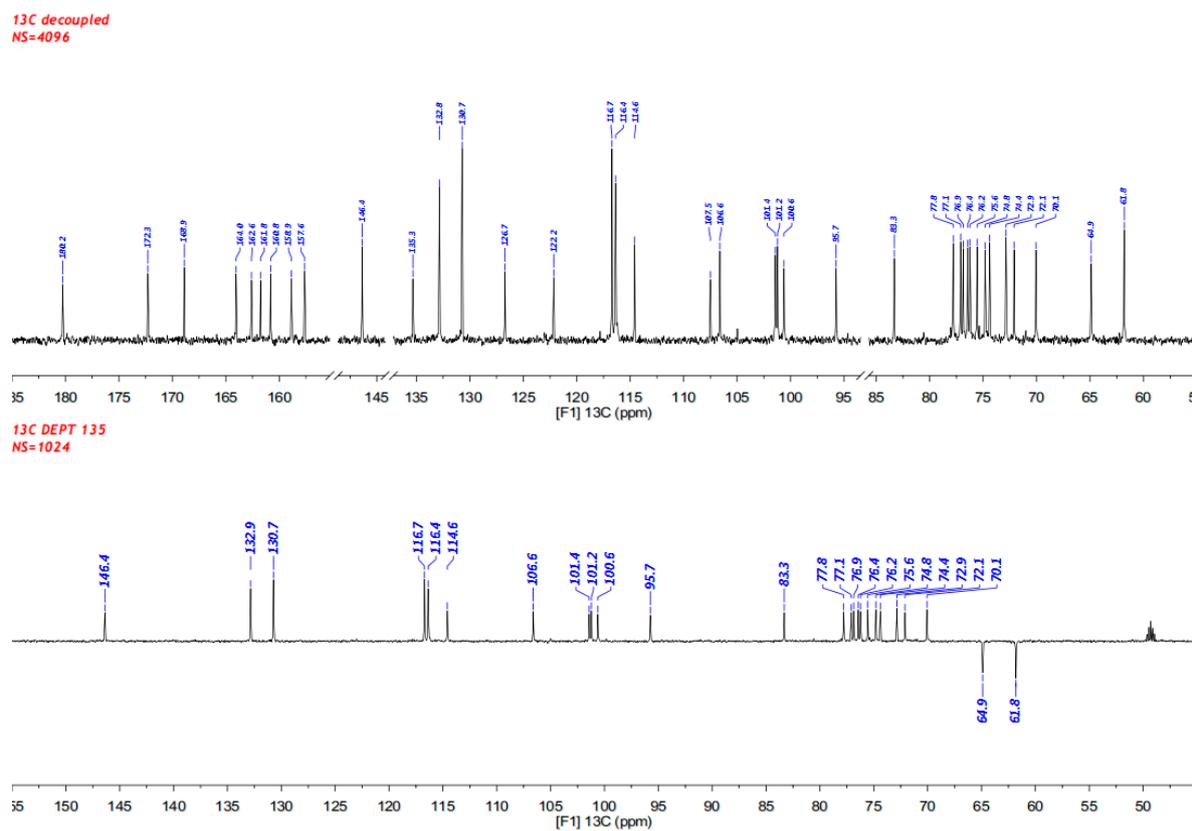
Figure S87. 1D ^1H -NMR spectrum of compound 9 (methanol- d_4 , 500.18 MHz).Figure S88. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound 9 (methanol- d_4 , 125.77 MHz).

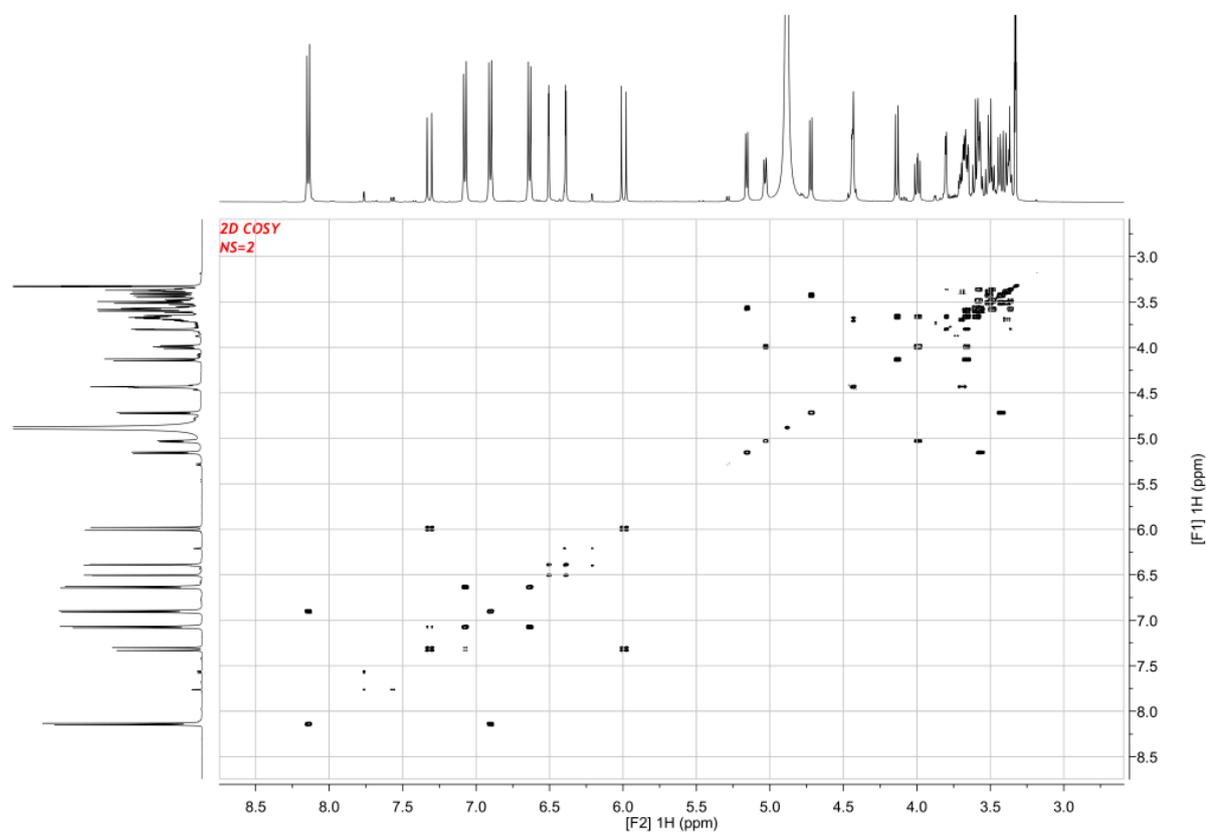
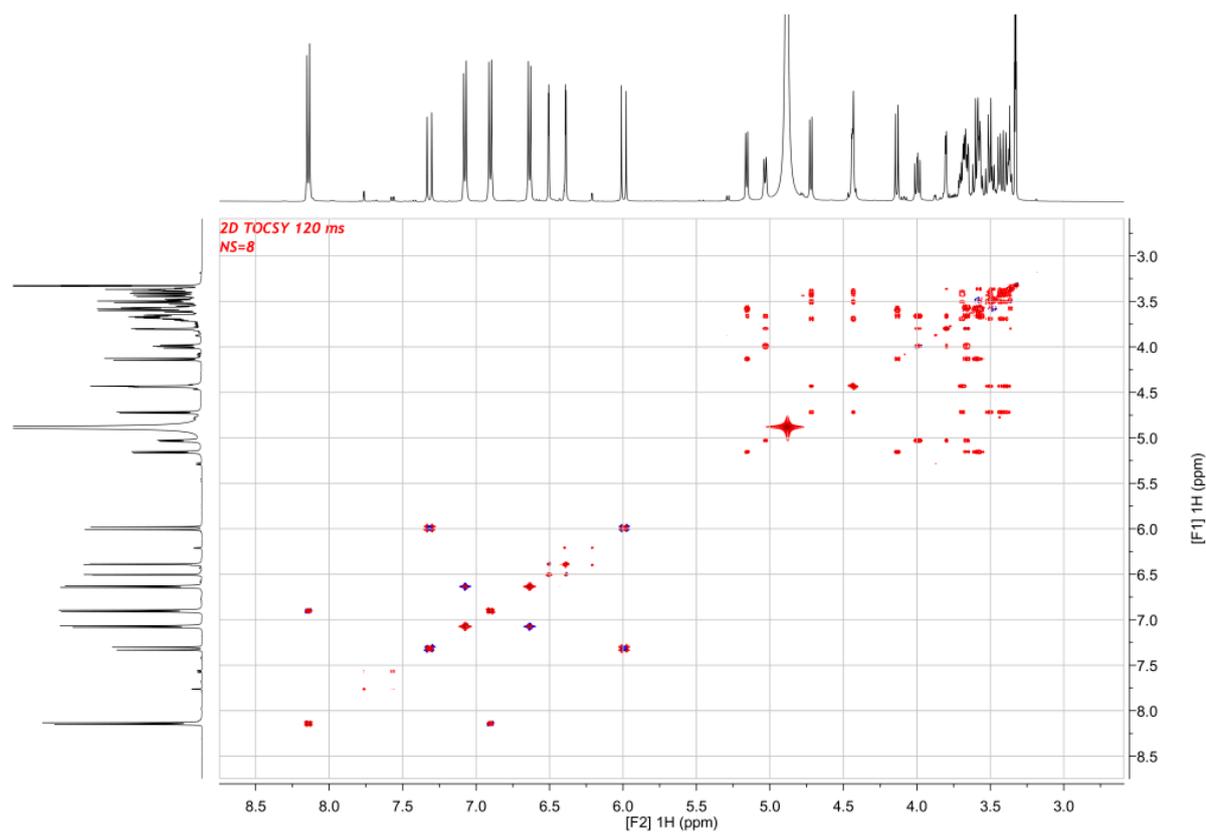
Figure S89. 2D g-COSY NMR spectrum of compound **9** (methanol-*d*₄, 500.18 MHz).**Figure S90.** 2D TOCSY NMR spectrum of compound **9** (methanol-*d*₄, 500.18 MHz).

Figure S91. 2D ROESY NMR spectrum of compound **9** (methanol- d_4 , 500.18 MHz).

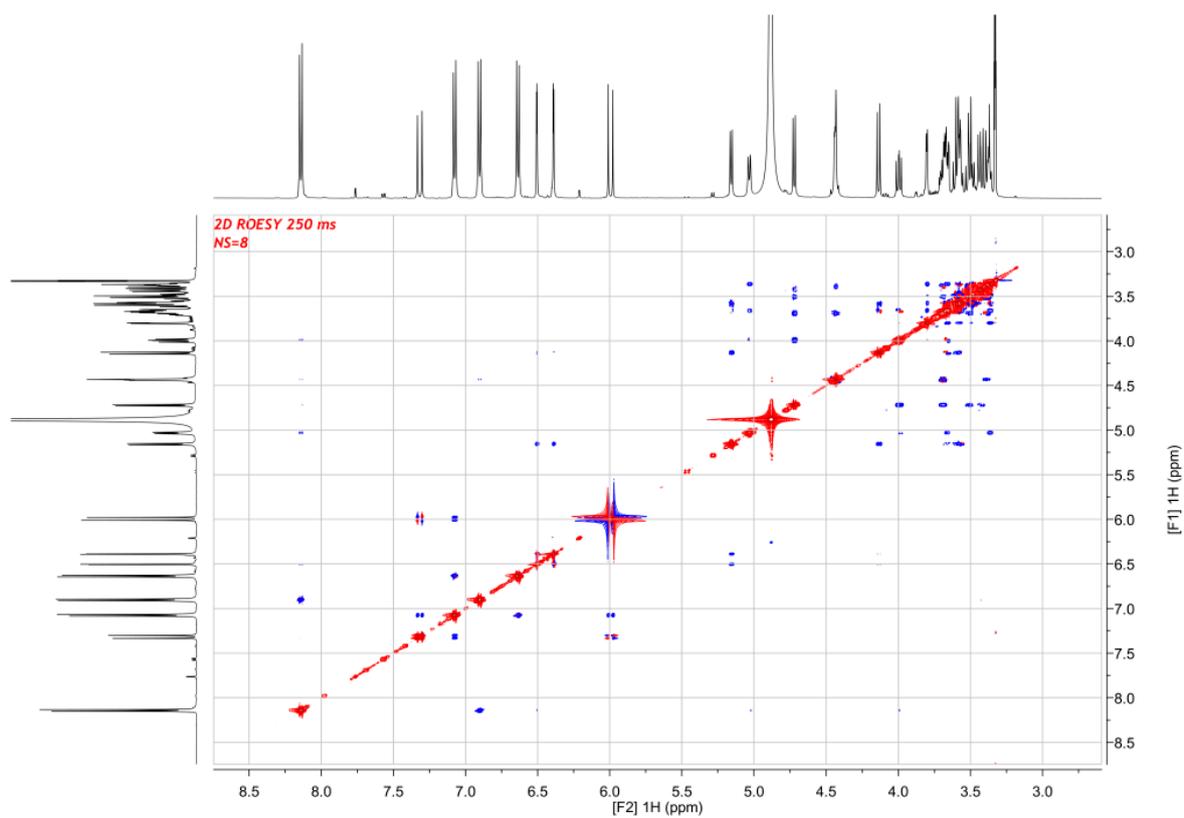


Figure S92. 2D g -HSQC-NMR spectrum of compound **9** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

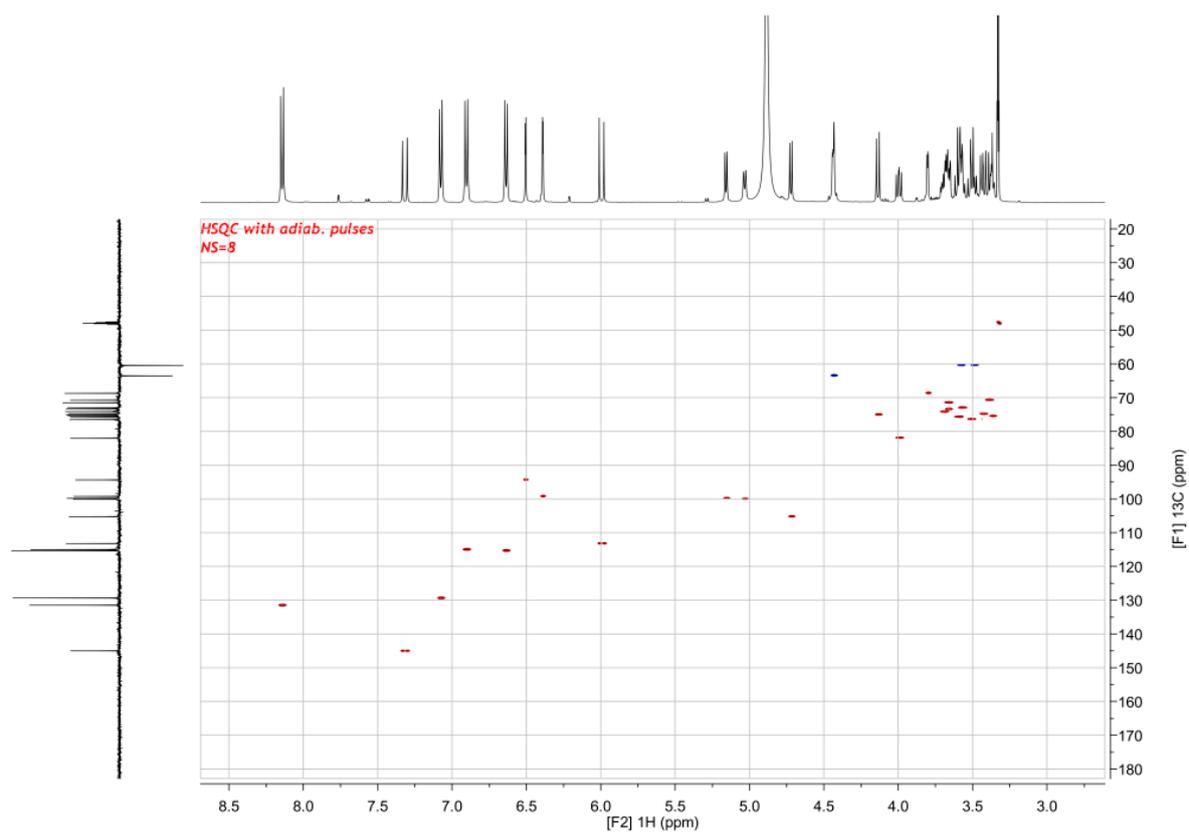


Figure S93. 2D *g*-HSQC-TOCSY NMR spectrum of compound **9** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

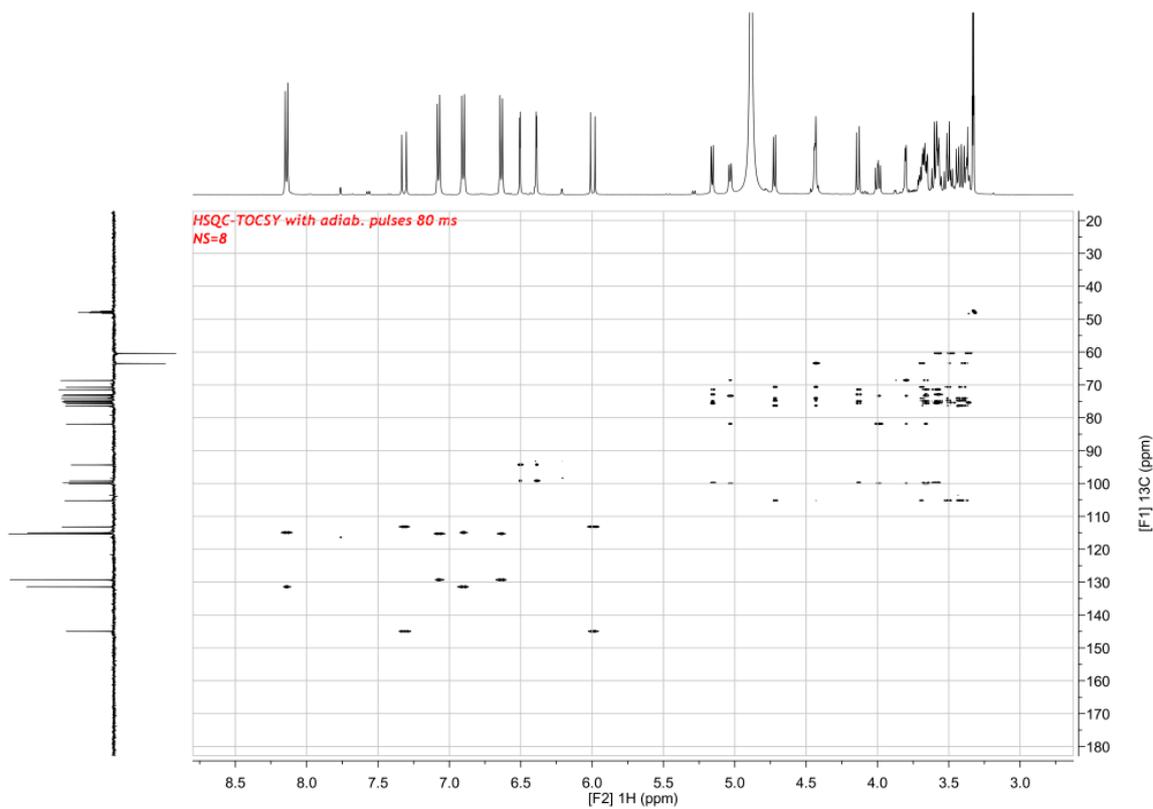


Figure S94. 2D *g*-HMBC-NMR spectrum of compound **9** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

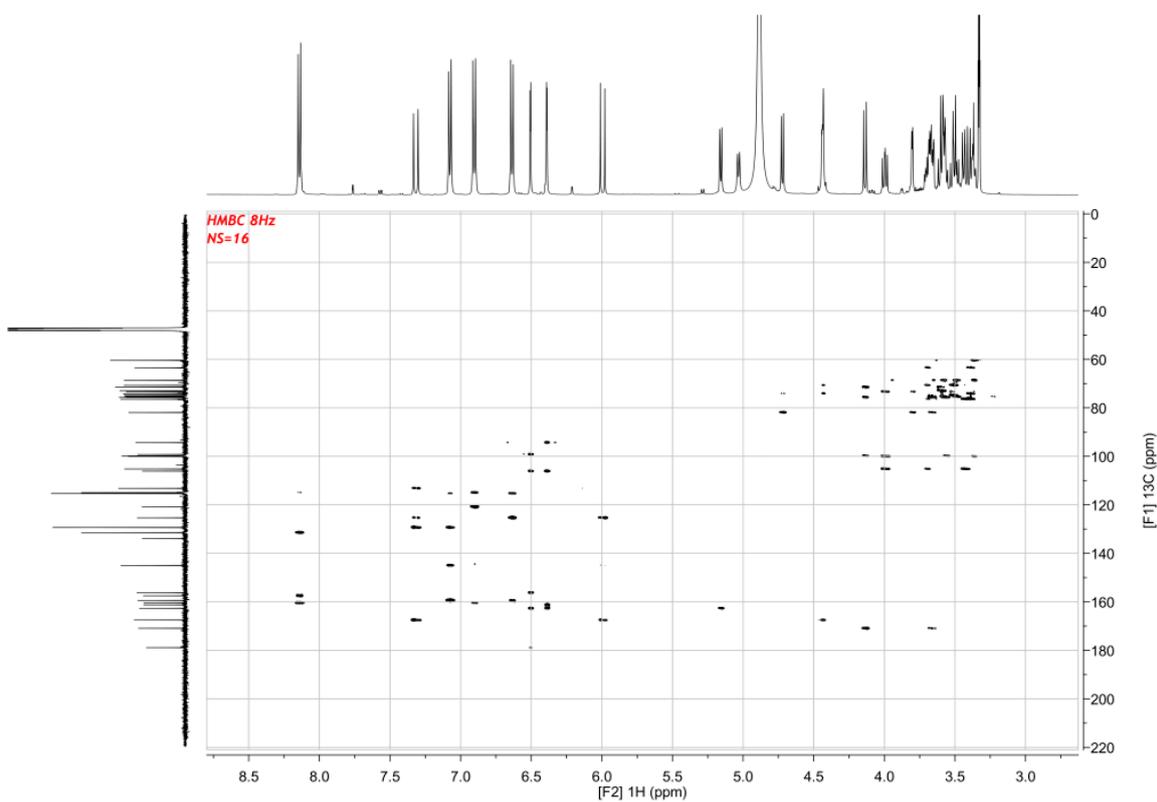


Figure S95. 1D TOCSY and 1D ROESY NMR subspectra of H-1(7-*O*- β -GlcA) in compound **9** (methanol-*d*₄, 500.18 MHz).

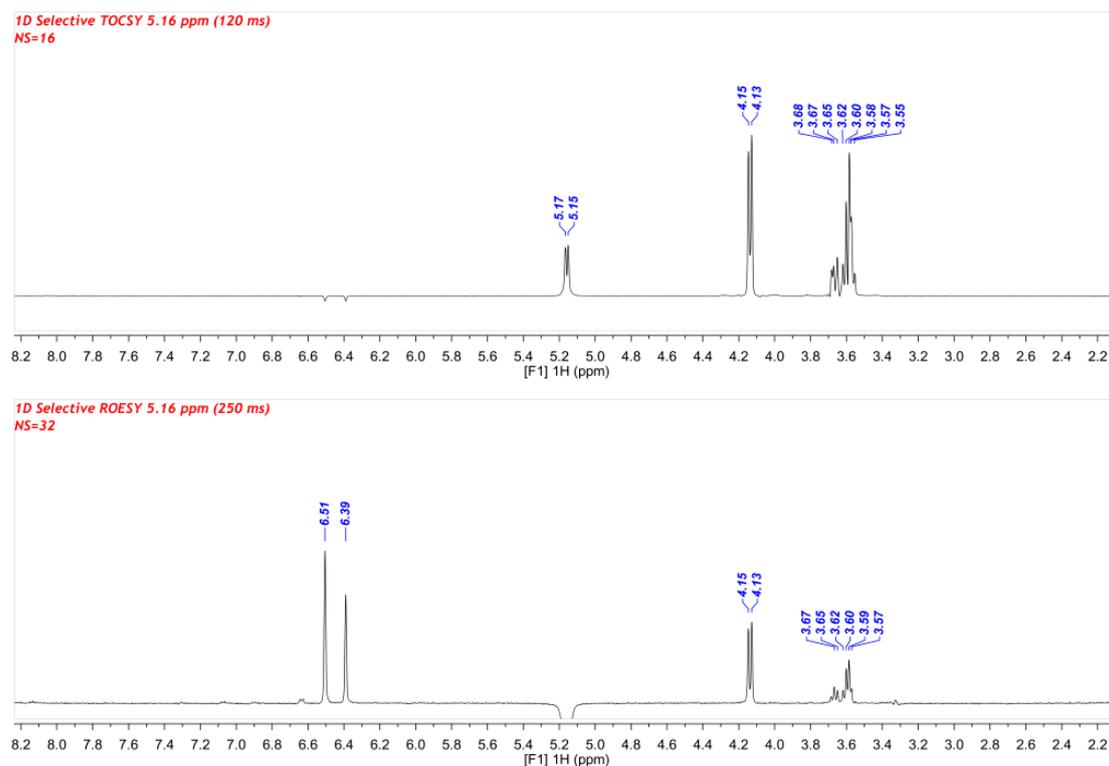


Figure S96. 1D TOCSY and 1D ROESY NMR subspectra of H-1(3-*O*- β -Gal) in compound **9** (methanol-*d*₄, 500.18 MHz).

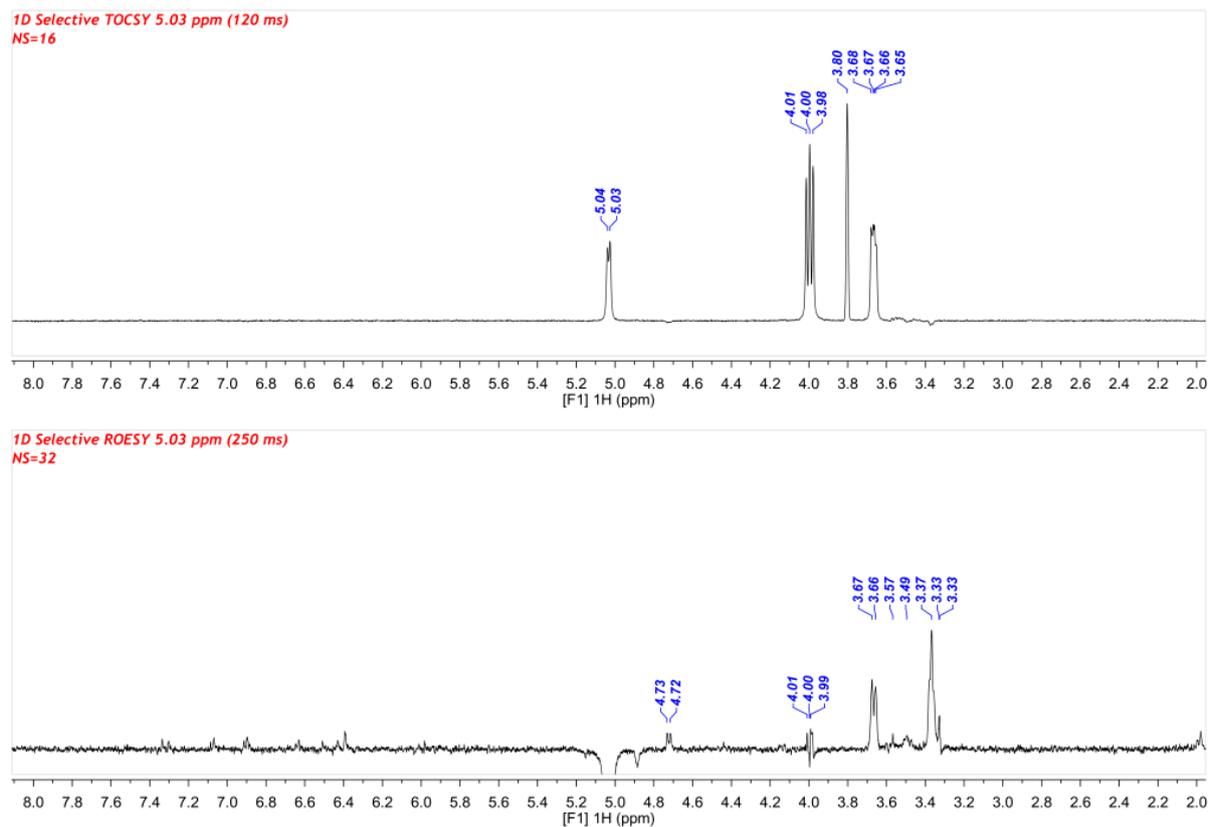
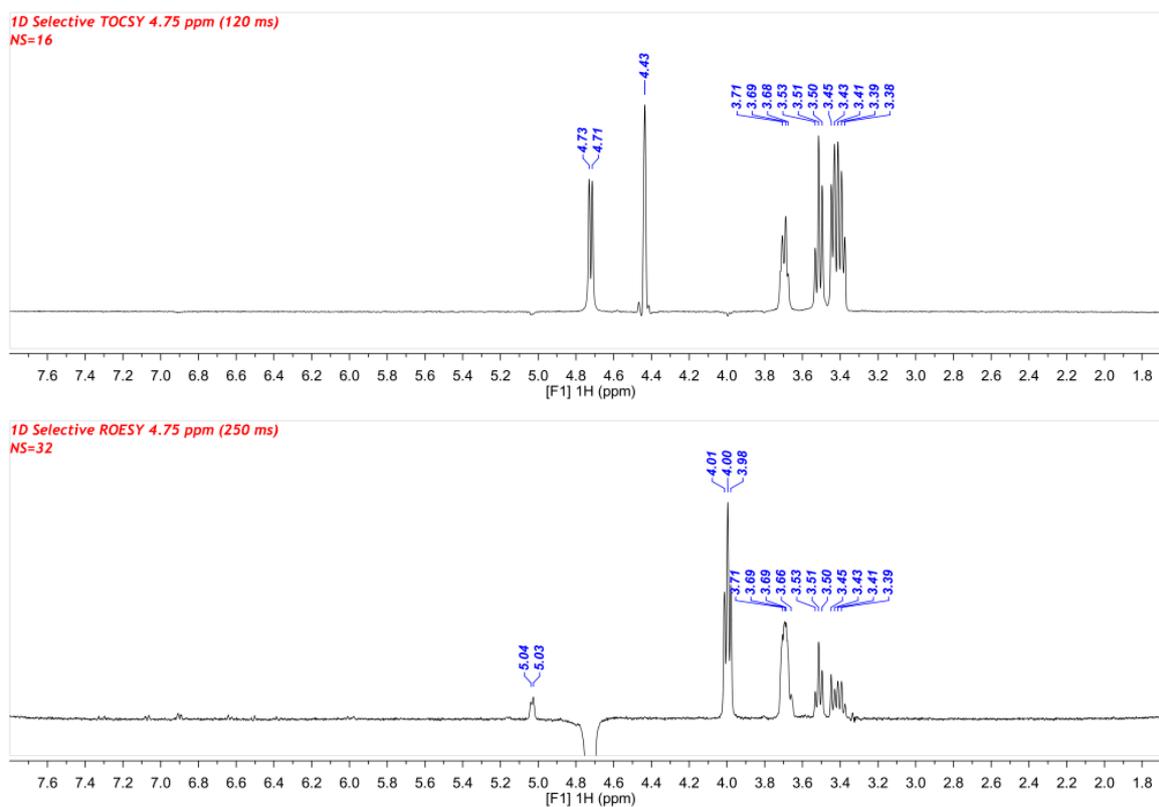


Figure S97. 1D TOCSY and 1D ROESY NMR subspectra of H-1(₂Gal-*O*-β-Glc) in compound **9** (methanol-*d*₄, 500.18 MHz).



Compound 10

Figure S98. 1D ¹H-NMR spectrum of compound **10** (methanol-*d*₄, 500.18 MHz).

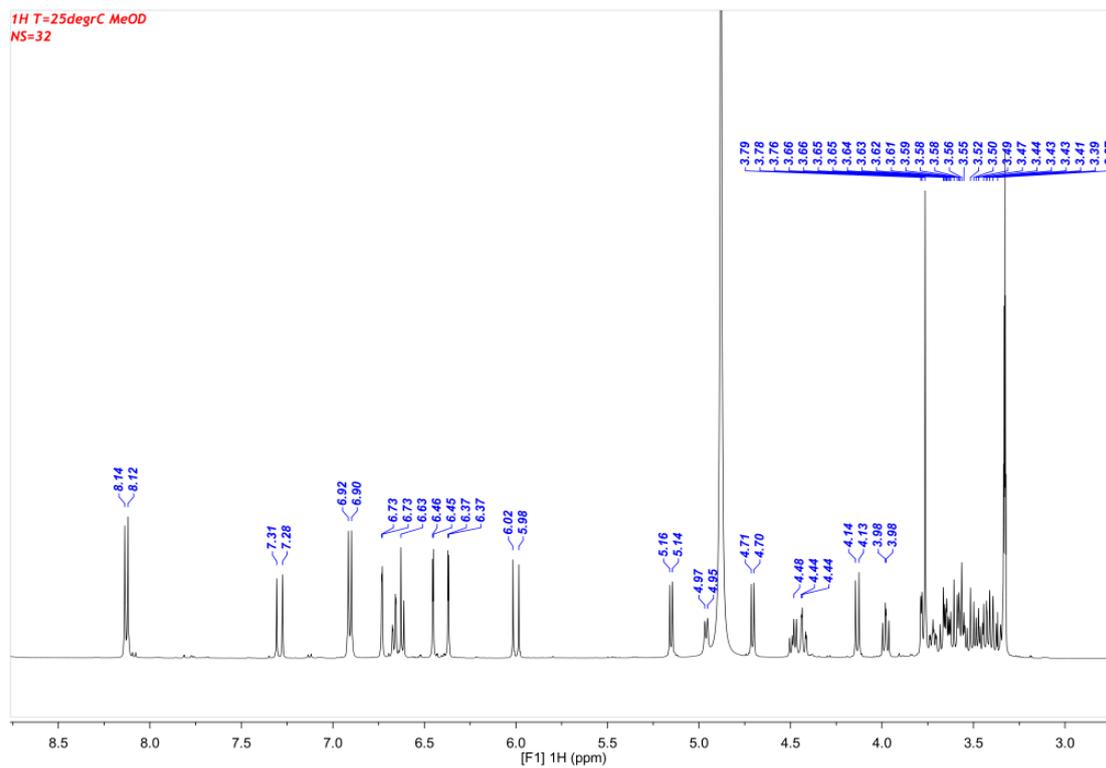


Figure S99. 1D ^{13}C -NMR spectra (^1H decoupled and DEPT-135) of compound **10** (methanol- d_4 , 125.77 MHz).

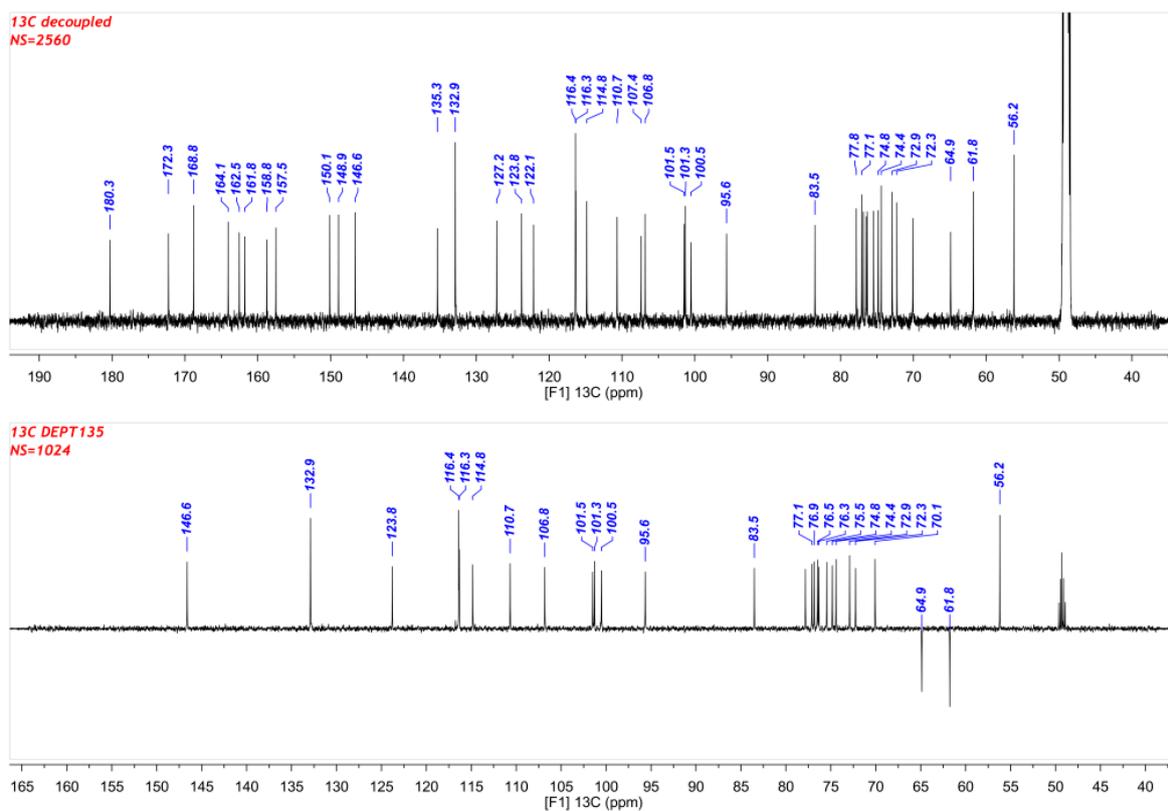


Figure S100. 2D g -COSY NMR spectrum of compound **10** (methanol- d_4 , 500.18 MHz).

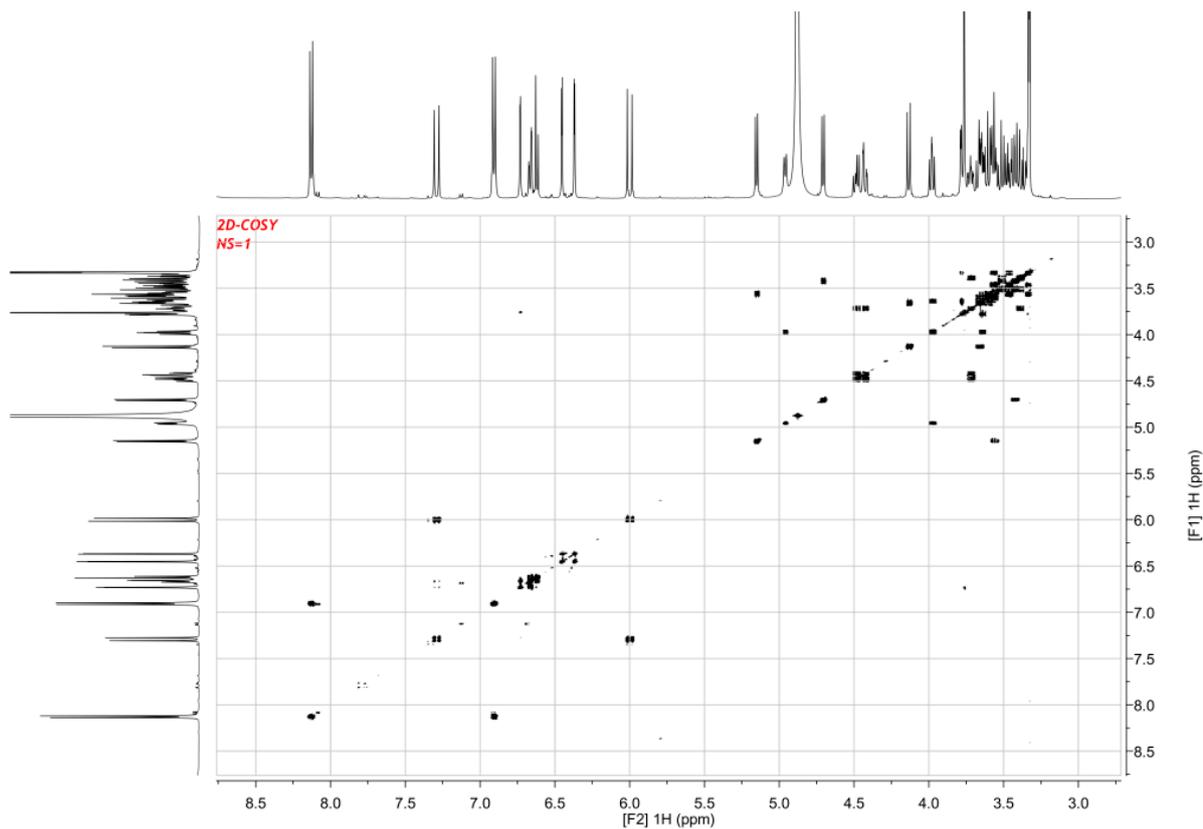


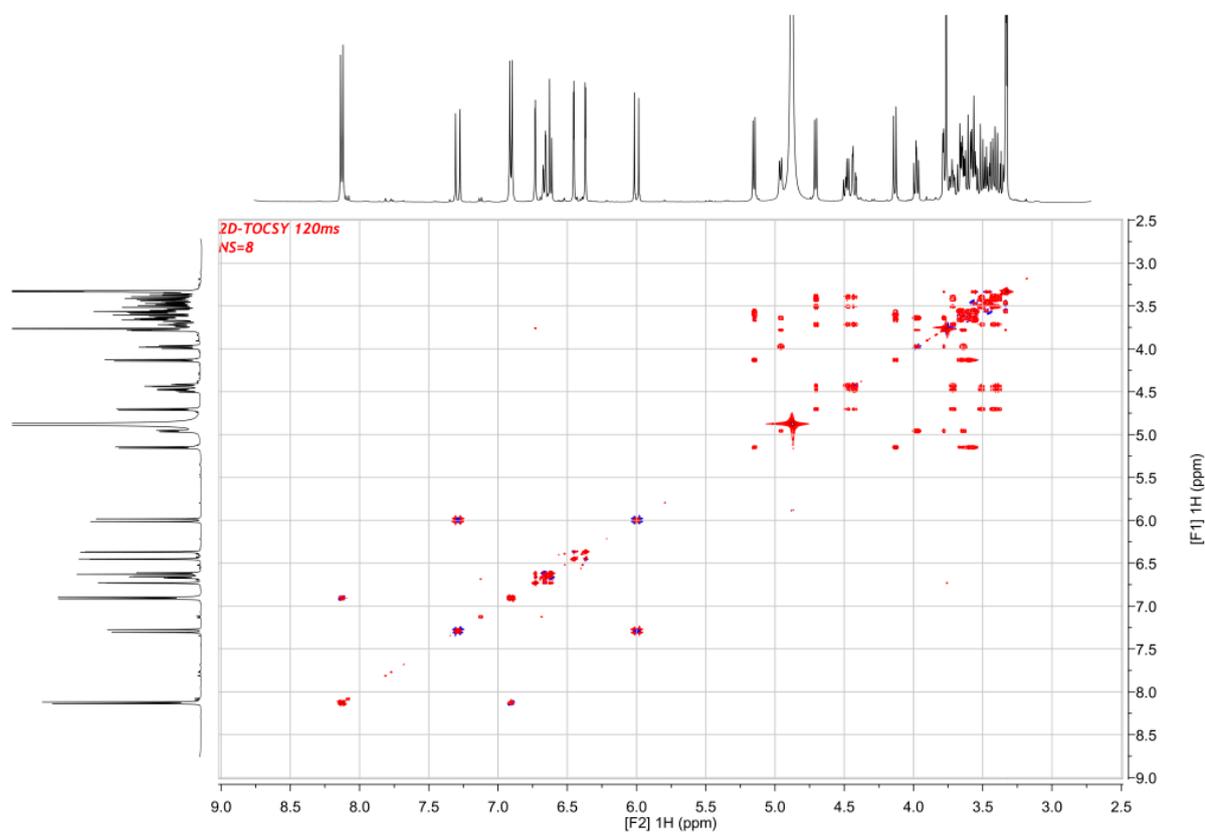
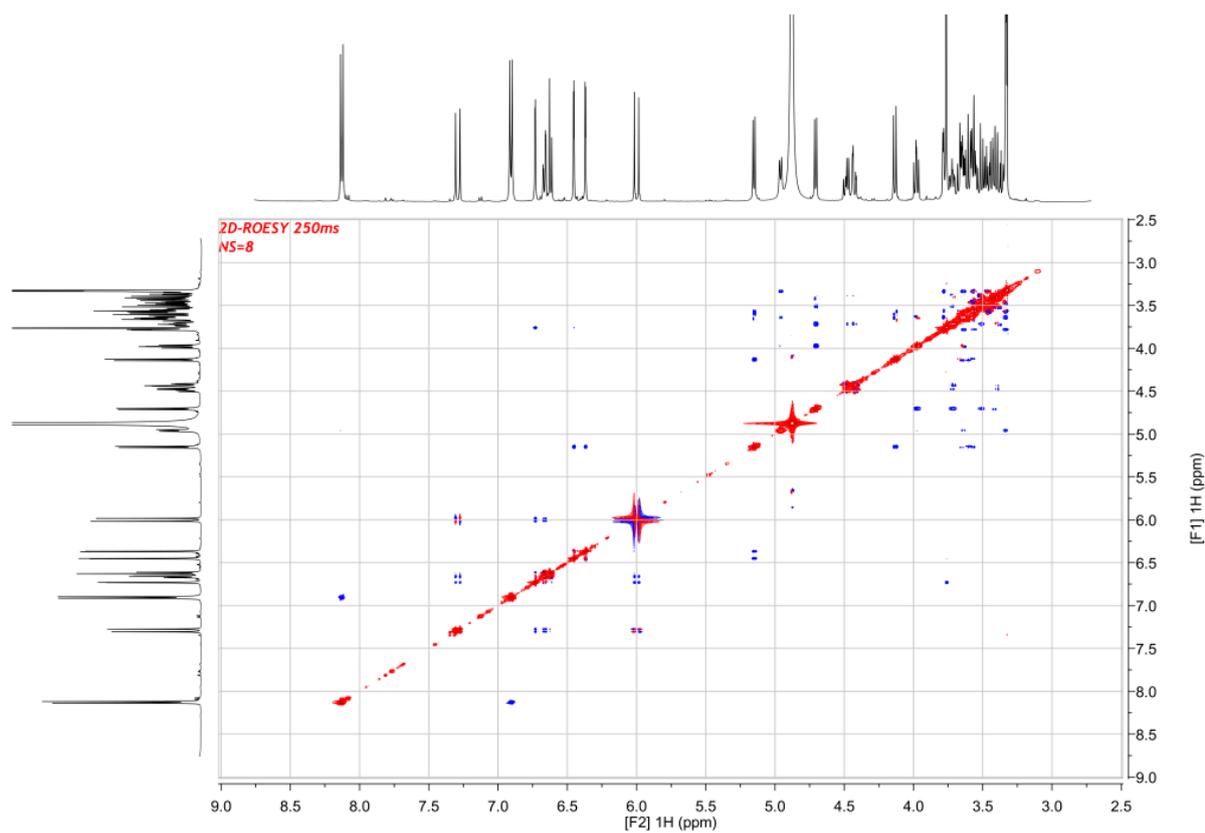
Figure S101. 2D TOCSY NMR spectrum of compound **10** (methanol-*d*₄, 500.18 MHz).**Figure S102.** 2D ROESY NMR spectrum of compound **10** (methanol-*d*₄, 500.18 MHz).

Figure S103. 2D *g*-HSQC-NMR spectrum of compound **10** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

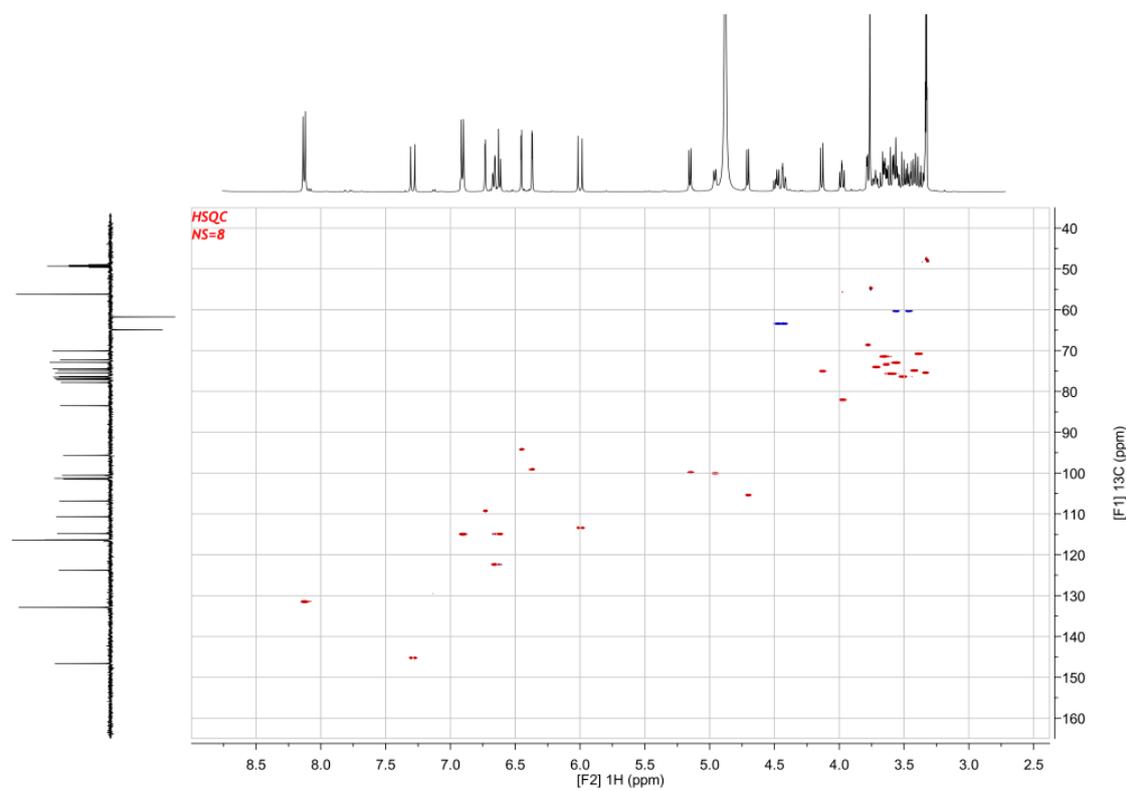


Figure S104. 2D *g*-HSQC-TOCSY NMR spectrum of compound **10** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

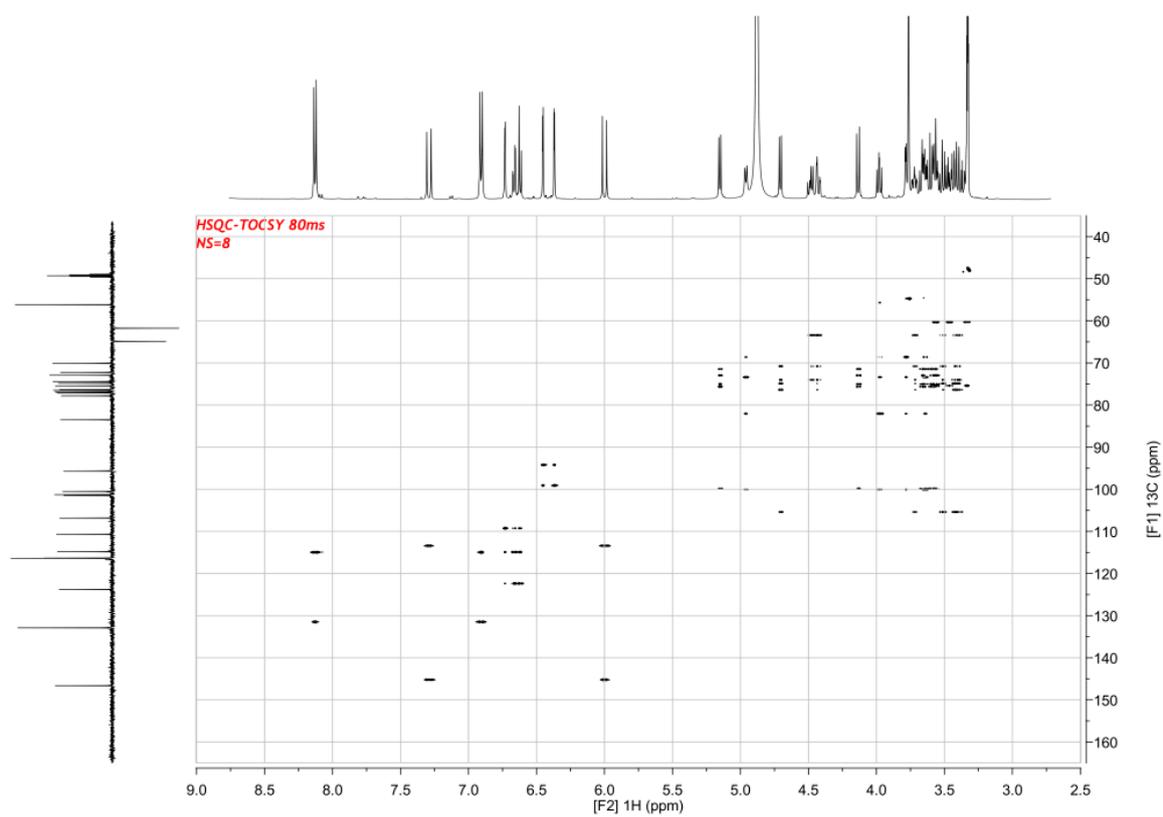


Figure S105. 2D g-HMBC-NMR spectrum of compound **10** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

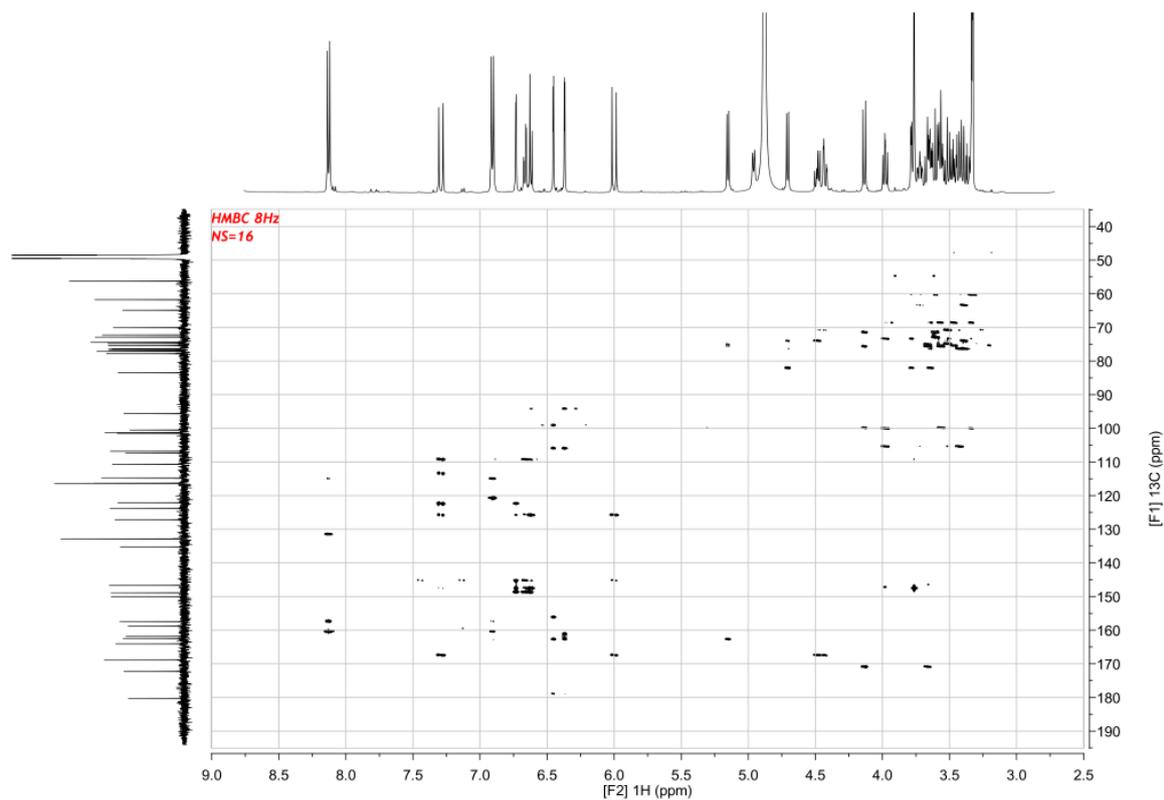


Figure S106. 1D TOCSY and 1D ROESY NMR subspectra of H-1(7-O- β -GlcA) in compound **10** (methanol- d_4 , 500.18 MHz).

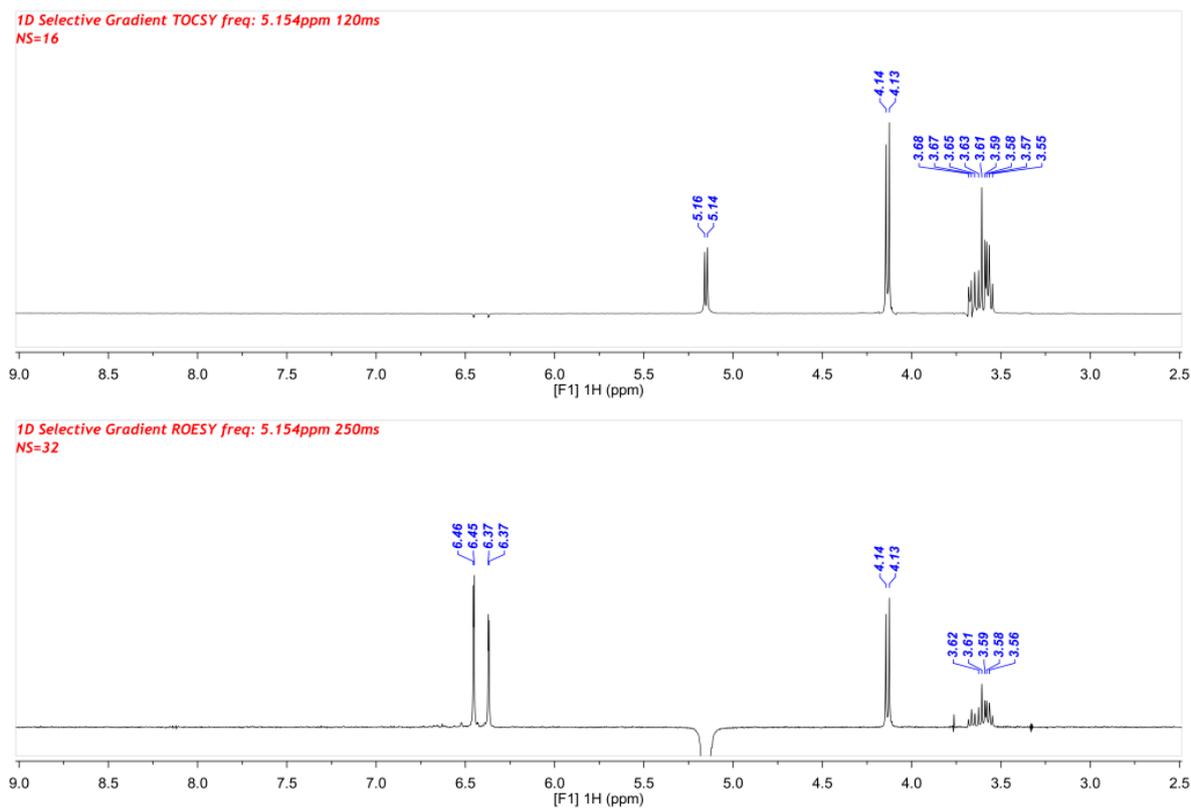


Figure S107. 1D TOCSY and 1D ROESY NMR subspectra of H-1(3-*O*- β -Gal) in compound **10** (methanol-*d*₄, 500.18 MHz).

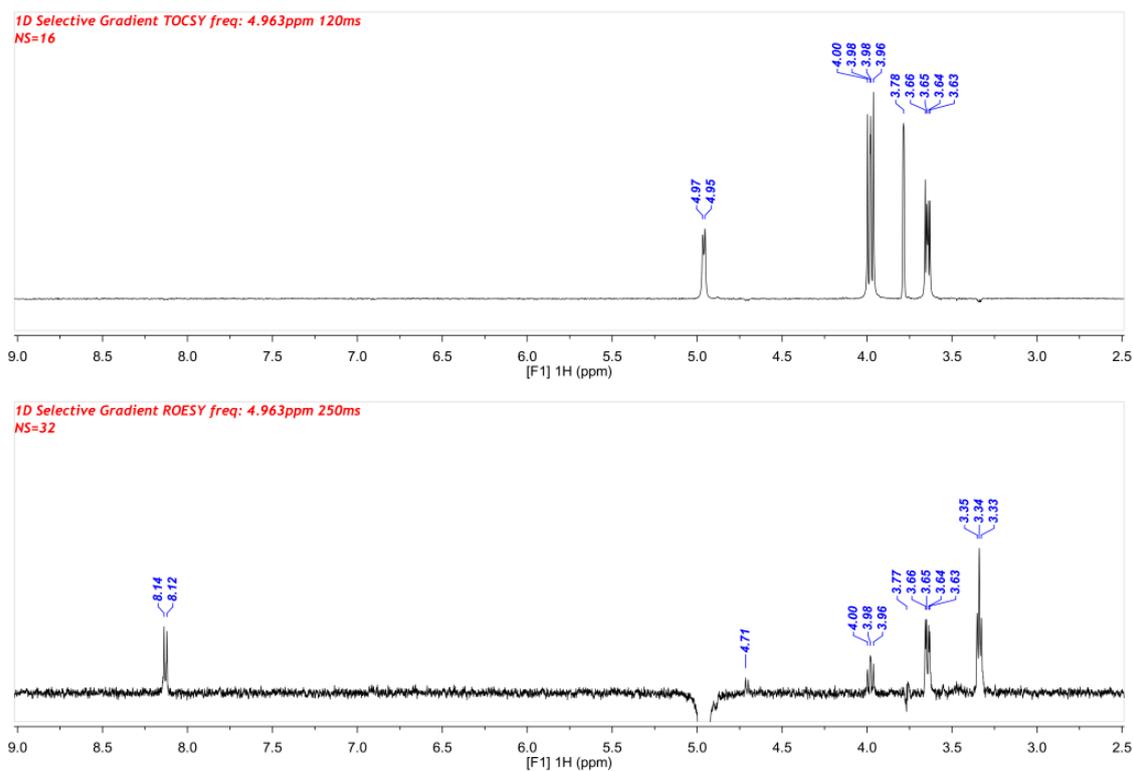
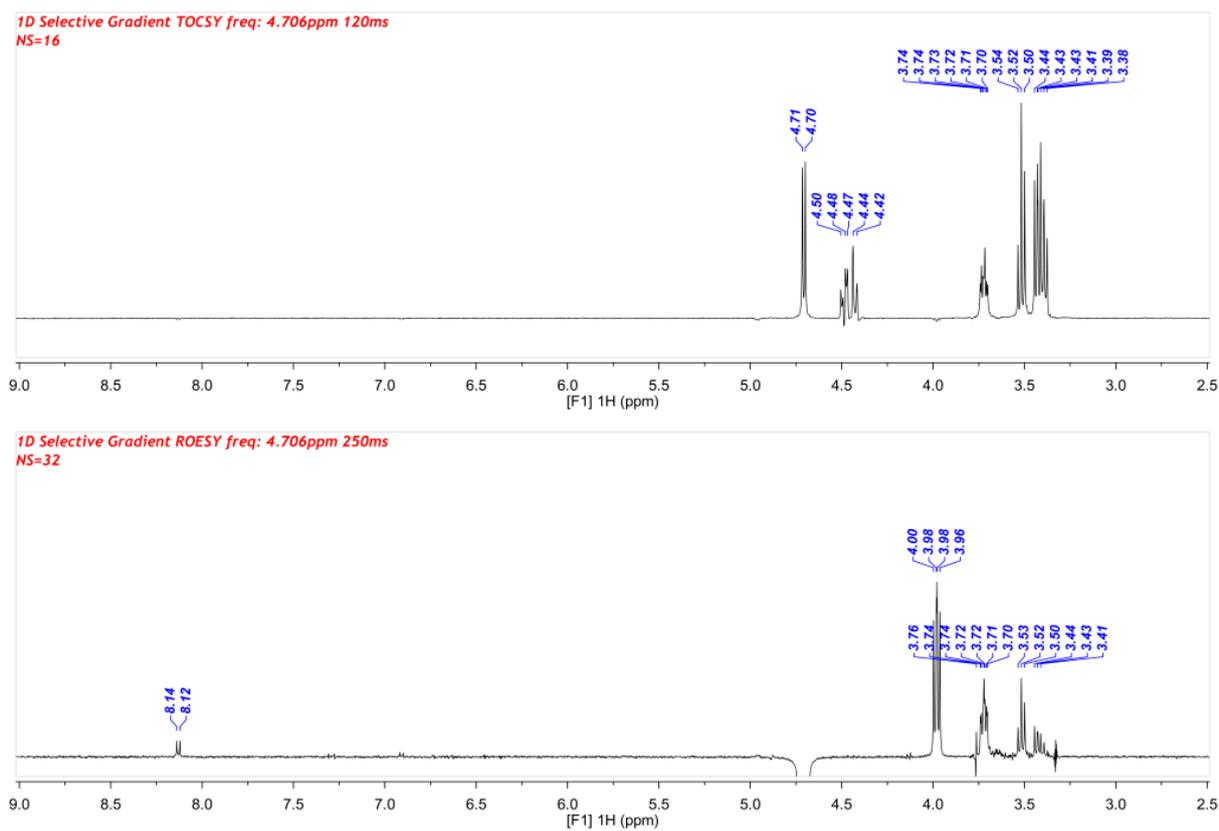


Figure S108. 1D TOCSY and 1D ROESY NMR subspectra of H-1(2^{Gal}-*O*- β -Glc) in compound **10** (methanol-*d*₄, 500.18 MHz).



Compound 11

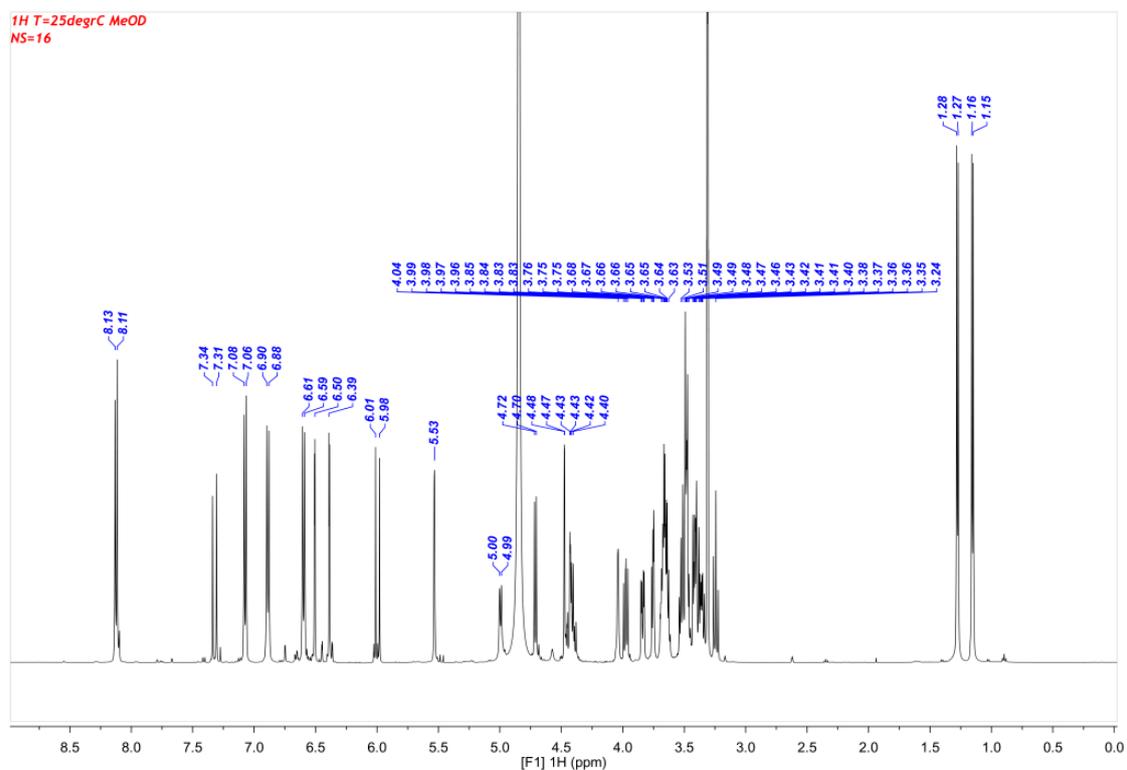
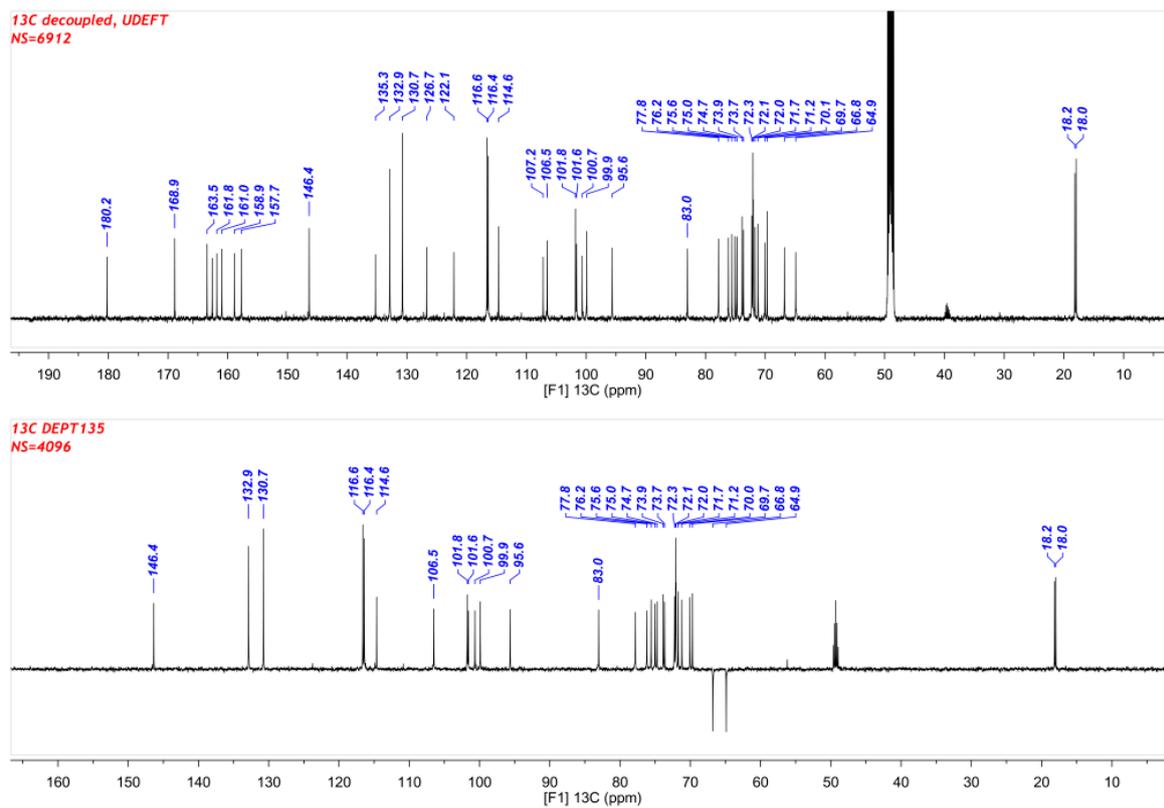
Figure S109. 1D ^1H -NMR spectrum of compound 11 (methanol- d_4 , 500.18 MHz).Figure S110. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound 11 (methanol- d_4 , 125.77 MHz).

Figure S111. 2D g-COSY NMR spectrum of compound **11** (methanol- d_4 , 500.18 MHz).

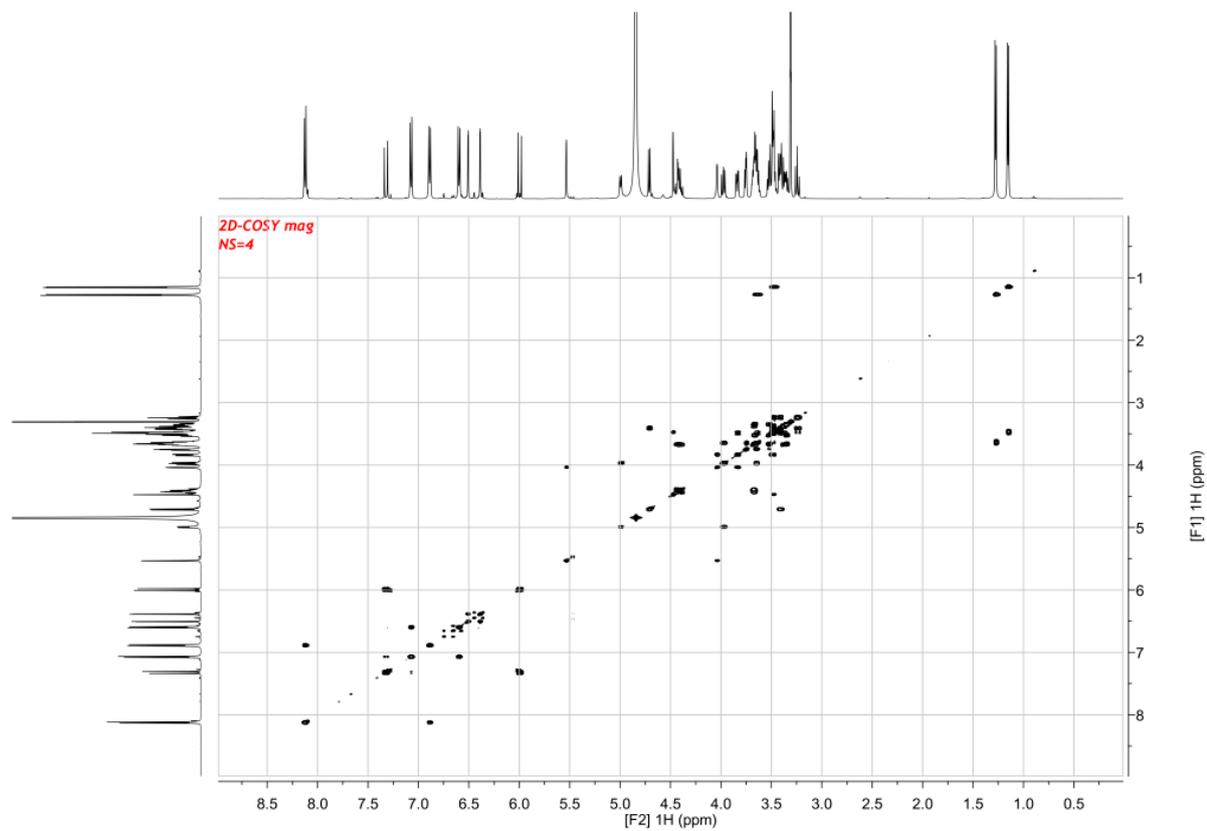


Figure S112. 2D TOCSY NMR spectrum of compound **11** (methanol- d_4 , 500.18 MHz).

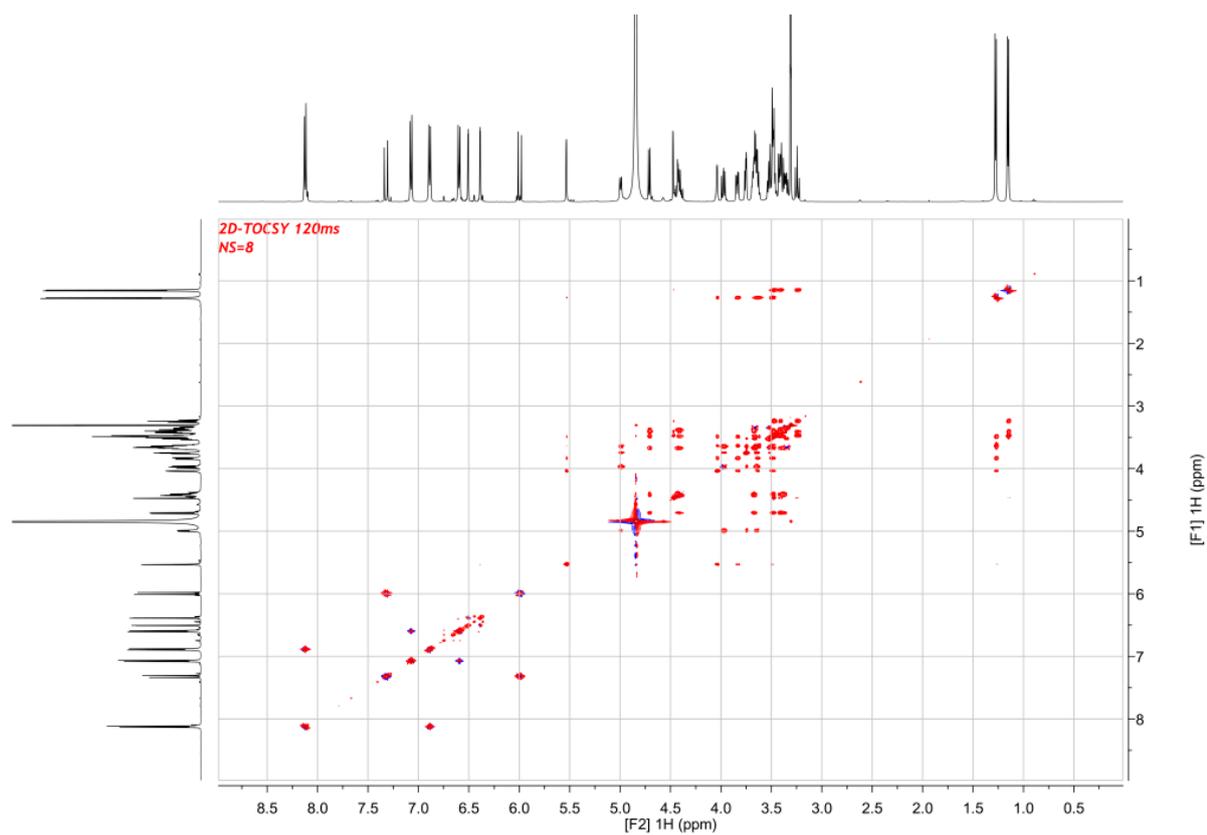


Figure S113. 2D ROESY NMR spectrum of compound **11** (methanol-*d*₄, 500.18 MHz).

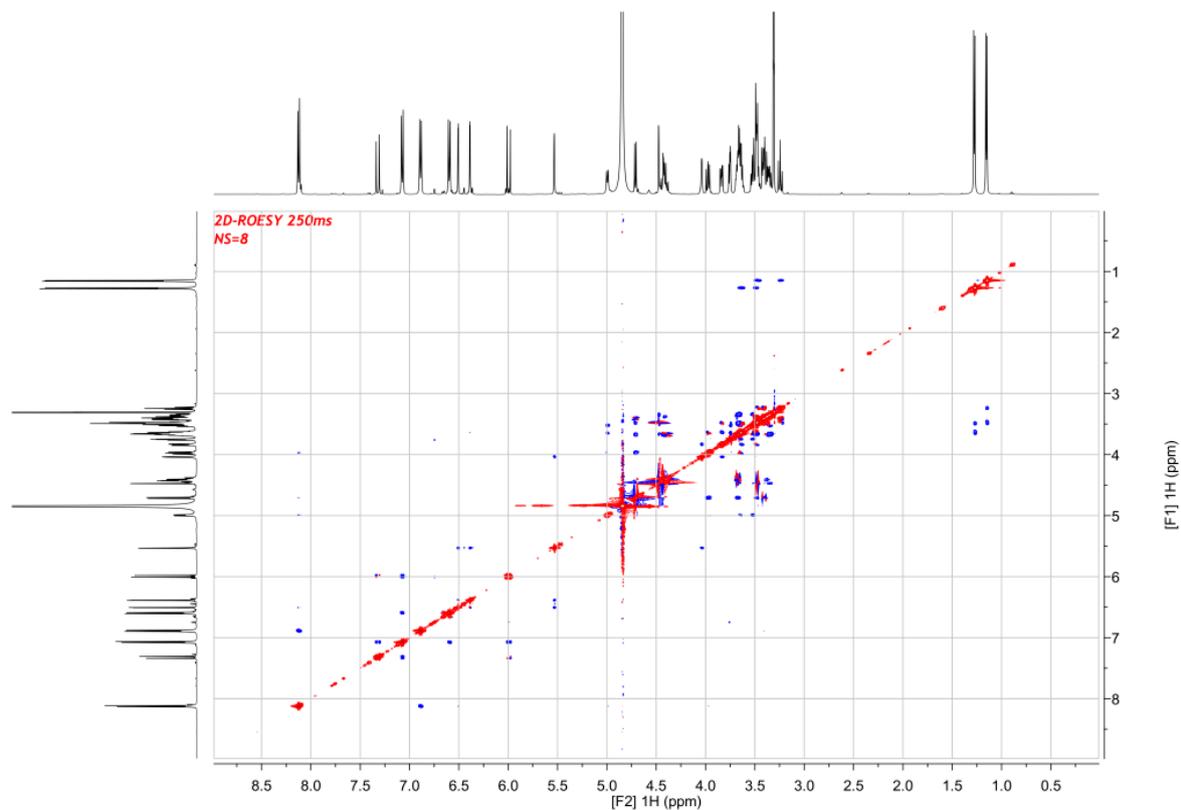


Figure S114. 2D *g*-HSQC-NMR spectrum of compound **11** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

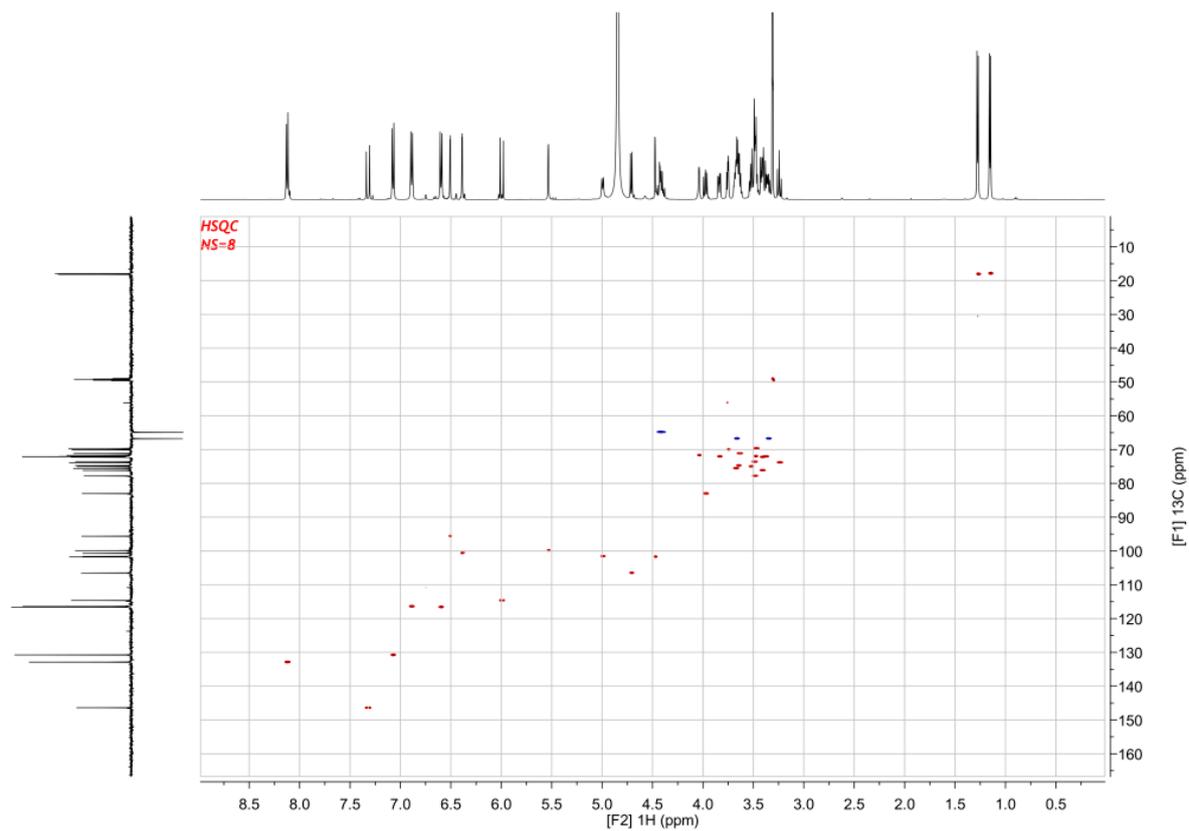


Figure S115. 2D *g*-HSQC-TOCSY NMR spectrum of compound **11** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

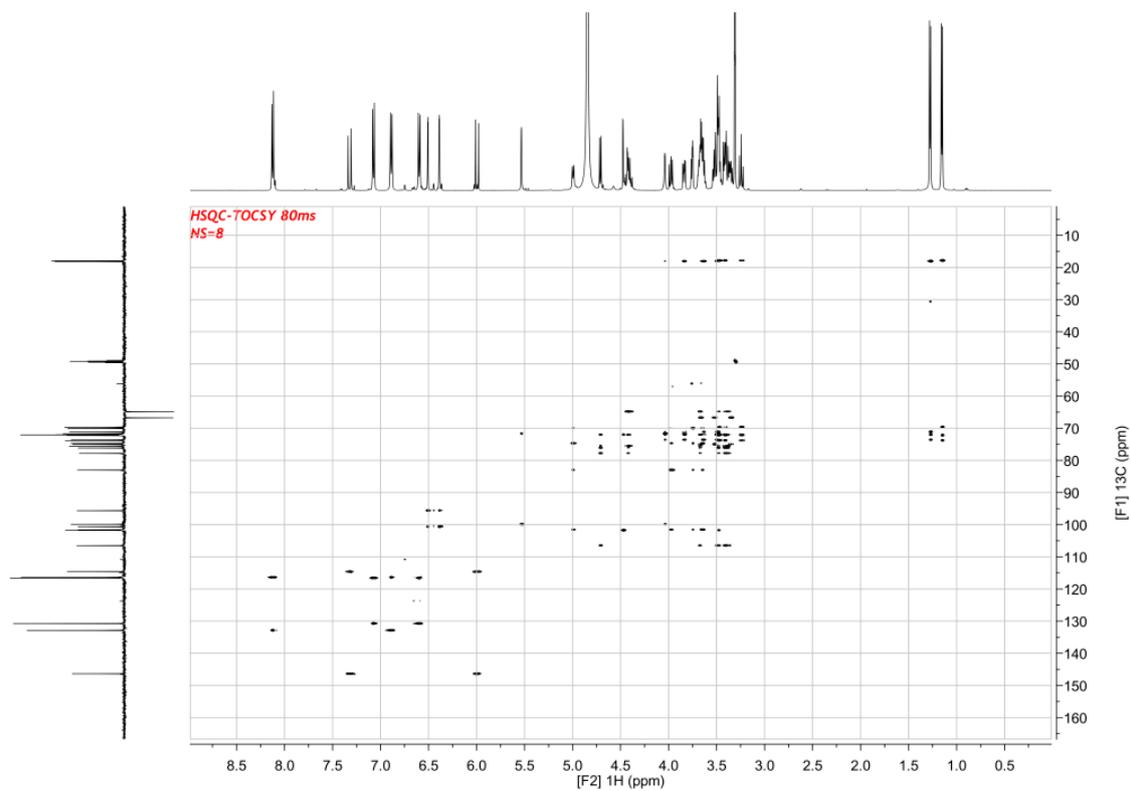


Figure S116. 2D *g*-HMBC-NMR spectrum of compound **11** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

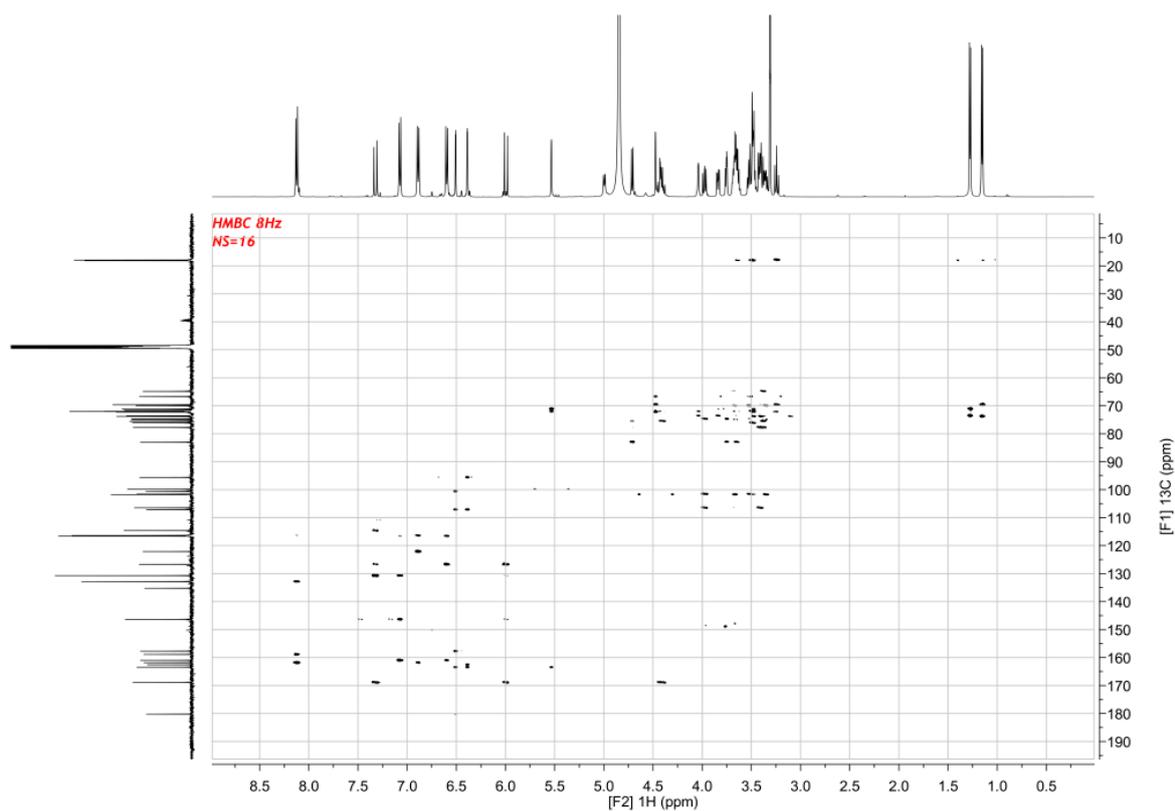


Figure S117. 1D TOCSY and 1D ROESY NMR subspectra of H-1(7-*O*- α -Rha) and H-6(7-*O*- α -Rha) in compound **11** (methanol-*d*₄, 500.18 MHz).

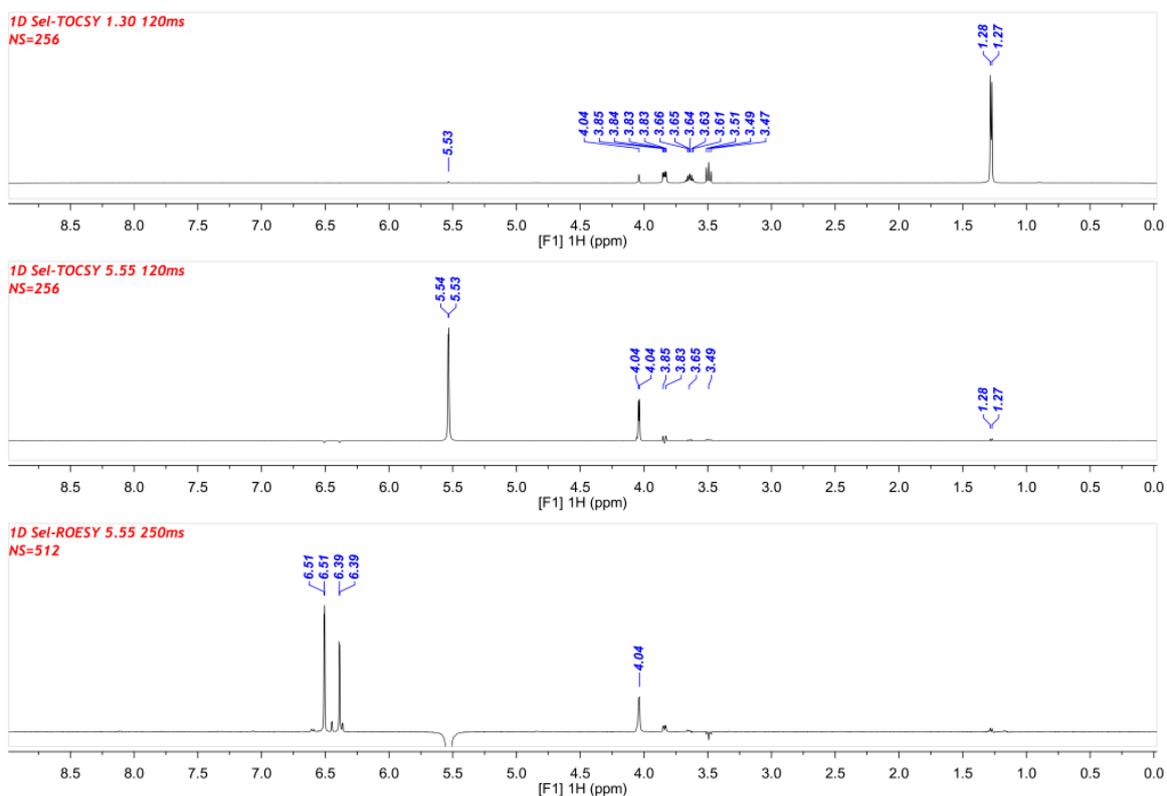


Figure S118. 1D TOCSY and 1D ROESY NMR subspectra of H-1(3-*O*- β -Gal) in compound **11** (methanol-*d*₄, 500.18 MHz).

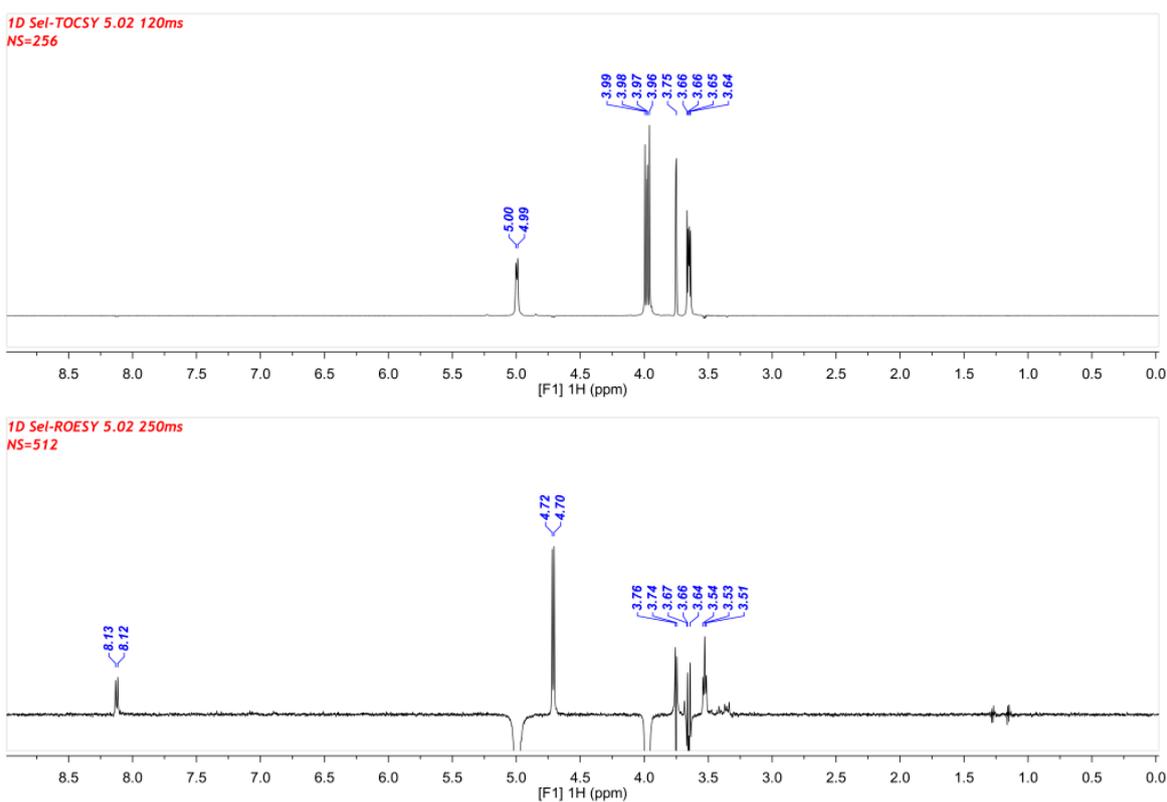


Figure S119. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{\text{Gal}}\text{-O-}\beta\text{-Glc}$) in compound **11** (methanol- d_4 , 500.18 MHz).

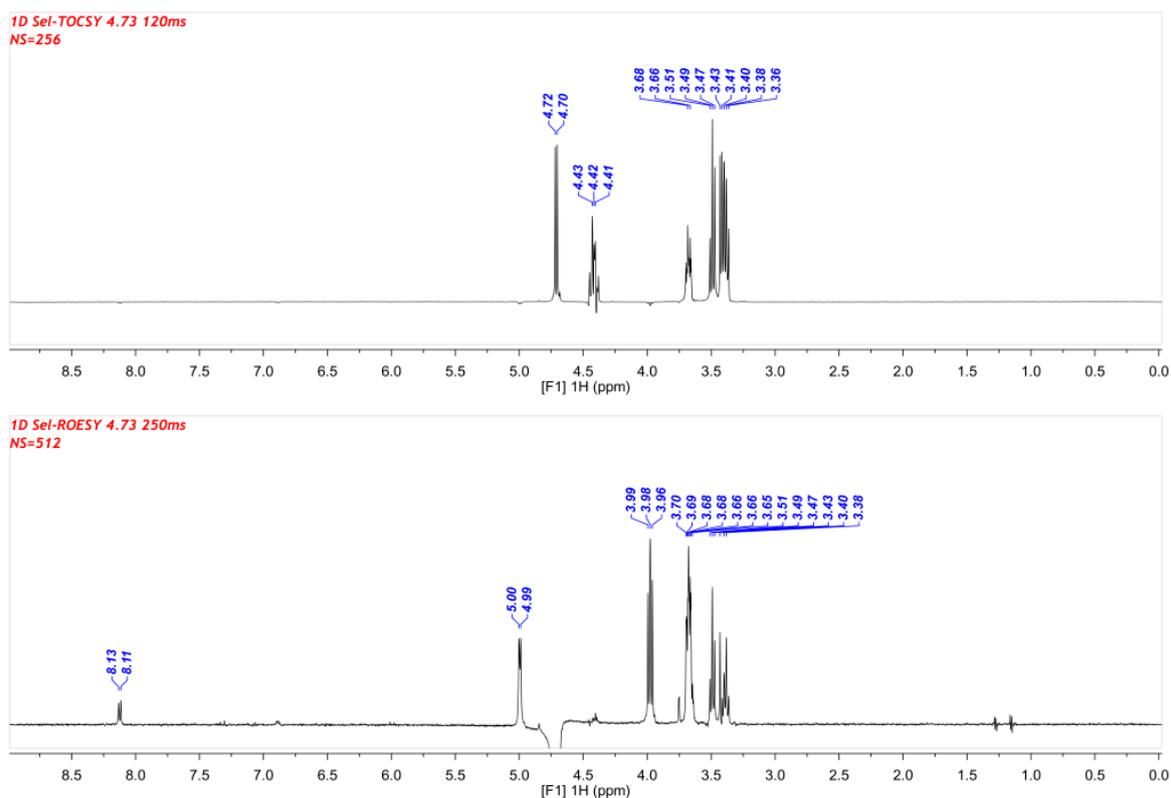
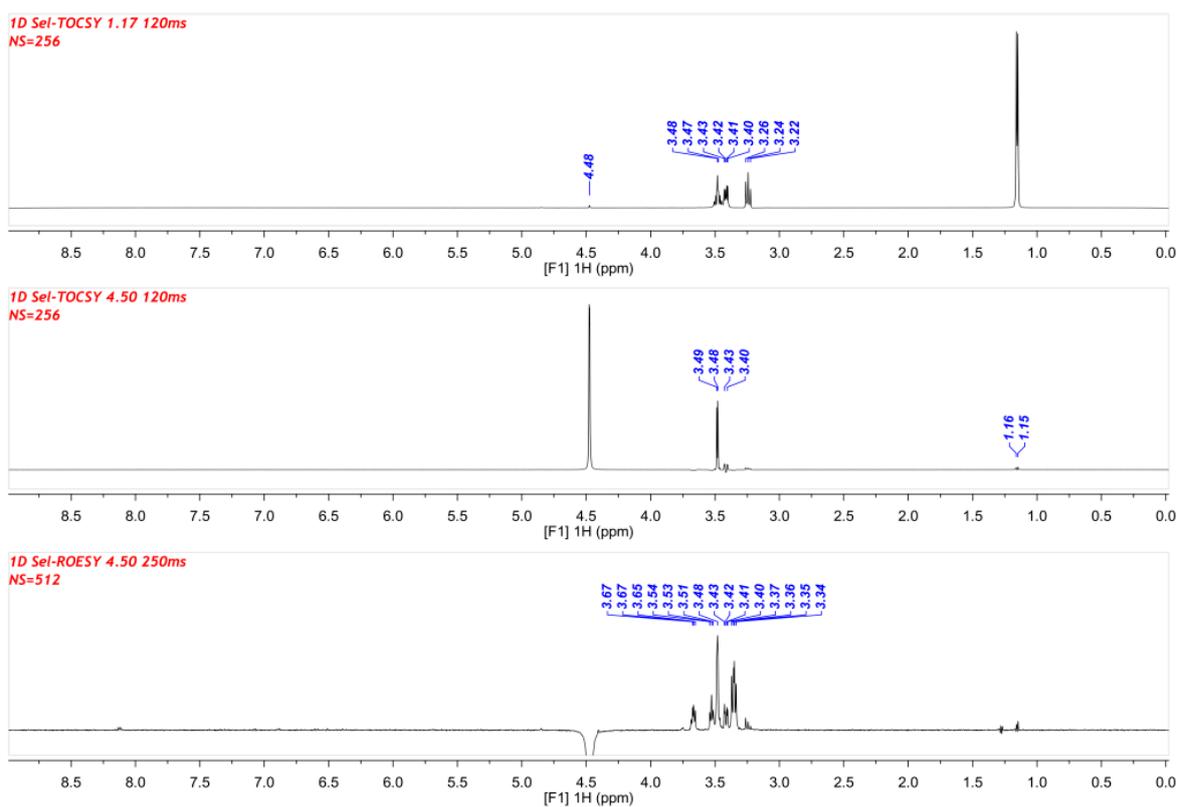


Figure S120. 1D TOCSY and 1D ROESY NMR subspectra of H-1($6^{\text{Gal}}\text{-O-}\alpha\text{-Rha}$) and H-6($6^{\text{Gal}}\text{-O-}\alpha\text{-Rha}$) in compound **11** (methanol- d_4 , 500.18 MHz).



Compound 12

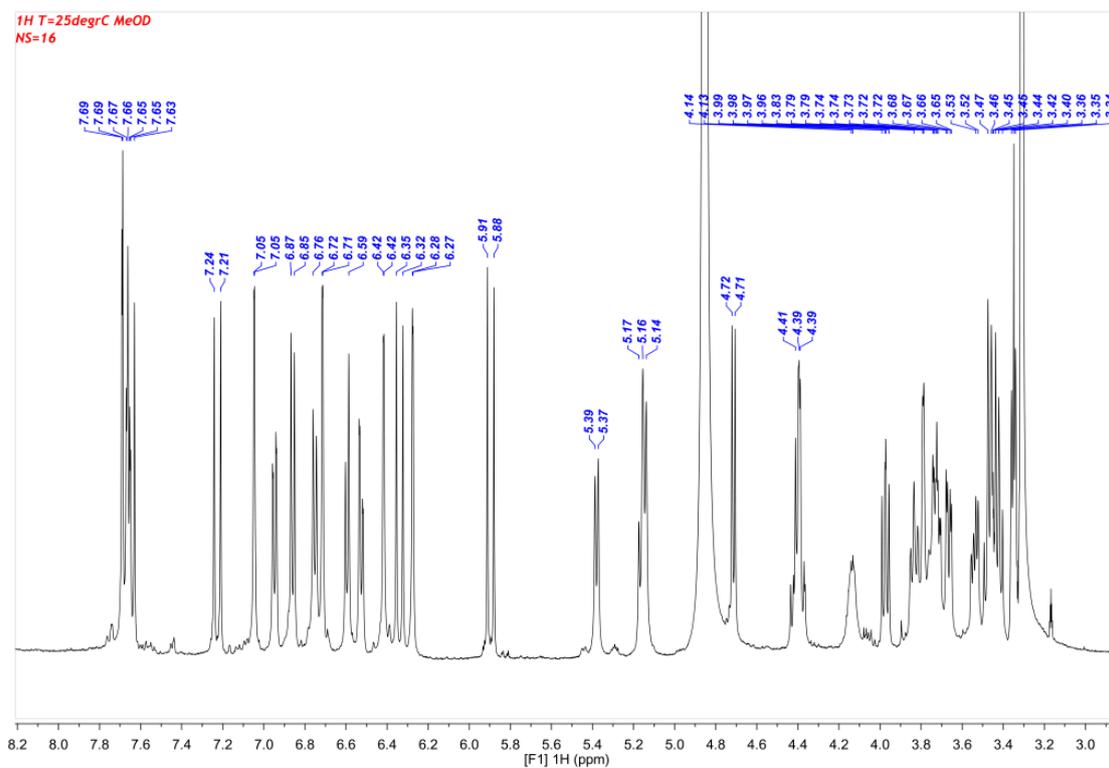
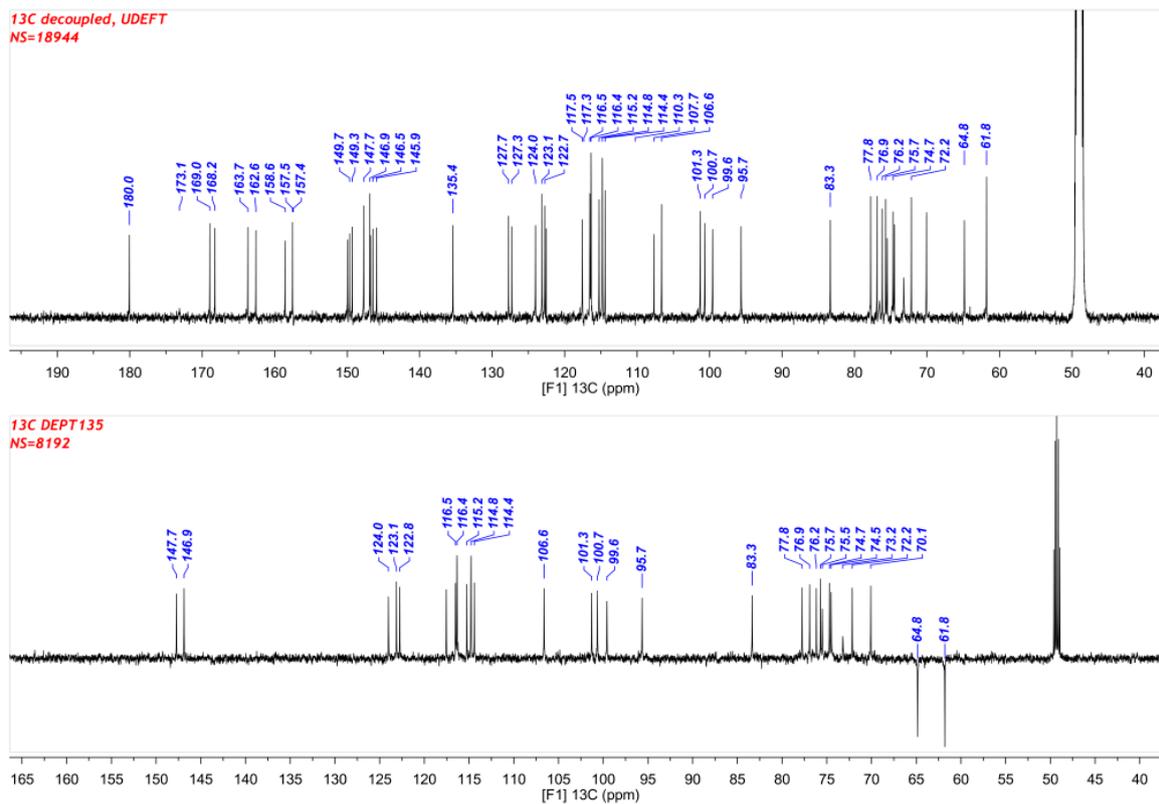
Figure S121. 1D ^1H -NMR spectrum of compound 12 (methanol- d_4 , 500.18 MHz).Figure S122. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound 12 (methanol- d_4 , 125.77 MHz).

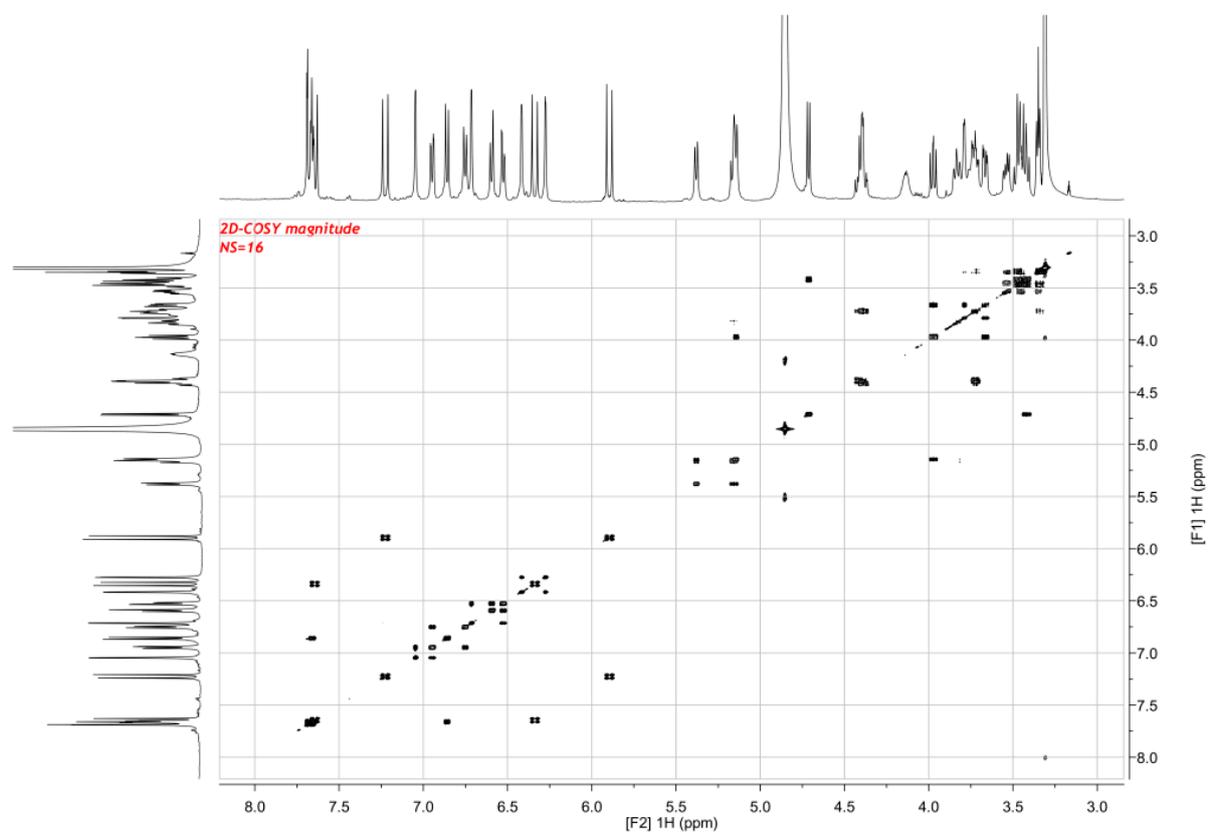
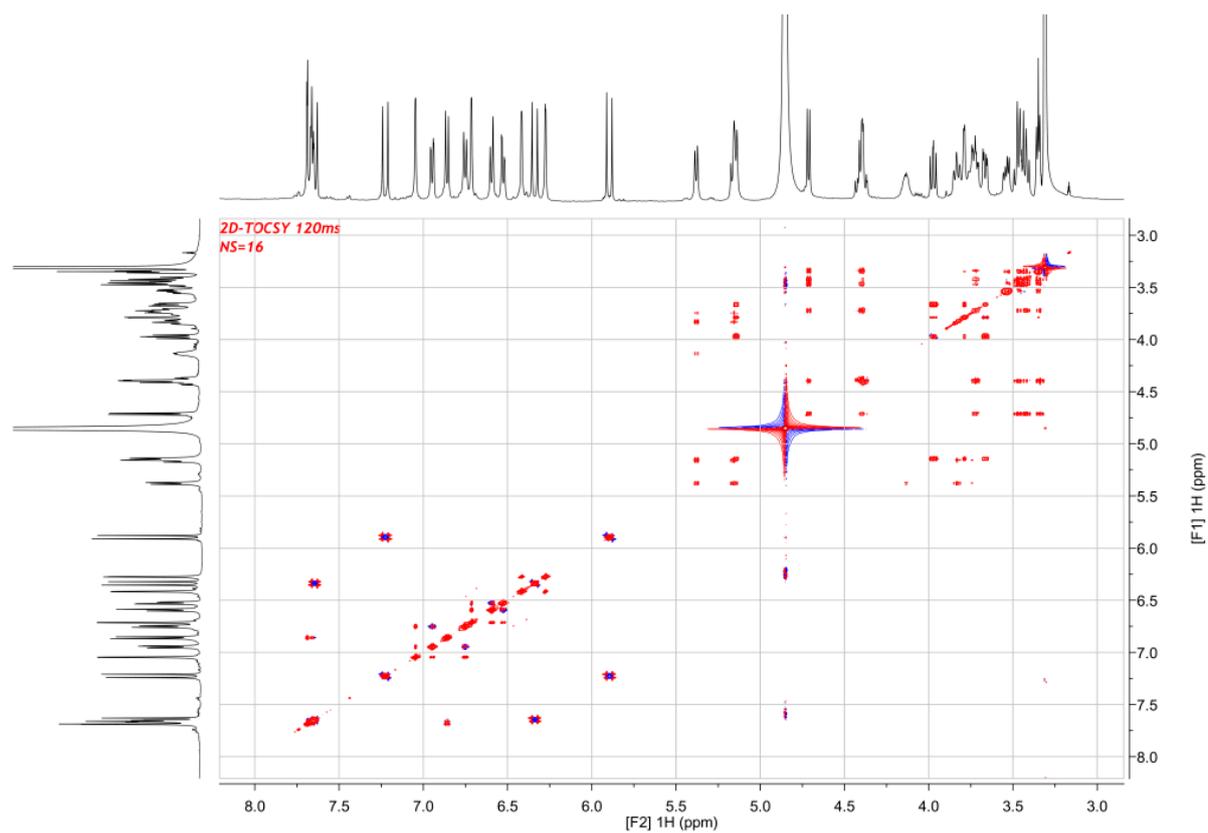
Figure S123. 2D g-COSY NMR spectrum of compound **12** (methanol-*d*₄, 500.18 MHz).**Figure S124.** 2D TOCSY NMR spectrum of compound **12** (methanol-*d*₄, 500.18 MHz).

Figure S125. 2D ROESY NMR spectrum of compound **12** (methanol-*d*₄, 500.18 MHz).

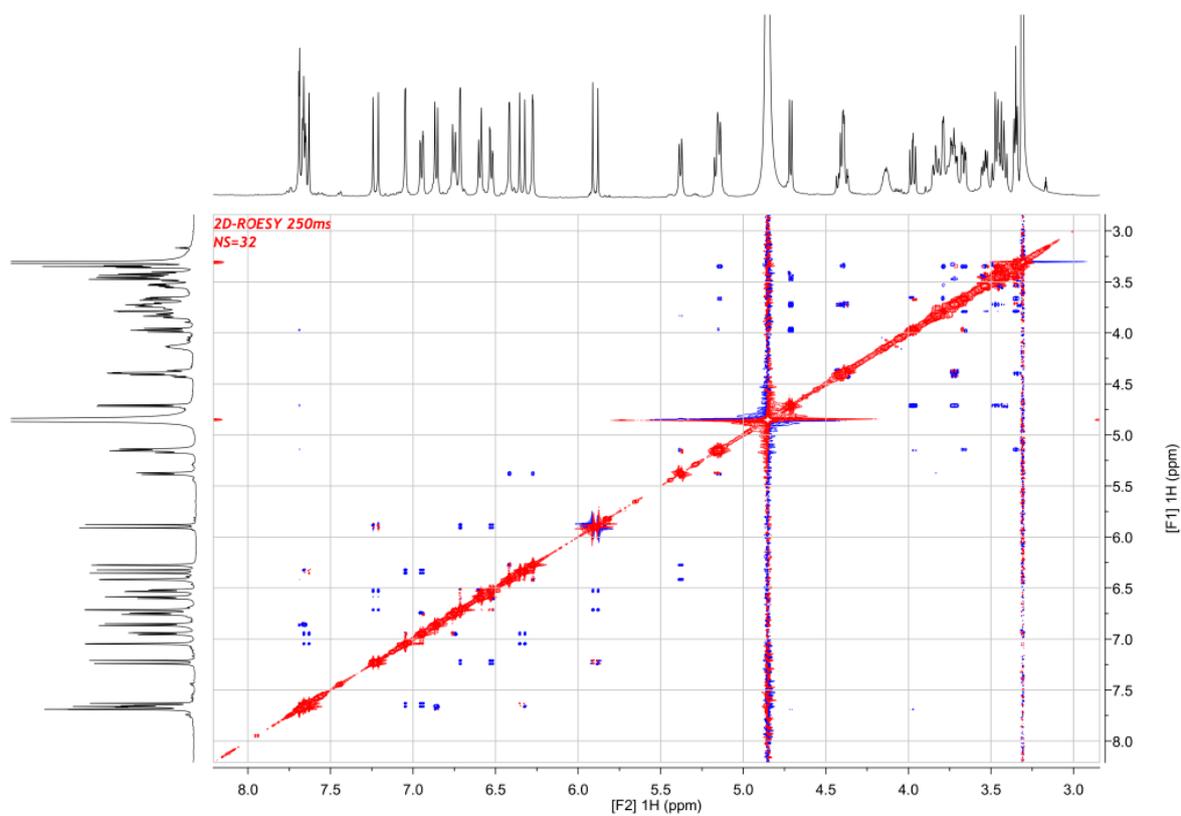


Figure S126. 2D *g*-HSQC-NMR spectrum of compound **12** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

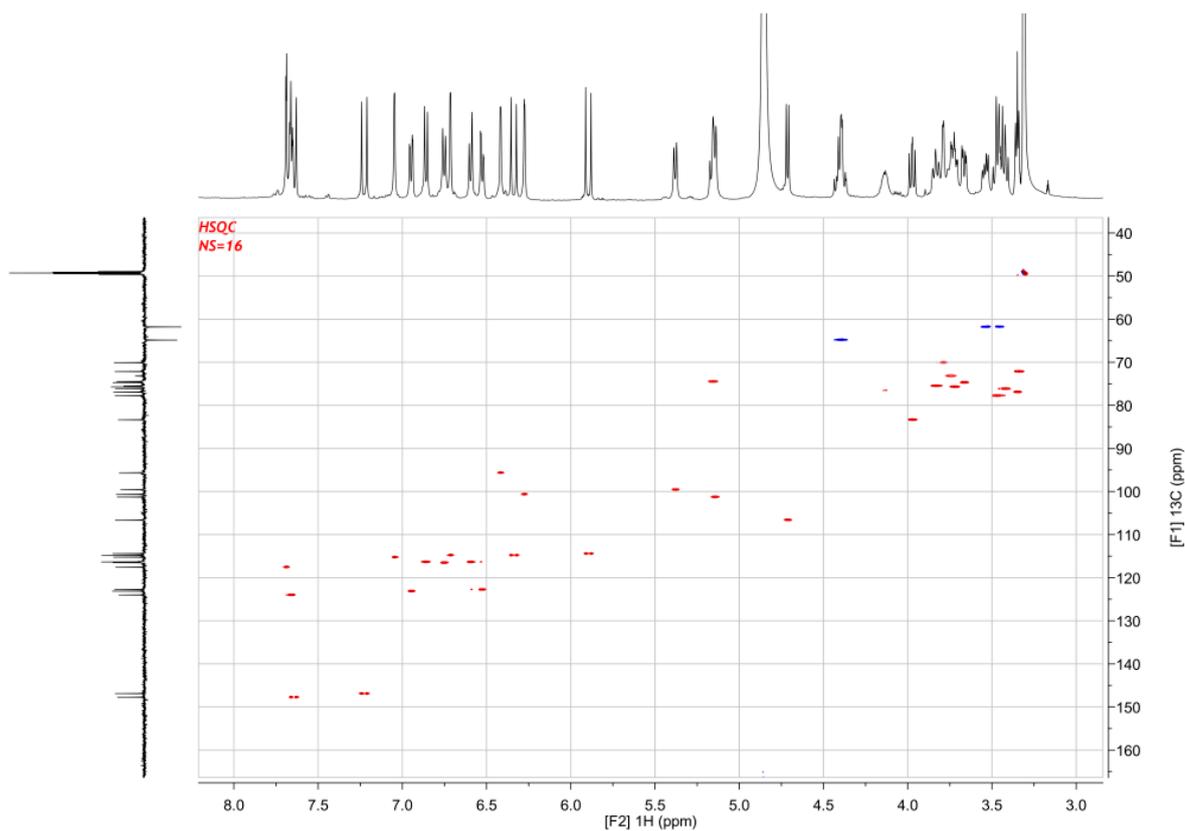


Figure S127. 2D *g*-HSQC-TOCSY NMR spectrum of compound **12** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

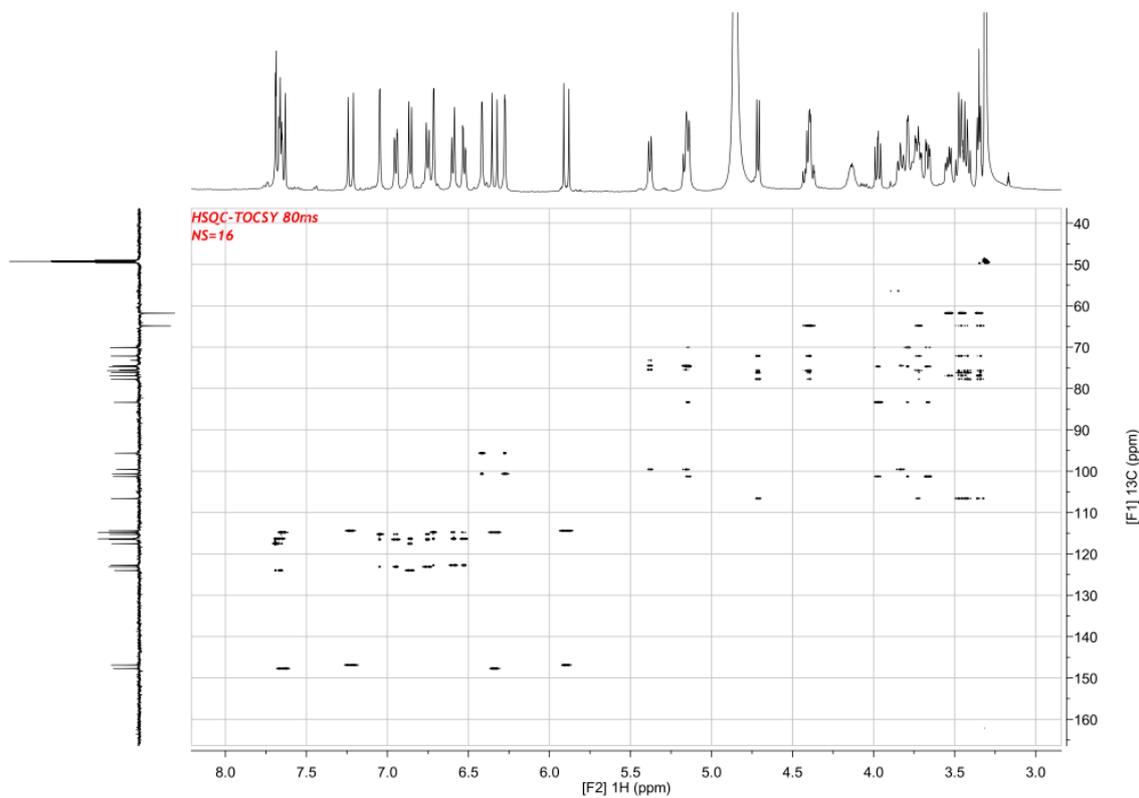


Figure S128. 2D *g*-HMBC-NMR spectrum of compound **12** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

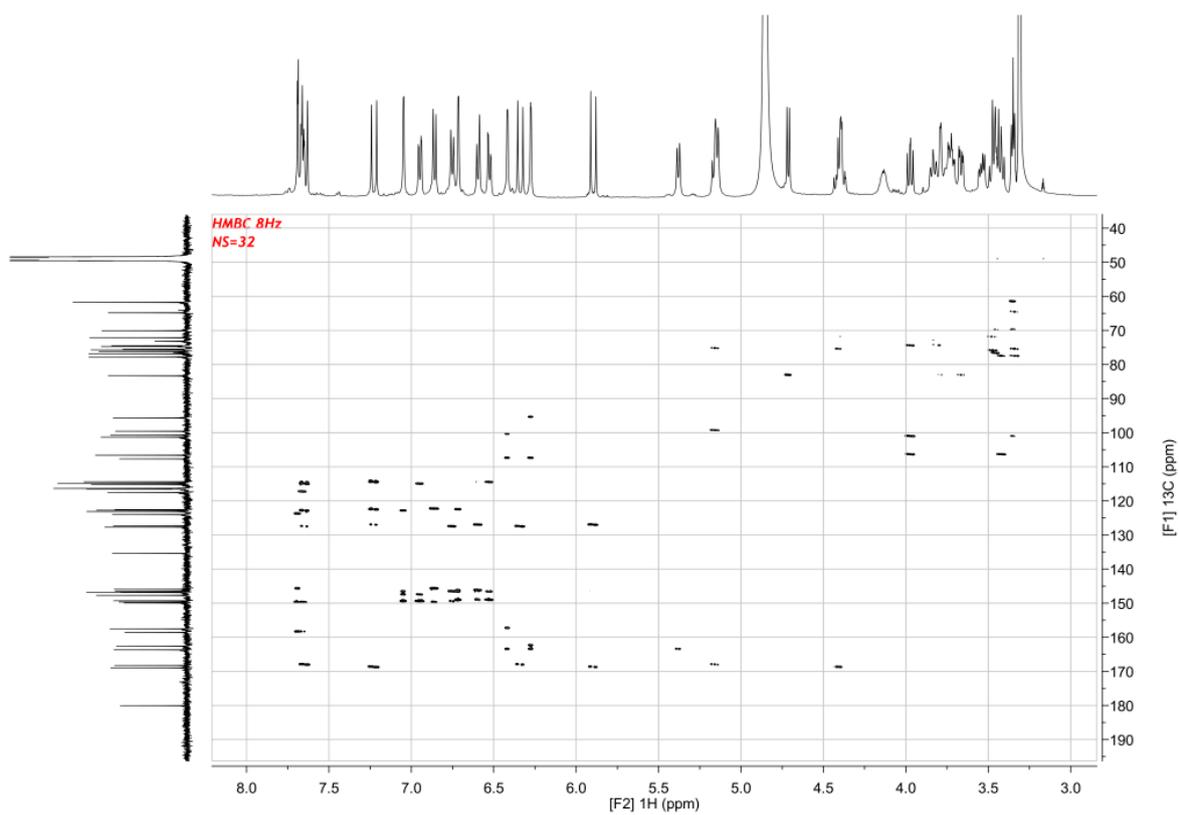


Figure S129. 1D TOCSY and 1D ROESY NMR subspectra of H-1(7-*O*- β -GlcA) in compound **12** (methanol-*d*₄, 500.18 MHz).

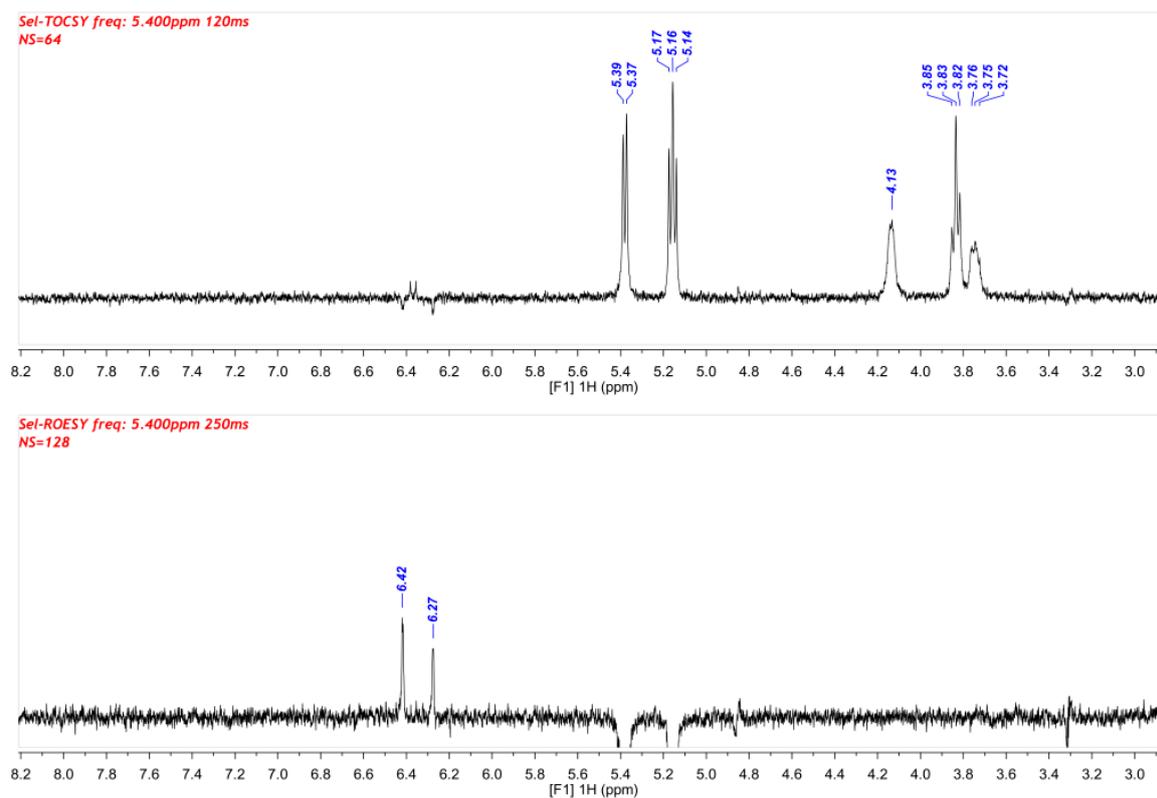


Figure S130. 1D TOCSY NMR subspectrum of H-2(3-*O*- β -Gal) in compound **12** (methanol-*d*₄, 500.18 MHz).

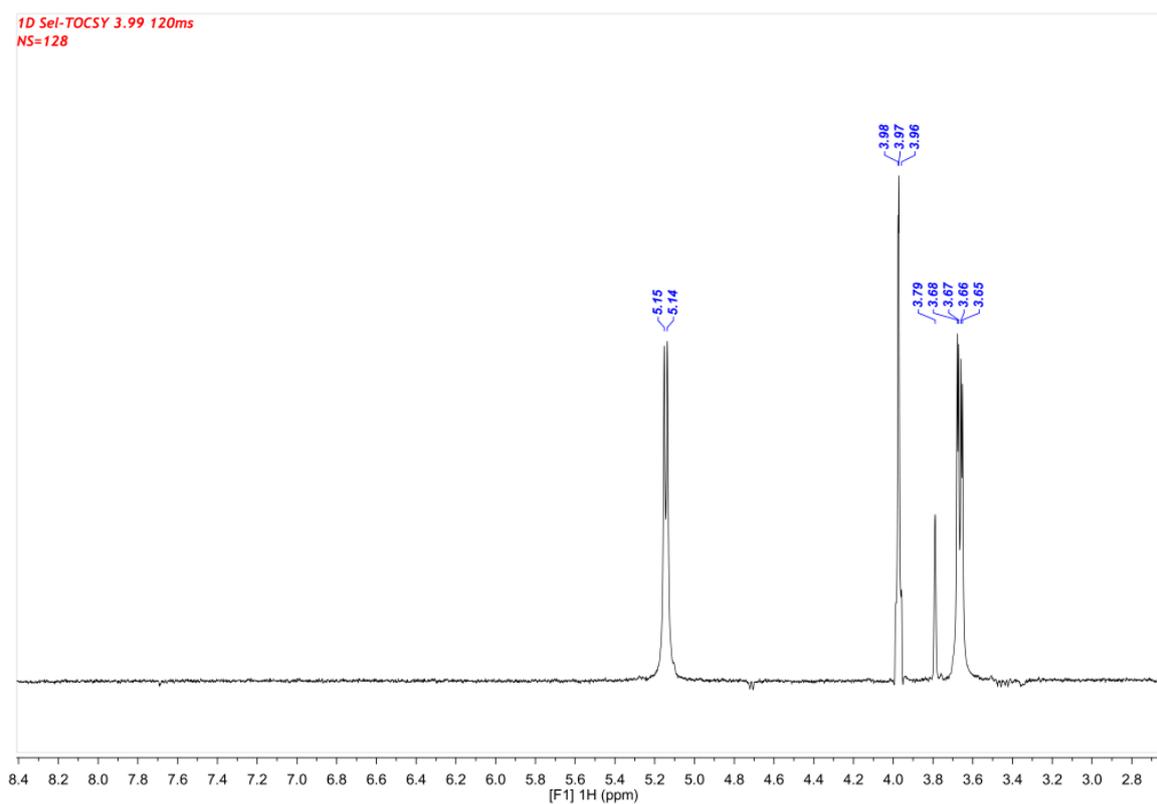
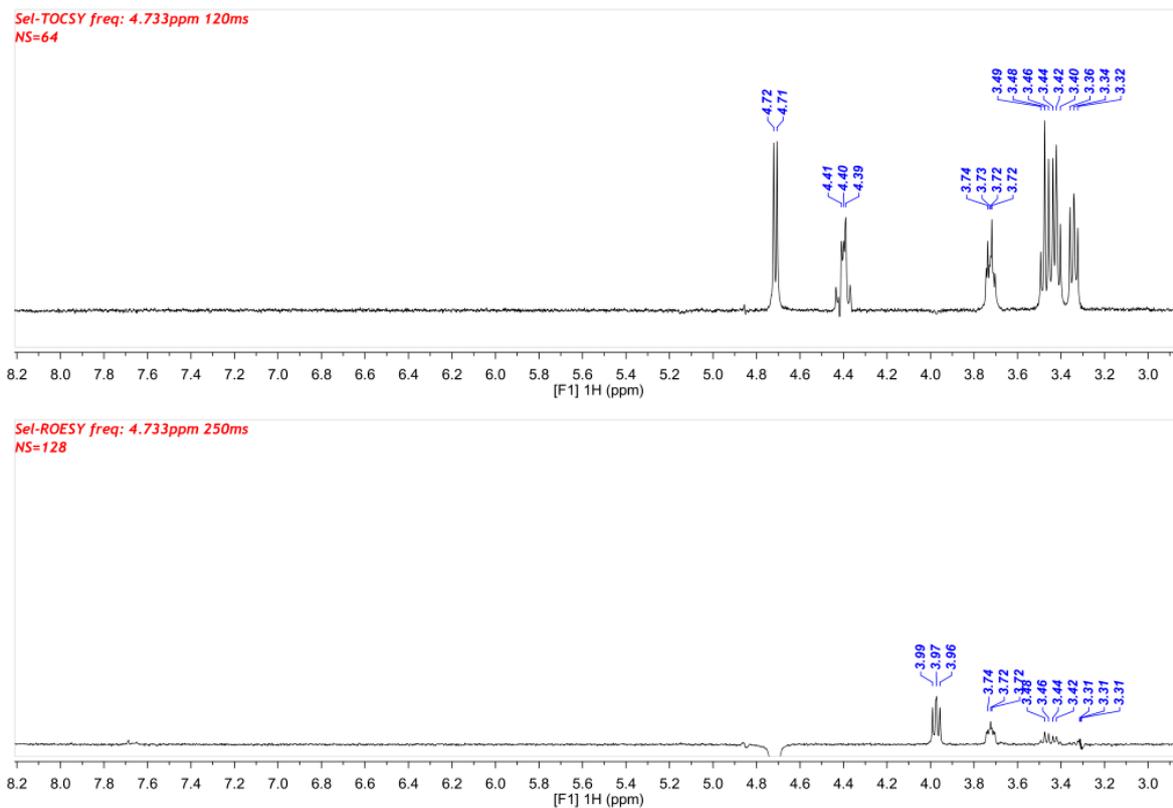


Figure S131. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{\text{Gal}}\text{-O-}\beta\text{-Glc}$) in compound **12** (methanol- d_4 , 500.18 MHz).



Compound 13

Figure S132. 1D $^1\text{H-NMR}$ spectrum of compound **13** (methanol- d_4 , 500.18 MHz).

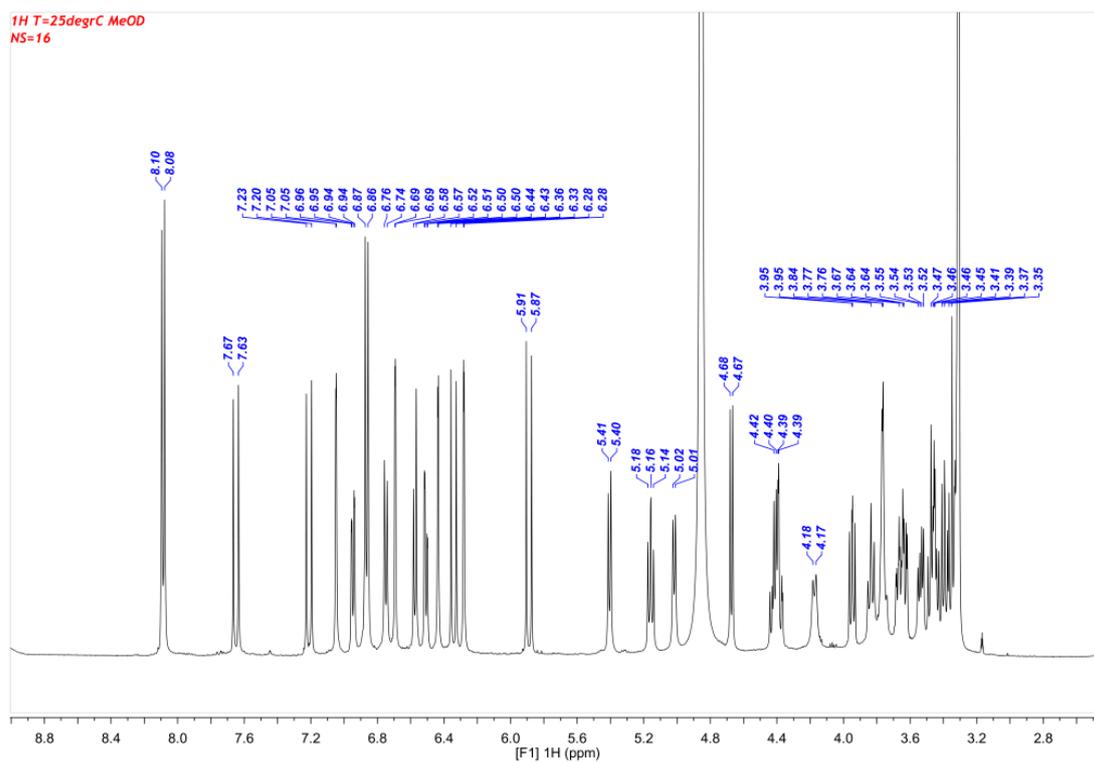


Figure S133. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **13** (methanol- d_4 , 125.77 MHz).

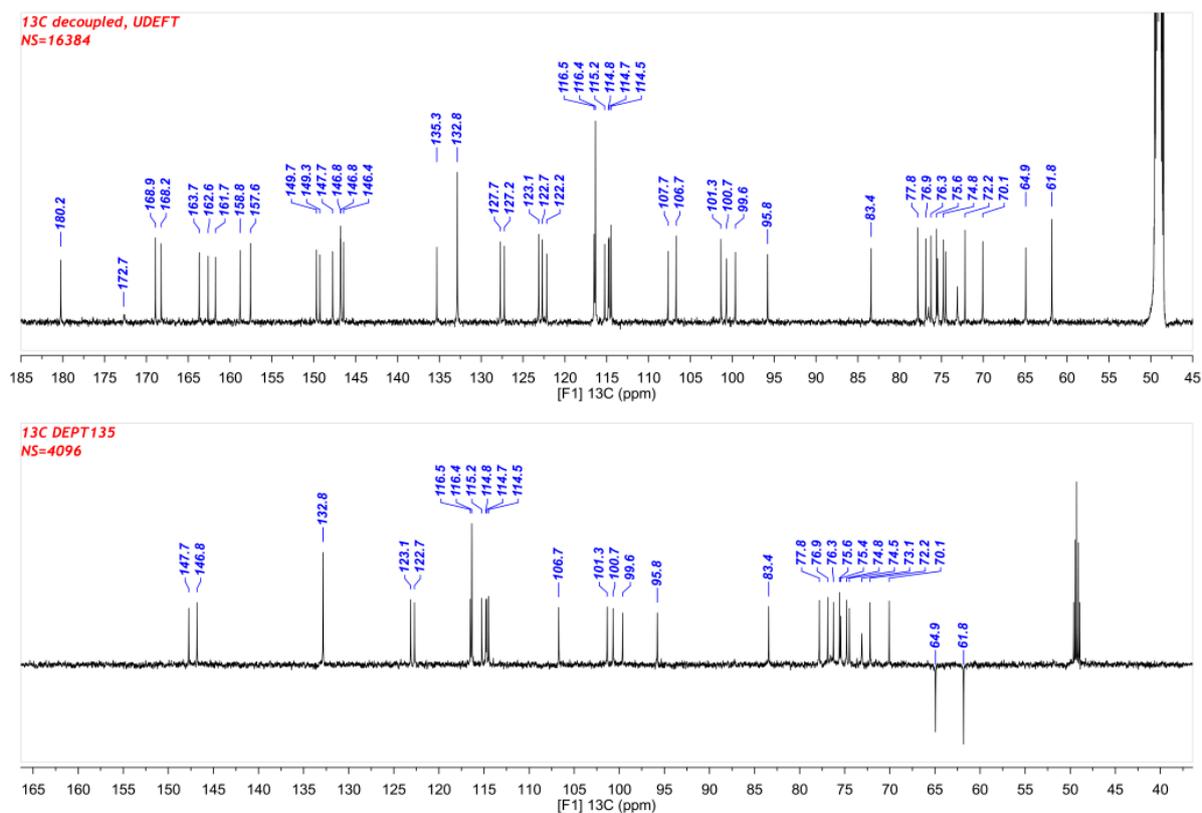


Figure S134. 2D g-COSY NMR spectrum of compound **13** (methanol- d_4 , 500.18 MHz).

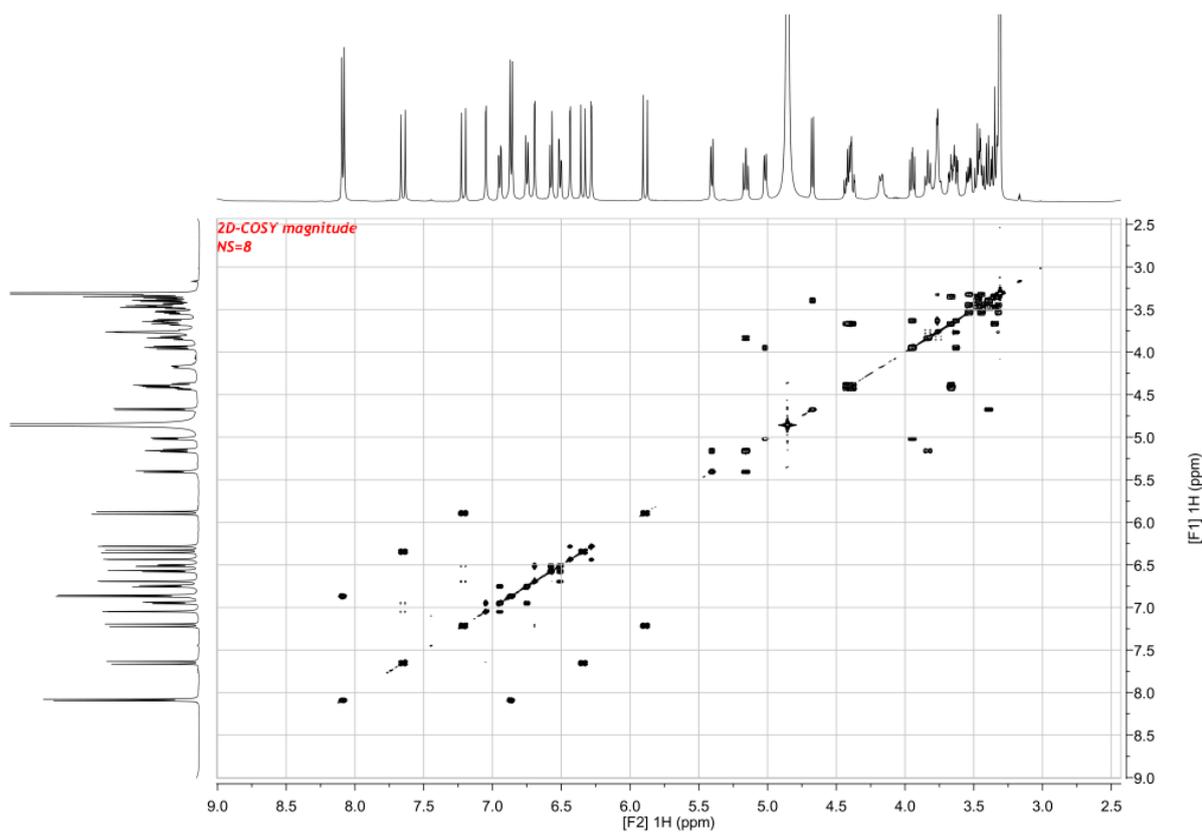


Figure S135. 2D TOCSY NMR spectrum of compound **13** (methanol-*d*₄, 500.18 MHz).

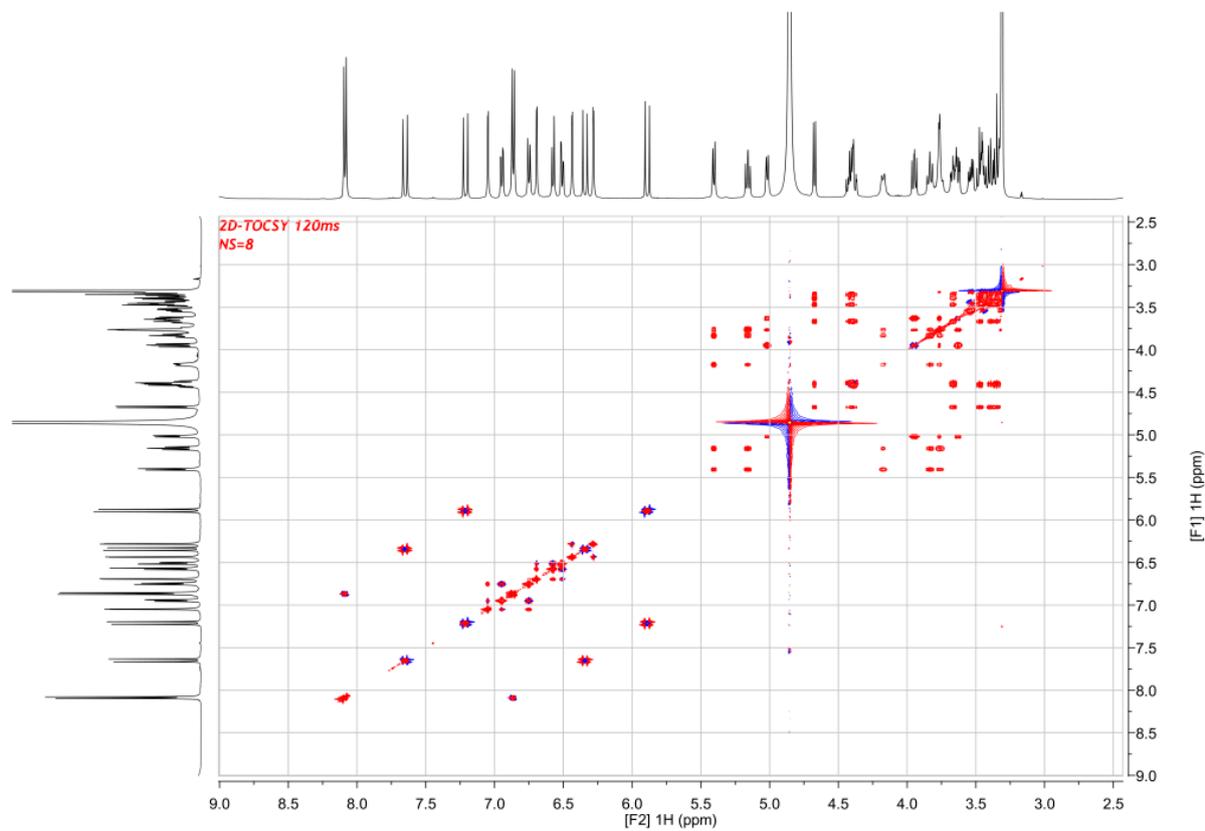


Figure S136. 2D ROESY NMR spectrum of compound **13** (methanol-*d*₄, 500.18 MHz).

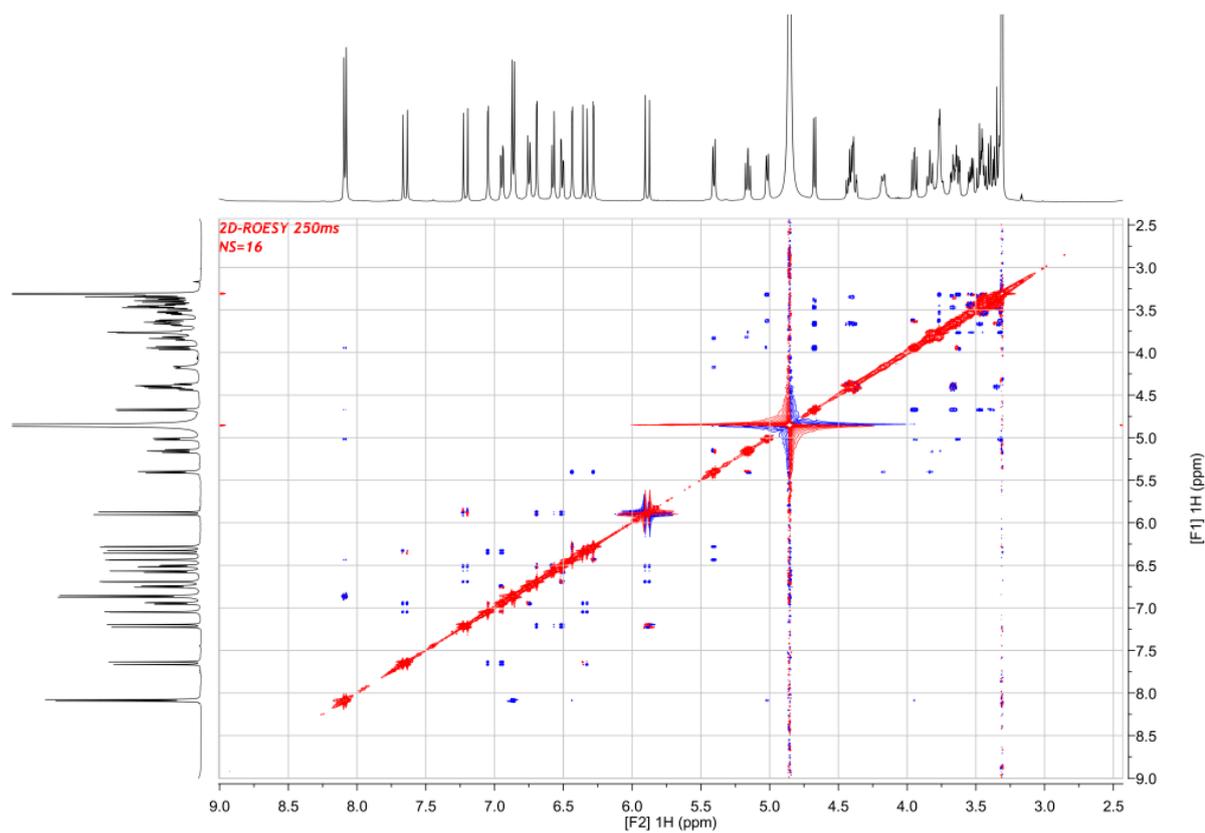


Figure S137. 2D *g*-HSQC-NMR spectrum of compound **13** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

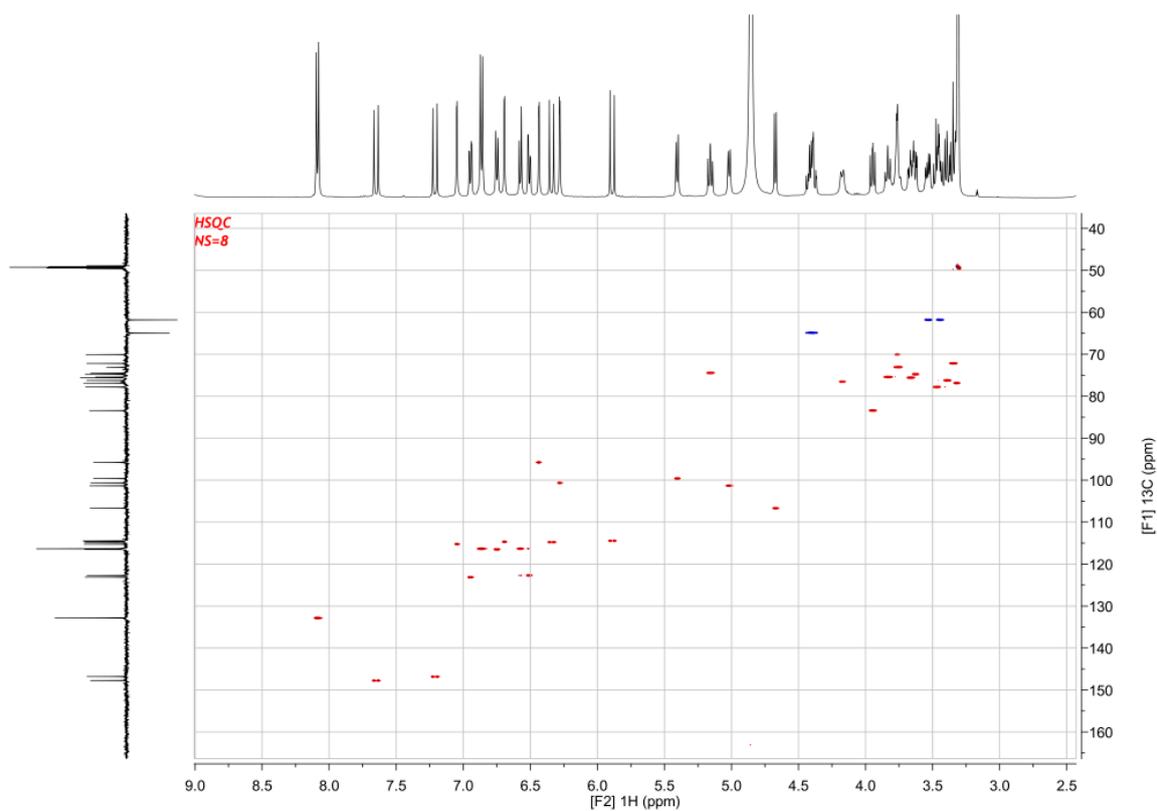


Figure S138. 2D *g*-HSQC-TOCSY NMR spectrum of compound **13** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

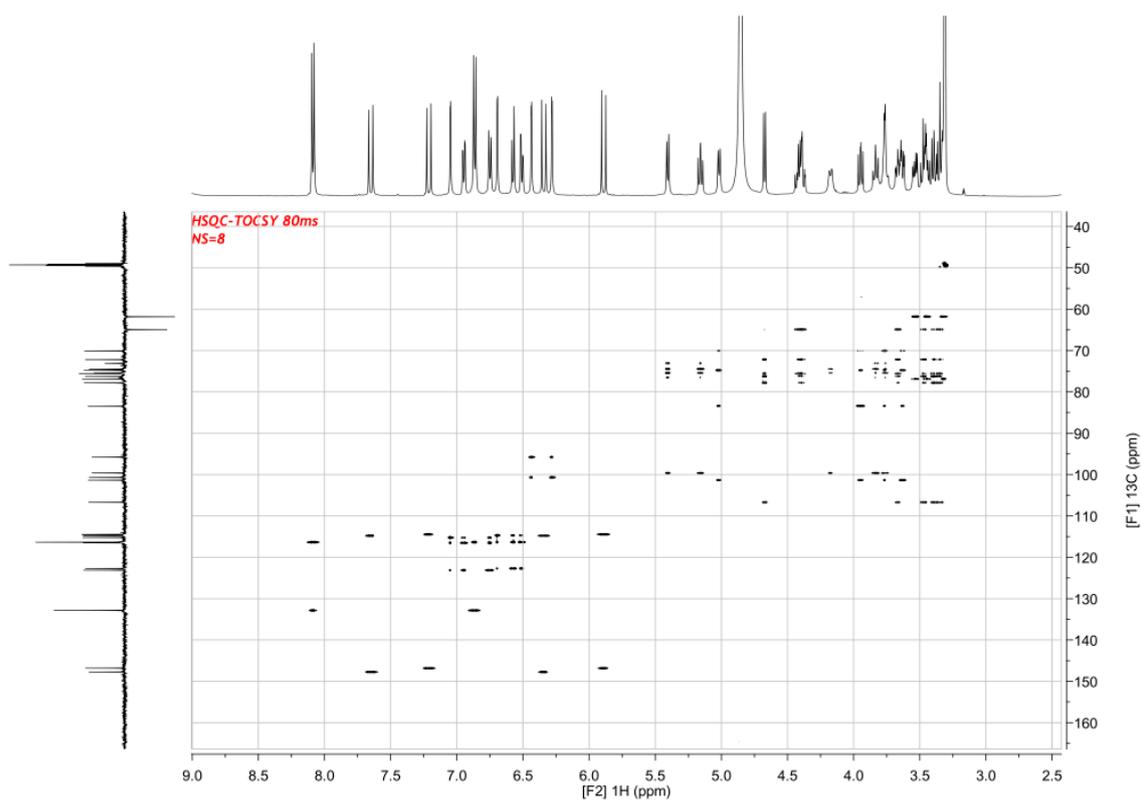


Figure S139. 2D g-HMBC-NMR spectrum of compound **13** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

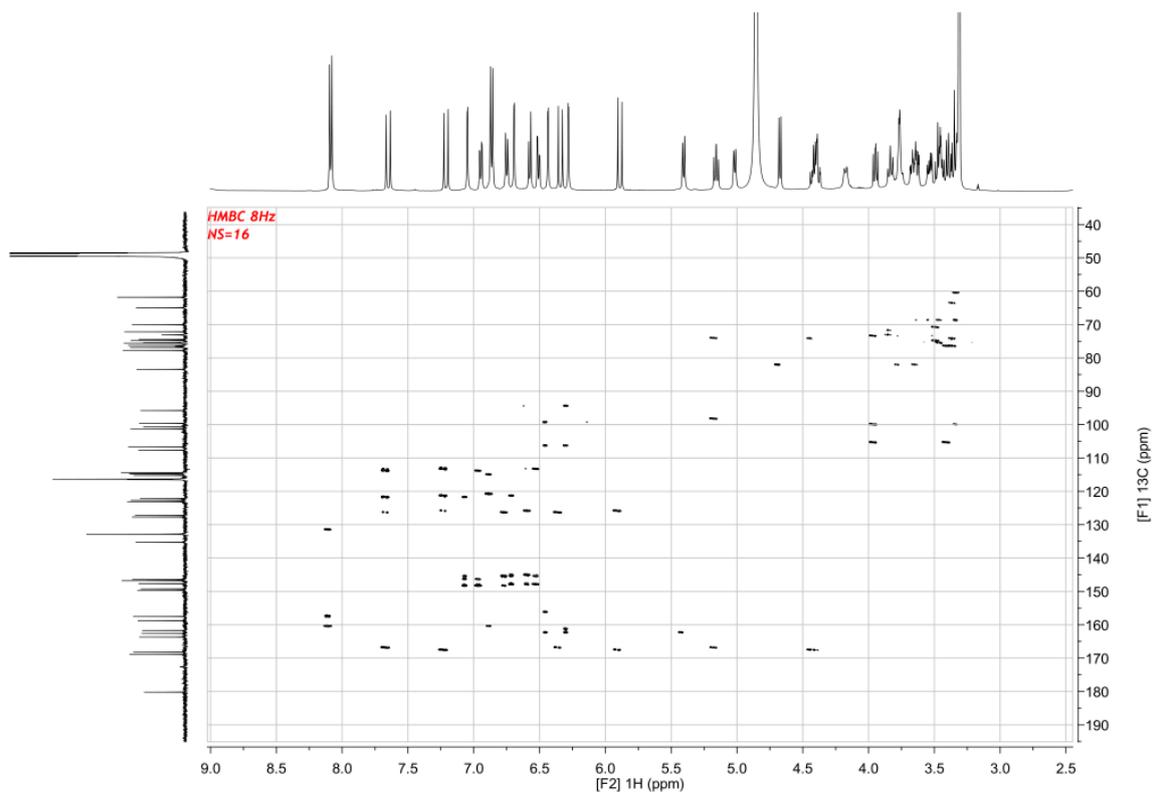


Figure S140. 1D TOCSY and 1D ROESY NMR subspectra of H-1(7-*O*- β -GlcA) in compound **13** (methanol- d_4 , 500.18 MHz).

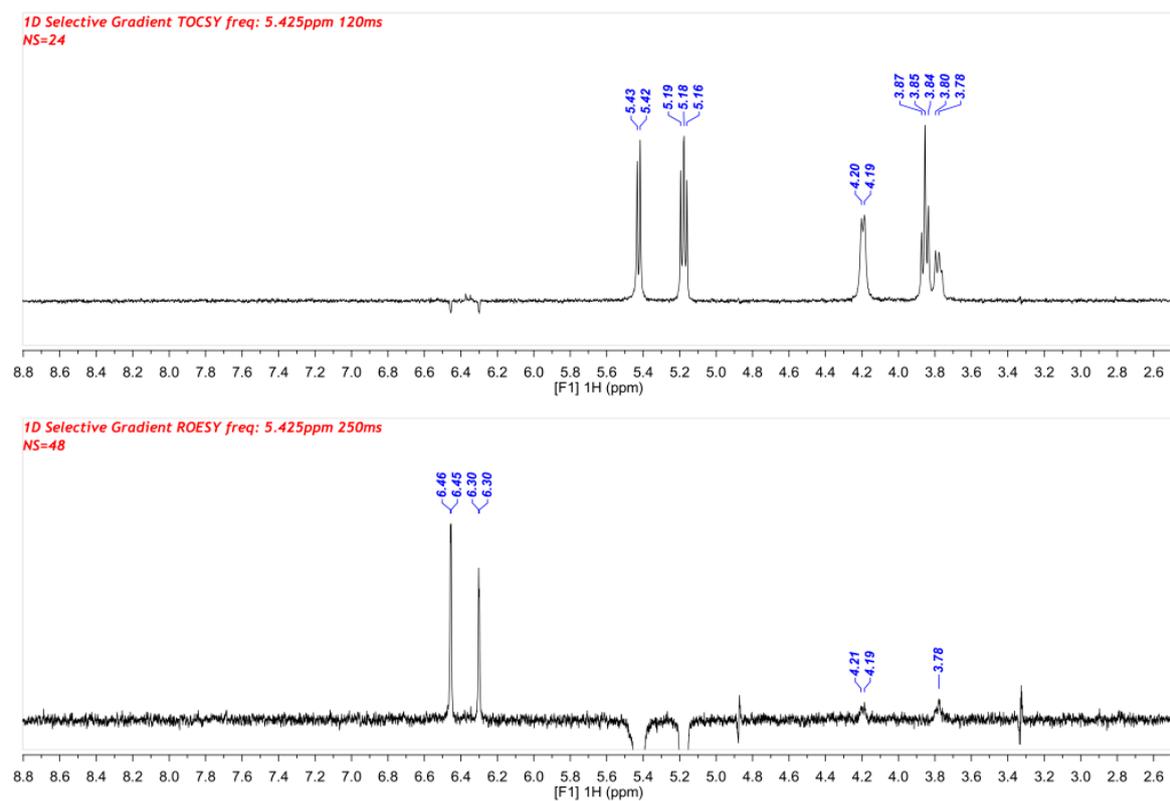


Figure S141. 1D TOCSY and 1D ROESY NMR subspectra of H-1(3-*O*-β-Gal) in compound **13** (methanol-*d*₄, 500.18 MHz).

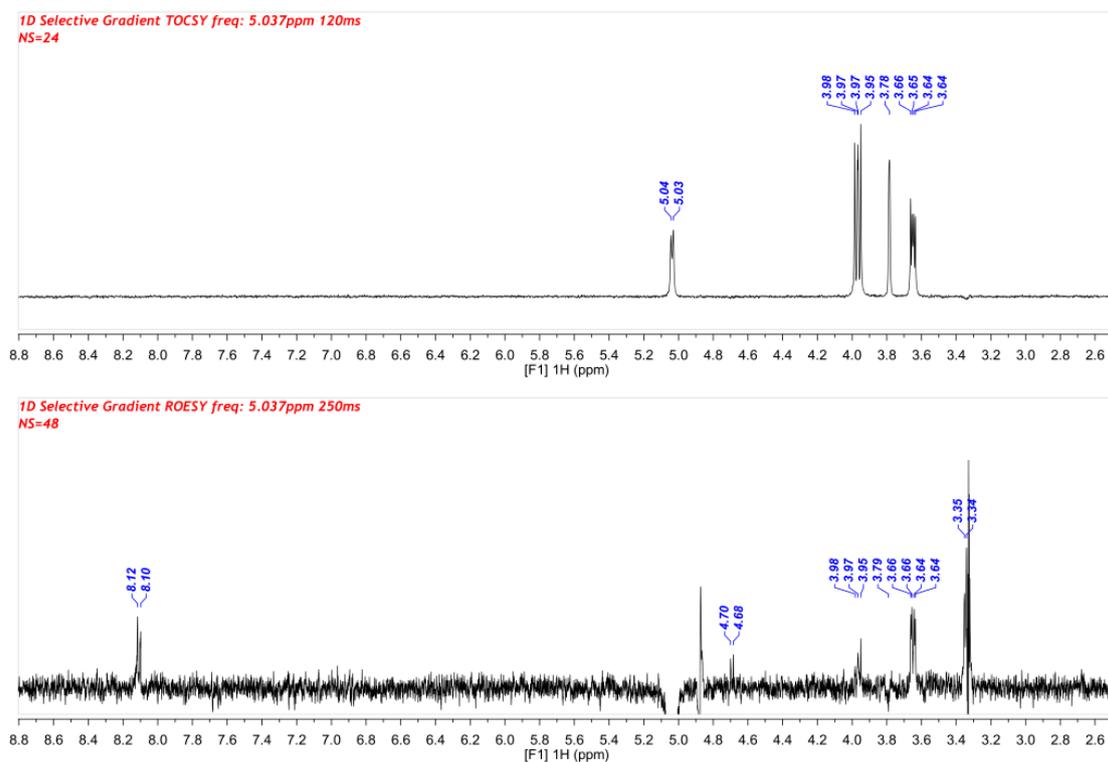
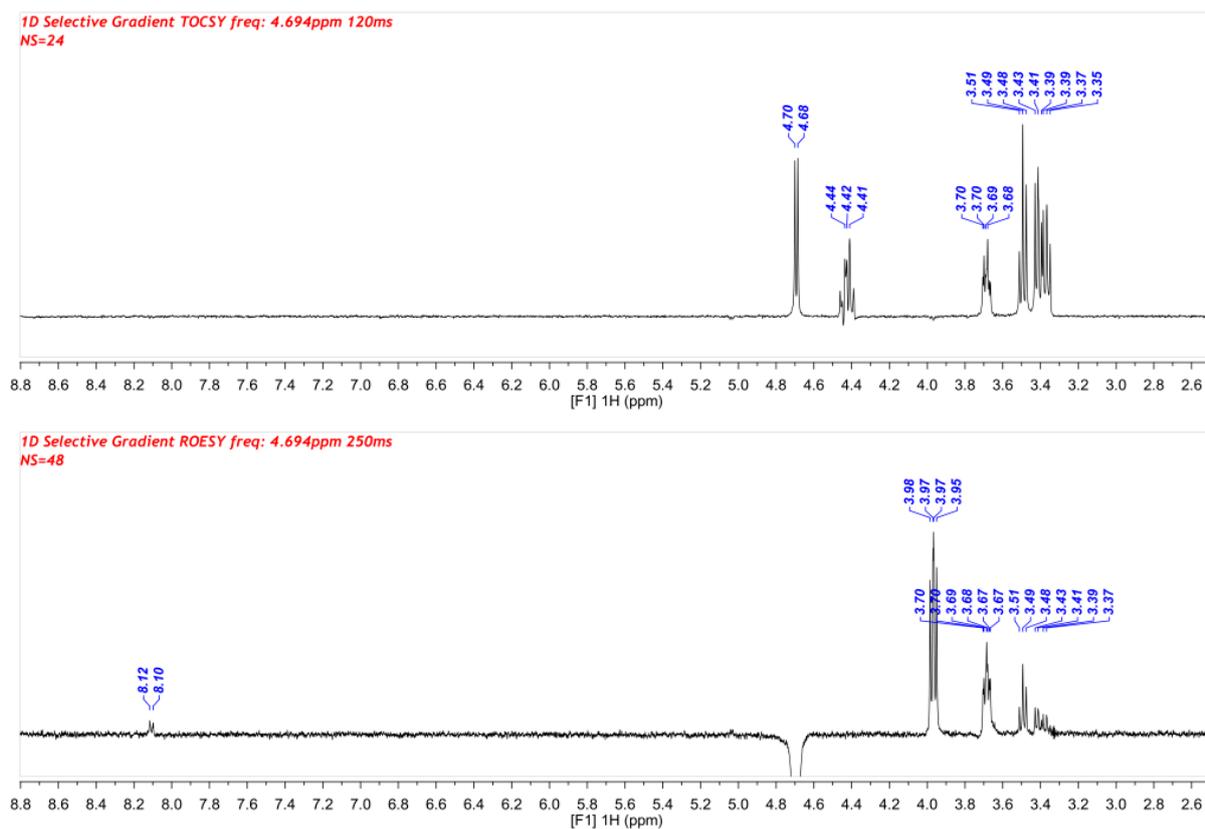


Figure S142. 1D TOCSY and 1D ROESY NMR subspectra of H-1(2^{Gal}-*O*-β-Glc) in compound **13** (methanol-*d*₄, 500.18 MHz).



Compound 14

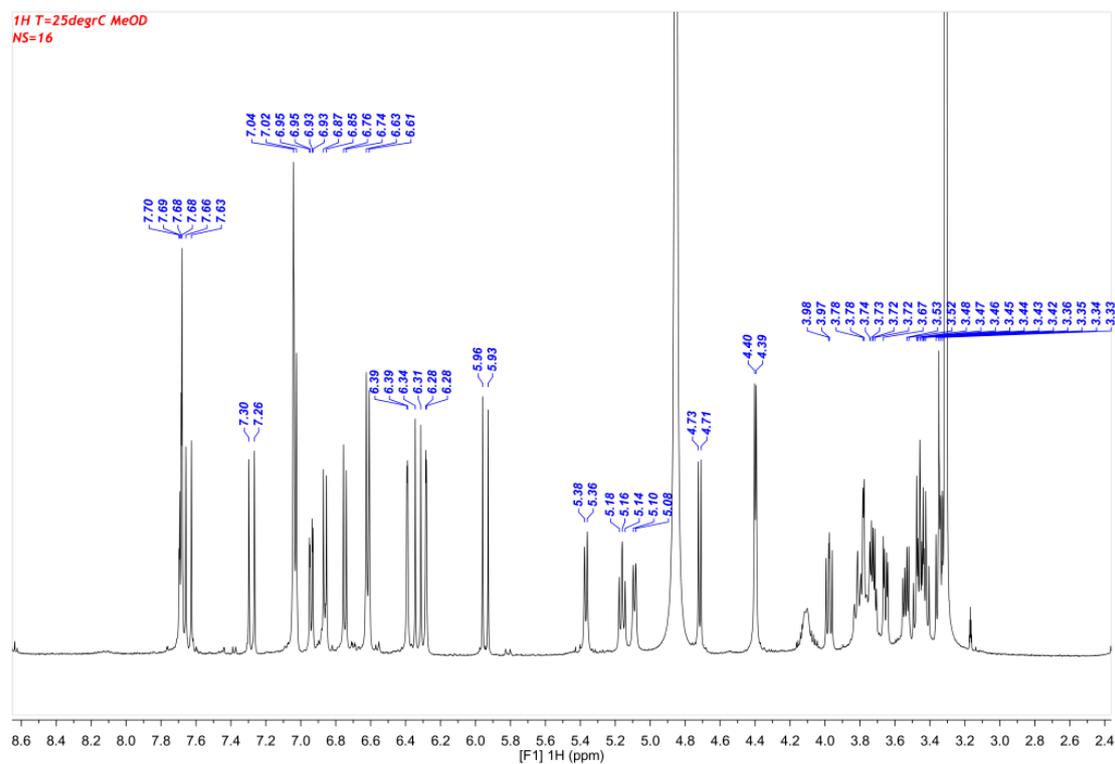
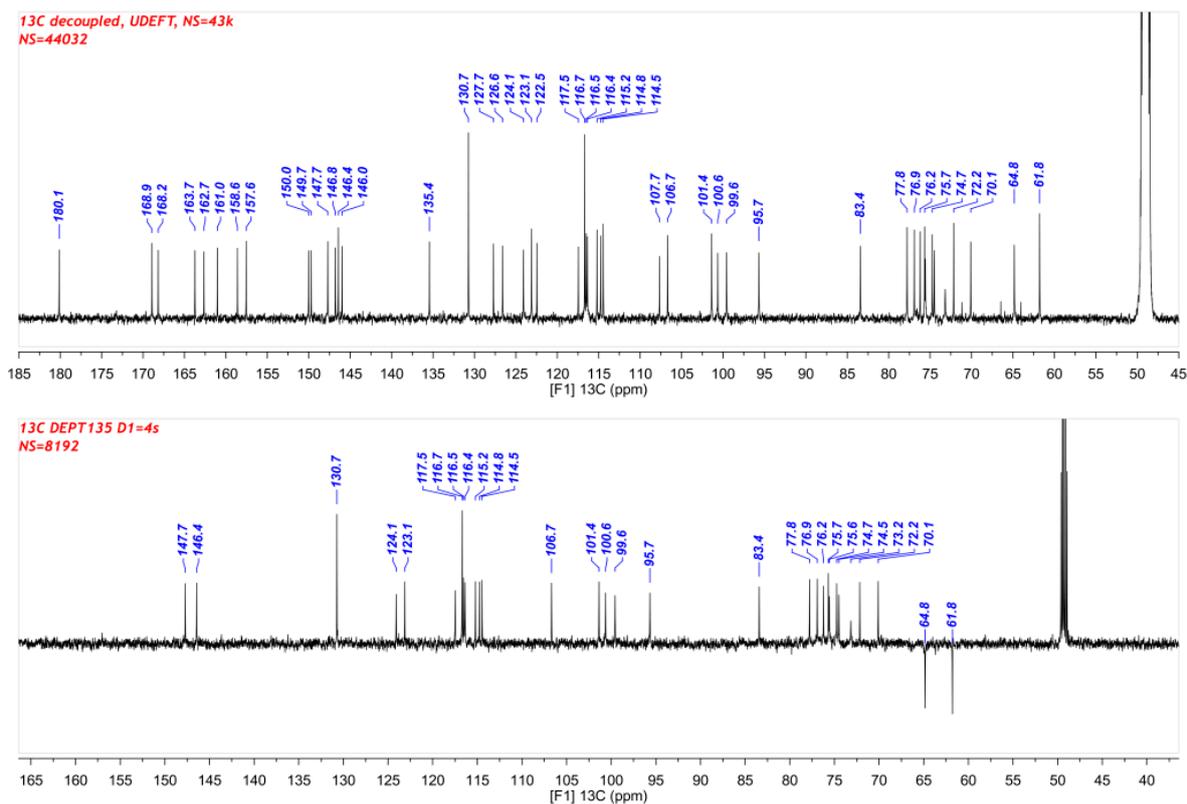
Figure S143. 1D ^1H -NMR spectrum of compound **14** (methanol- d_4 , 500.18 MHz).Figure S144. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **14** (methanol- d_4 , 125.77 MHz).

Figure S145. 2D g-COSY NMR spectrum of compound **14** (methanol- d_4 , 500.18 MHz).

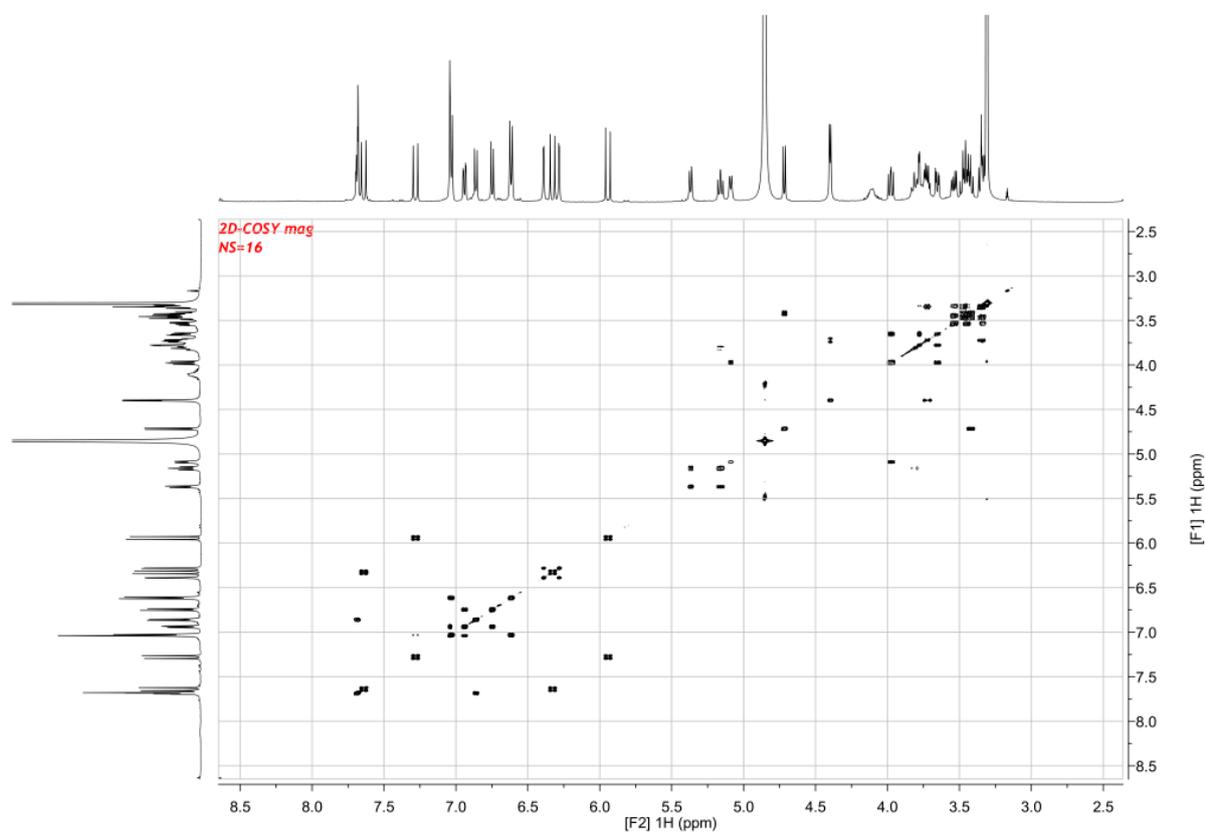


Figure S146. 2D TOCSY NMR spectrum of compound **14** (methanol- d_4 , 500.18 MHz).

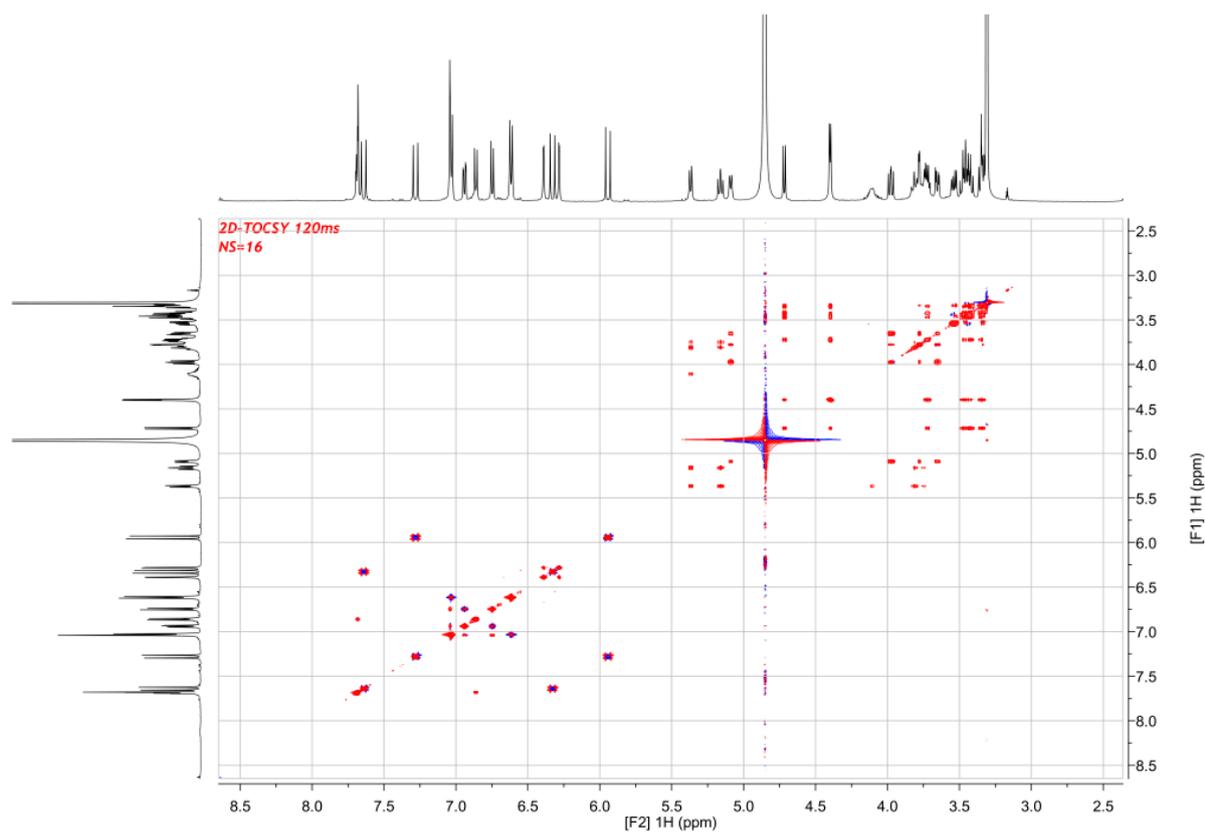


Figure S147. 2D ROESY NMR spectrum of compound **14** (methanol-*d*₄, 500.18 MHz).

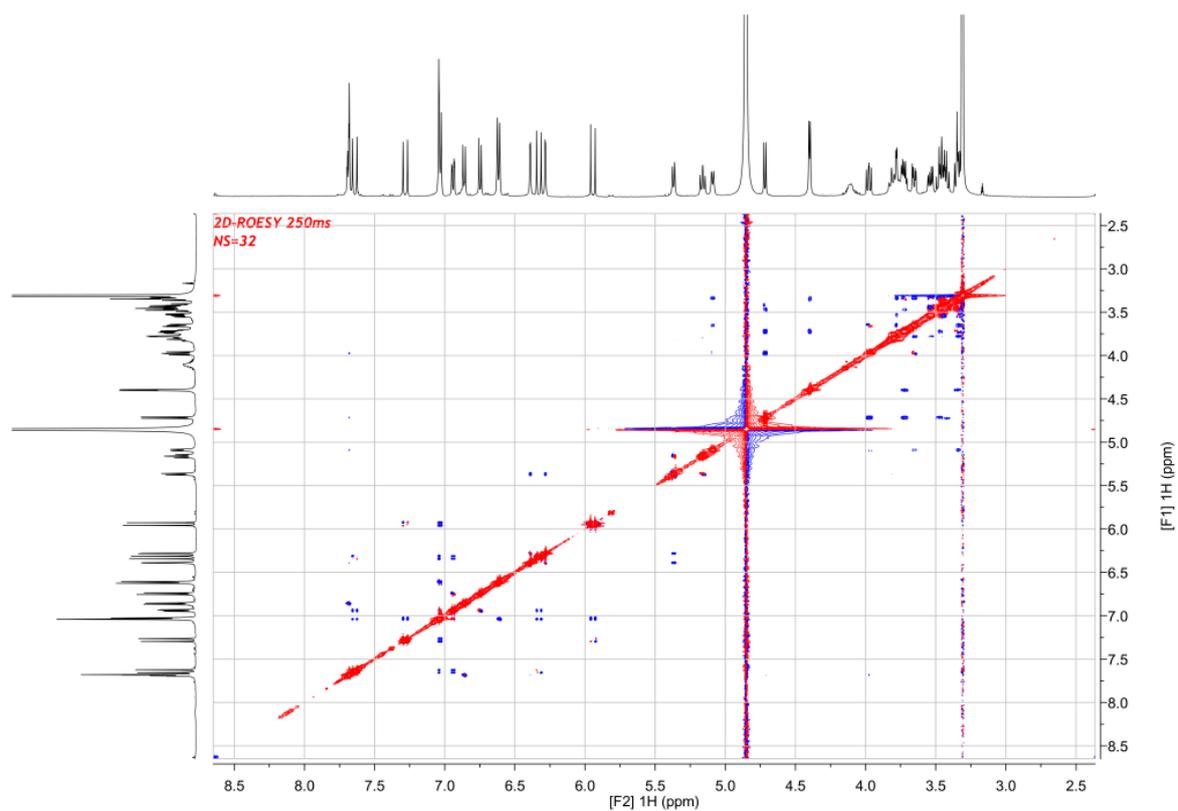


Figure S148. 2D g-HSQC-NMR spectrum of compound **14** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

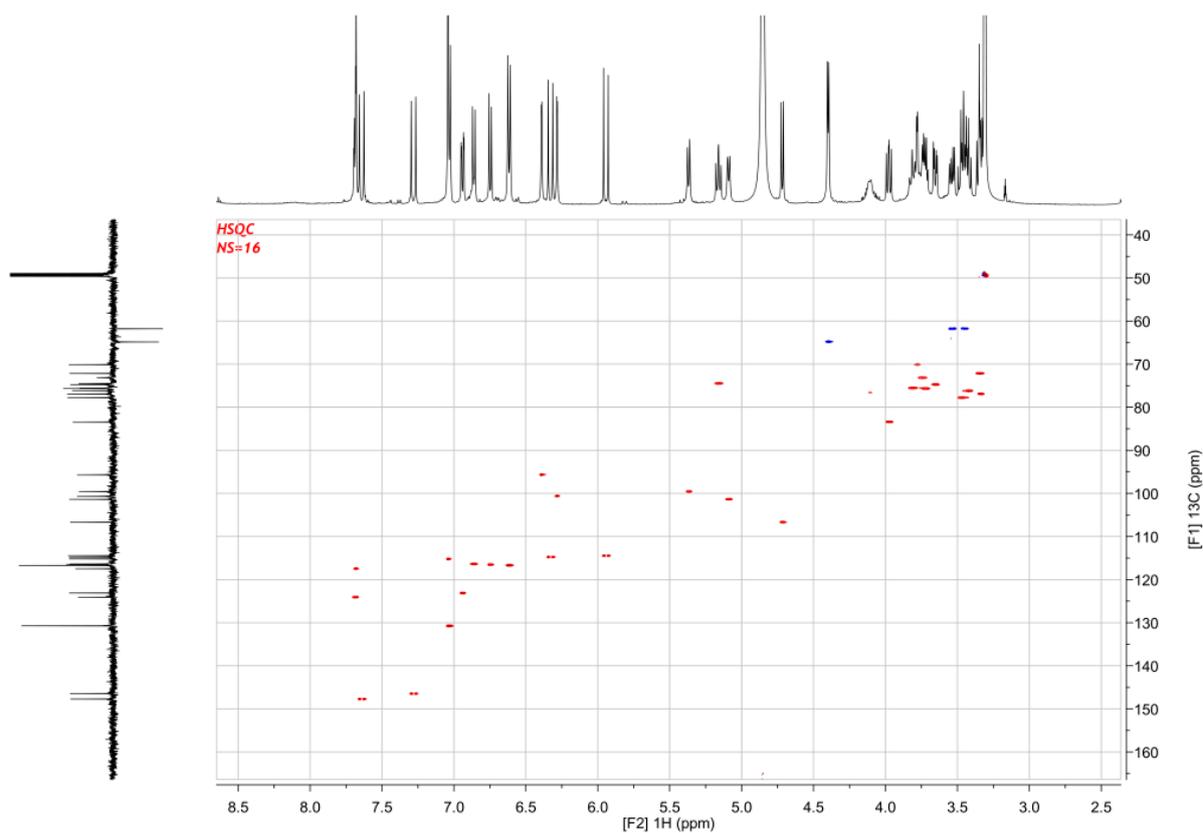


Figure S149. 2D *g*-HSQC-TOCSY NMR spectrum of compound **14** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

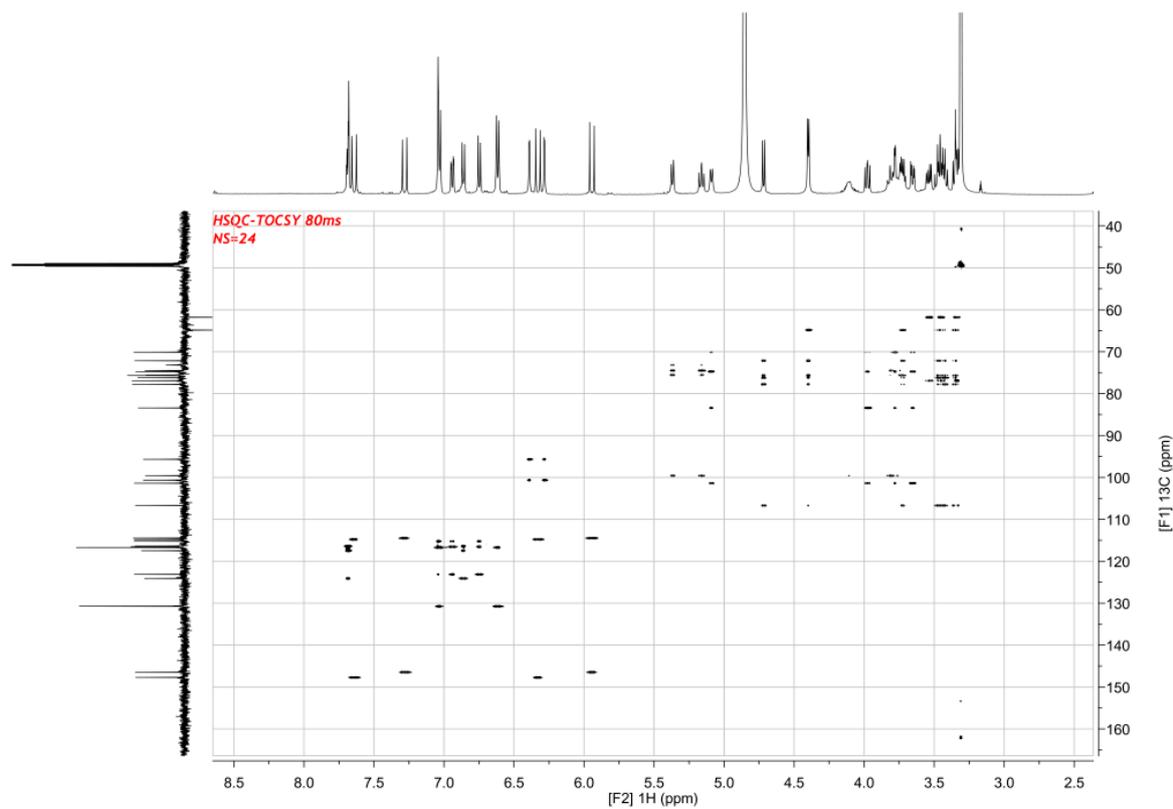


Figure S150. 2D *g*-HMBC-NMR spectrum of compound **14** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

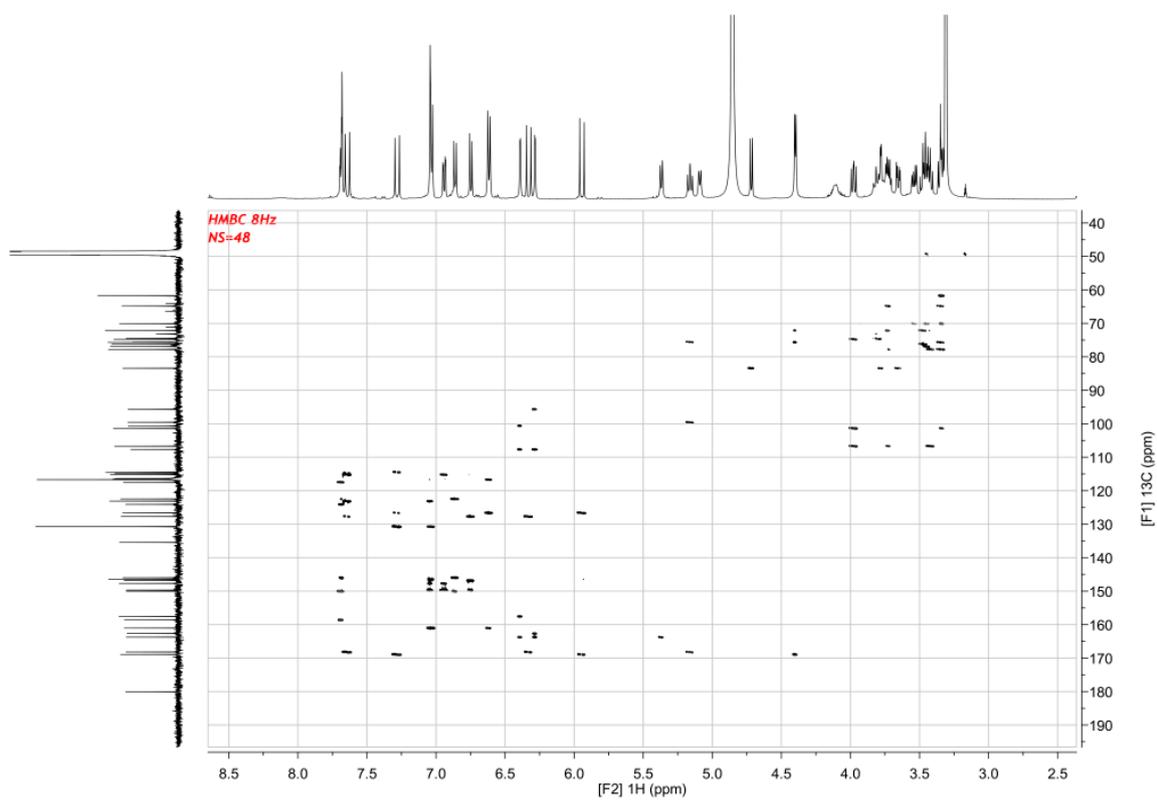


Figure S151. 1D TOCSY and 1D ROESY NMR subspectra of H-1(7-*O*- β -GlcA) in compound **14** (methanol-*d*₄, 500.18 MHz).

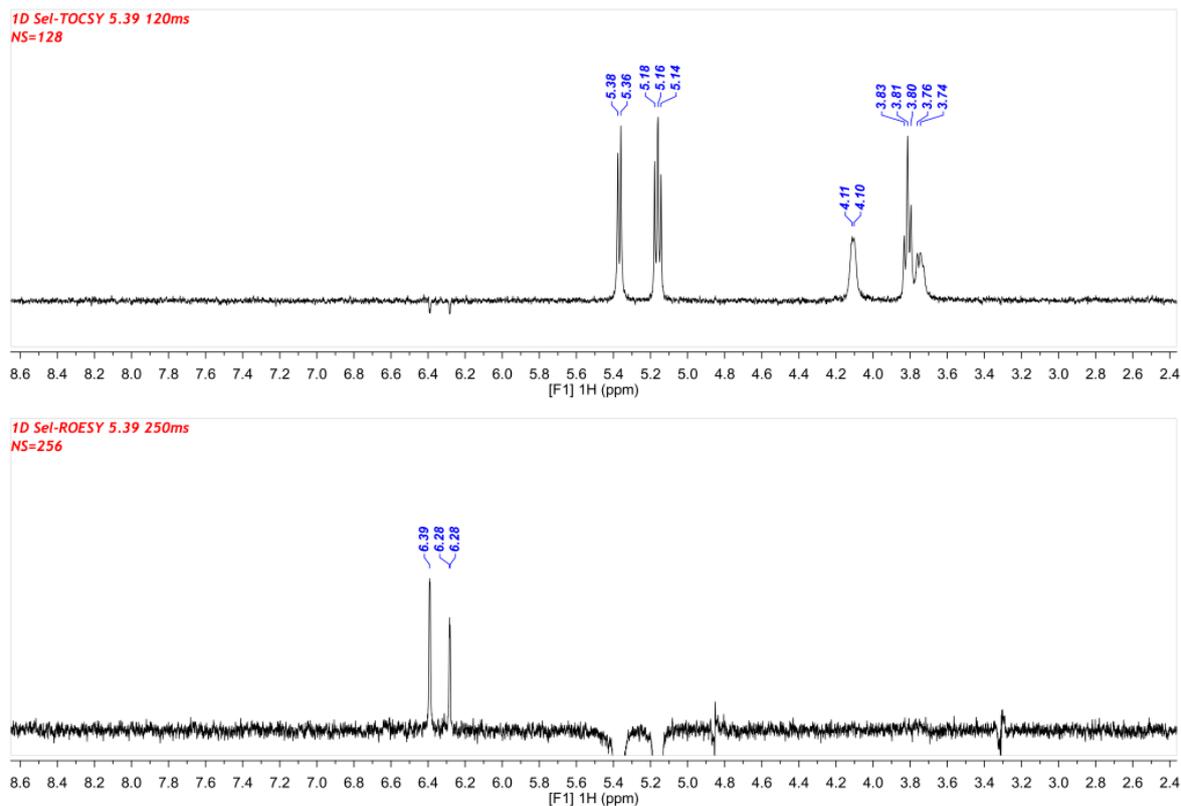


Figure S152. 1D TOCSY and 1D ROESY NMR subspectra of H-1(3-*O*- β -Gal) in compound **14** (methanol-*d*₄, 500.18 MHz).

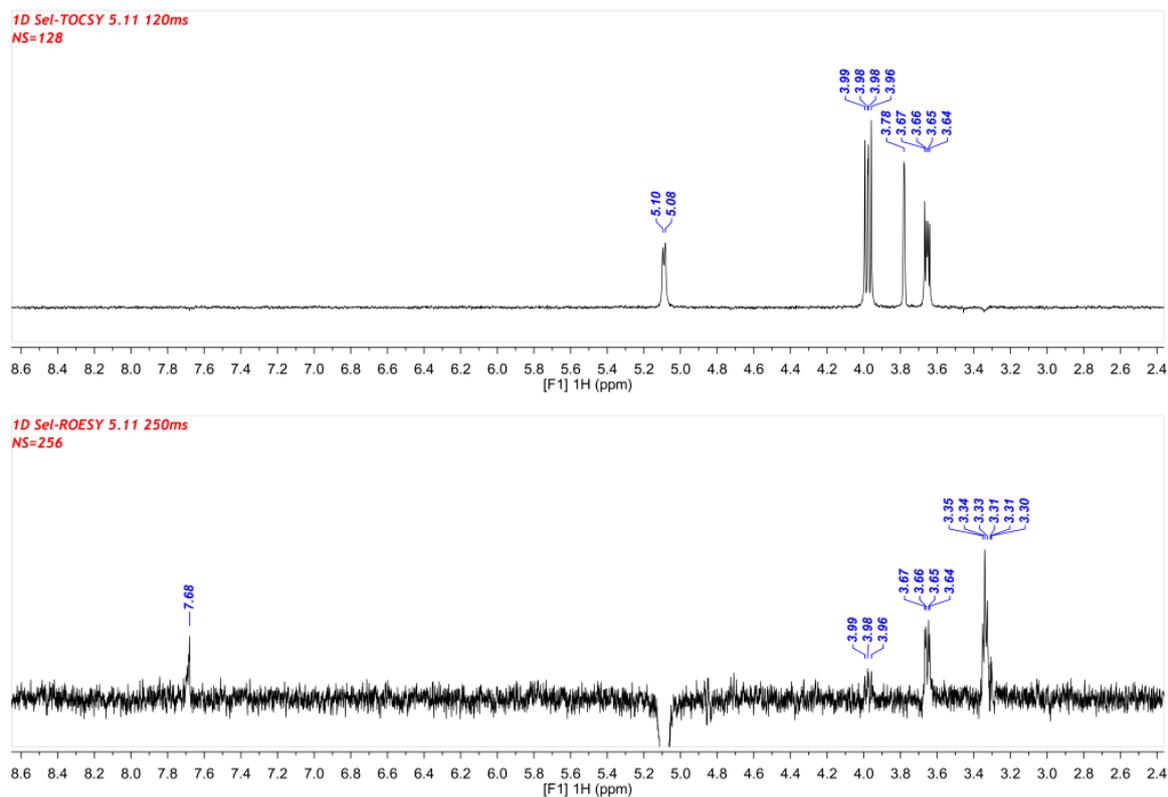
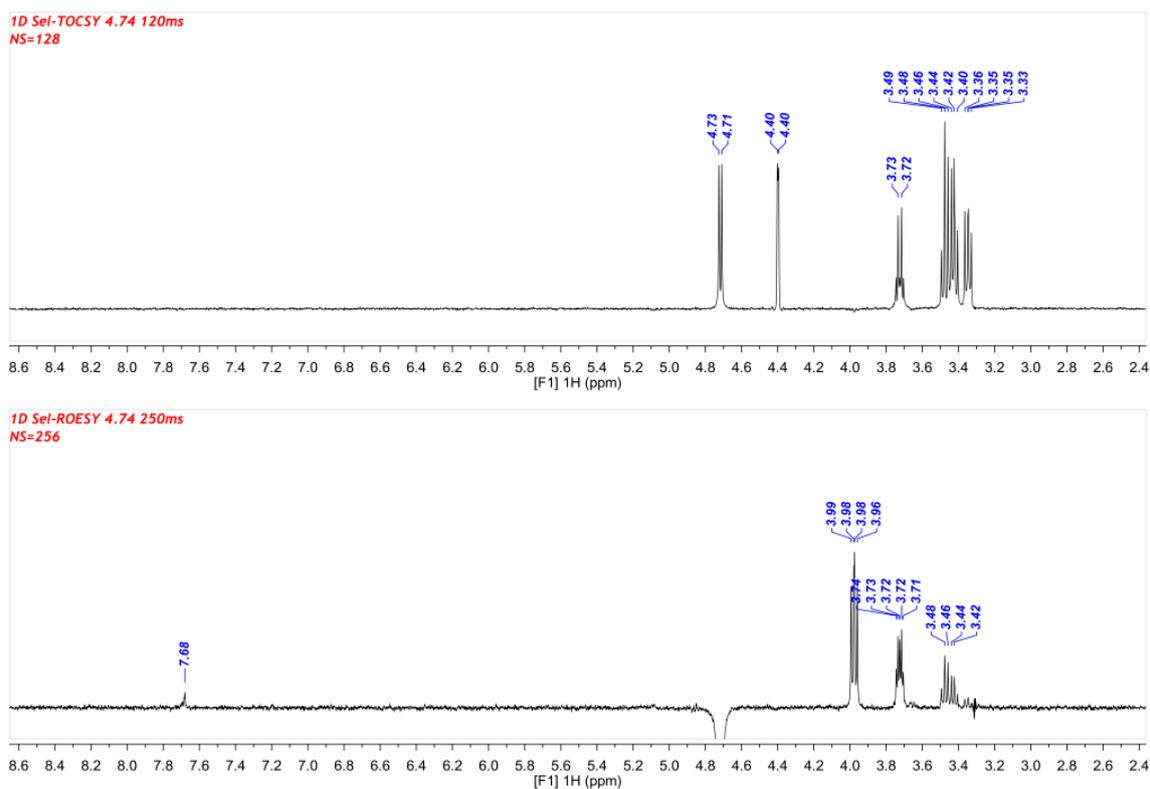


Figure S153. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{\text{Gal}}\text{-O-}\beta\text{-Glc}$) in compound **14** (methanol- d_4 , 500.18 MHz).



Compound 15

Figure S154. 1D $^1\text{H-NMR}$ spectrum of compound **15** (methanol- d_4 , 500.18 MHz).

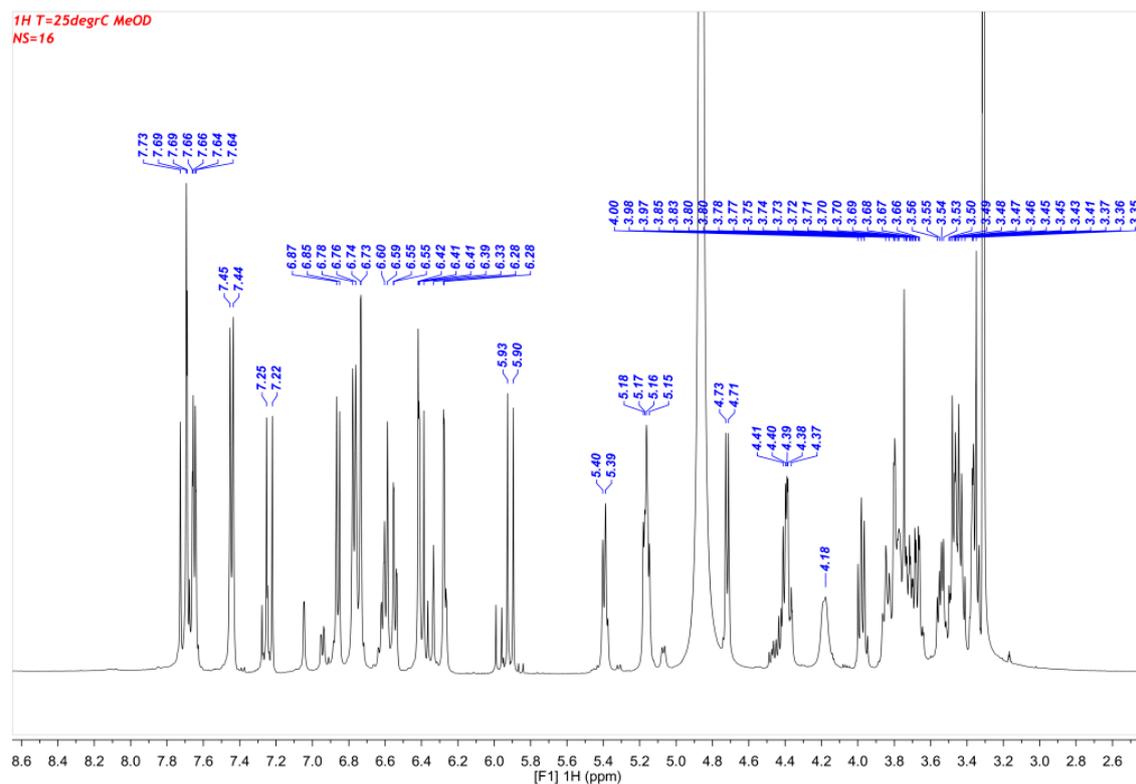


Figure S155. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **15** (methanol- d_4 , 125.77 MHz).

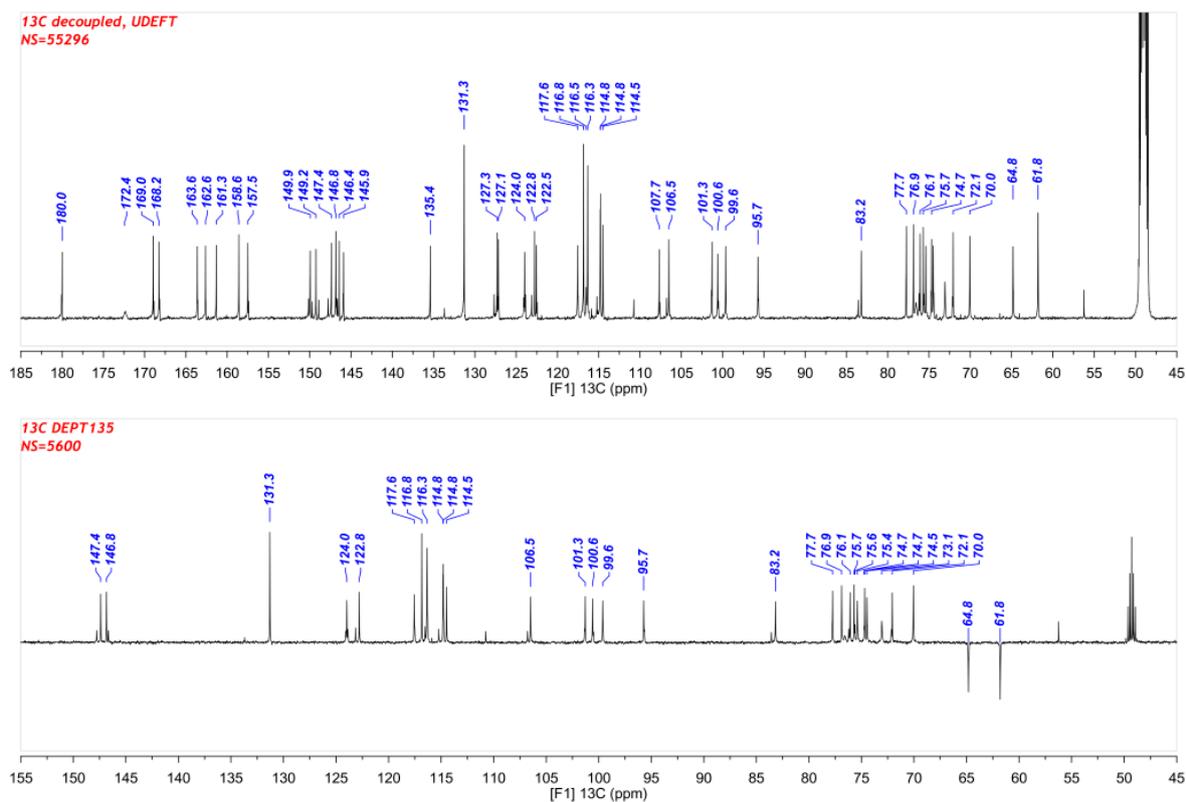


Figure S156. 2D g-COSY NMR spectrum of compound **15** (methanol- d_4 , 500.18 MHz).

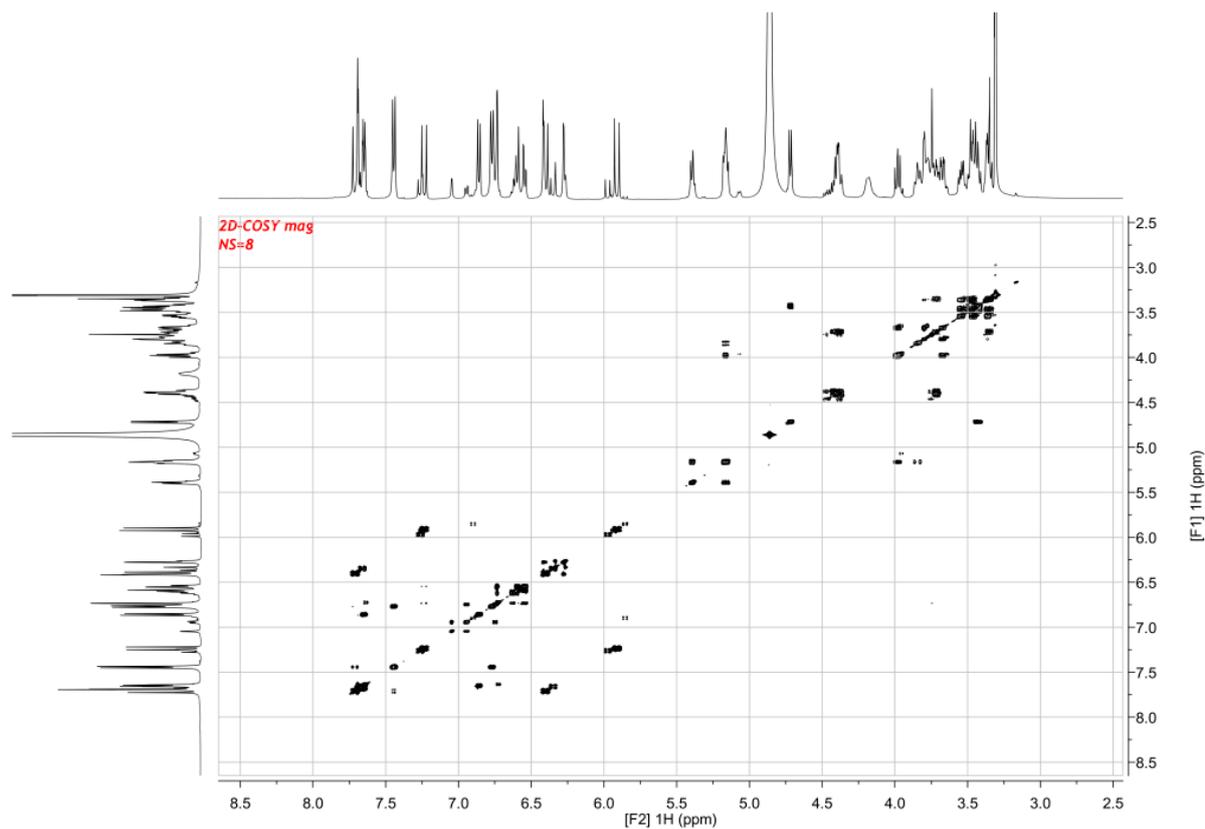


Figure S157. 2D TOCSY NMR spectrum of compound **15** (methanol-*d*₄, 500.18 MHz).

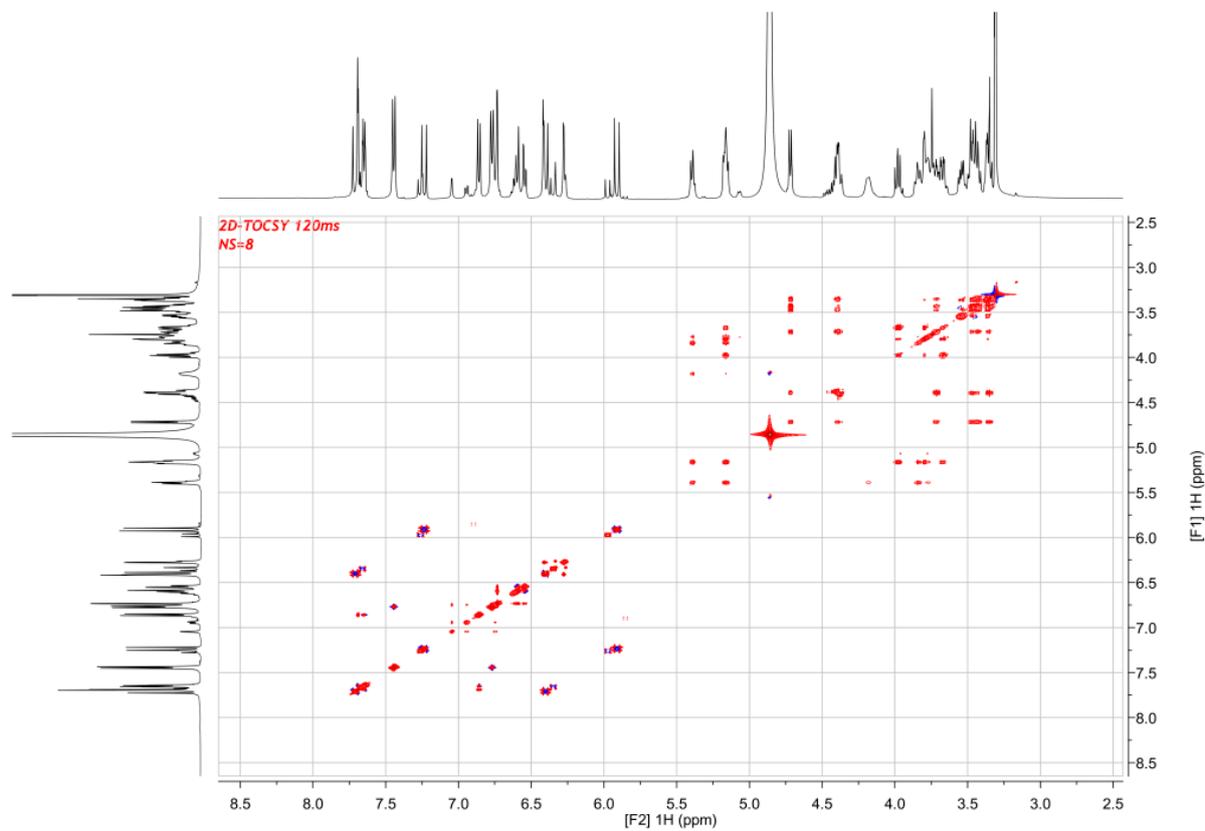


Figure S158. 2D ROESY NMR spectrum of compound **15** (methanol-*d*₄, 500.18 MHz).

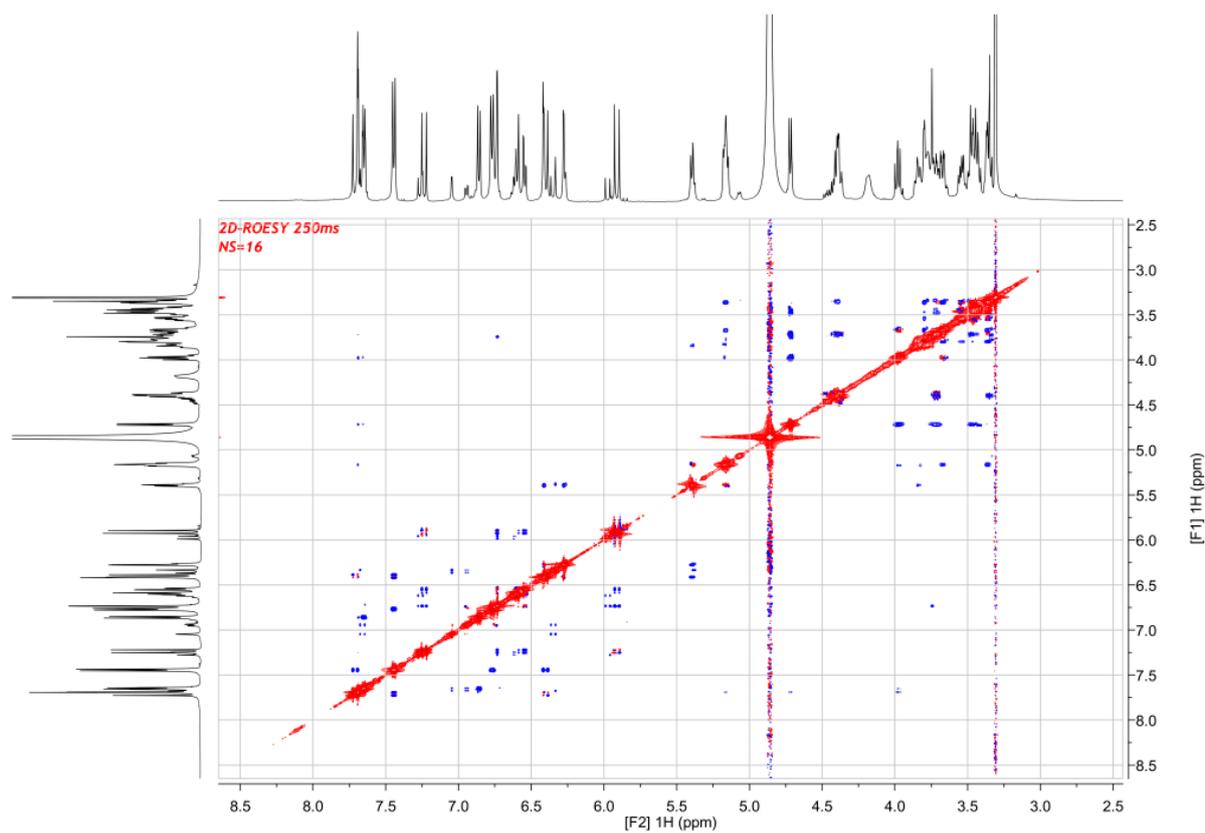


Figure S159. 2D *g*-HSQC-NMR spectrum of compound **15** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

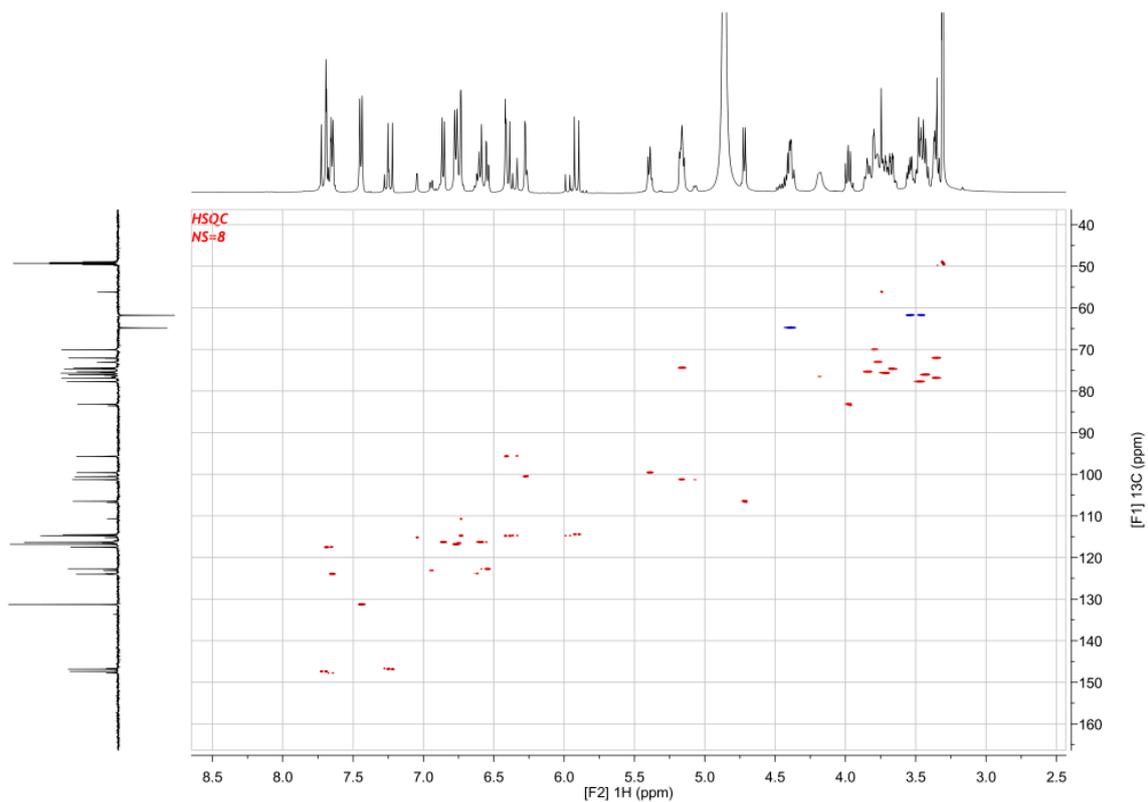


Figure S160. 2D *g*-HSQC-TOCSY NMR spectrum of compound **15** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

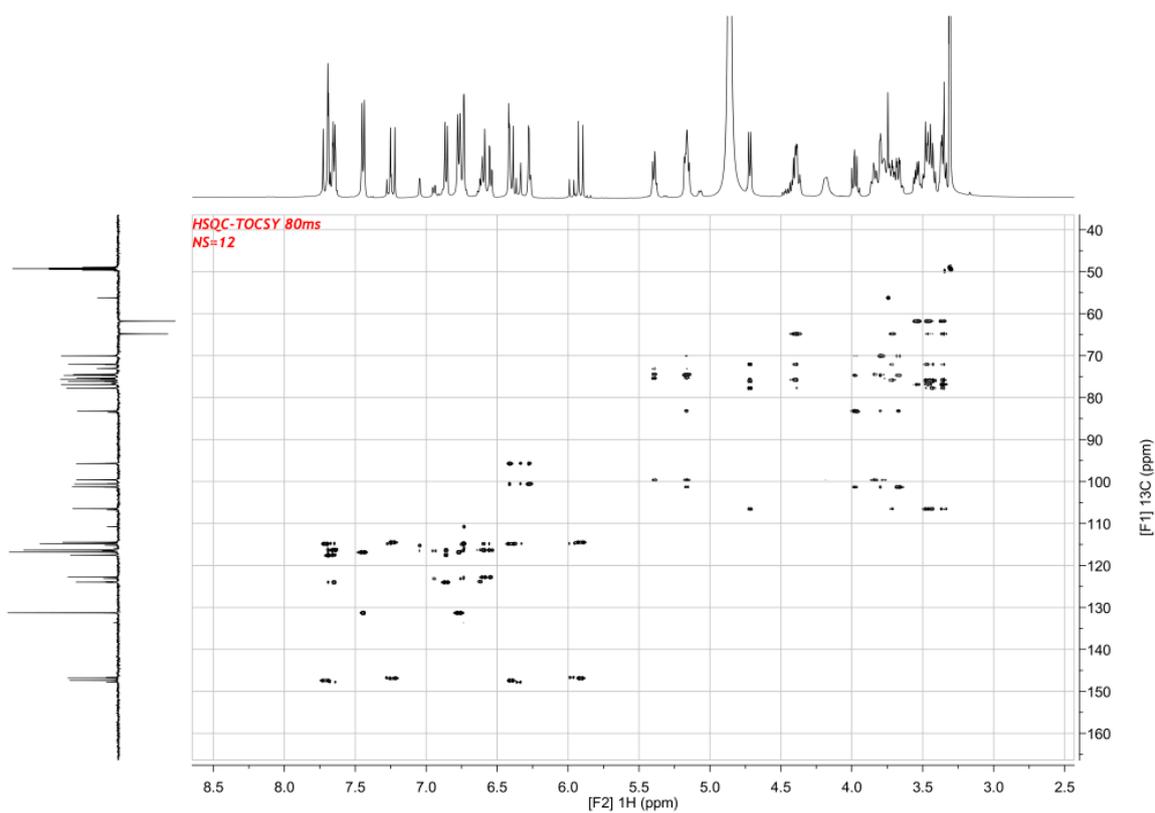


Figure S161. 2D g-HMBC-NMR spectrum of compound **15** (methanol- d_4 , 500.18 MHz, 125.77 MHz).

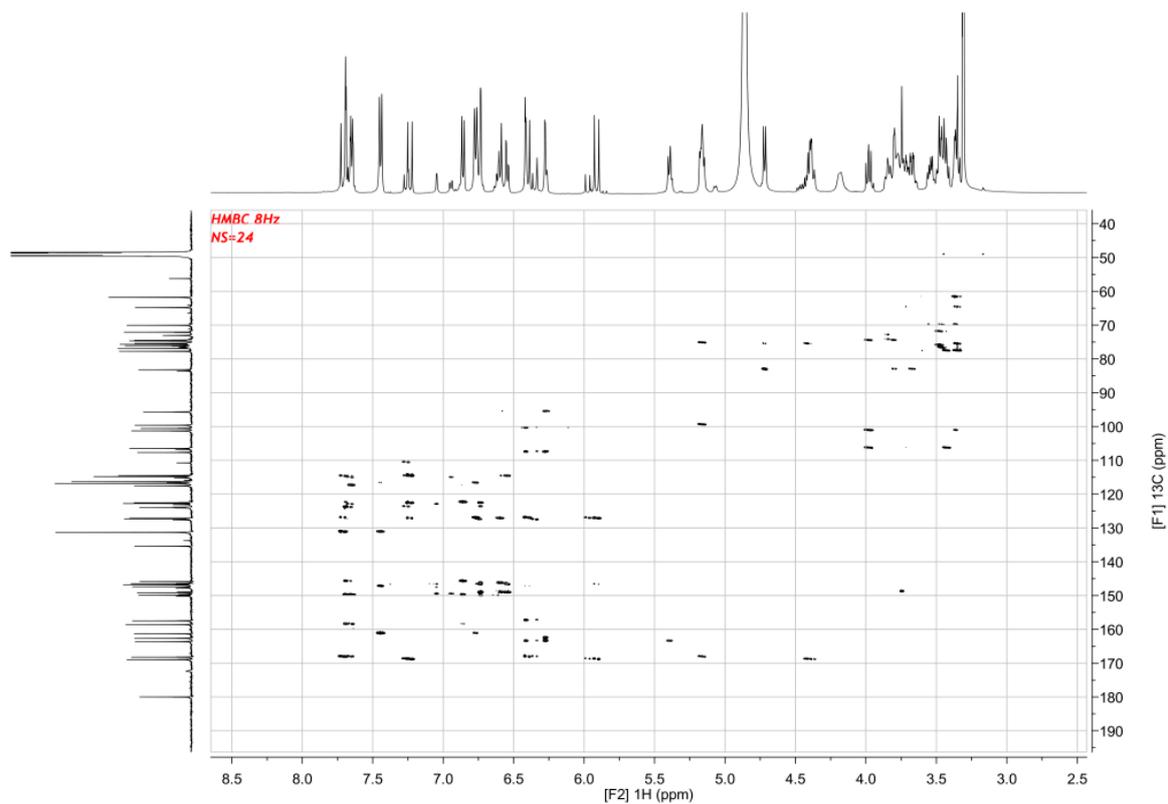


Figure S162. 1D TOCSY and 1D ROESY NMR subspectra of H-1(7-*O*- β -GlcA) in compound **15** (methanol- d_4 , 500.18 MHz).

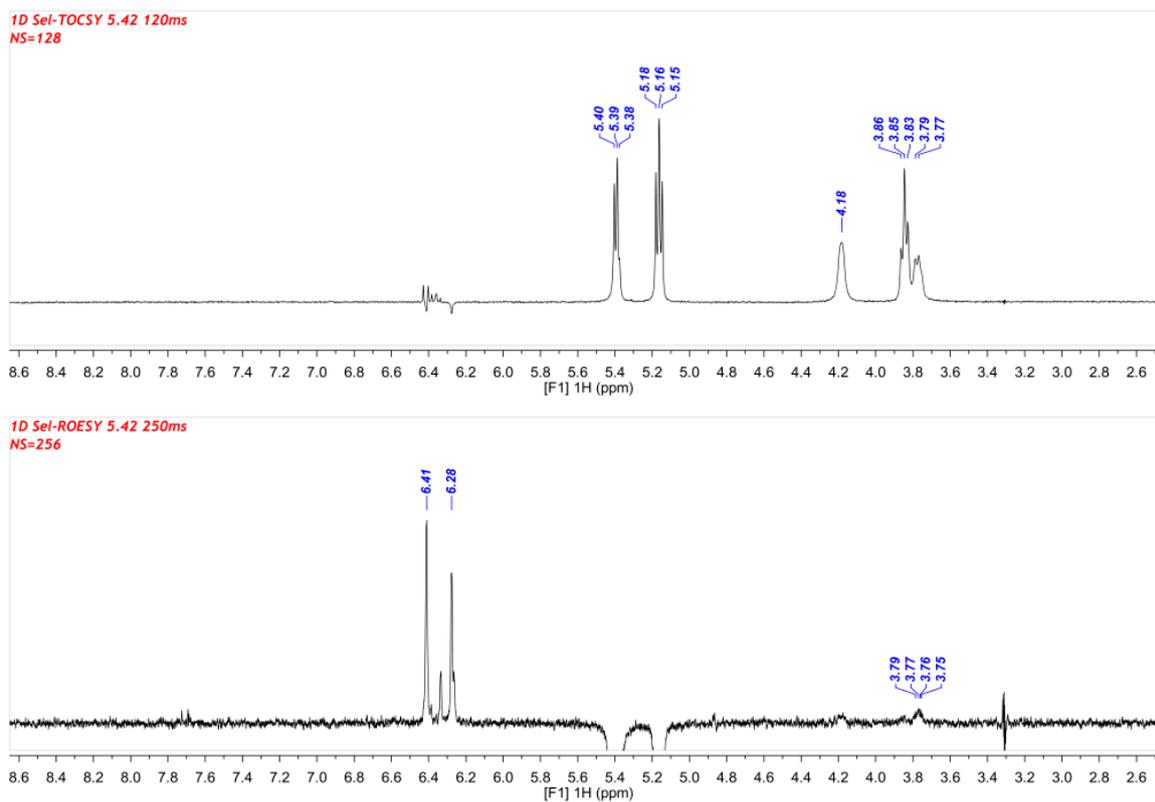


Figure S163. 1D TOCSY NMR subspectrum of H-2(3-*O*- β -Gal) in compound **15** (methanol-*d*₄, 500.18 MHz).

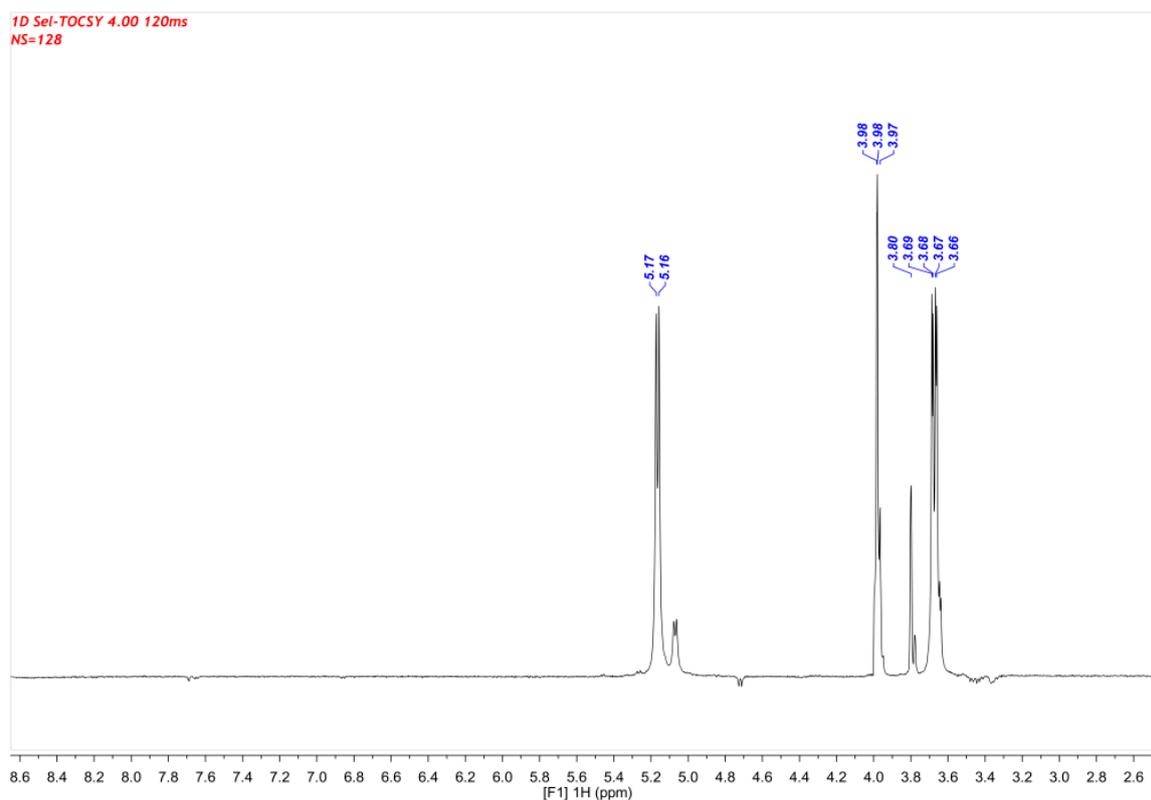
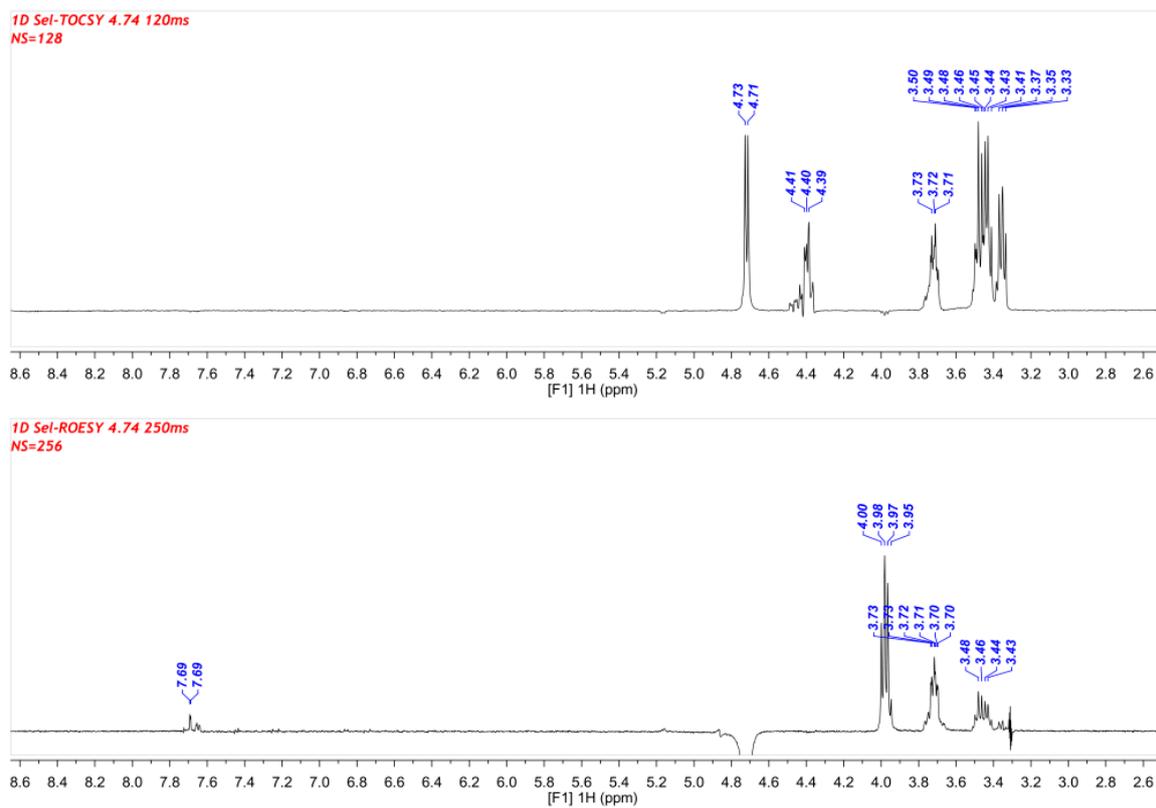


Figure S164. 1D TOCSY and 1D ROESY NMR subspectra of H-1(2^{Gal}-*O*- β -Glc) in compound **15** (methanol-*d*₄, 500.18 MHz).



Compound 16

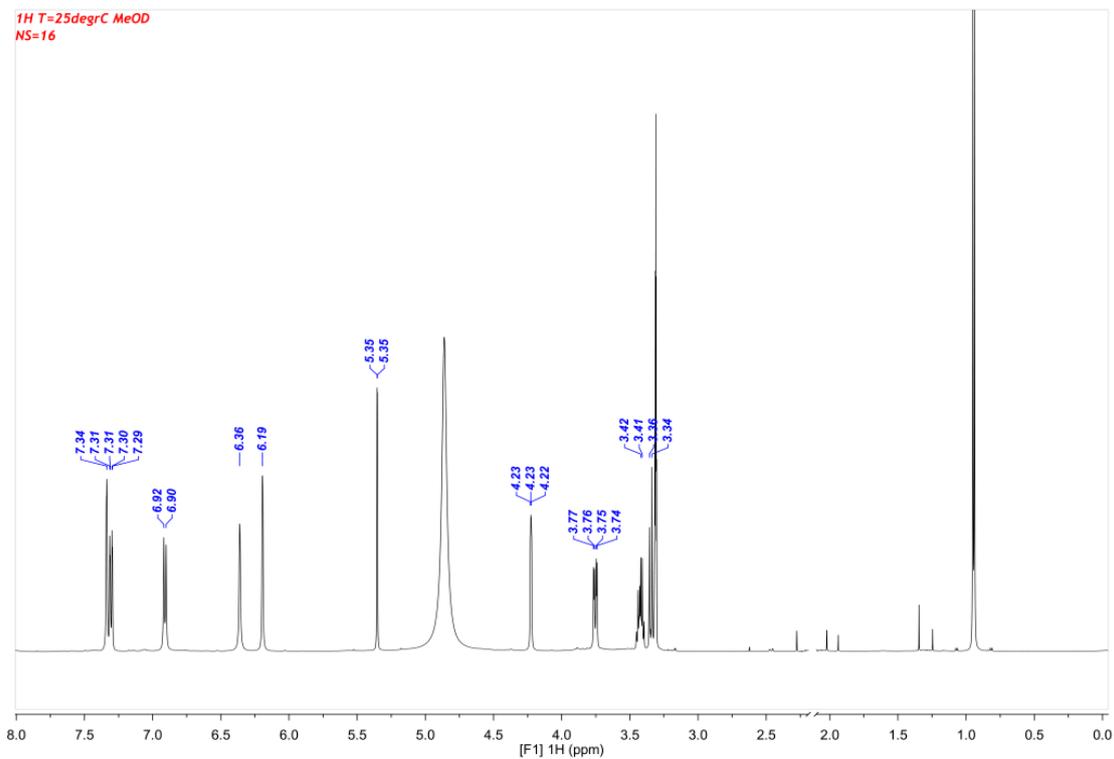
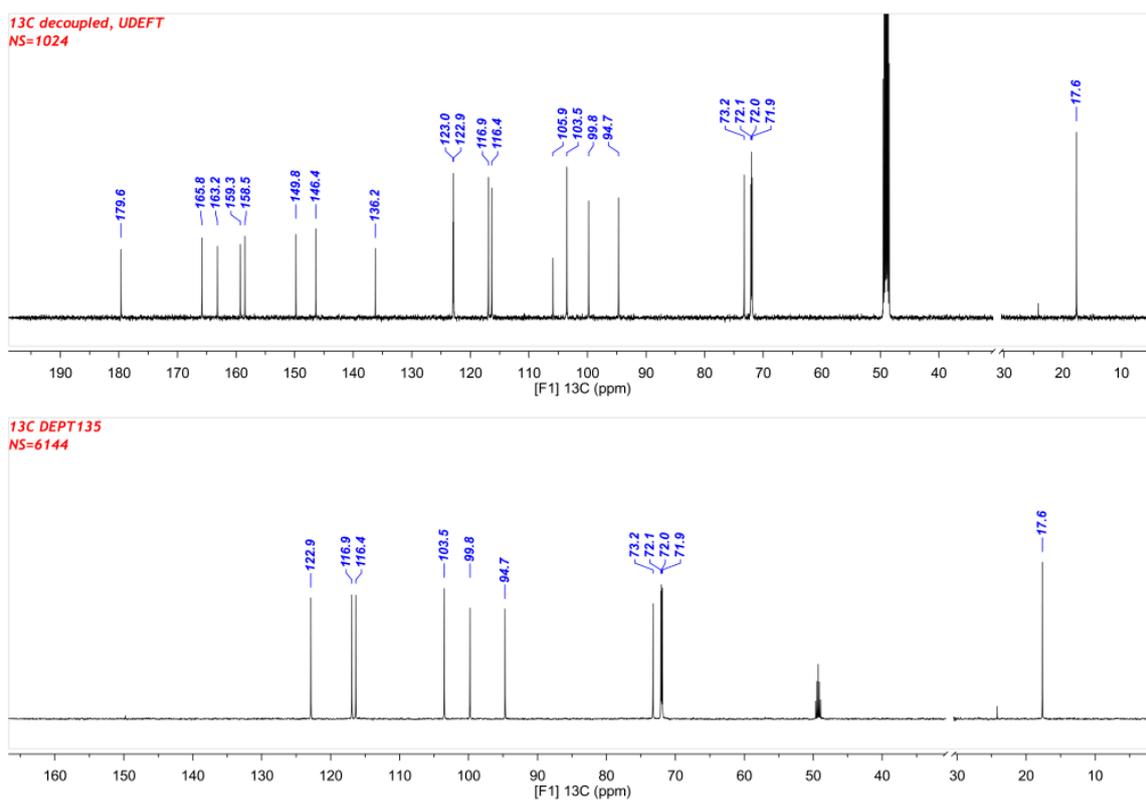
Figure S165. 1D ^1H -NMR spectrum of compound 16 (methanol- d_4 , 500.18 MHz).Figure S166. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound 16 (methanol- d_4 , 125.77 MHz).

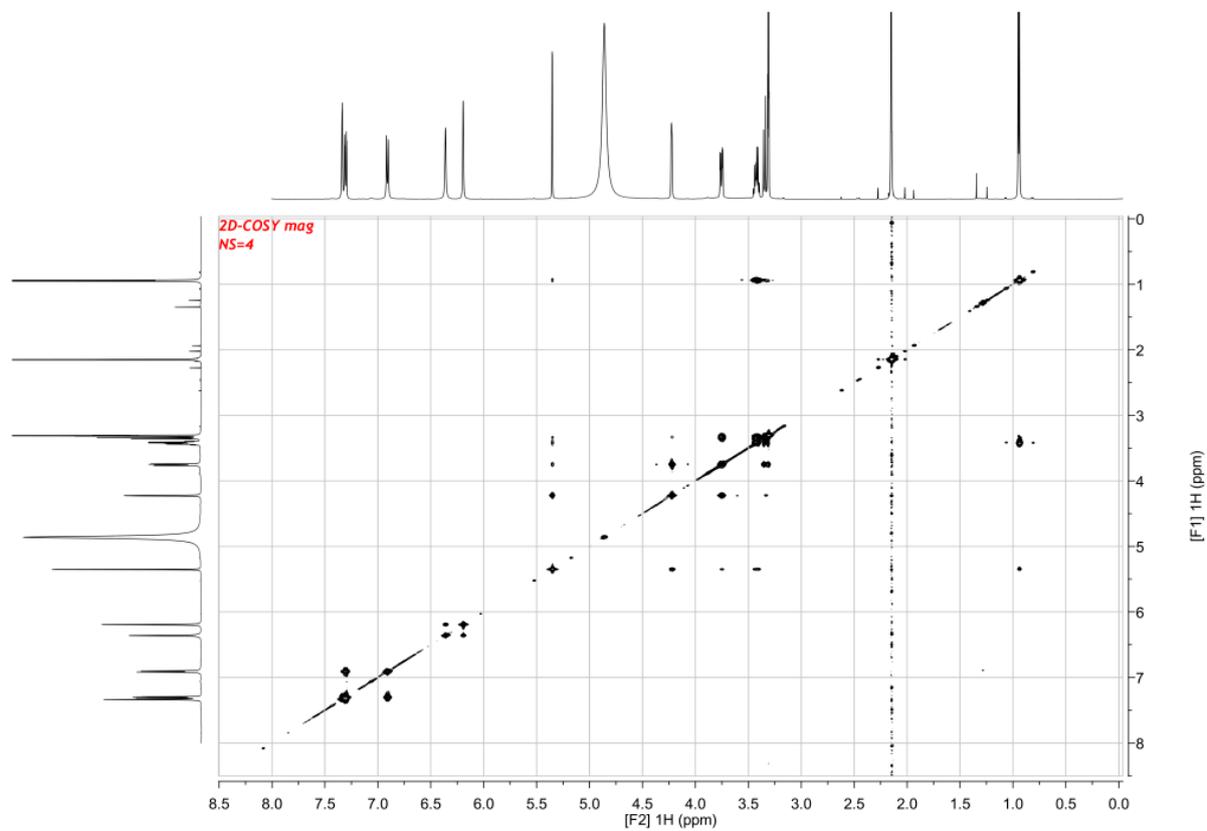
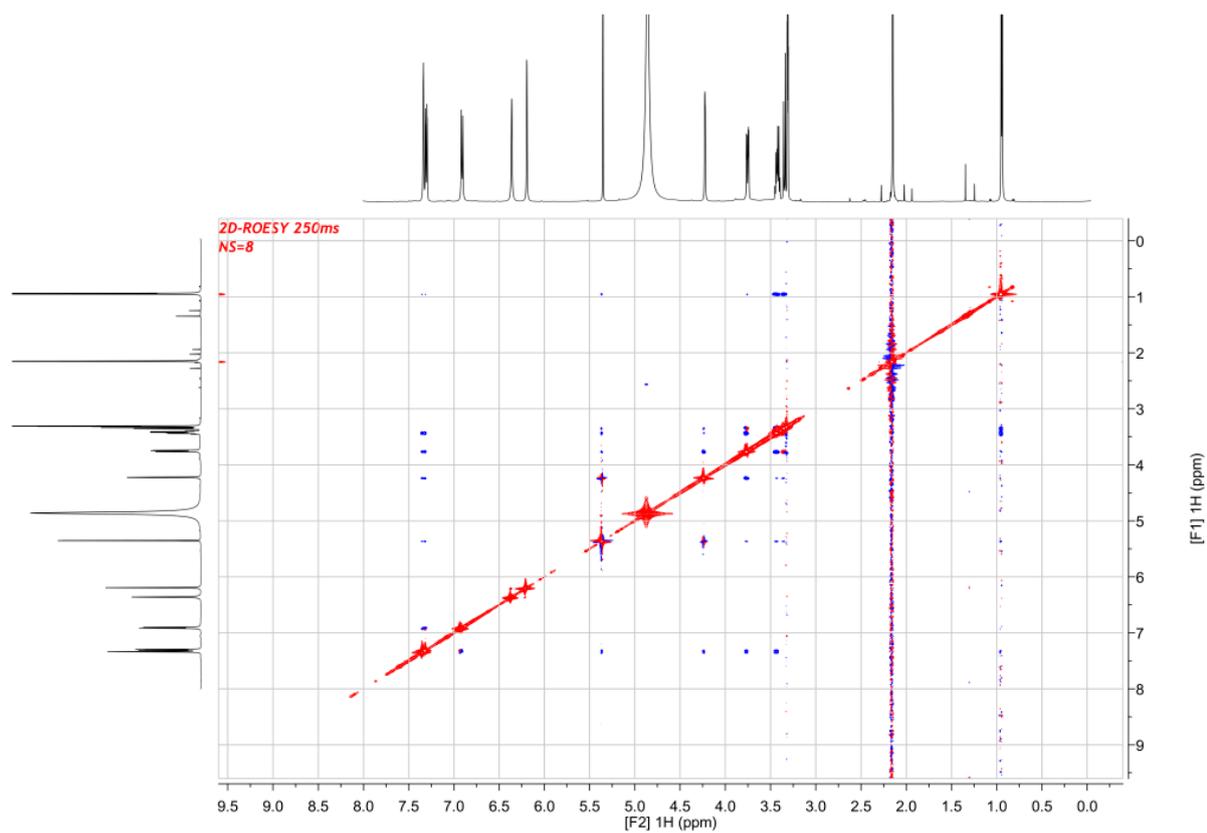
Figure S167. 2D g-COSY NMR spectrum of compound **16** (methanol-*d*₄, 500.18 MHz).**Figure S168.** 2D ROESY NMR spectrum of compound **16** (methanol-*d*₄, 500.18 MHz).

Figure S169. 2D *g*-HSQC-NMR spectrum of compound **16** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

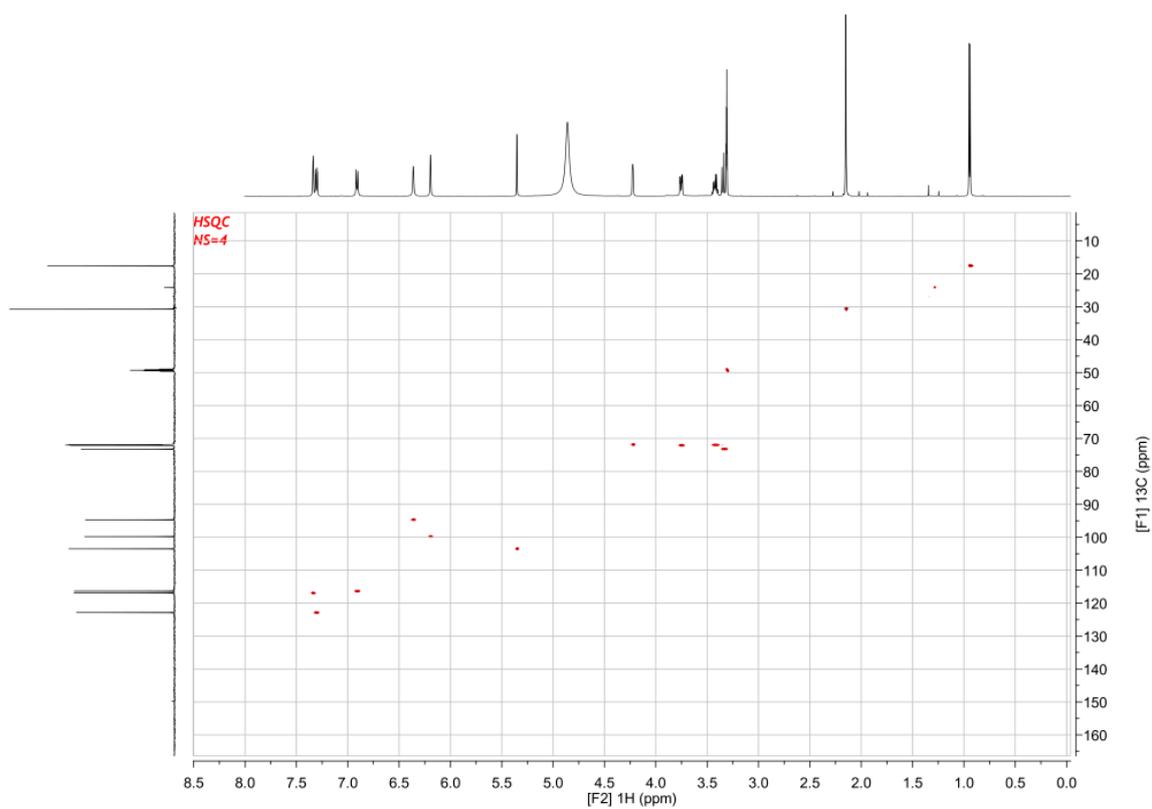


Figure S170. 2D *g*-HMBC-NMR spectrum of compound **16** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

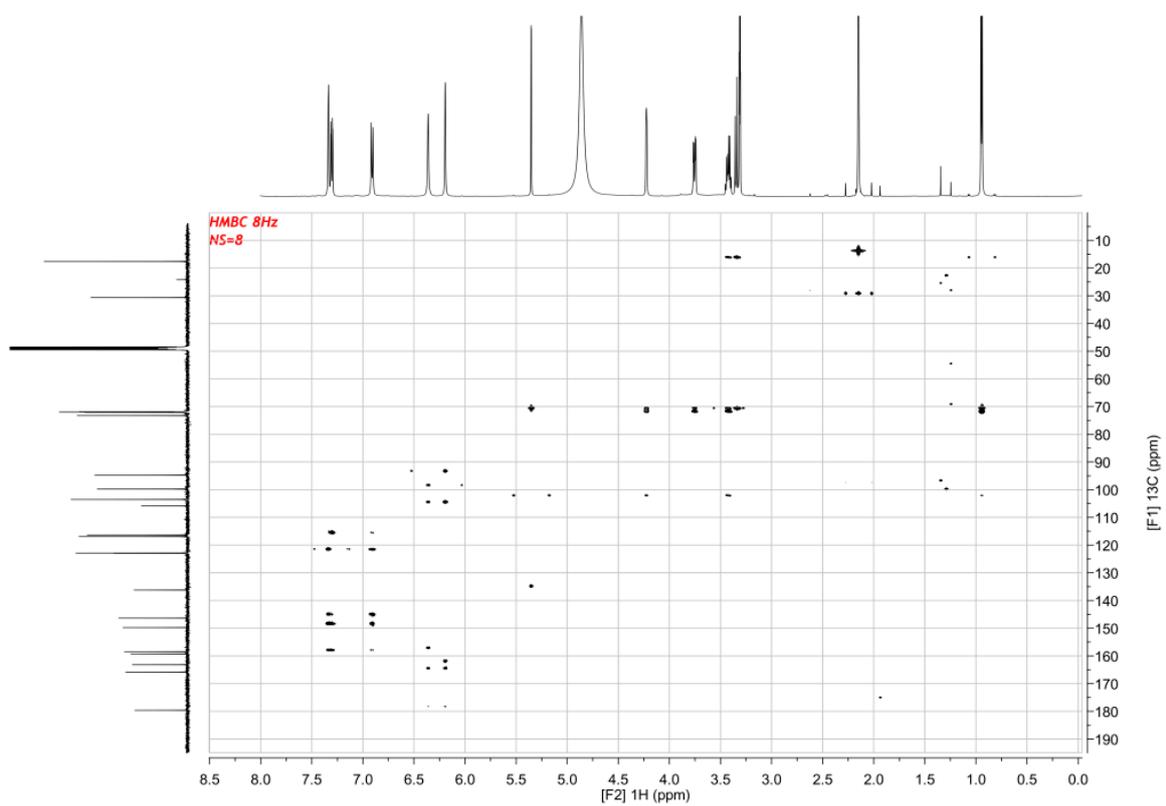
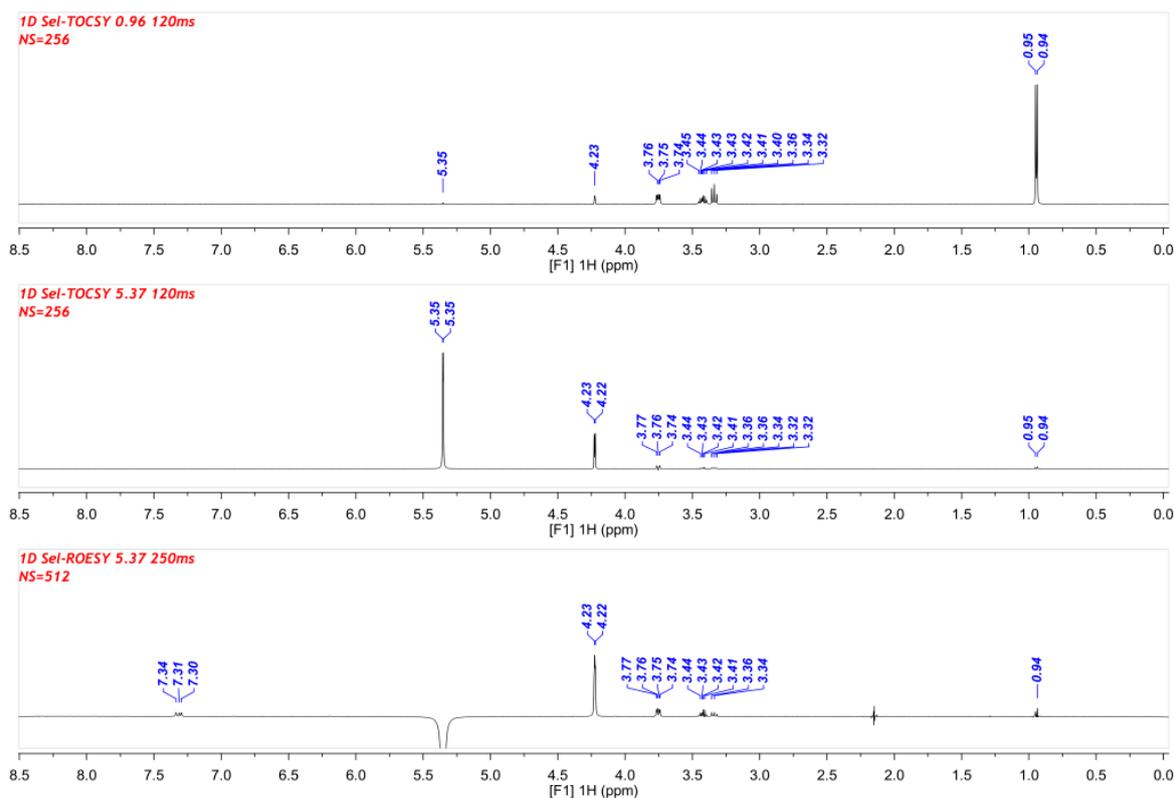


Figure S171. 1D TOCSY and 1D ROESY NMR subspectra of H-1(3-*O*- α -Rha) and H-6(3-*O*- α -Rha) in compound **16** (methanol-*d*₄, 500.18 MHz).



Compound 17

Figure S172. 1D ¹H-NMR spectrum of compound **17** (methanol-*d*₄, 500.18 MHz).

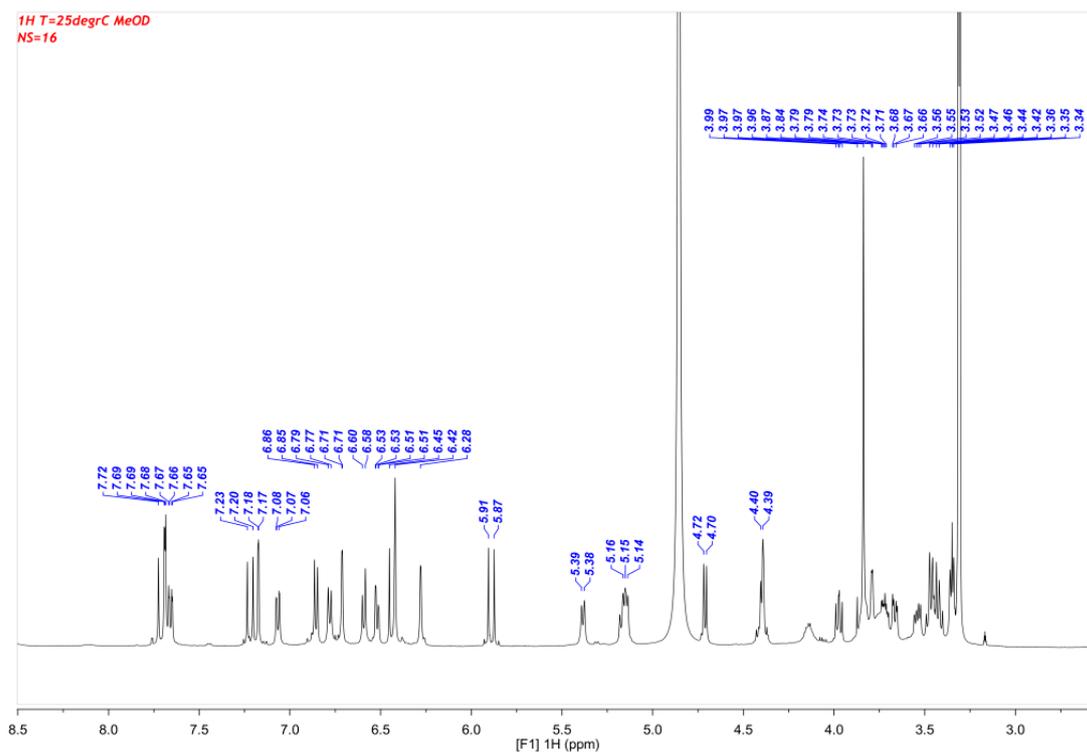


Figure S173. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **17** (methanol- d_4 , 125.77 MHz).

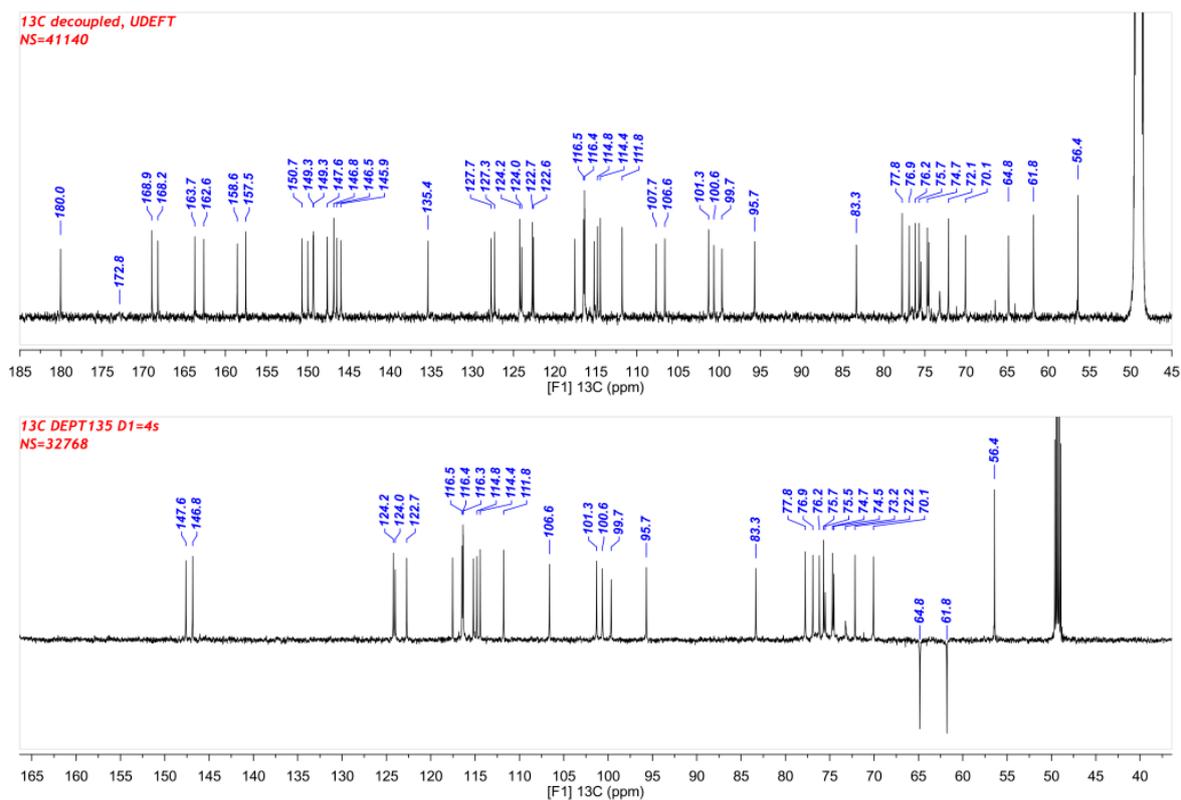


Figure S174. 2D g-COSY NMR spectrum of compound **17** (methanol- d_4 , 500.18 MHz).

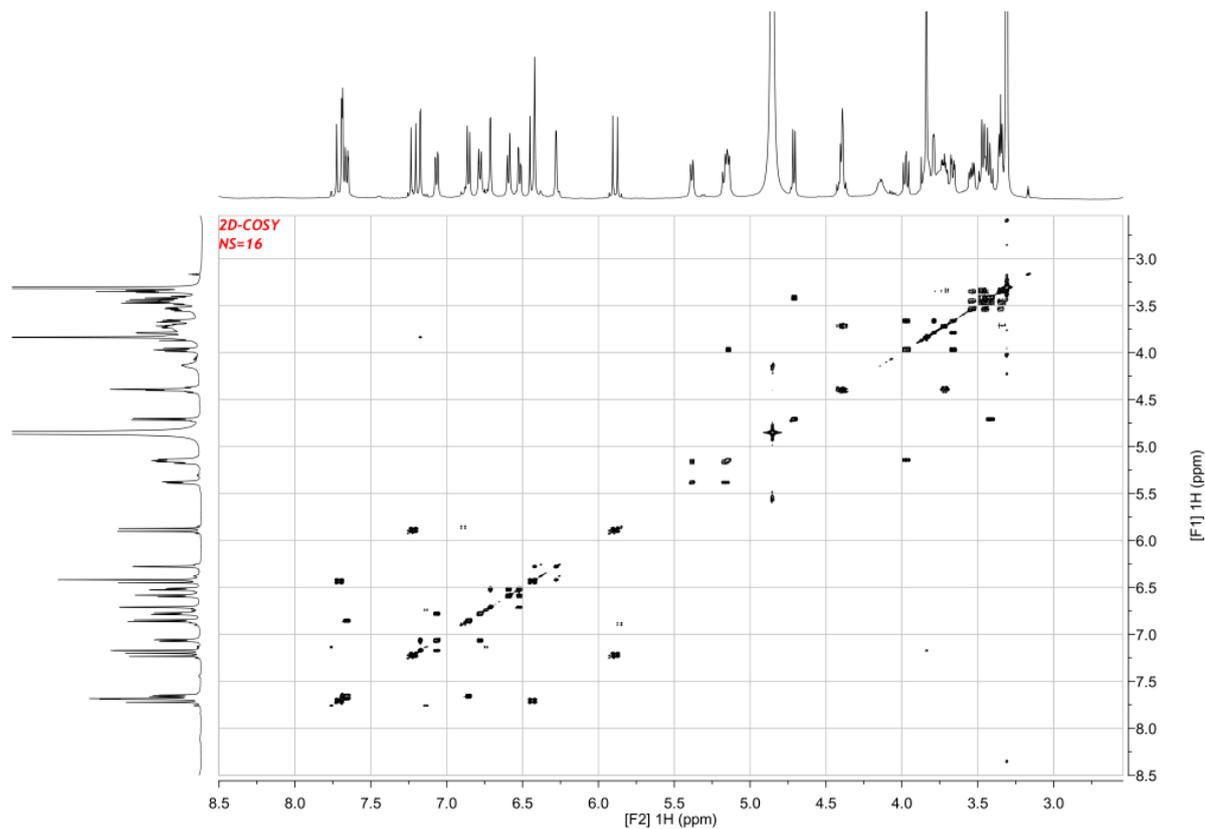


Figure S175. 2D TOCSY NMR spectrum of compound **17** (methanol-*d*₄, 500.18 MHz).

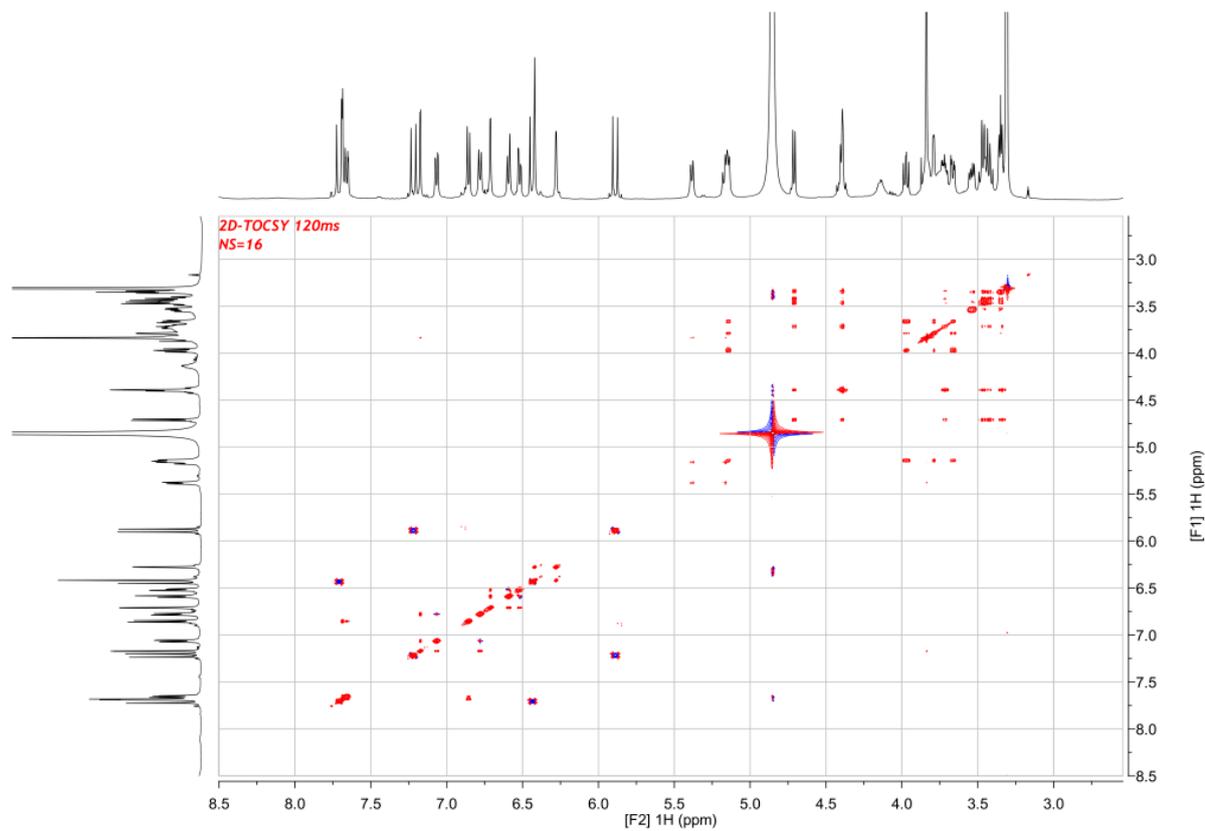


Figure S176. 2D ROESY NMR spectrum of compound **17** (methanol-*d*₄, 500.18 MHz).

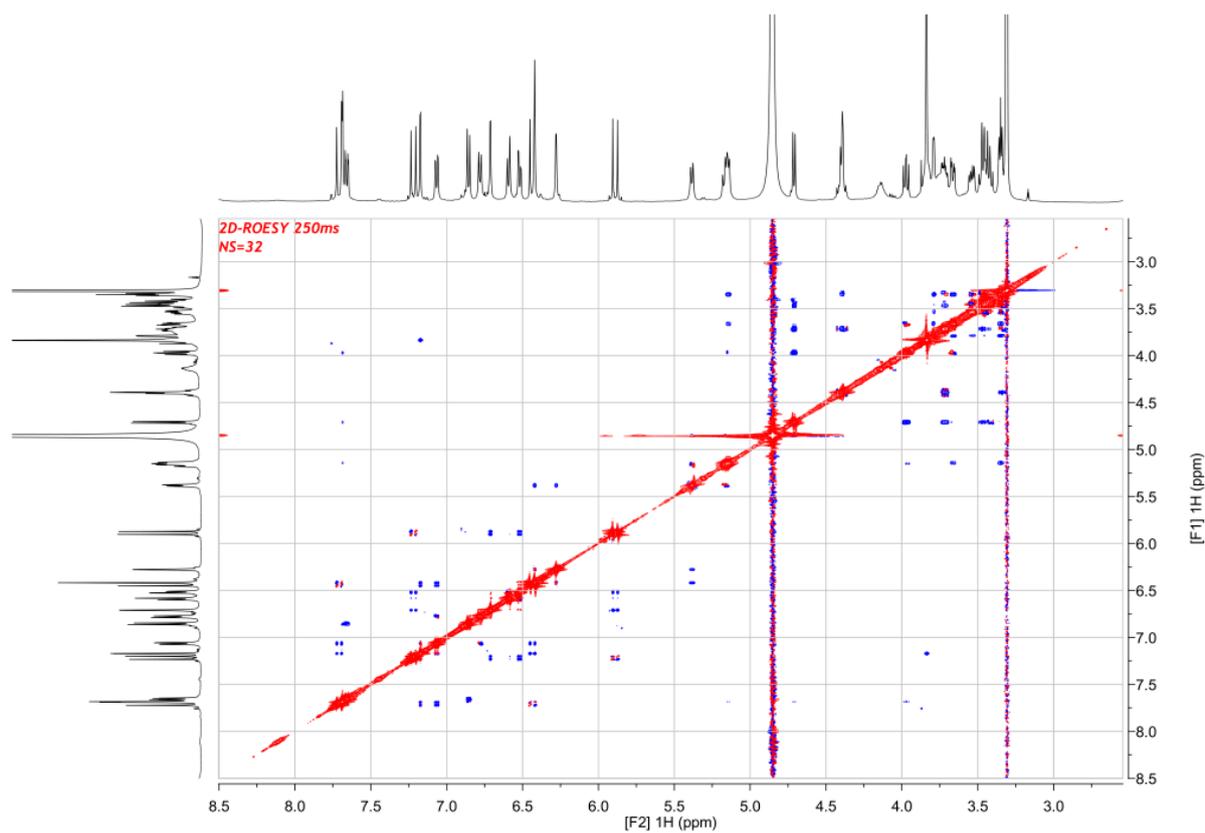


Figure S177. 2D *g*-HSQC-NMR spectrum of compound **17** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

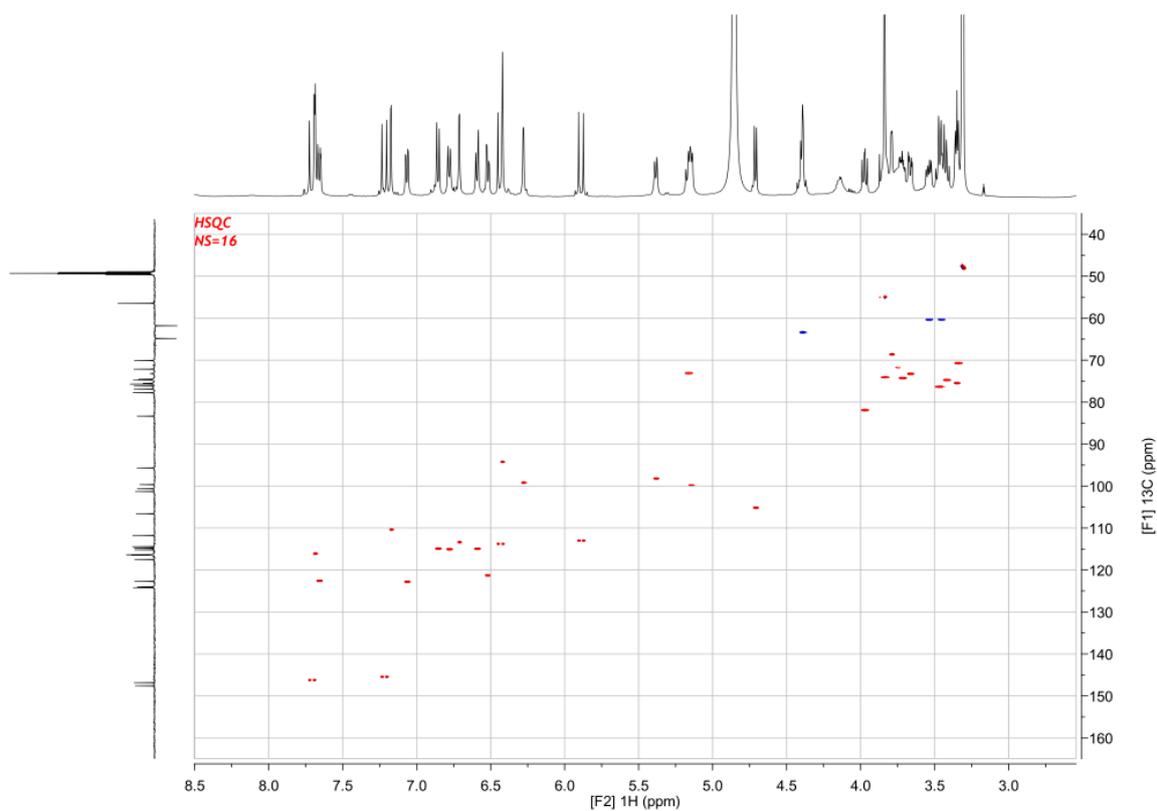


Figure S178. 2D *g*-HSQC-TOCSY NMR spectrum of compound **17** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

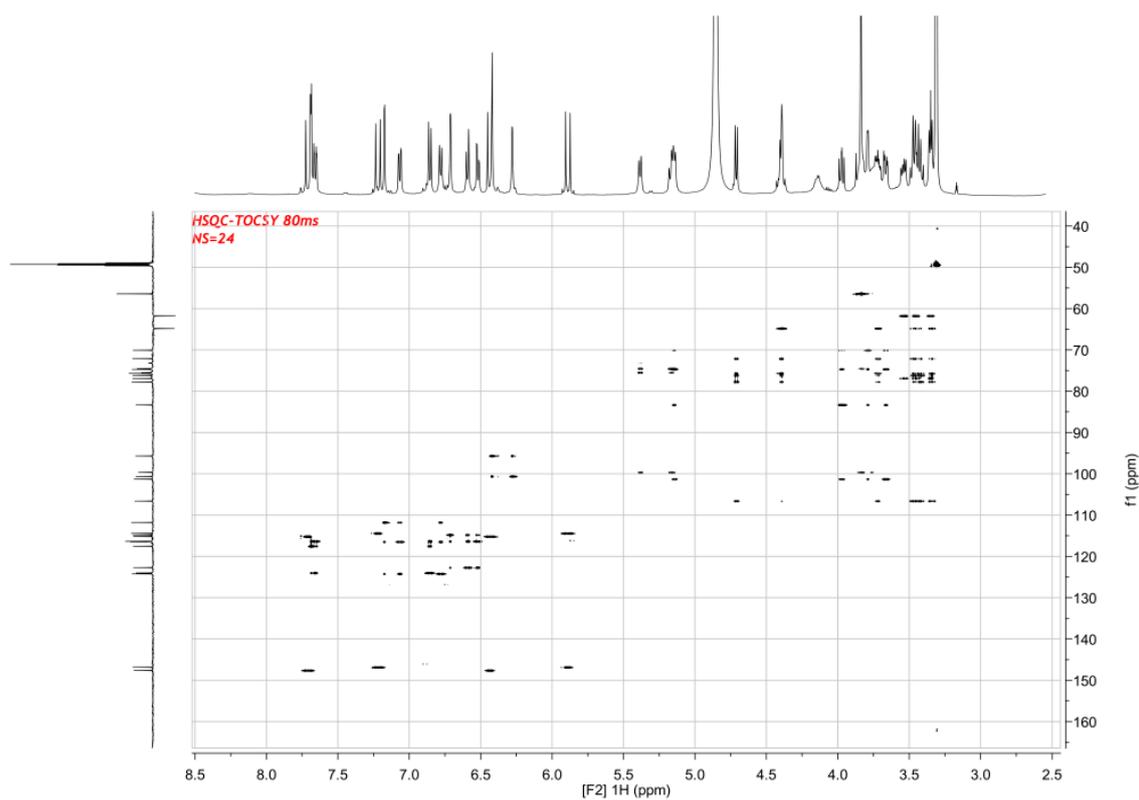


Figure S179. 2D *g*-HMBC-NMR spectrum of compound **17** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

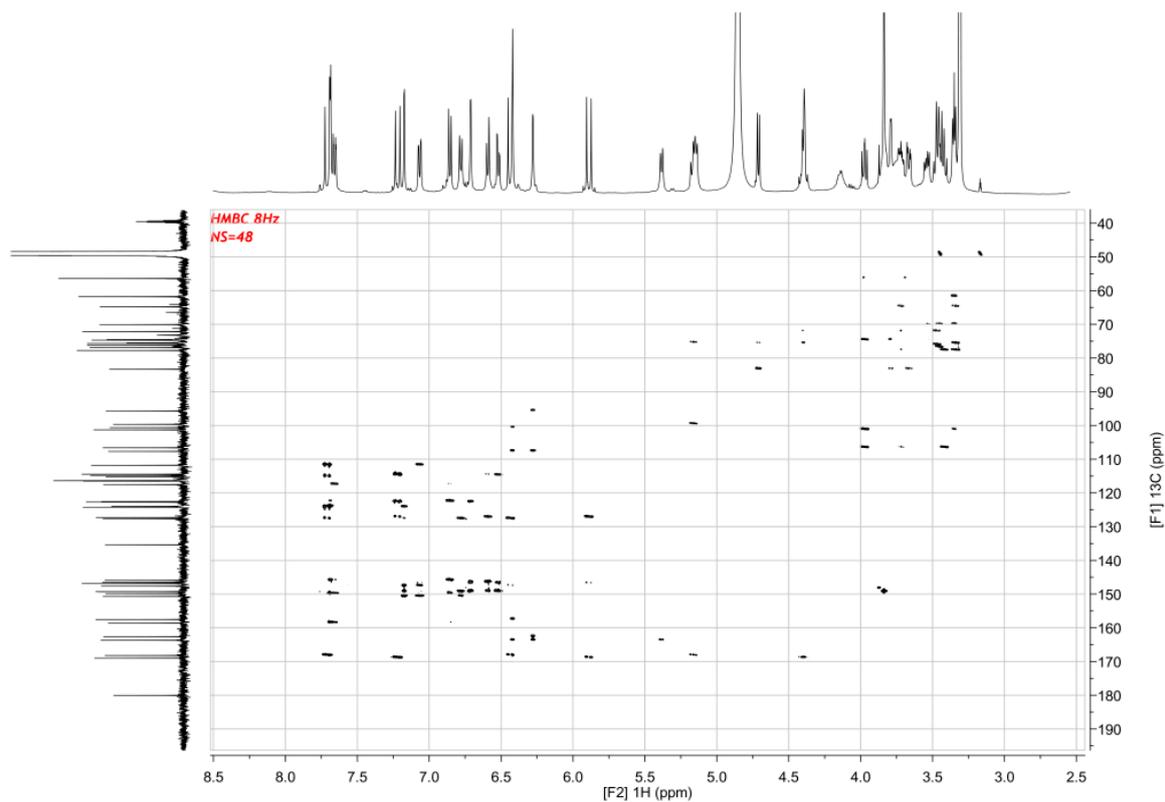


Figure S180. 1D TOCSY and 1D ROESY NMR subspectra of H-1(7-*O*-β-GlcA) in compound **17** (methanol-*d*₄, 500.18 MHz).

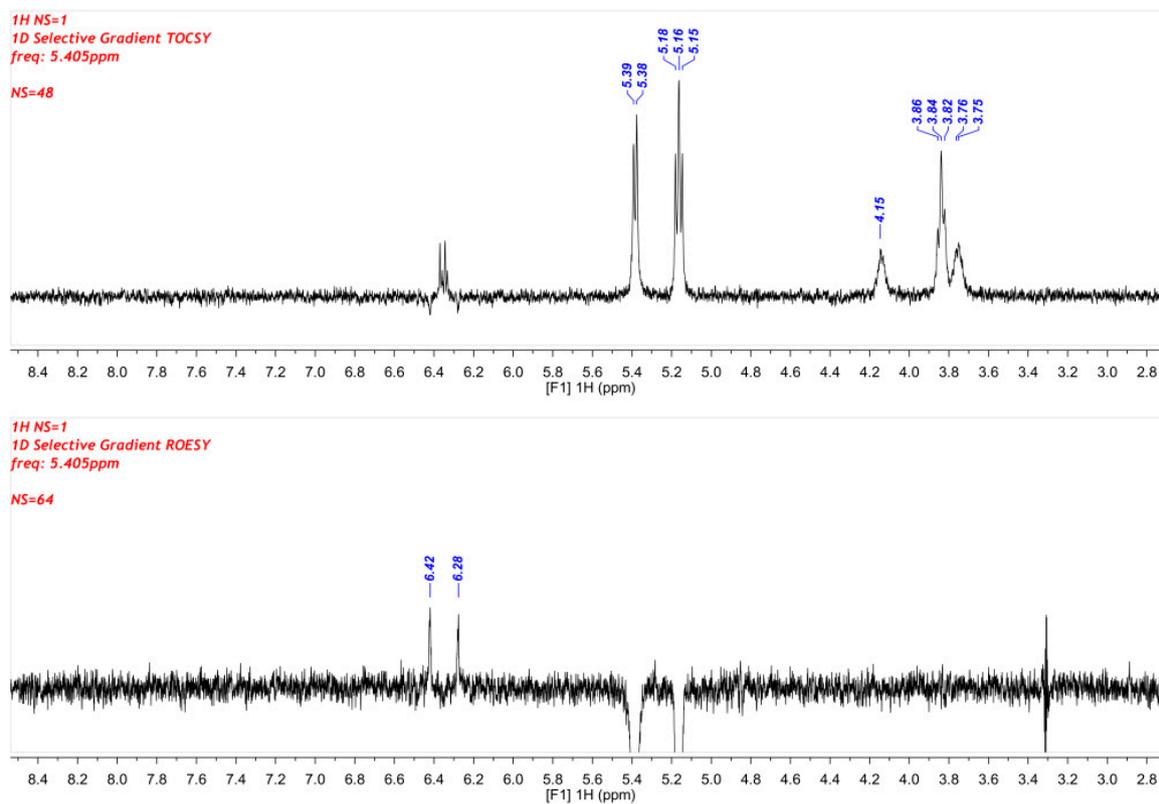


Figure S181. 1D TOCSY subspectrum of H-2(3-*O*- β -Gal) in compound **17** (methanol-*d*₄, 500.18 MHz).

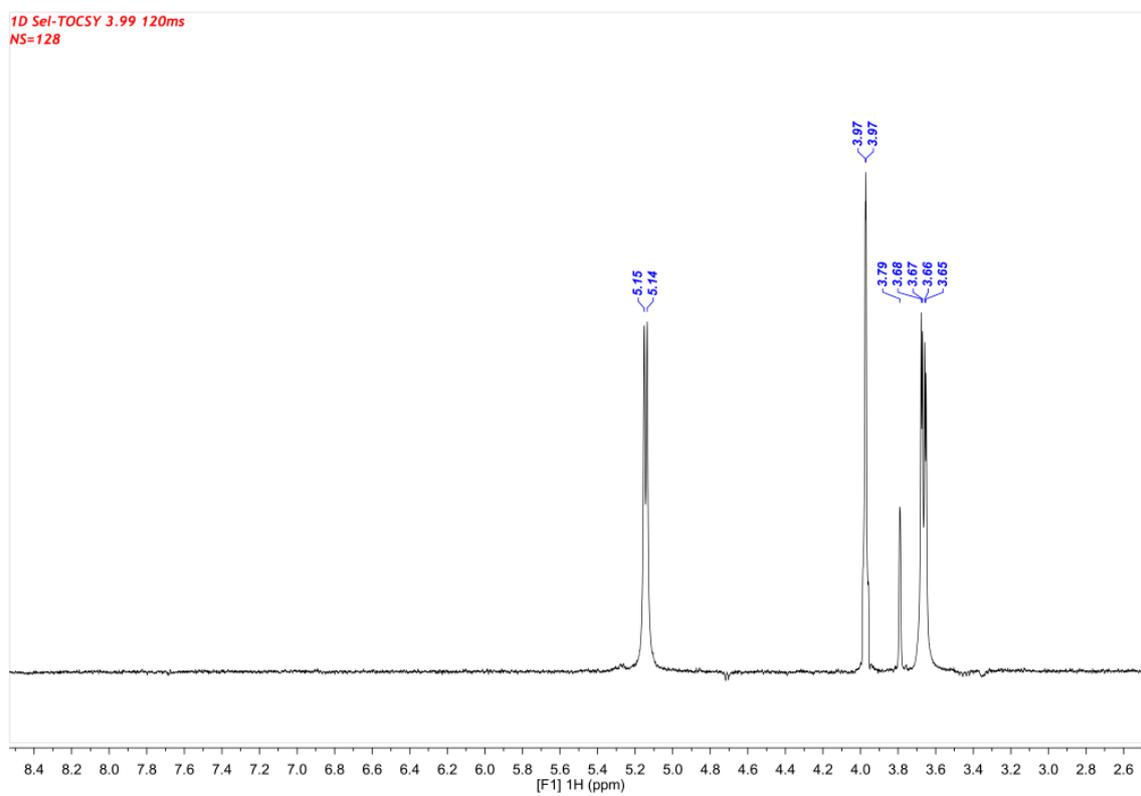
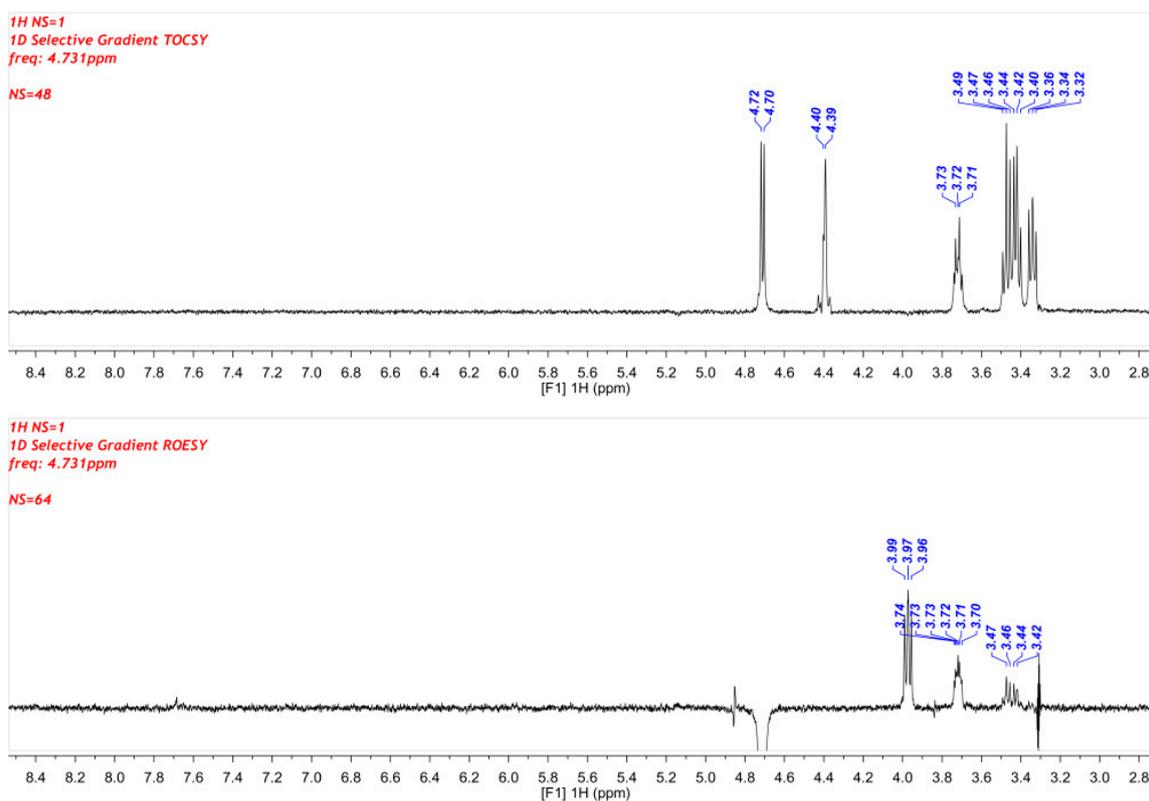


Figure S182. 1D TOCSY and 1D ROESY NMR subspectra of H-1(2^{Gal}-*O*- β -Glc) in compound **17** (methanol-*d*₄, 500.18 MHz).



Compound 18

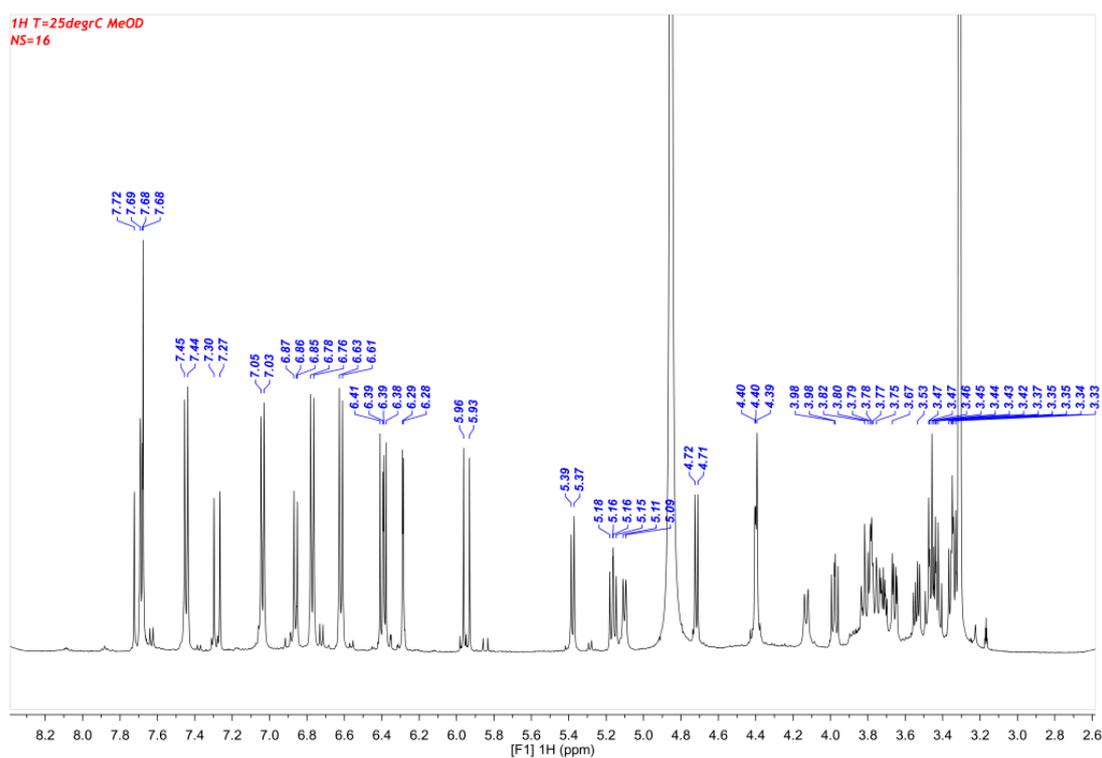
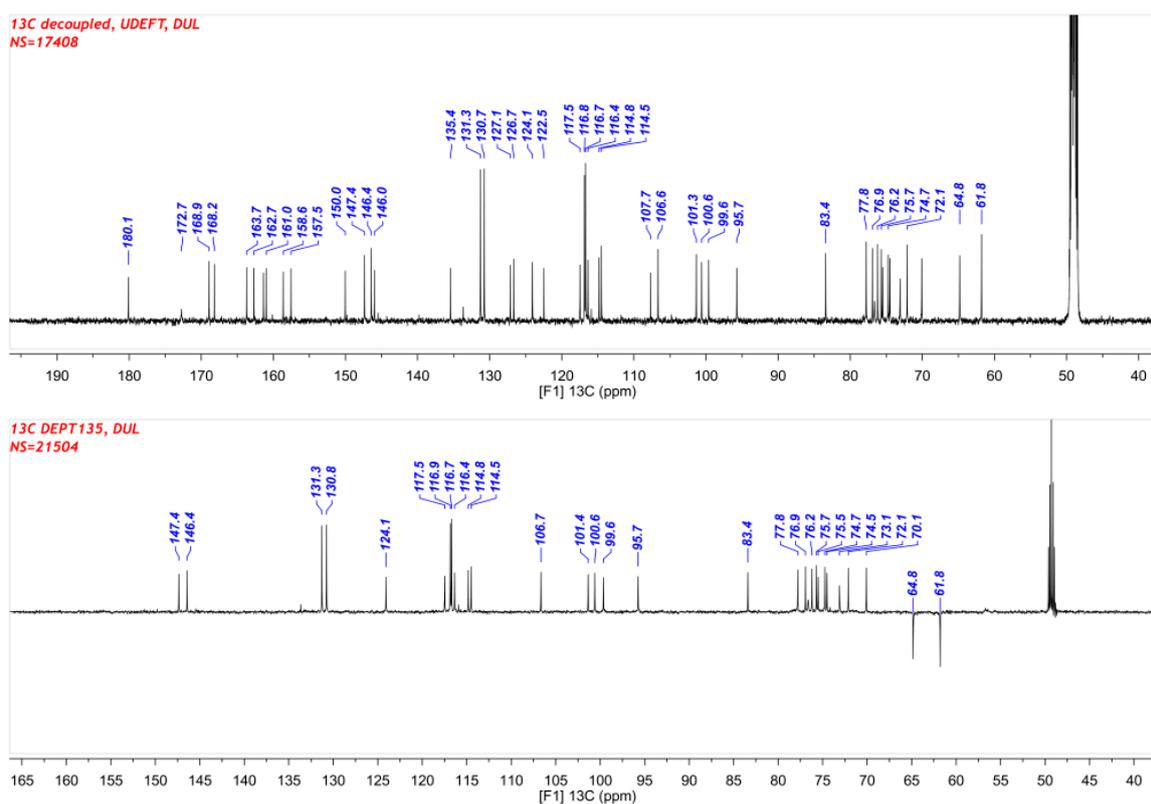
Figure S183. 1D ^1H -NMR spectrum of compound **18** (methanol- d_4 , 500.18 MHz).Figure S184. 1D ^{13}C -NMR spectra (1H decoupled and DEPT-135) of compound **18** (methanol- d_4 , 125.77 MHz).

Figure S185. 2D g-COSY NMR spectrum of compound **18** (methanol- d_4 , 500.18 MHz).

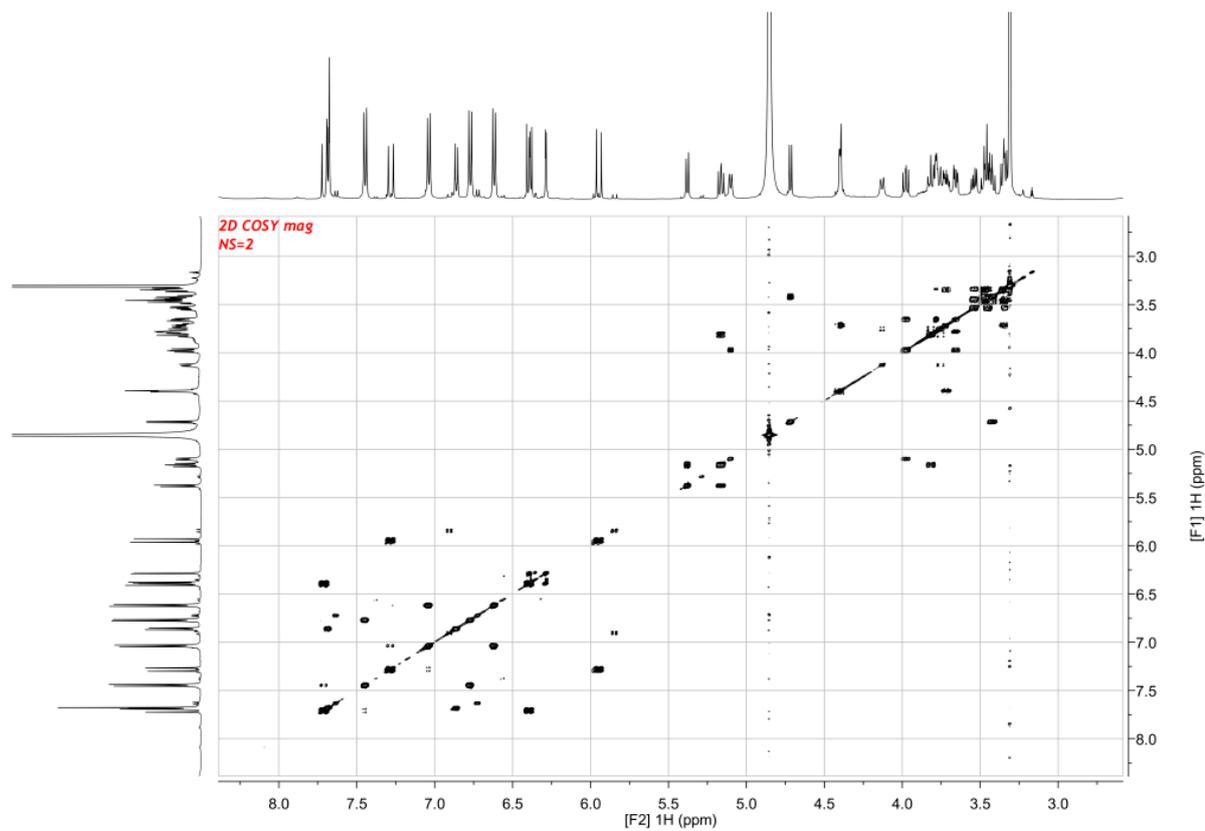


Figure S186. 2D TOCSY NMR spectrum of compound **18** (methanol- d_4 , 500.18 MHz).

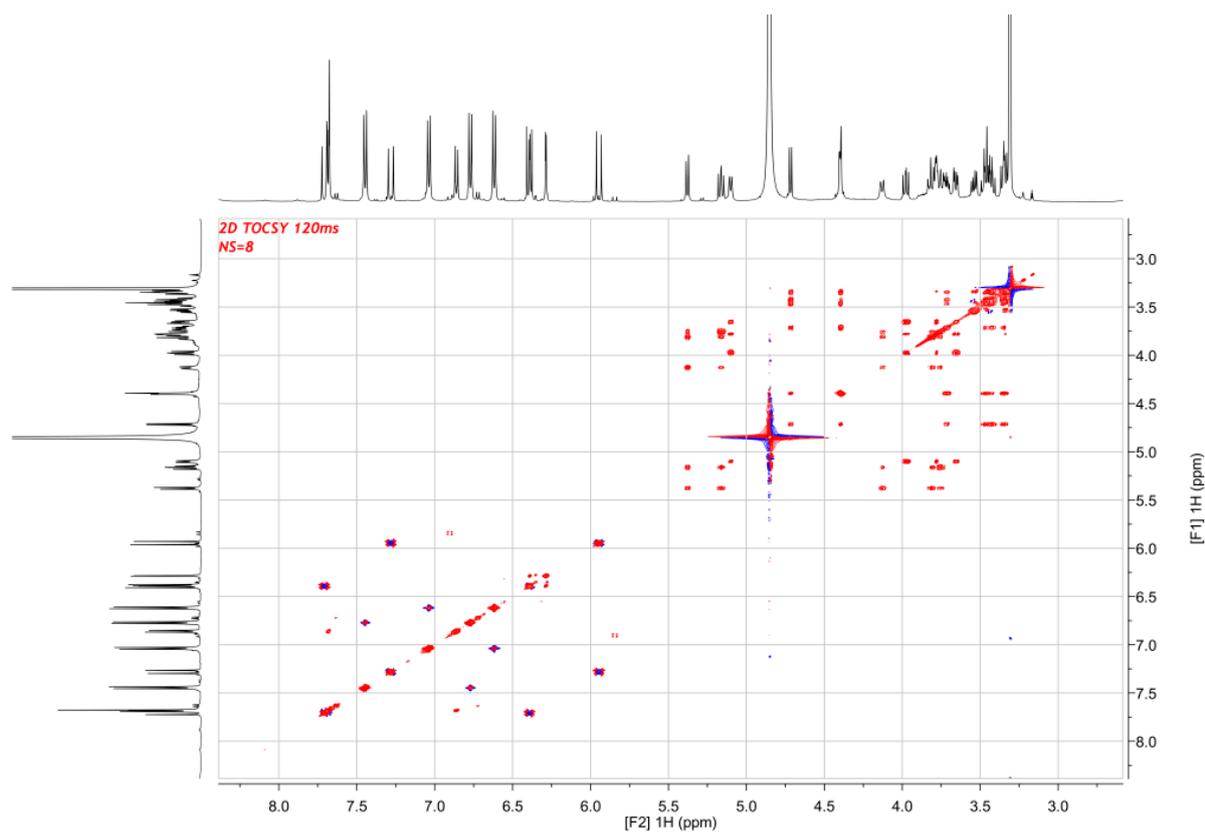


Figure S187. 2D ROESY NMR spectrum of compound **18** (methanol-*d*₄, 500.18 MHz).

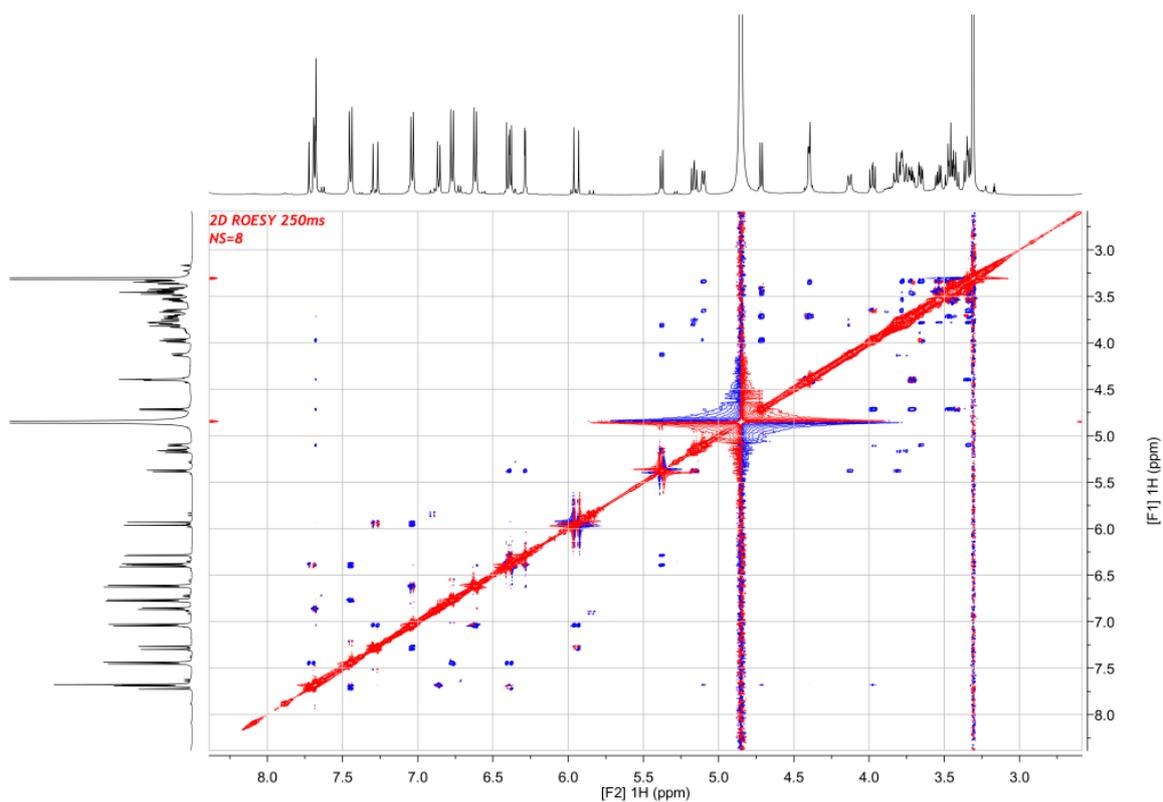


Figure S188. 2D g-HSQC-NMR spectrum of compound **18** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

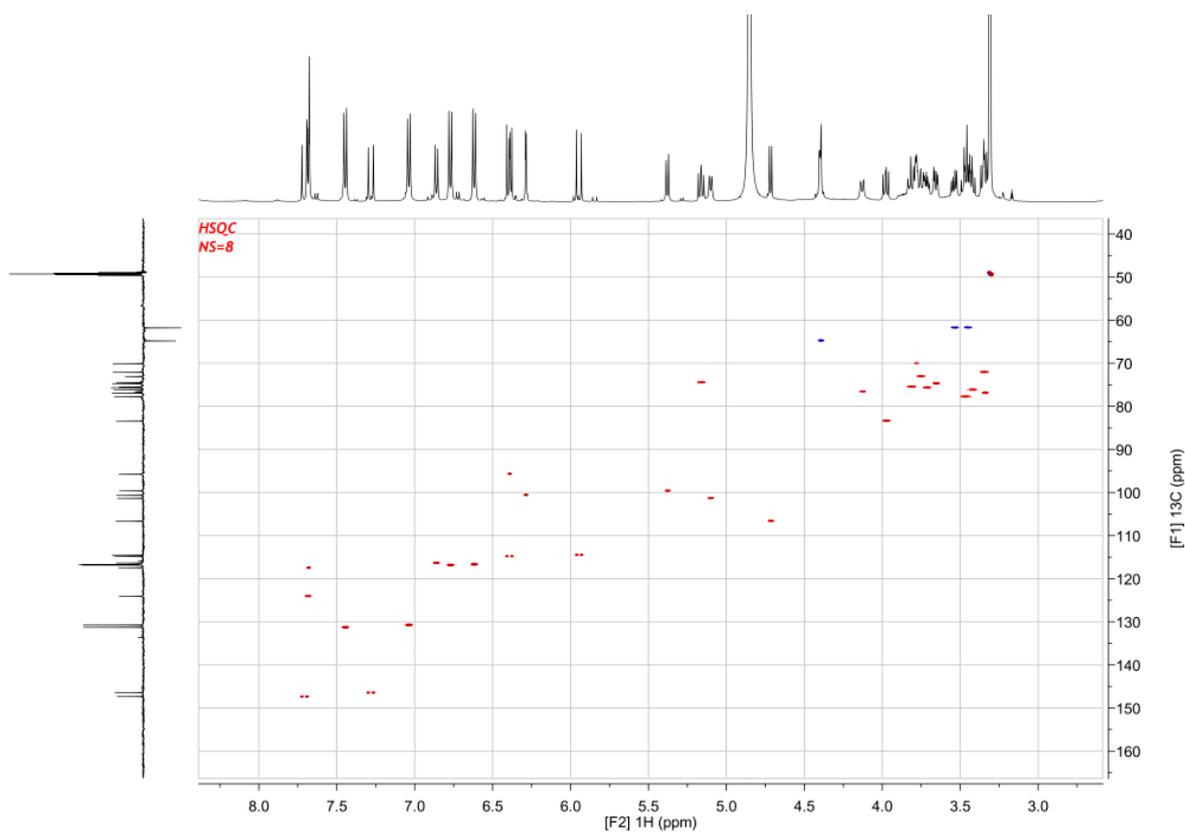


Figure S189. 2D *g*-HSQC-TOCSY NMR spectrum of compound **18** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

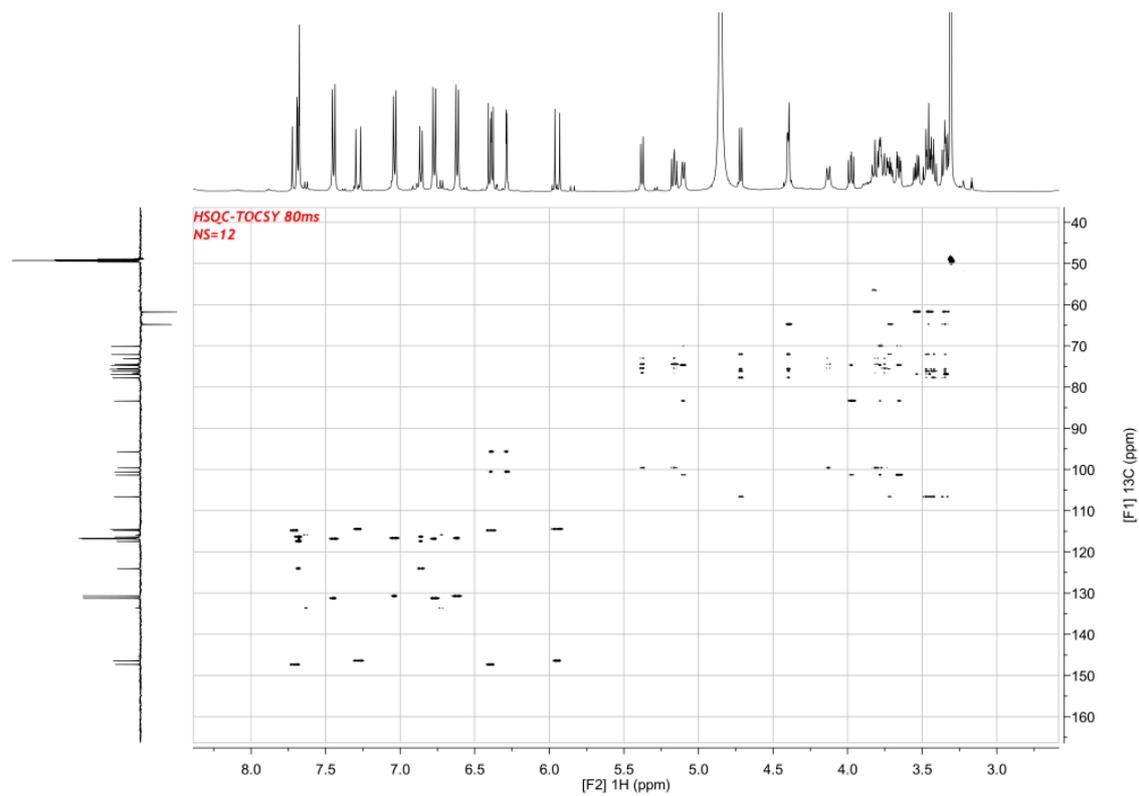


Figure S190. 2D *g*-HMBC-NMR spectrum of compound **18** (methanol-*d*₄, 500.18 MHz, 125.77 MHz).

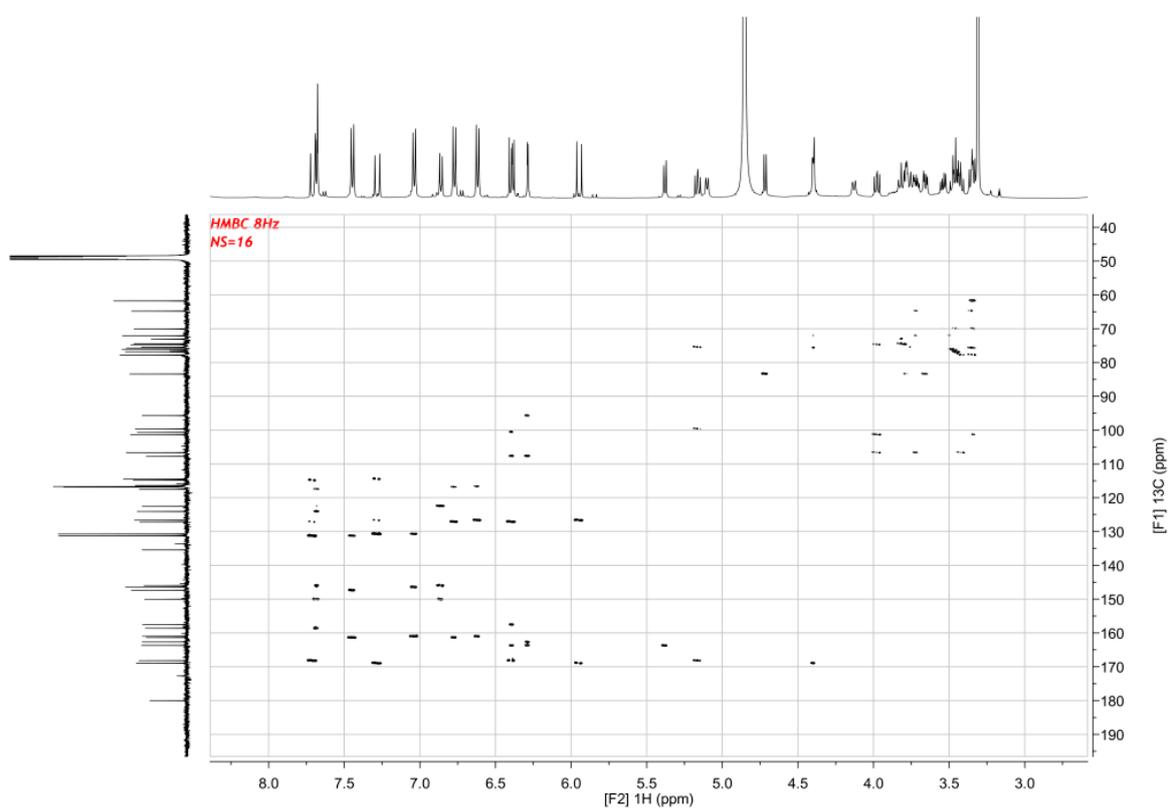


Figure S191. 1D TOCSY and 1D ROESY NMR subspectra of H-1(7-*O*- β -GlcA) in compound **18** (methanol- d_4 , 500.18 MHz).

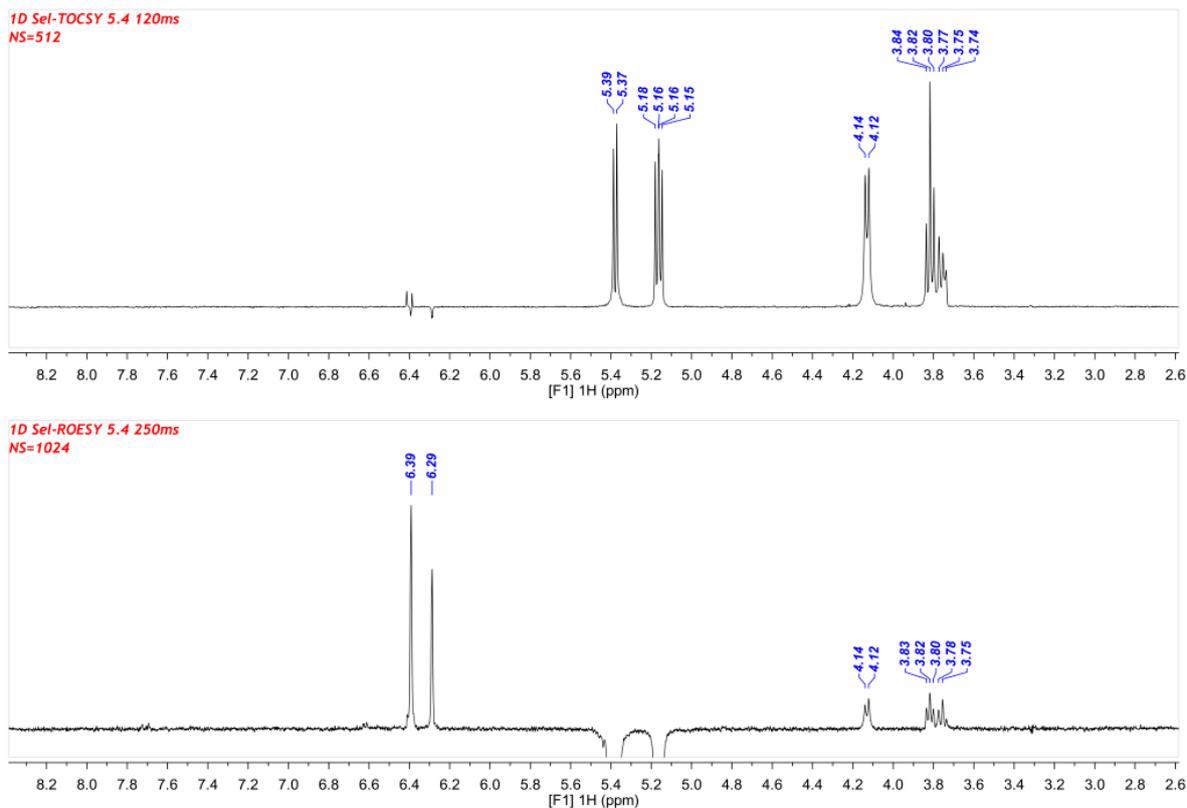


Figure S192. 1D TOCSY and 1D ROESY NMR subspectra of H-1(3-*O*- β -Gal) in compound **18** (methanol- d_4 , 500.18 MHz).

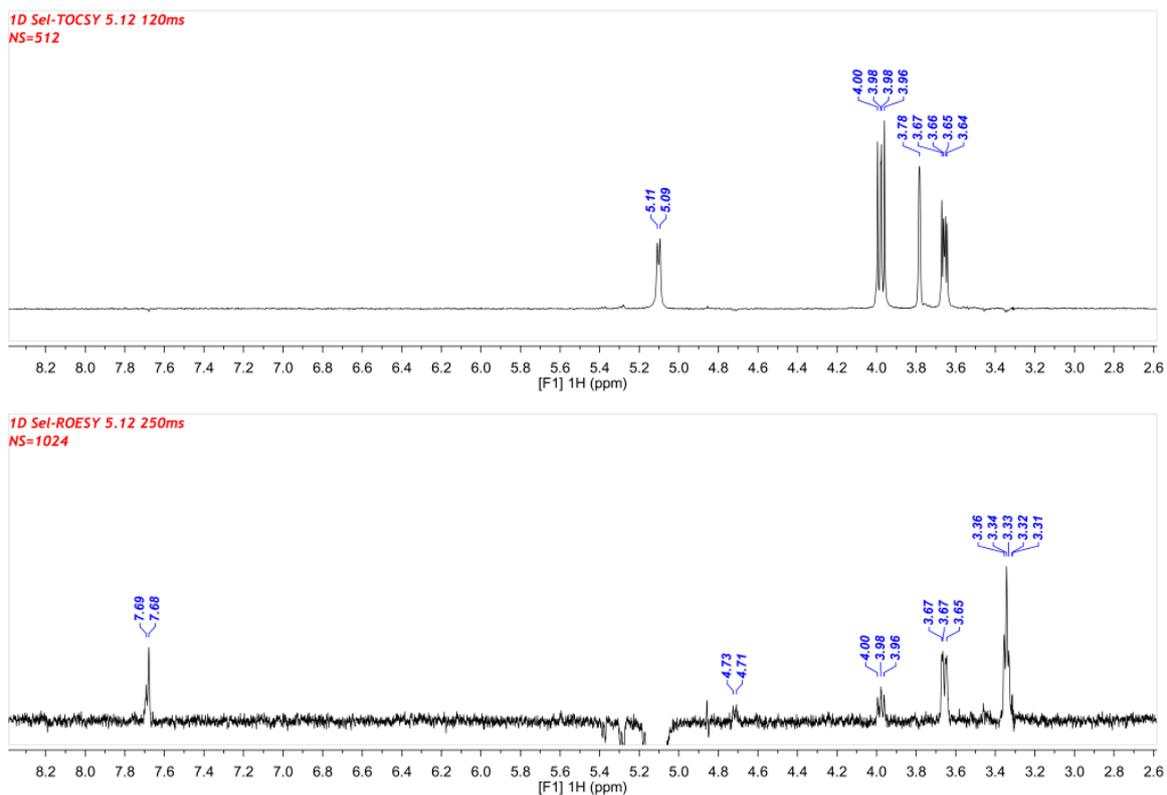


Figure S193. 1D TOCSY and 1D ROESY NMR subspectra of H-1($2^{\text{Gal}}\text{-O-}\beta\text{-Glc}$) in compound **18** (methanol- d_4 , 500.18 MHz).

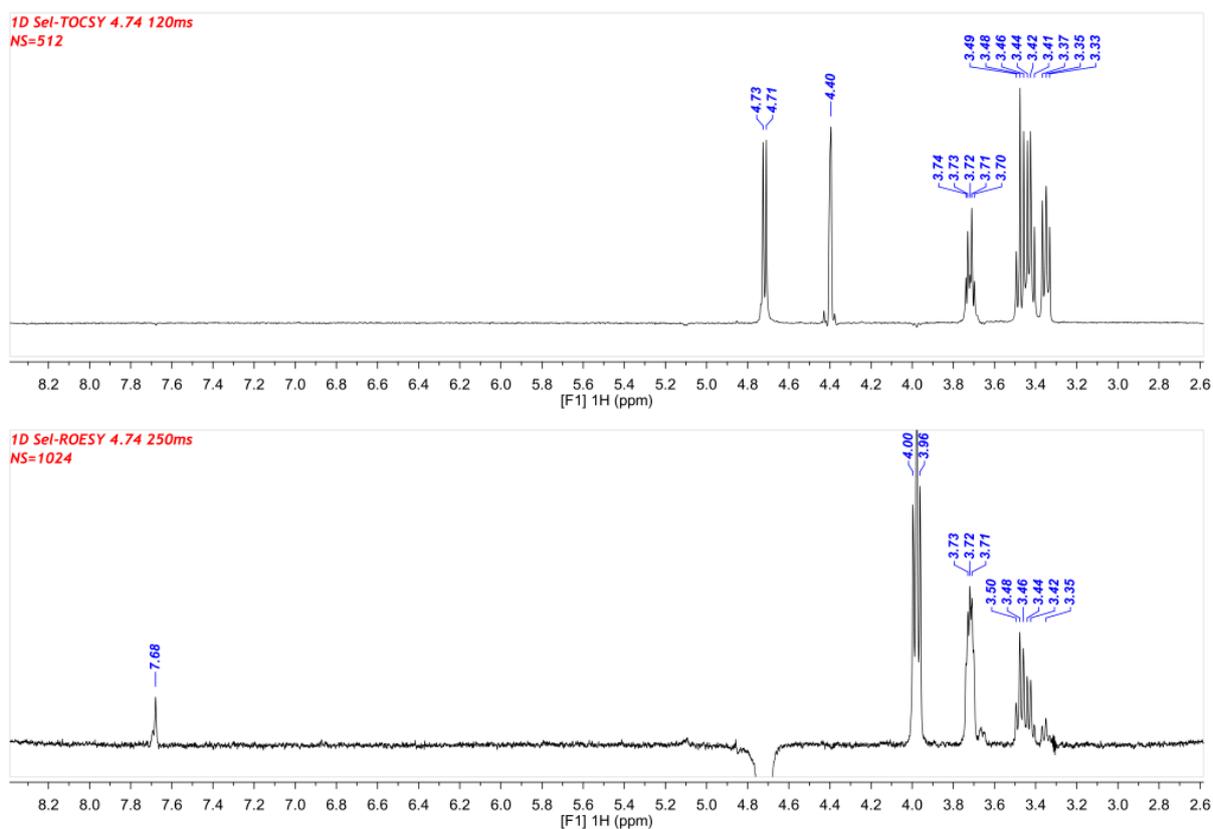


Figure S194. UPLC-MS chromatograms of phenolic acid reference standards.

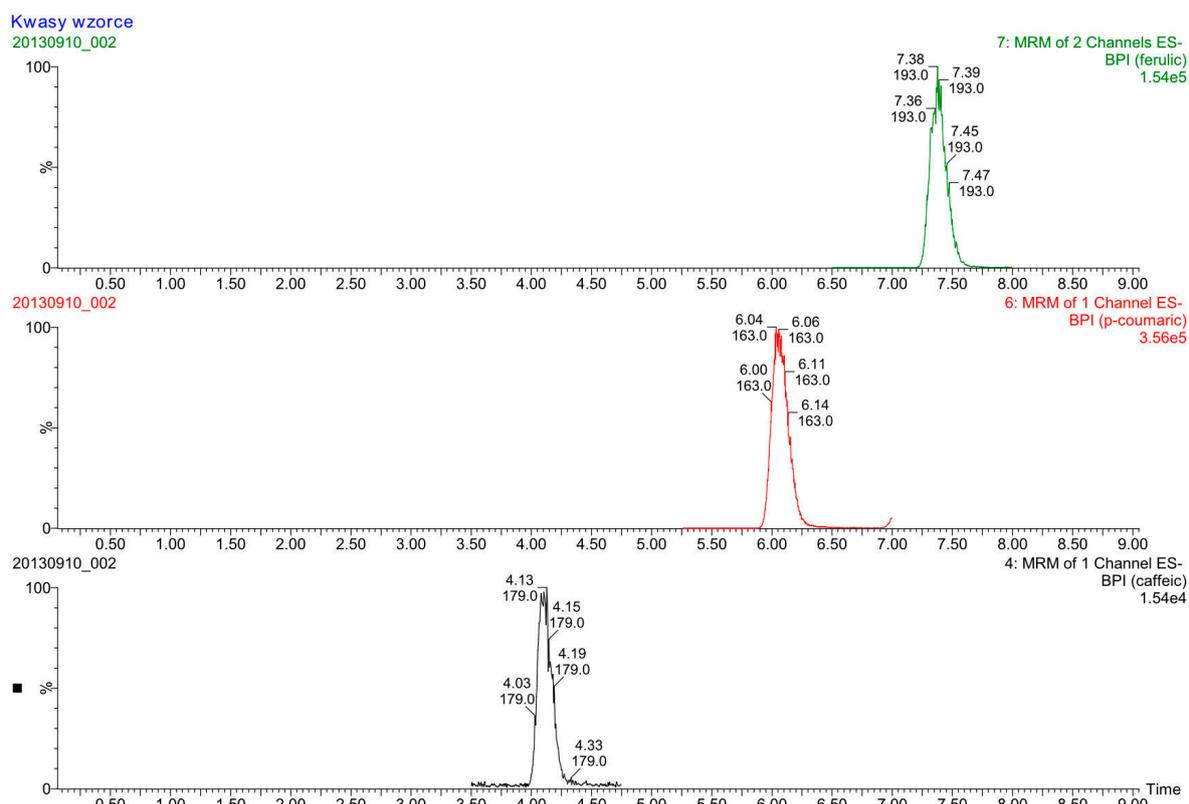


Figure S195. UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound **4**.

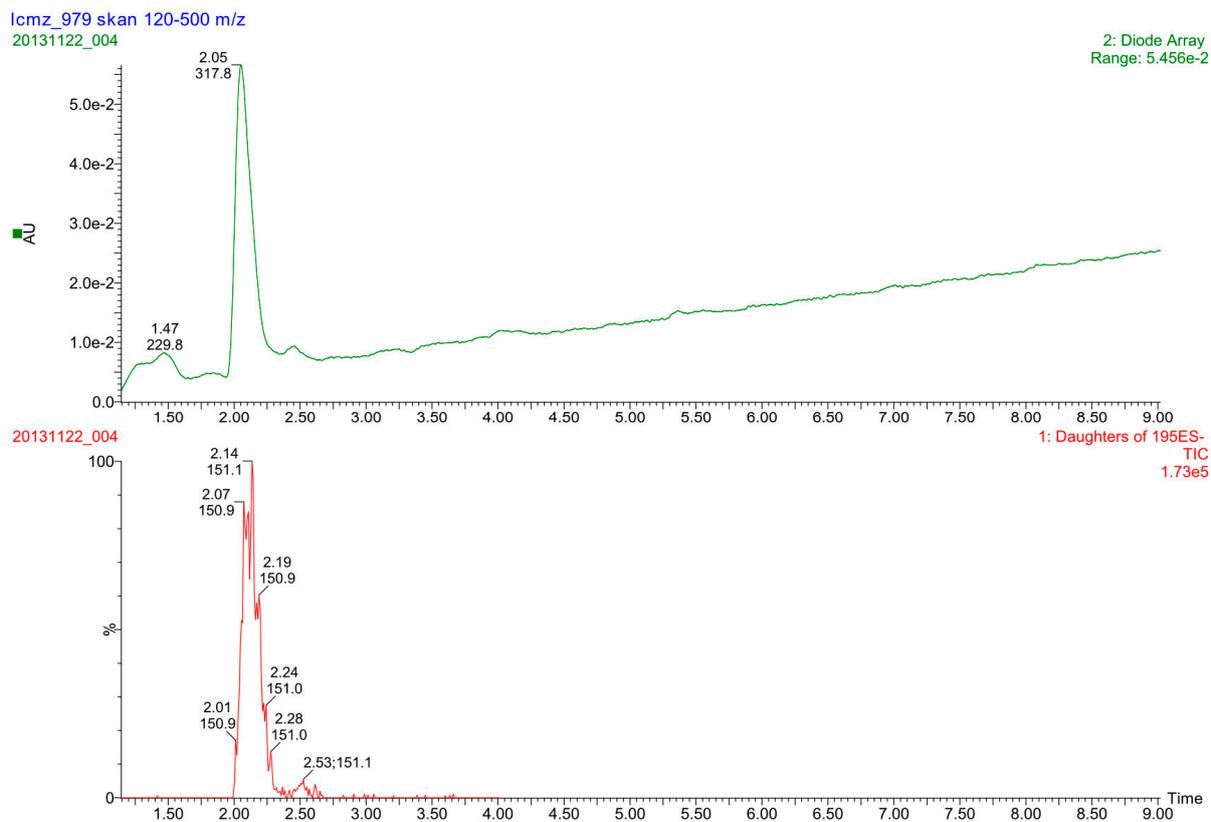


Figure S196. The UV spectrum of the putative 3,4,5-trihydroxycinnamic acid.

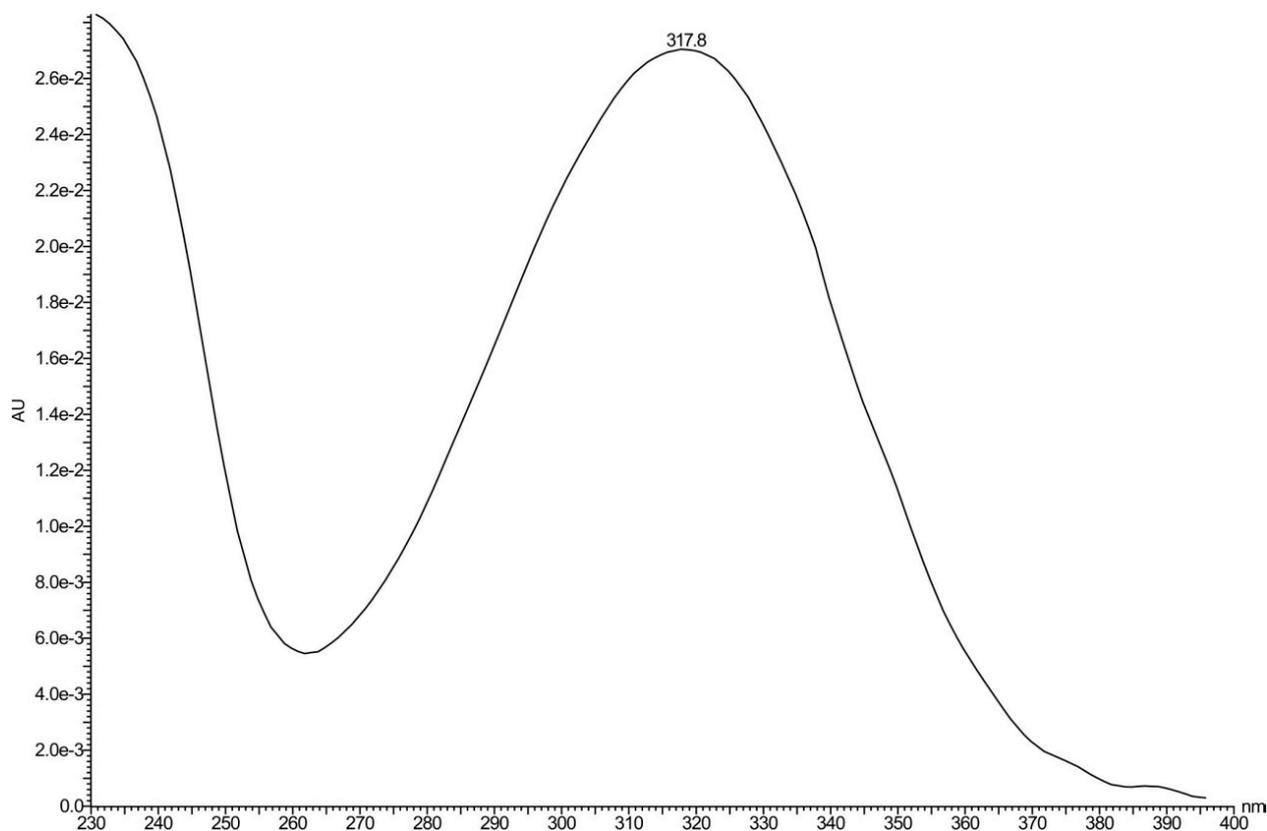


Figure S197. UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 5.

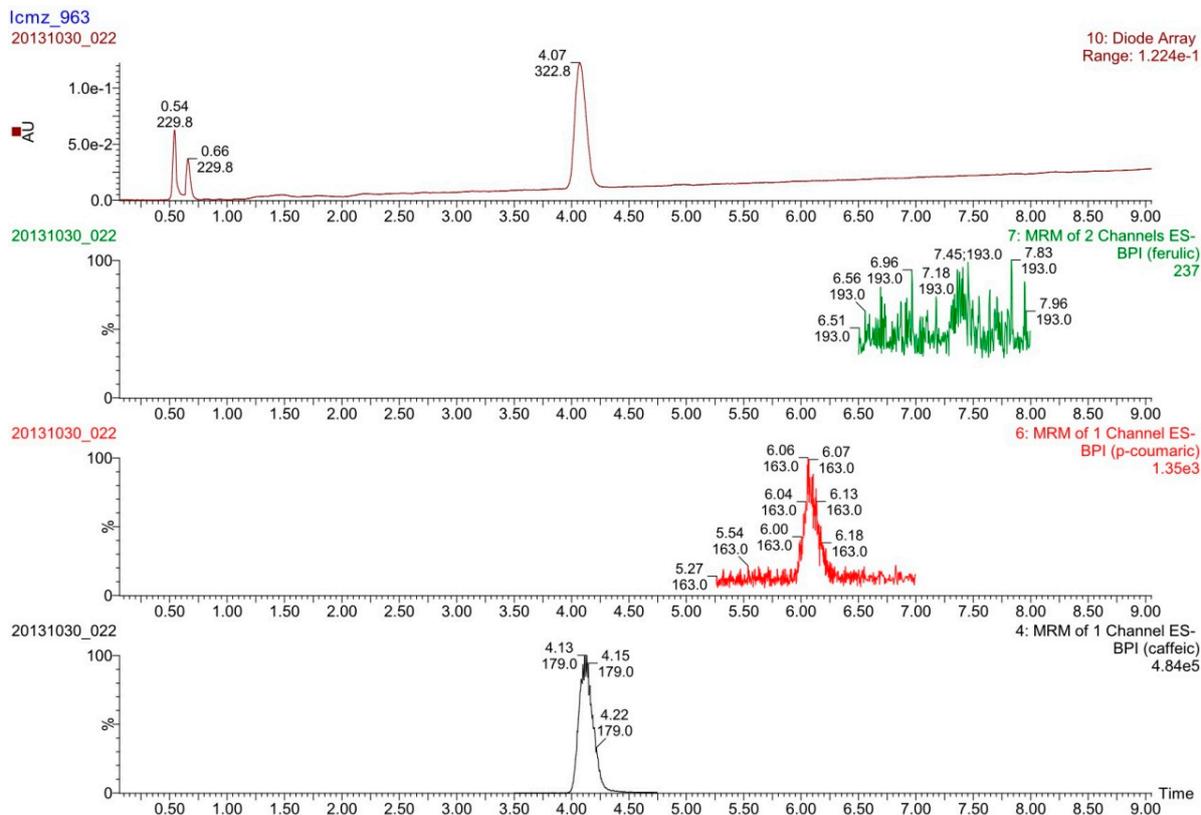


Figure S198. UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 6.

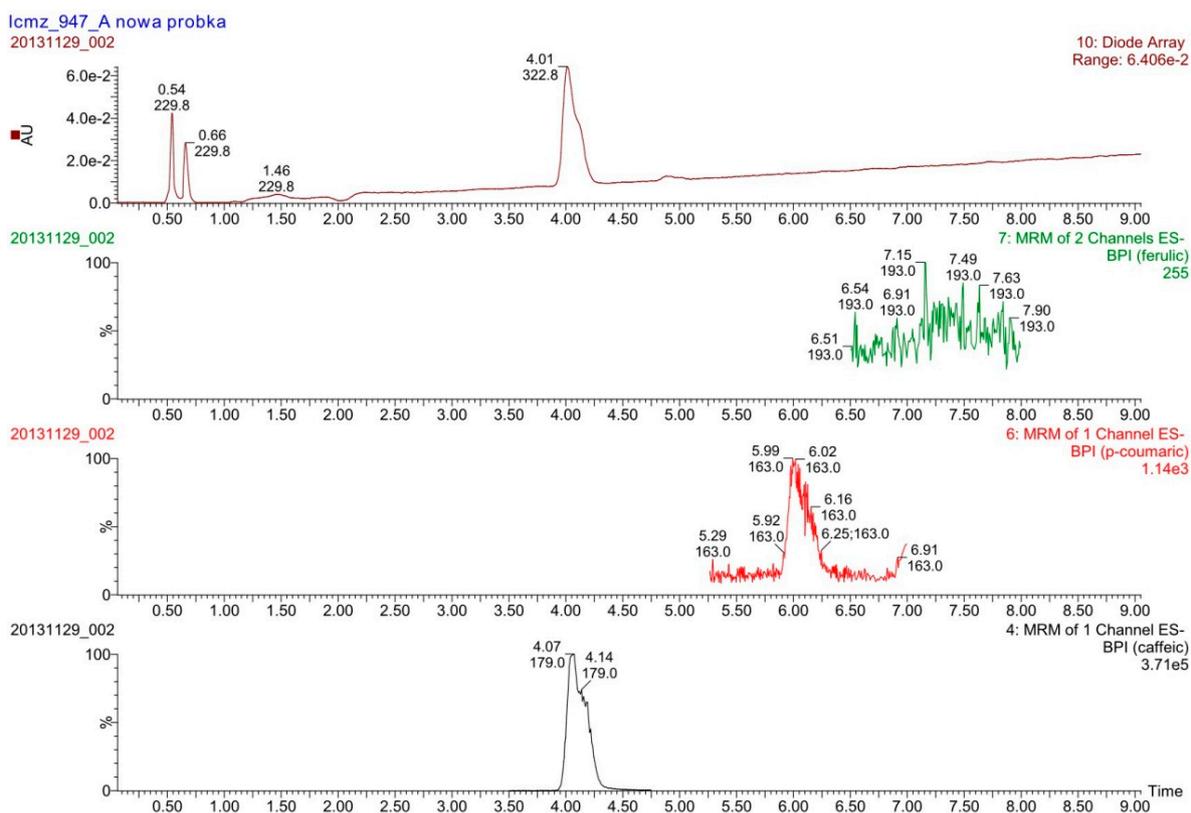


Figure S199. UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 7.

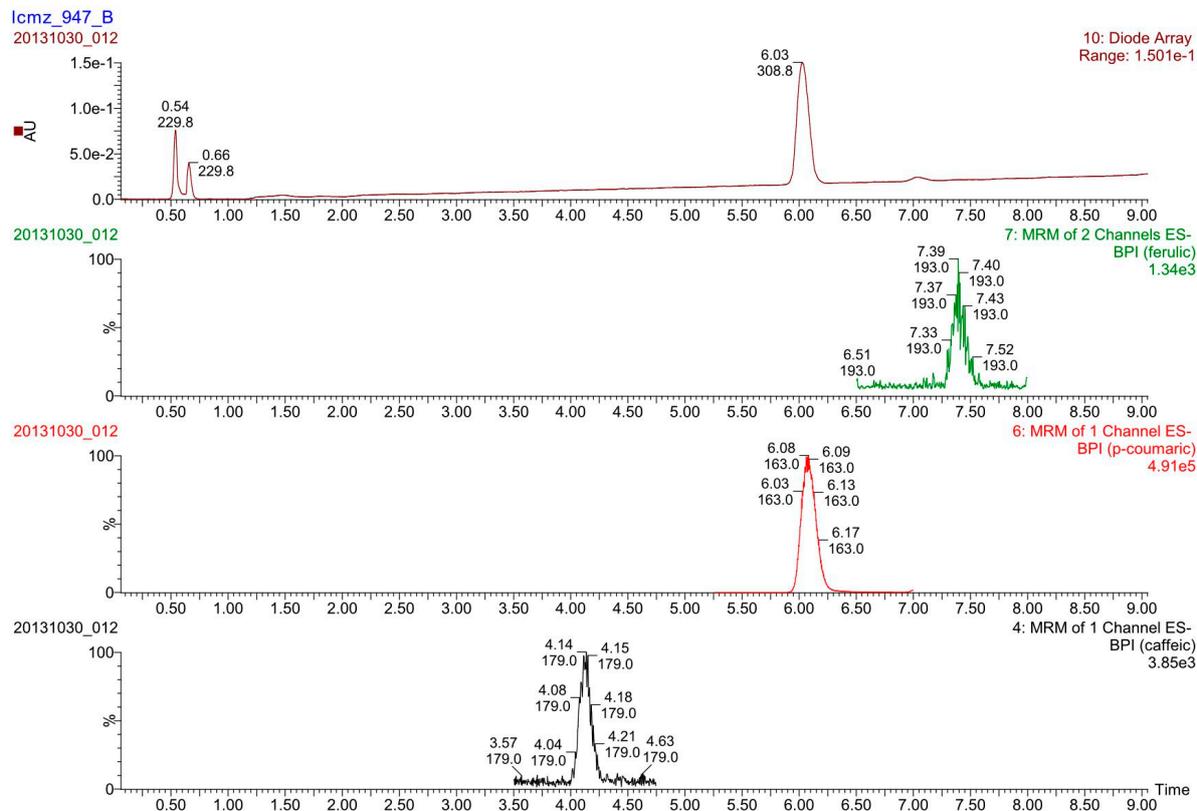


Figure S200. UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound 8.

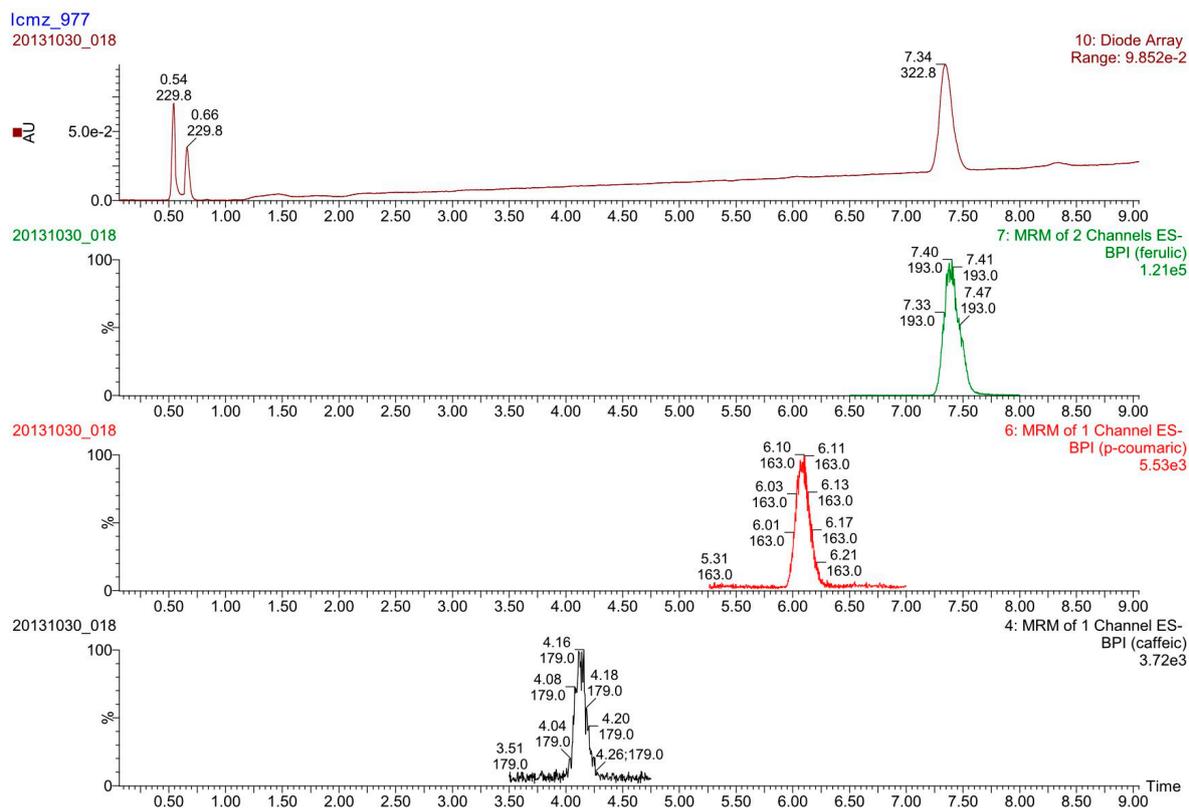


Figure S201. UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound **9**.

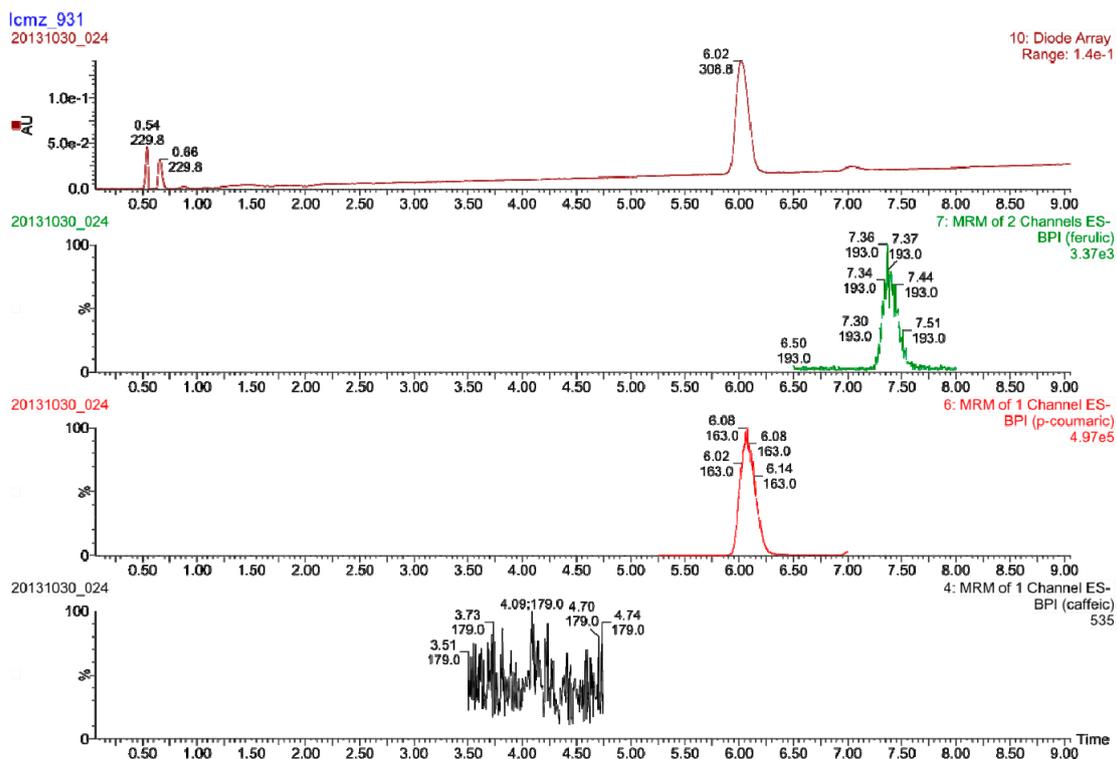


Figure S202. UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound **10**.

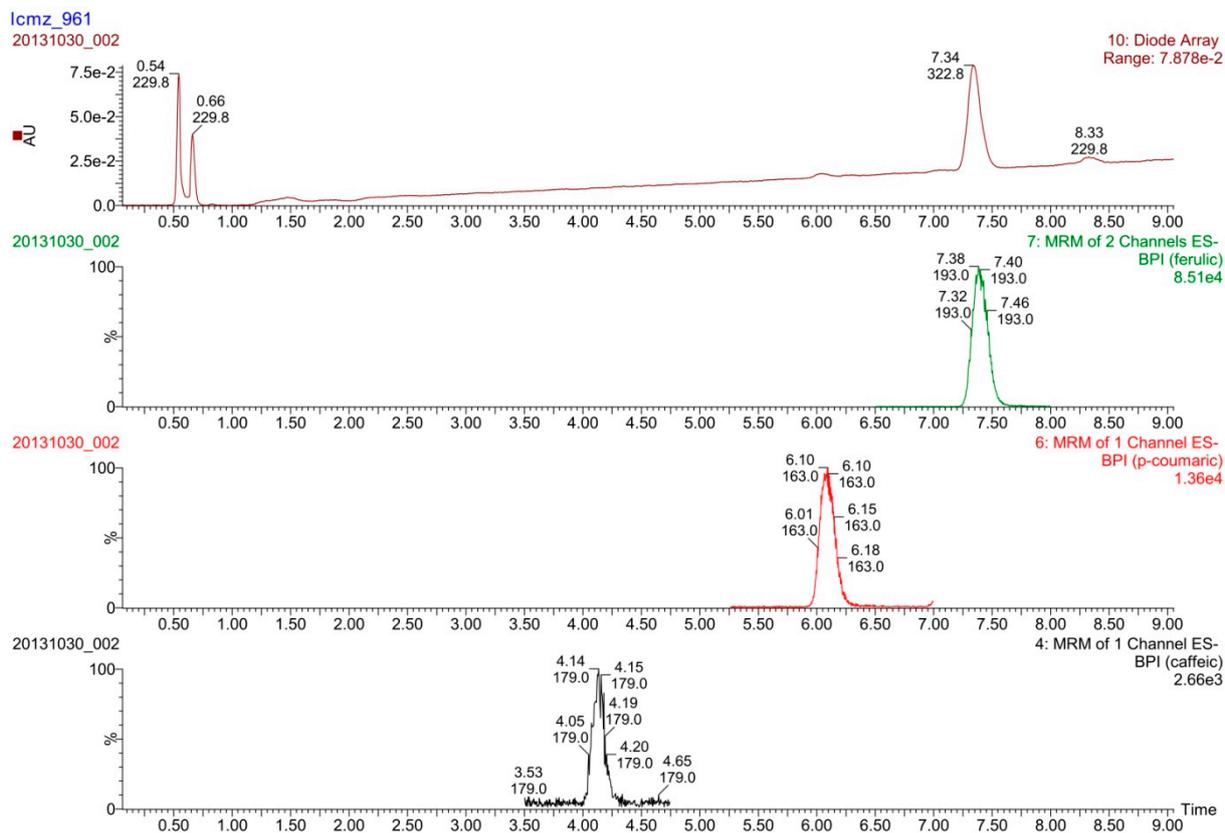


Figure S203. UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound **11**.

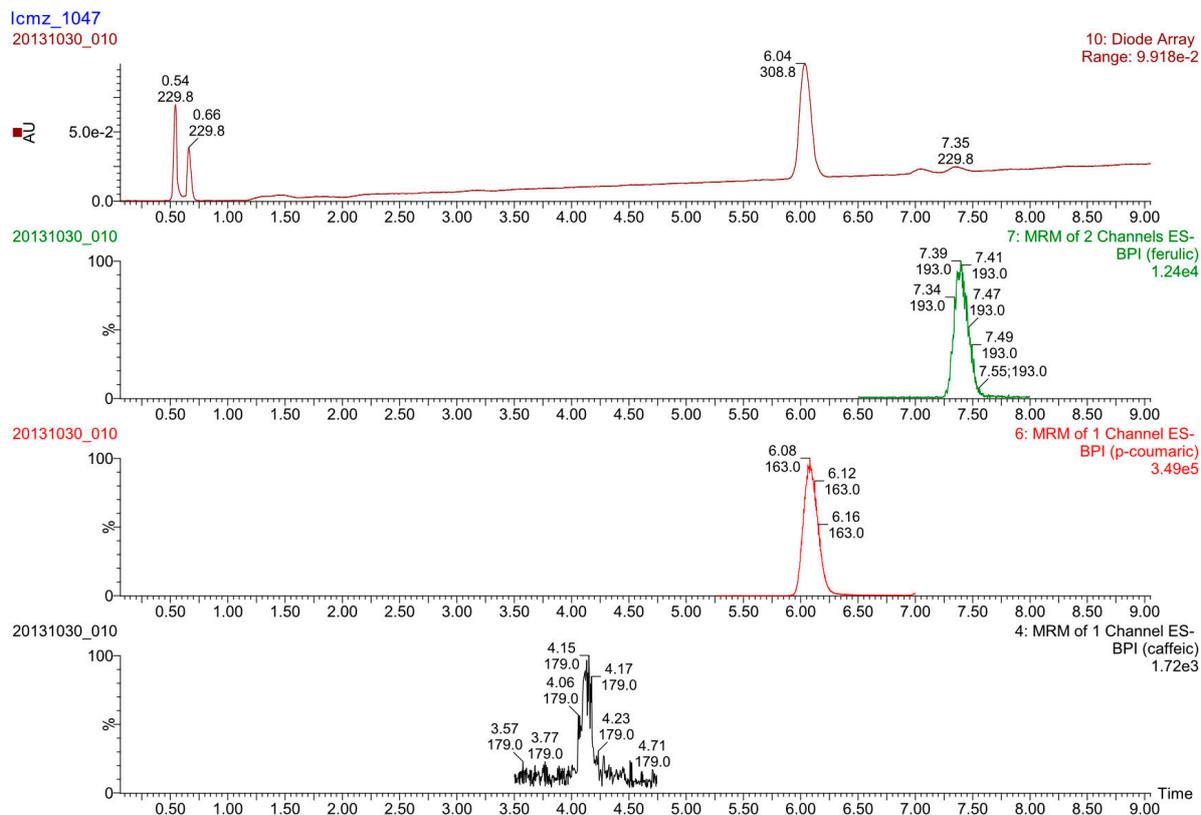


Figure S204. UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound **12**.

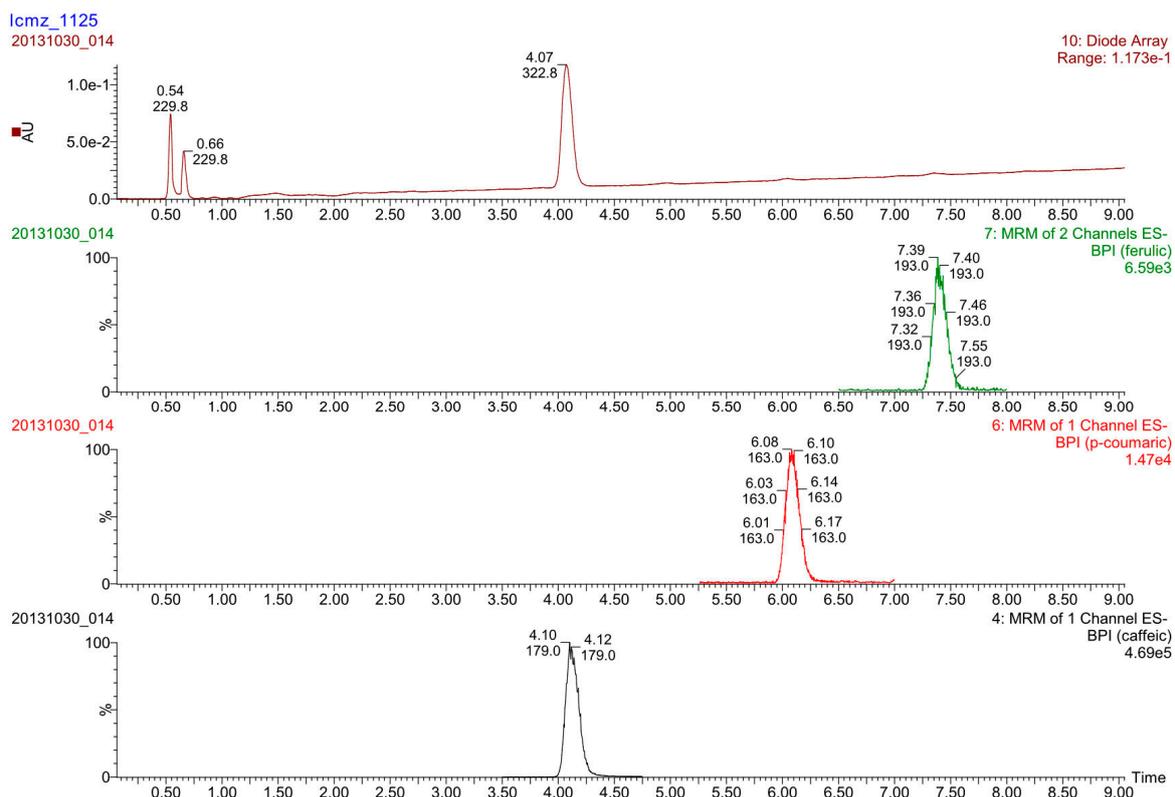


Figure S205. UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound **13**.

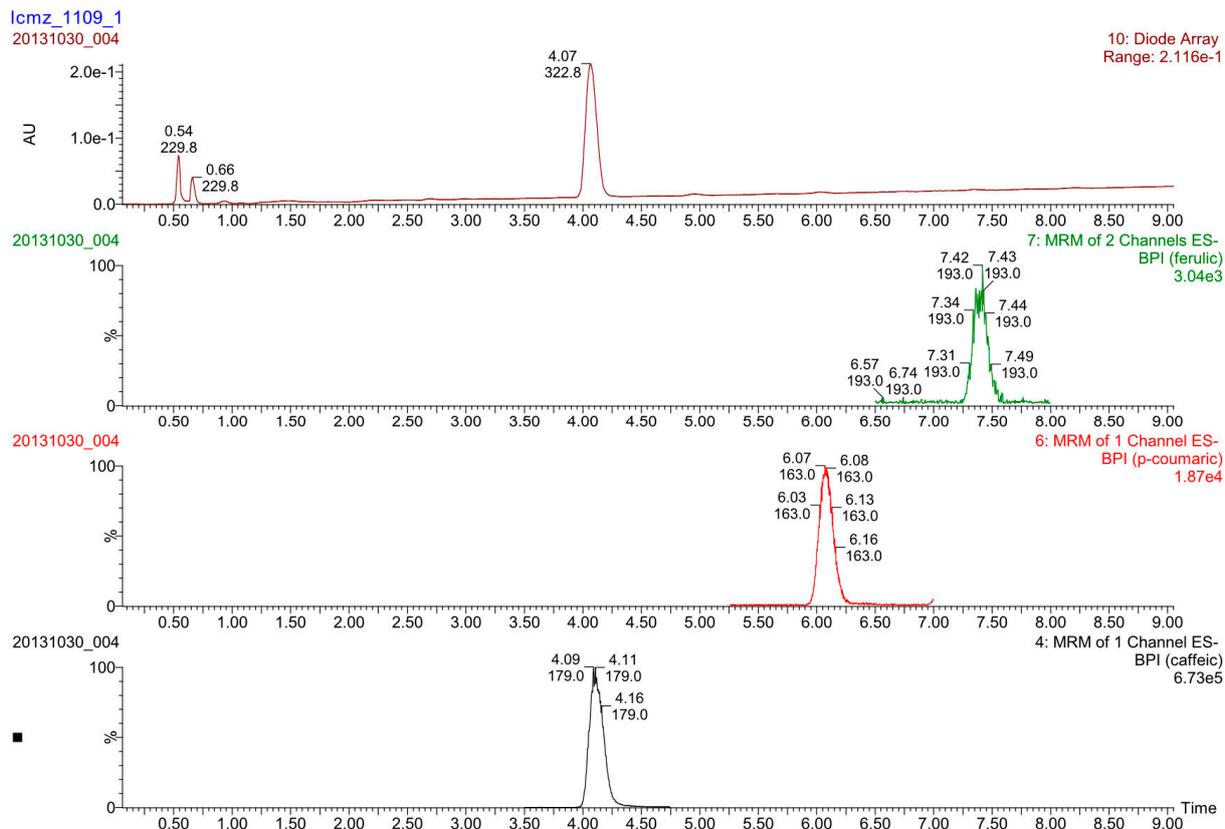


Figure S206. UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound **14**.

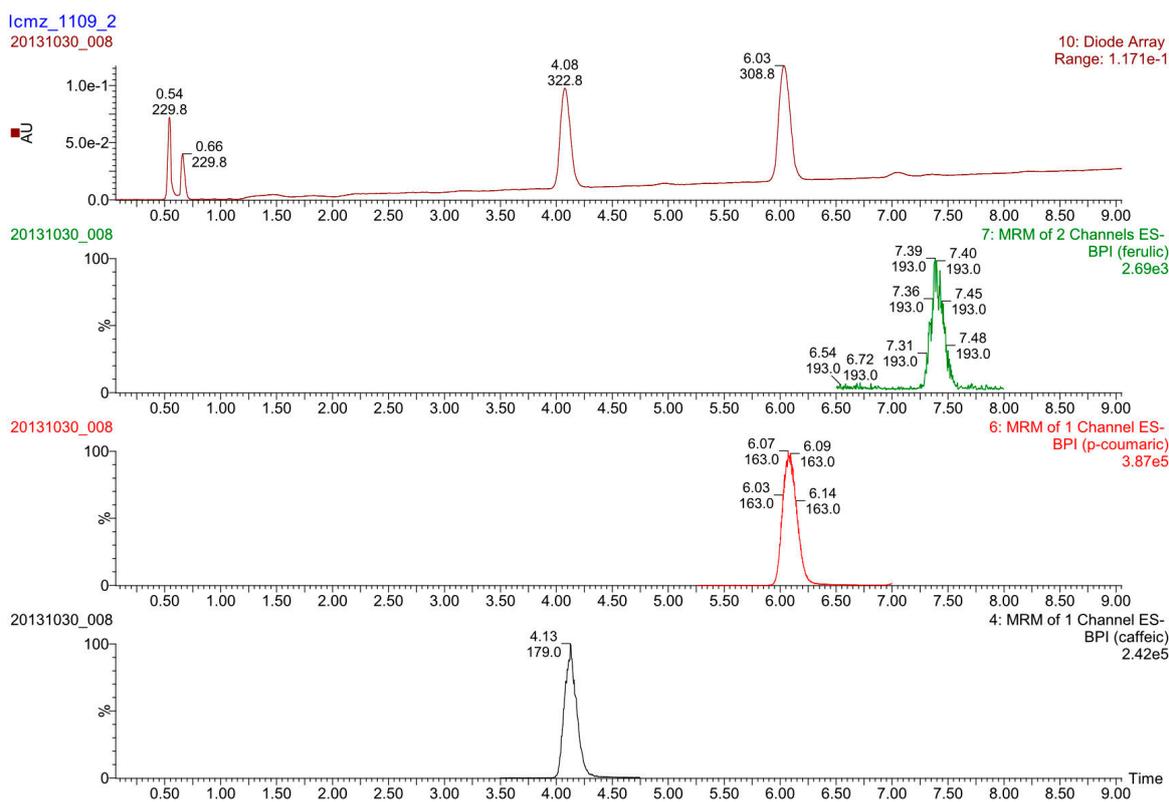


Figure S207. UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound **15**.

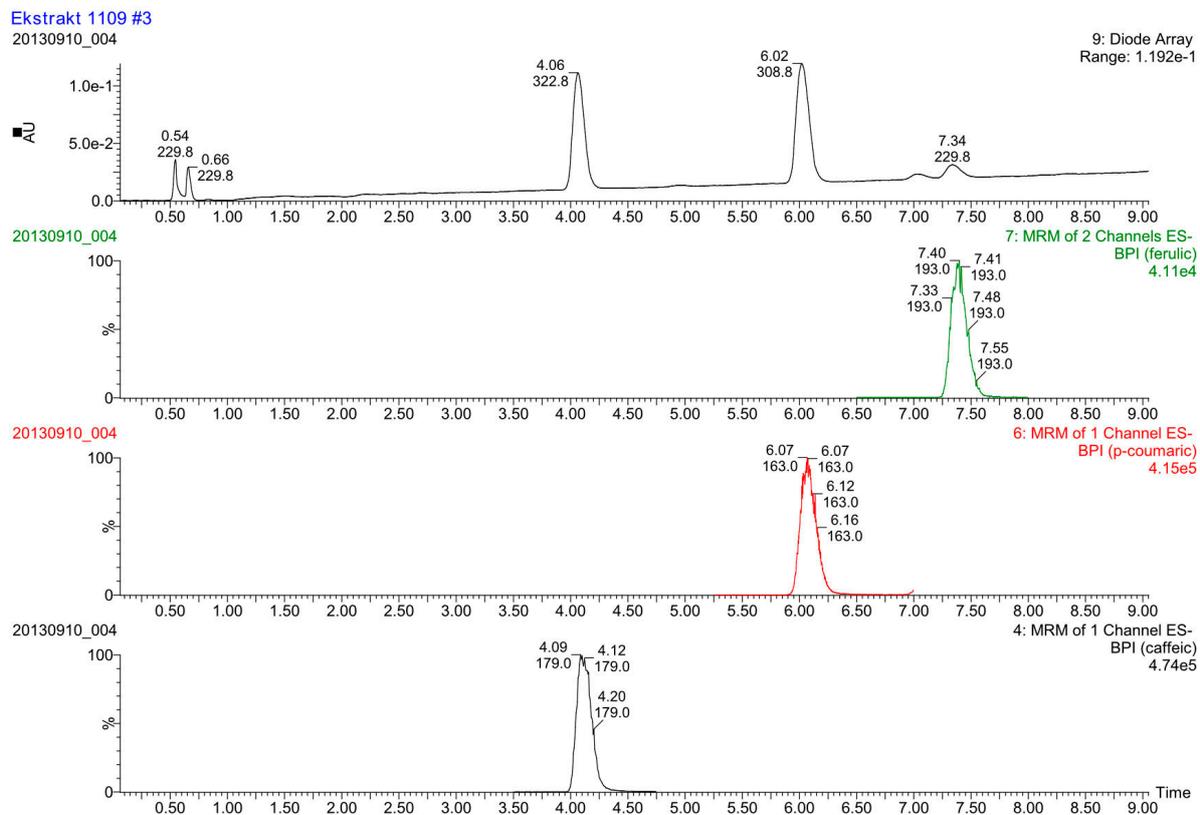


Figure S208. UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound **17**.

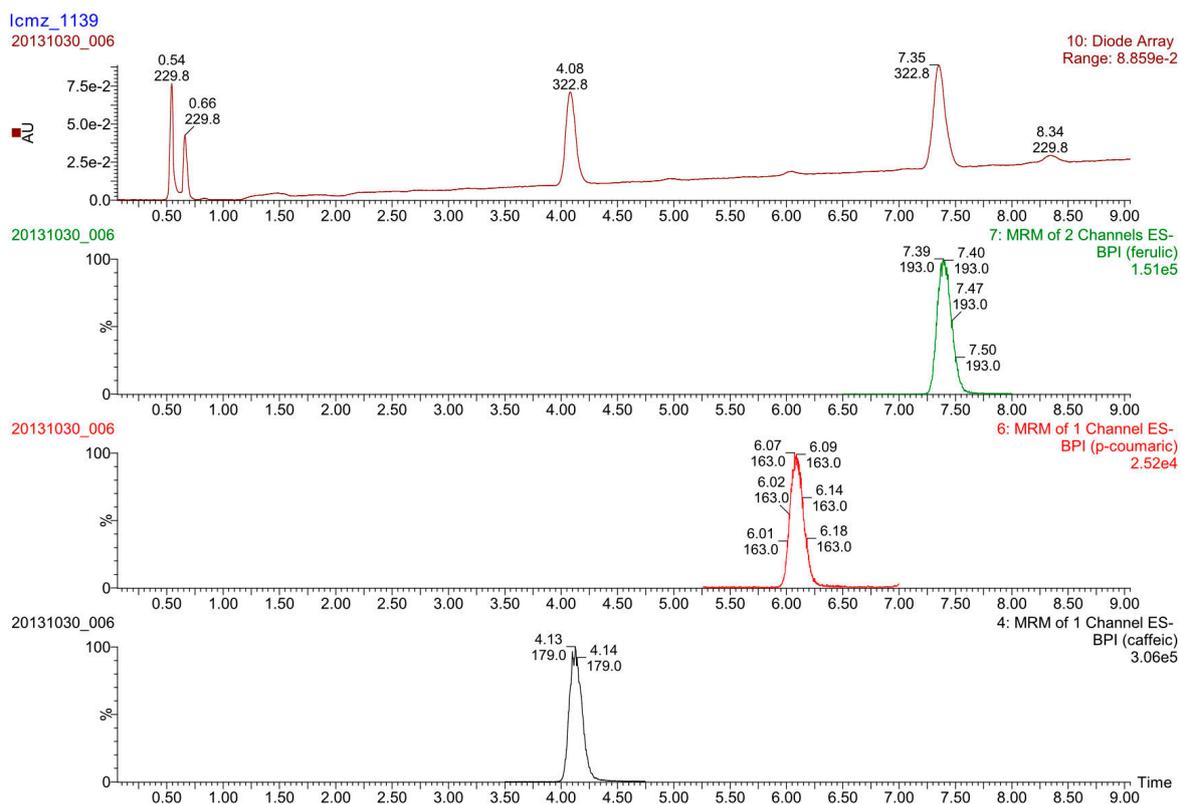


Figure S209. UPLC-MS chromatograms of phenolic acids released during alkaline hydrolysis of the compound **18**.

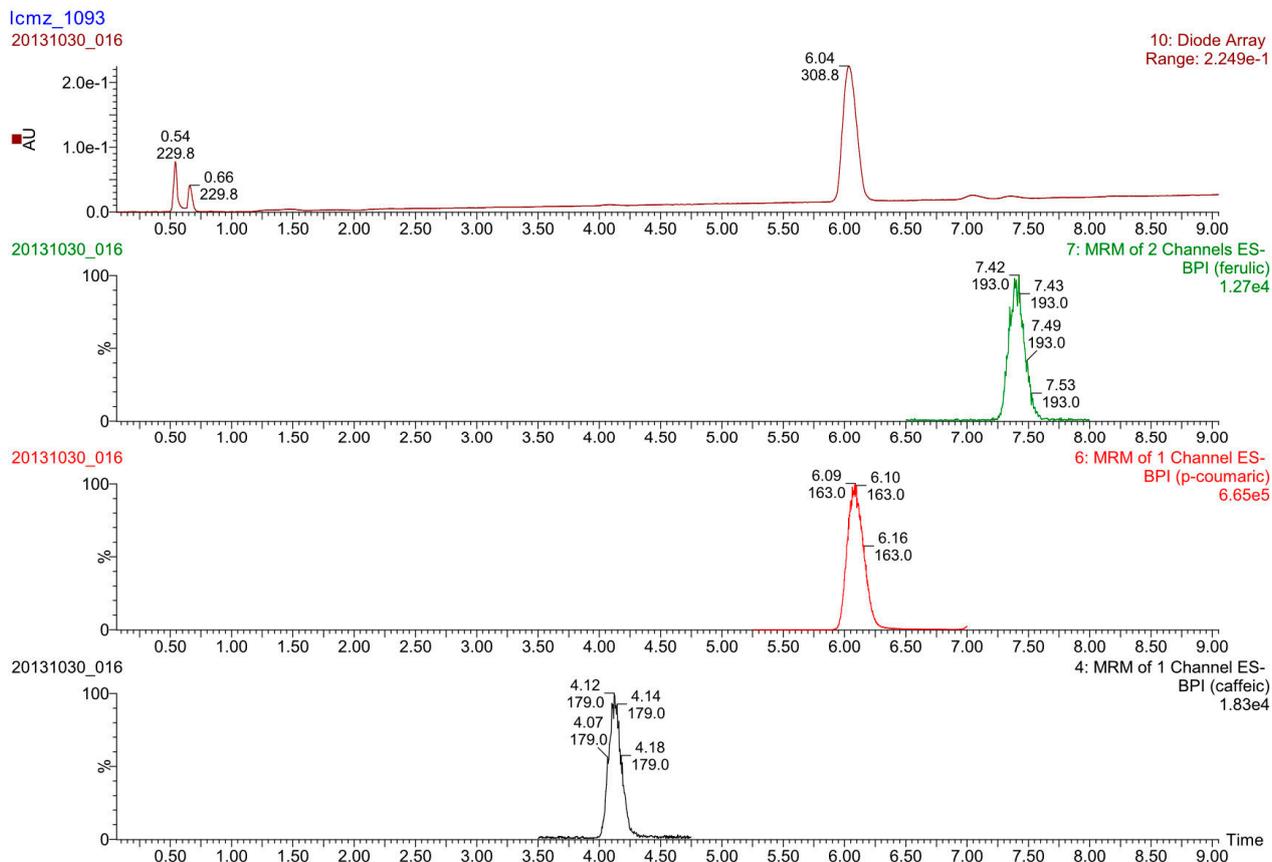
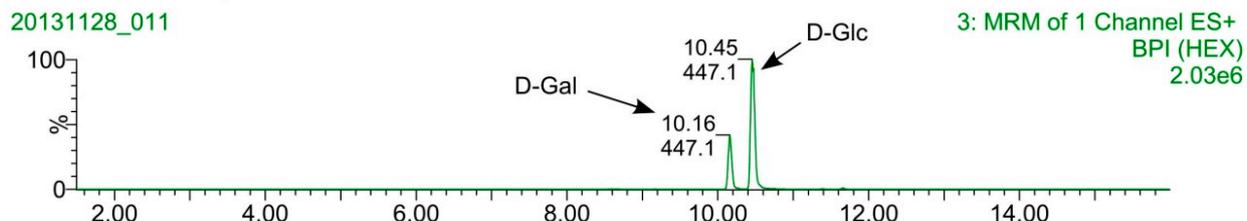
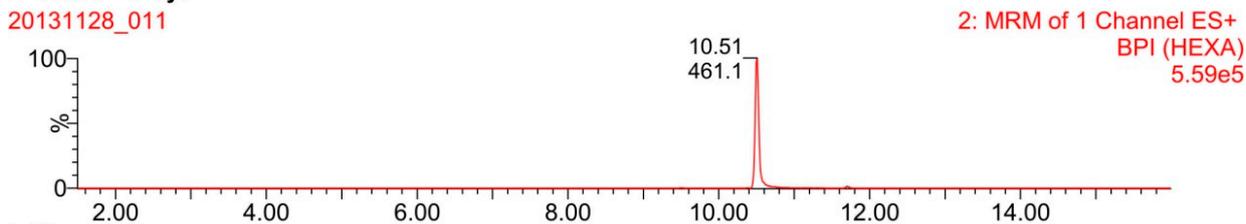


Figure S210. UPLC-MS chromatograms of the sugar standards.

D-Glc, D-Gal + L-Cys



D-GLcA + L-Cys



L-Rha + L-Cys

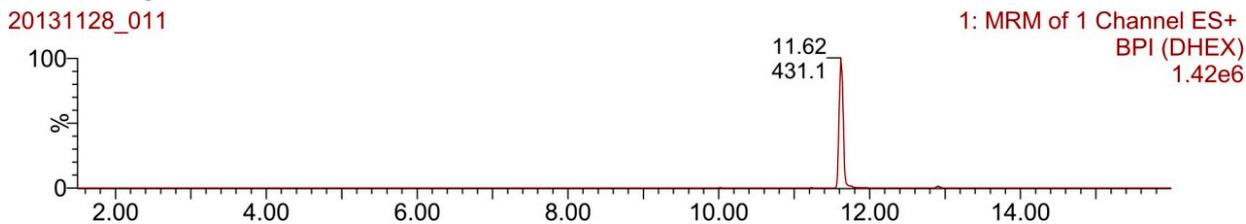
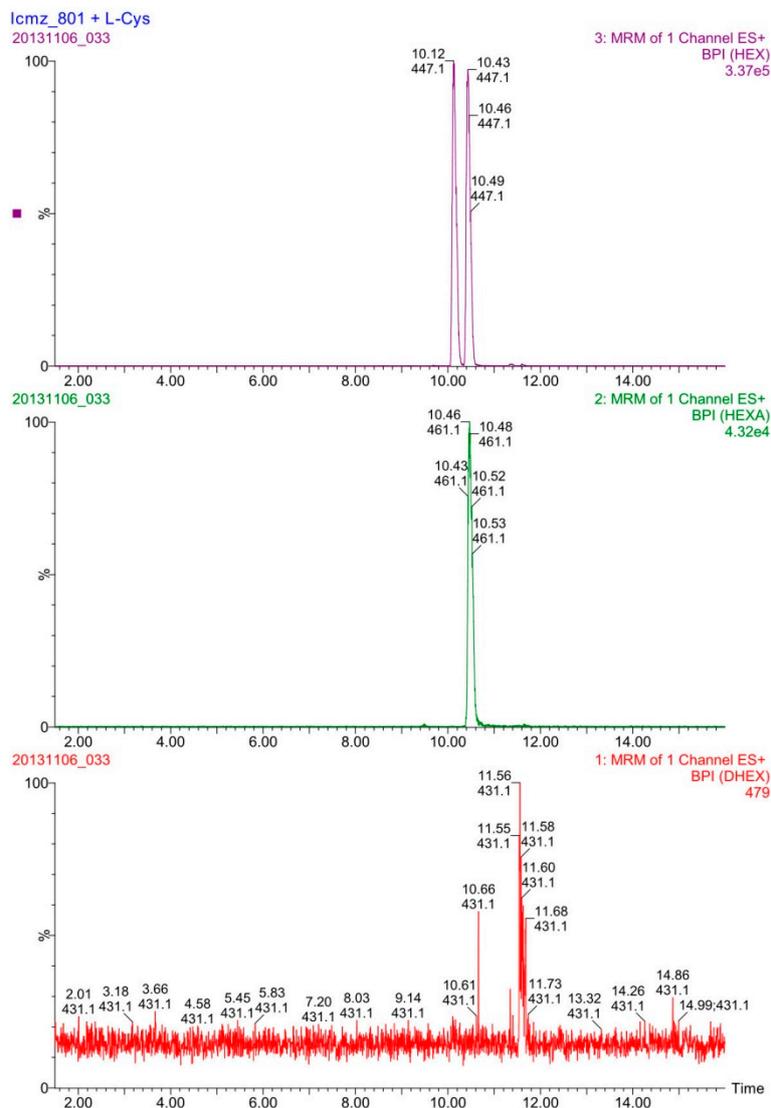


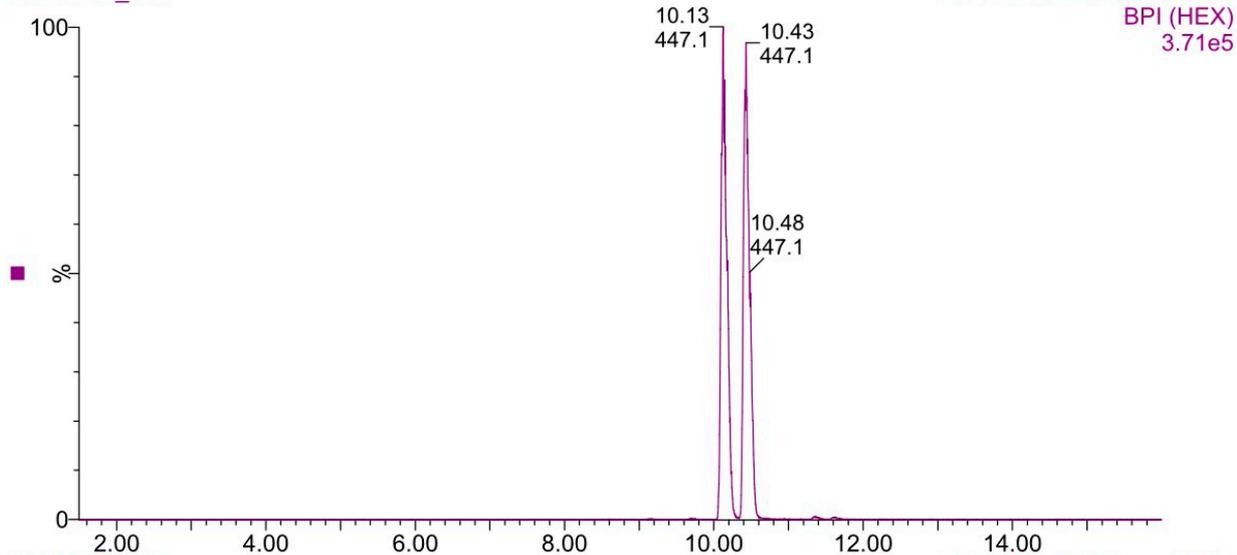
Figure S211. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **1**.



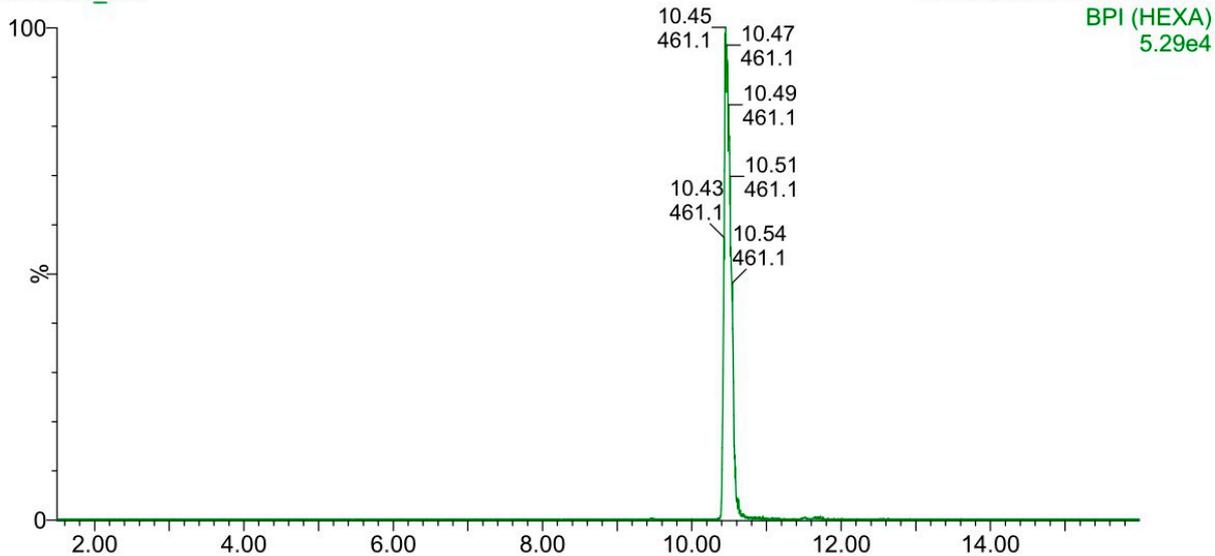
It can be noticed that heights of peaks of D-glucuronic acid, obtained for the samples of sugars released from the flavonoids **1**, **3**, **4–10**, **12–15**, **17**, and **18**, were distinctly lower than those of D-glucose and D-galactose. This may be explained by the fact that 7-*O*-glucuronides of flavonols are much less susceptible to acid hydrolysis than their 7-*O*-glucosides, and especially 7-*O*-rhamnosides (Mabry, T.J.; Markham, K.R.; Thomas, M.B. The aglycone and sugar analysis of flavonoid glycosides. In *The Systematic Identification of Flavonoids*; Springer: Berlin/Heidelberg, Germany, **1970**; pp. 23–32).

Figure S212. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **3**.

lcmz_785 + L-Cys
20131106_032



20131106_032



20131106_032

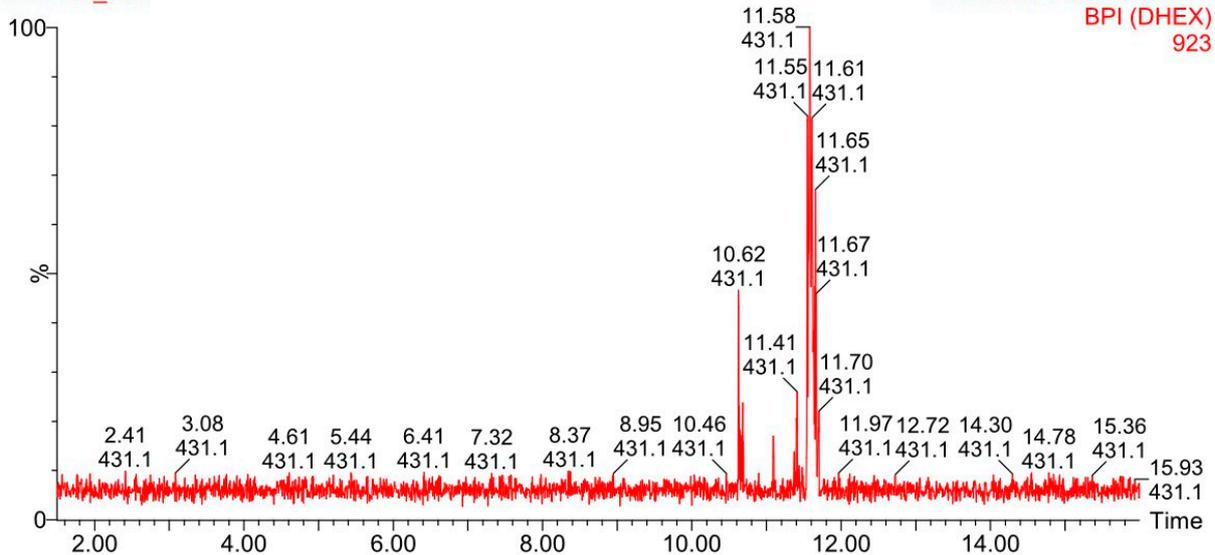
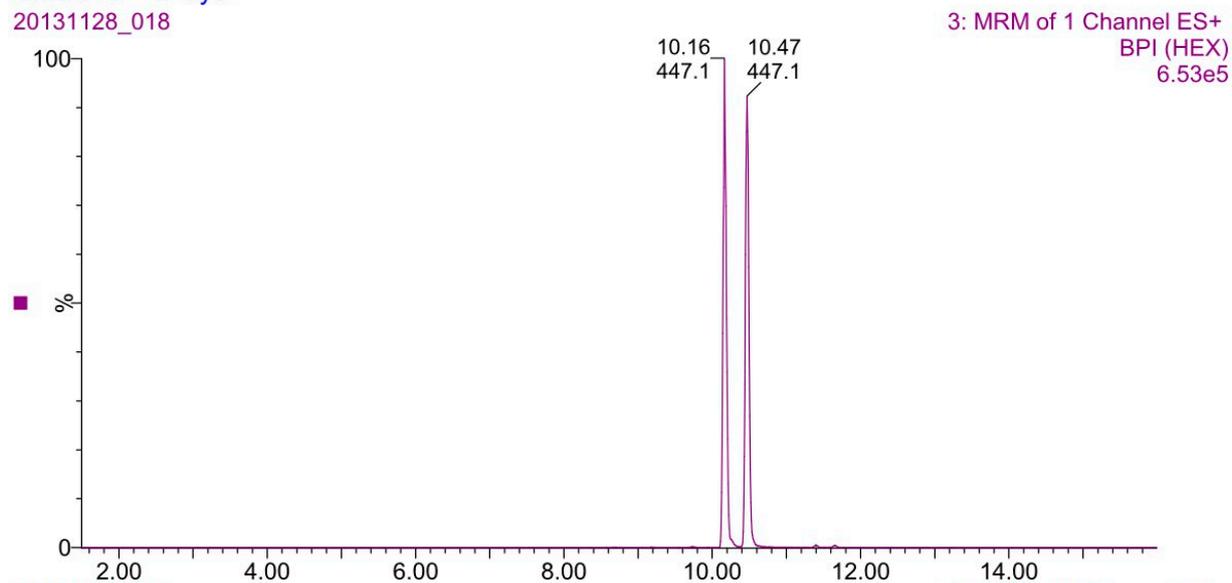
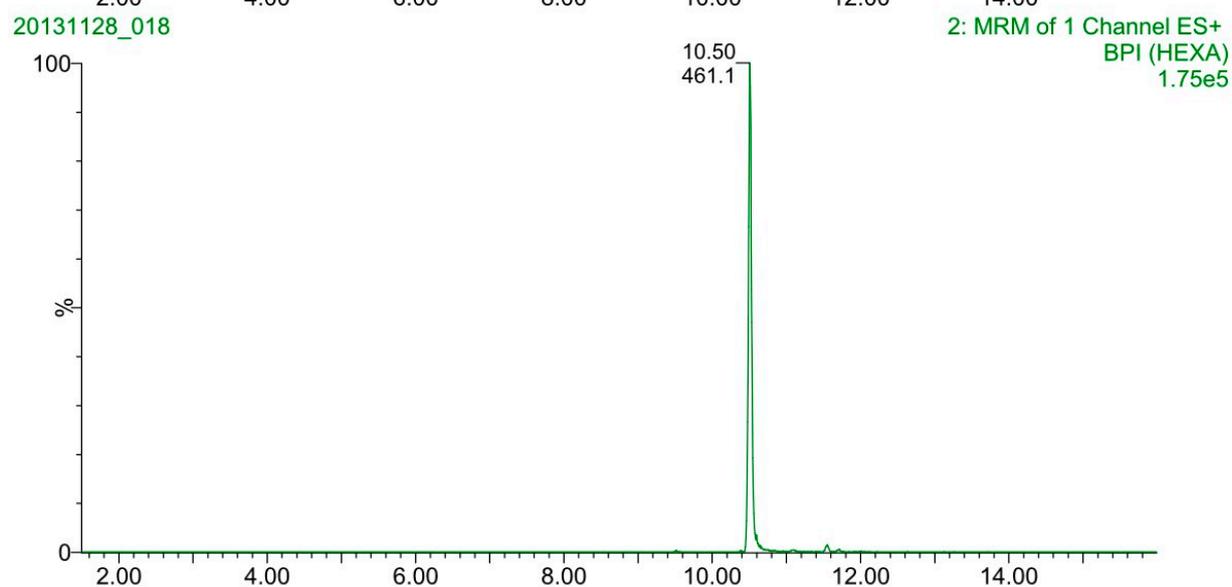


Figure S213. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **4**.

lcmz 979 + L-Cys
20131128_018



20131128_018



20131128_018

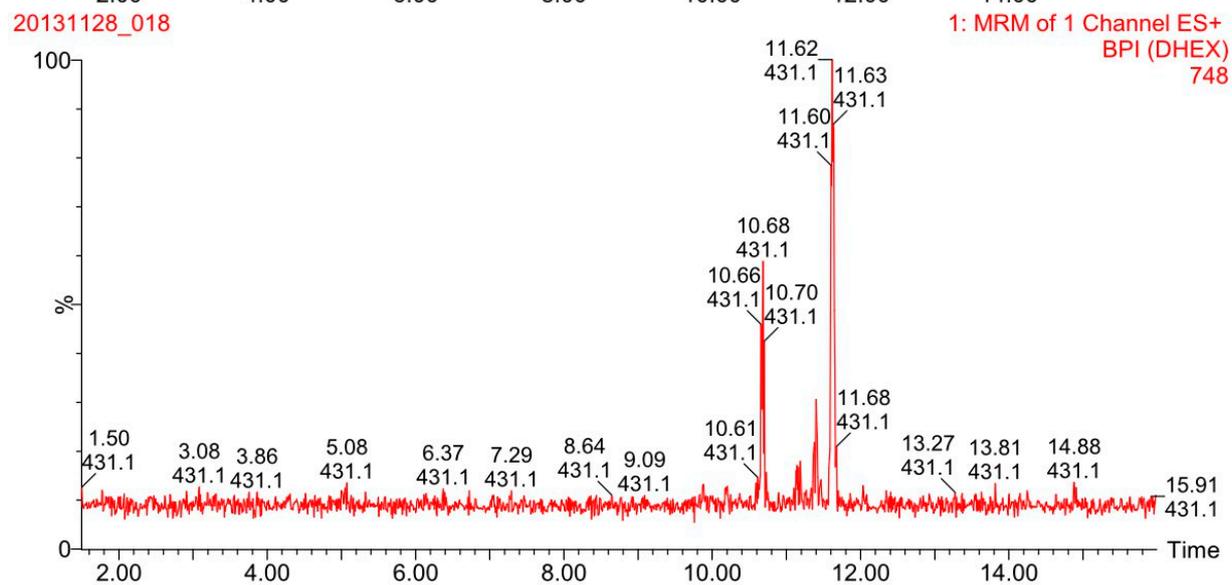
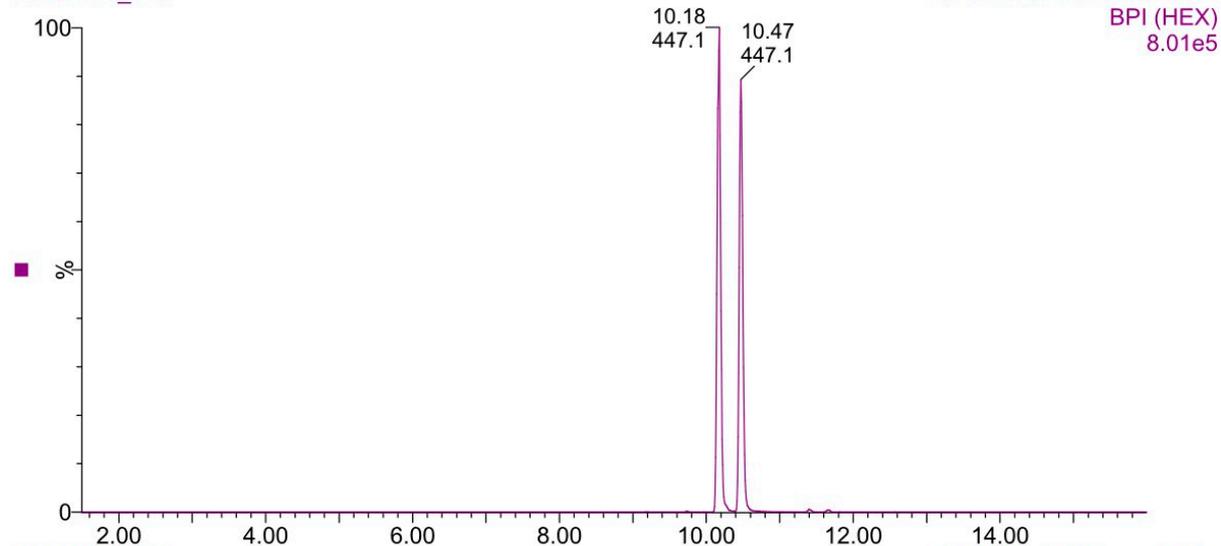
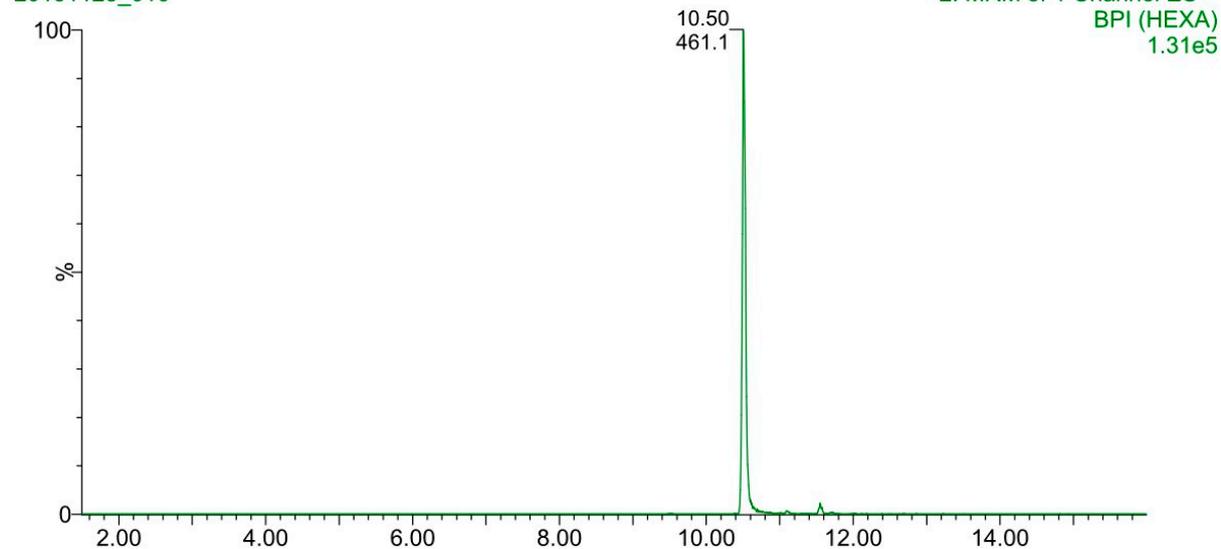


Figure S214. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **5**.

lcmz 963 + L-Cys
20131128_016



20131128_016



20131128_016

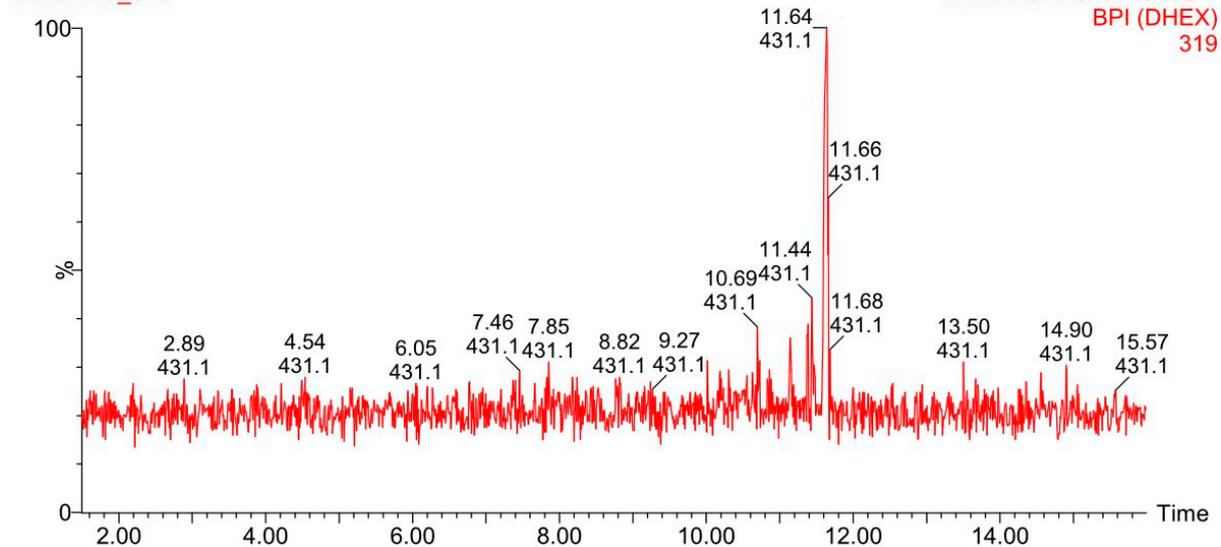
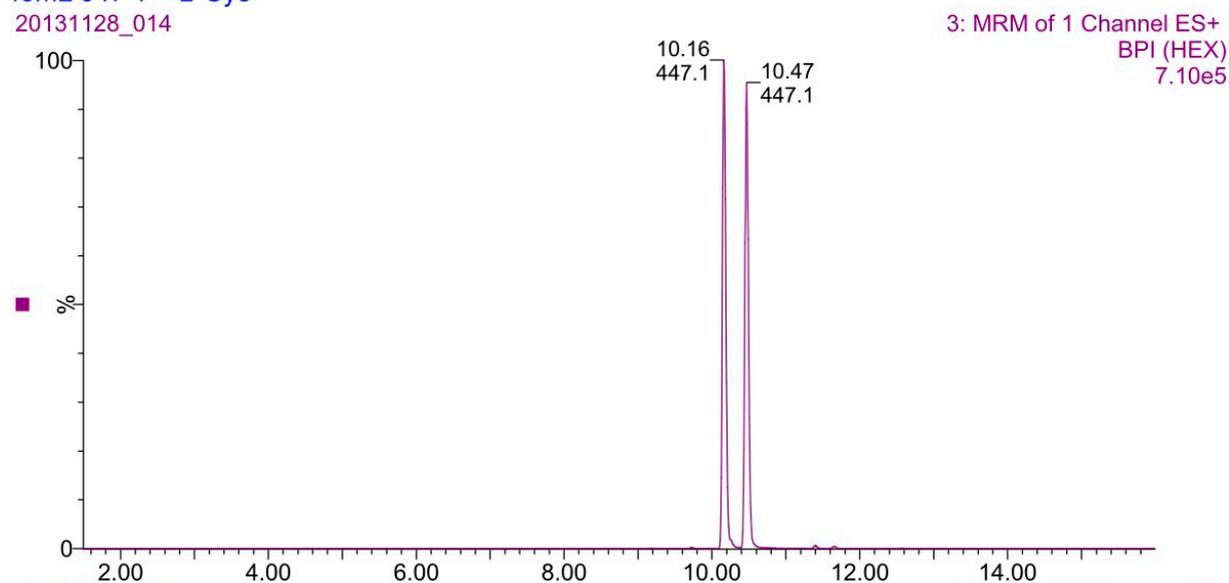
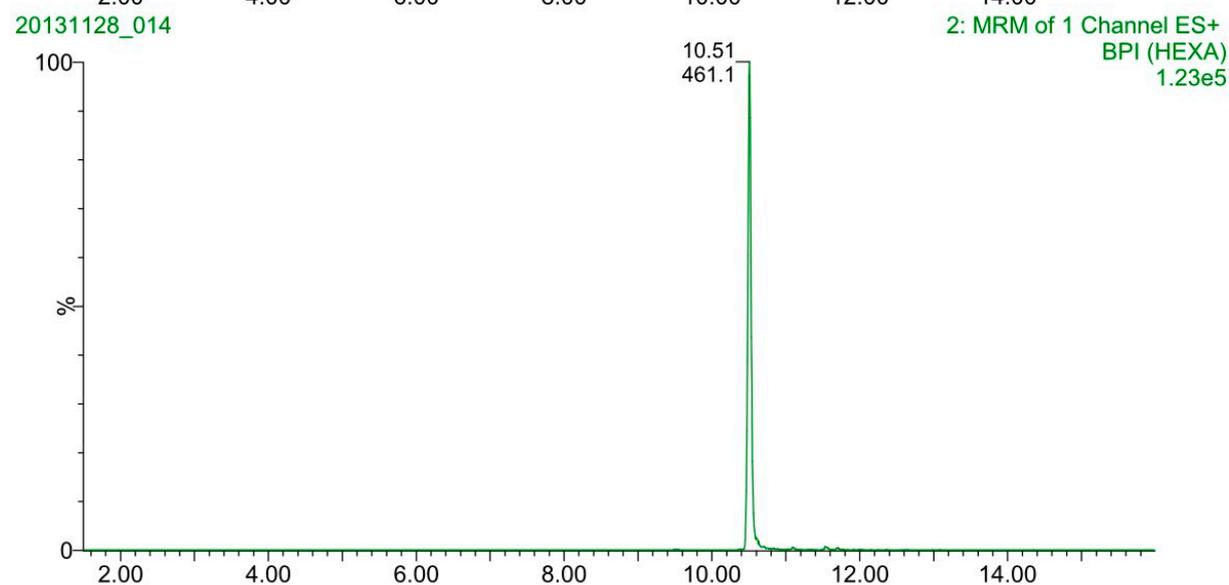


Figure S215. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **6**.

lcmz 947 1 + L-Cys
20131128_014



20131128_014



20131128_014

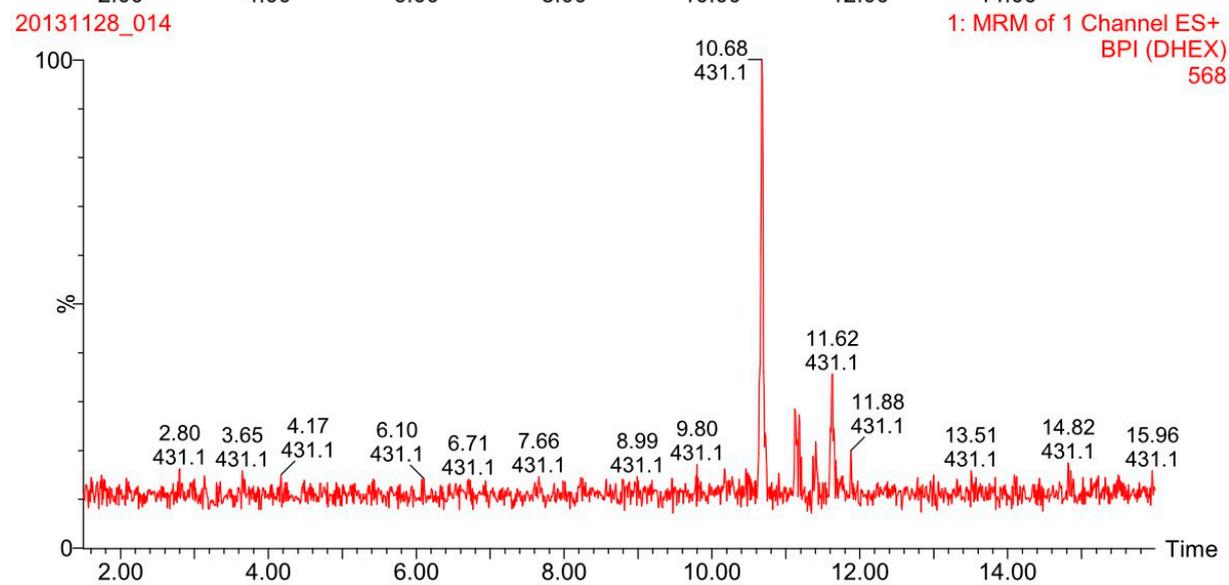


Figure S216. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound 7.

lcmz_947_II + L-Cys
20131106_034

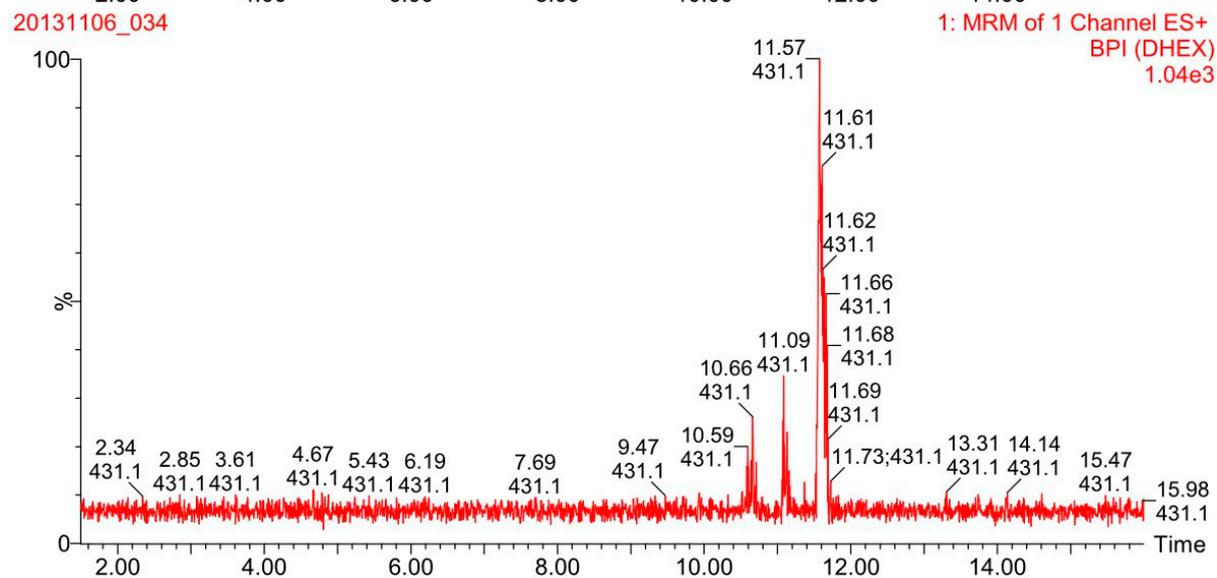
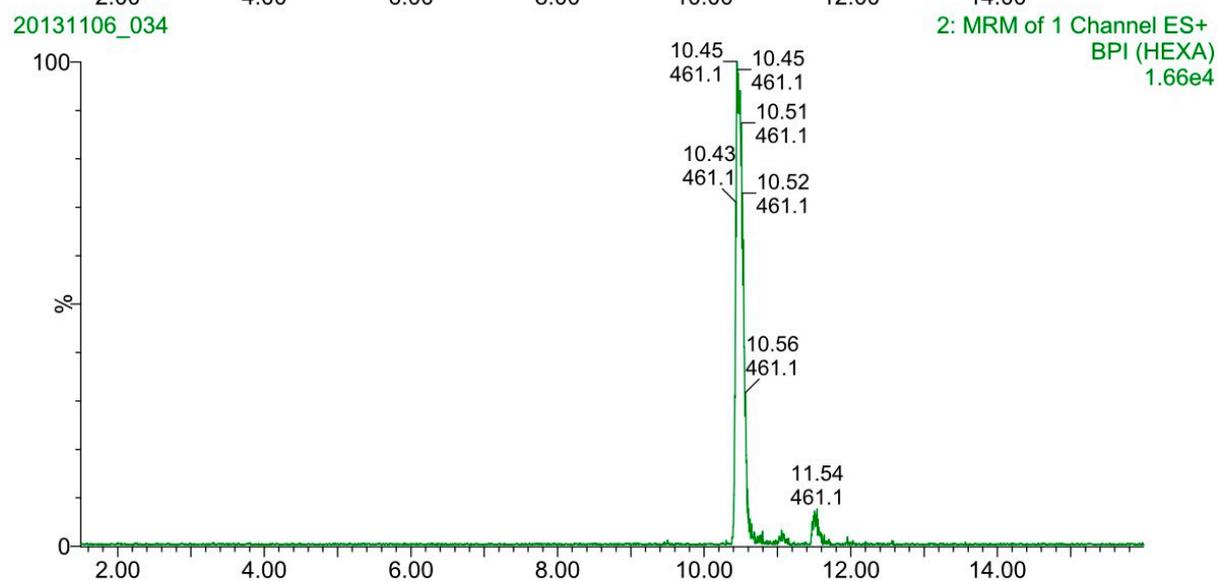
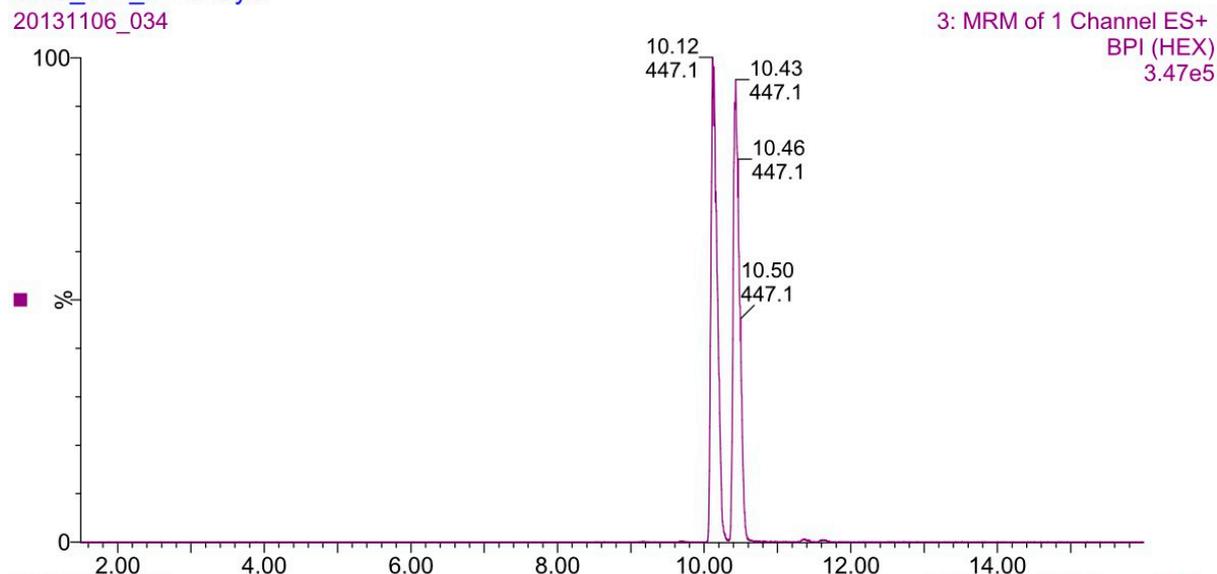
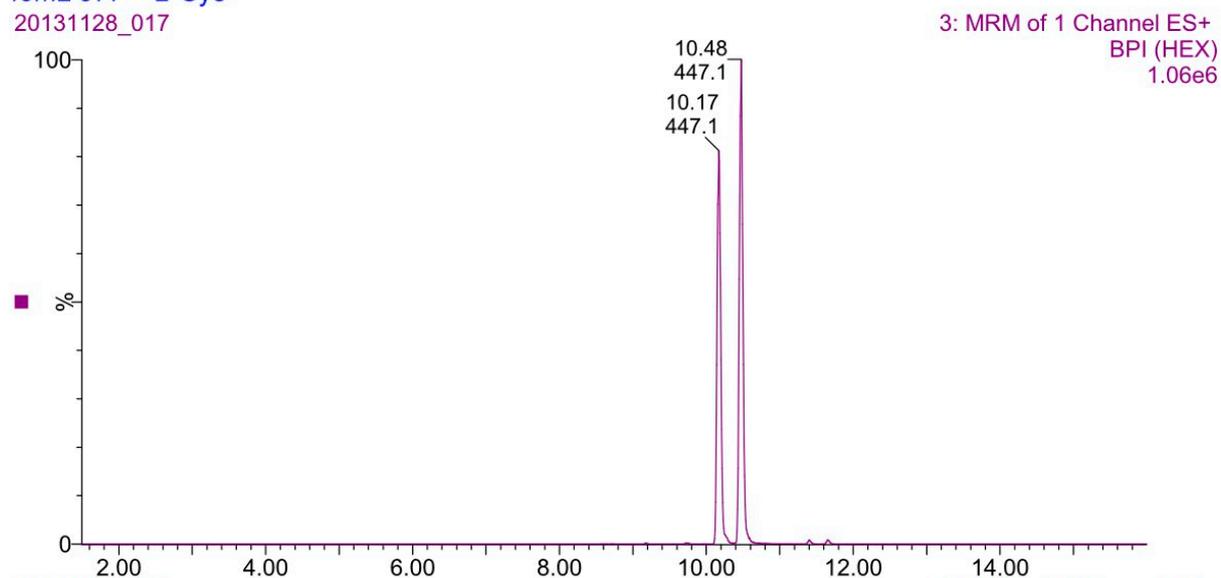
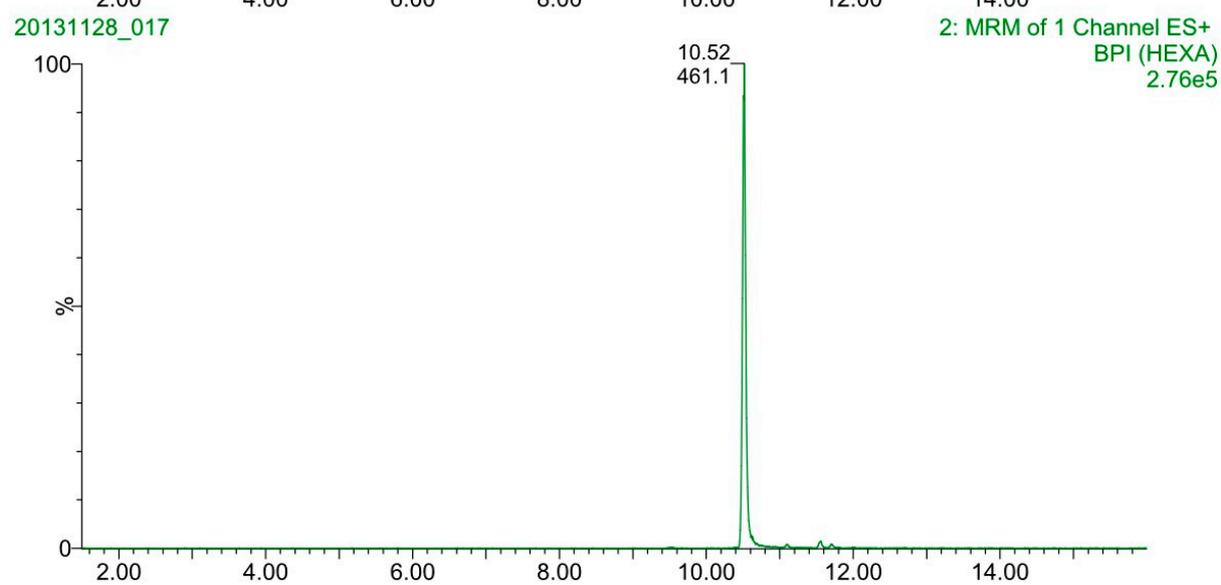


Figure S217. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **8**.

lcmz 977 + L-Cys
20131128_017



20131128_017



20131128_017

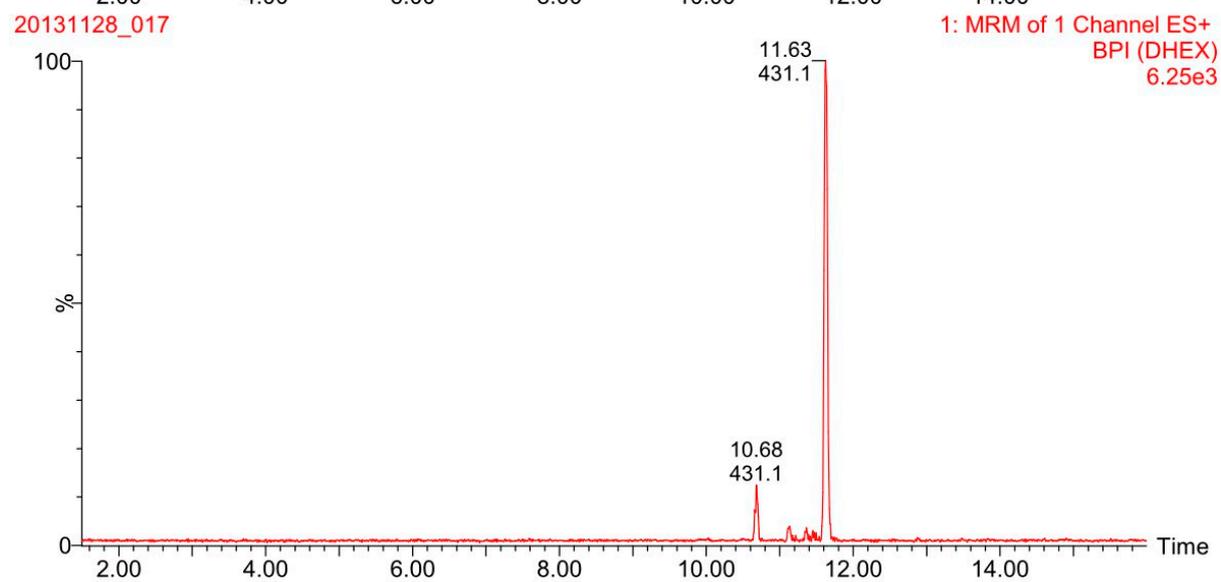
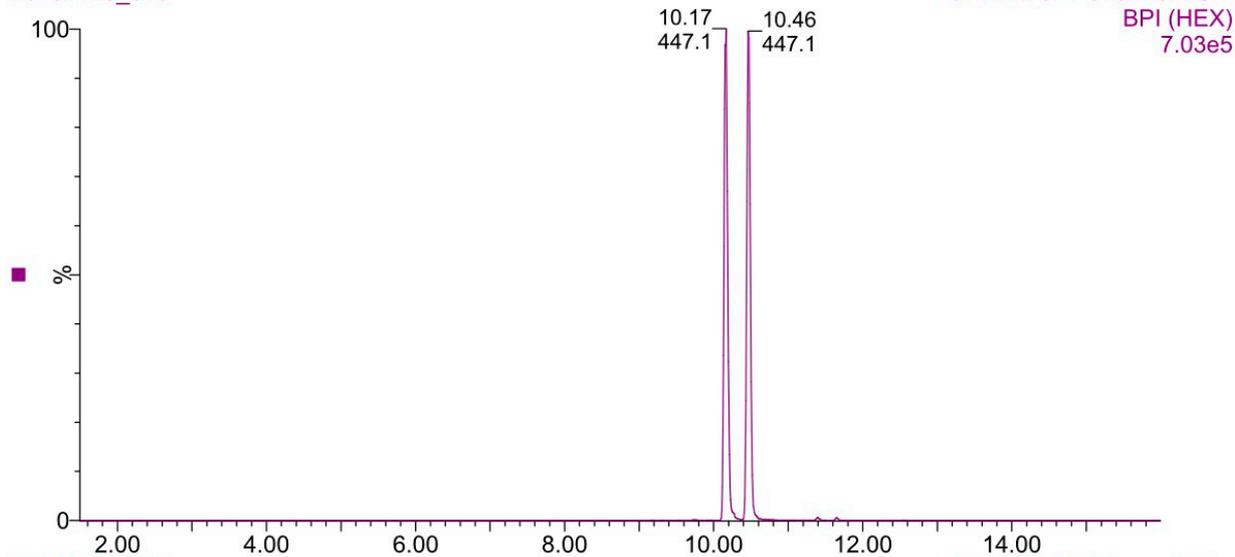
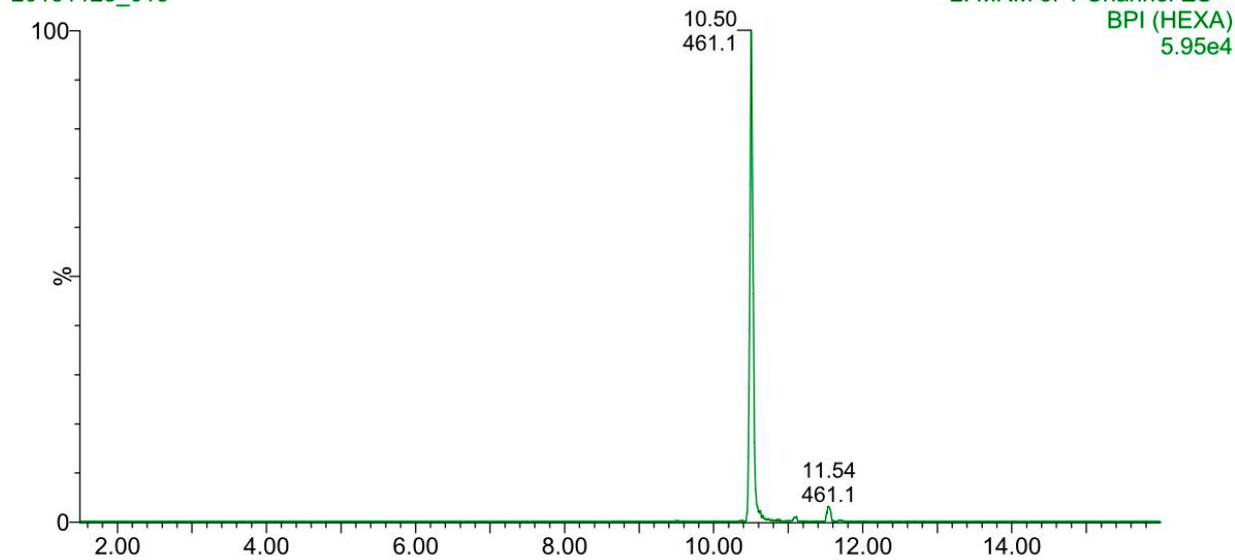


Figure S218. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **9**.

lcmz 931 + L-Cys
20131128_013



20131128_013



20131128_013

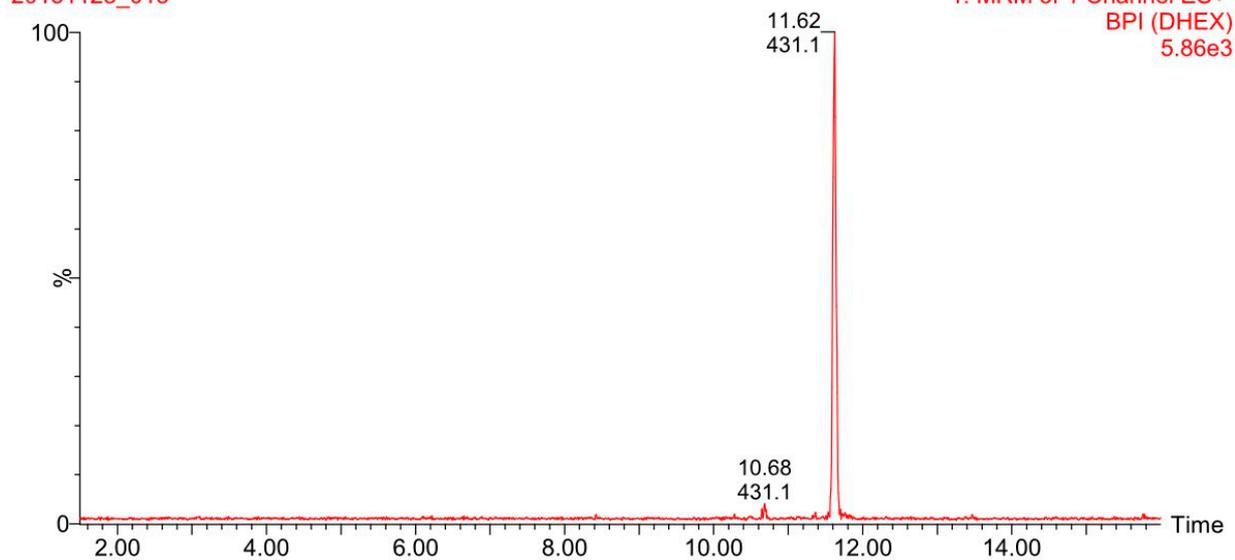
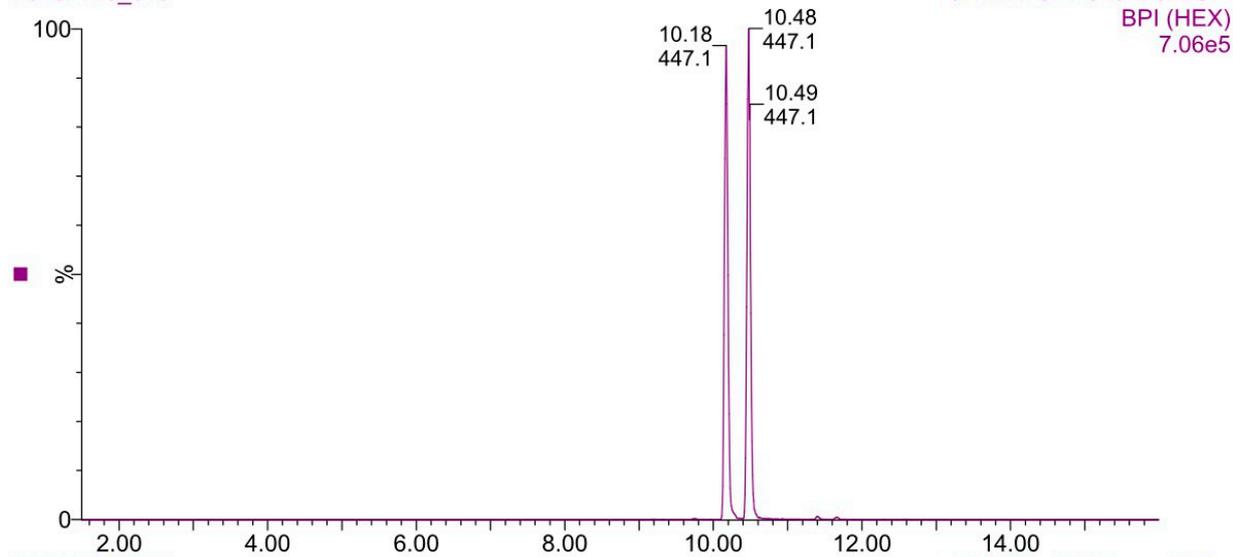
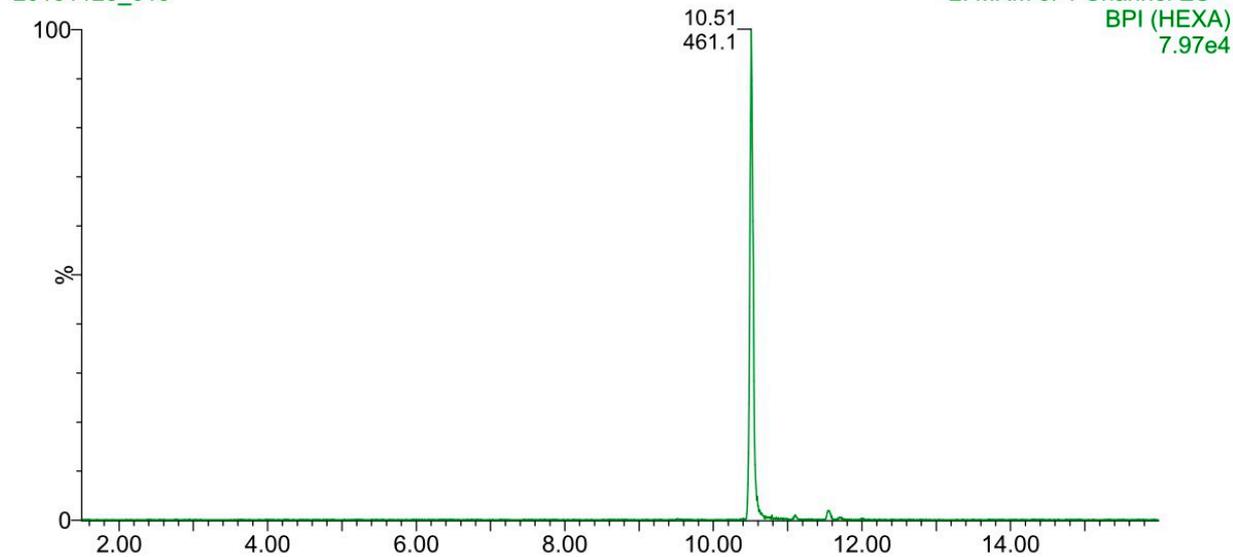


Figure S219. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **10**.

lcmz 961 + L-Cys
20131128_015



20131128_015



20131128_015

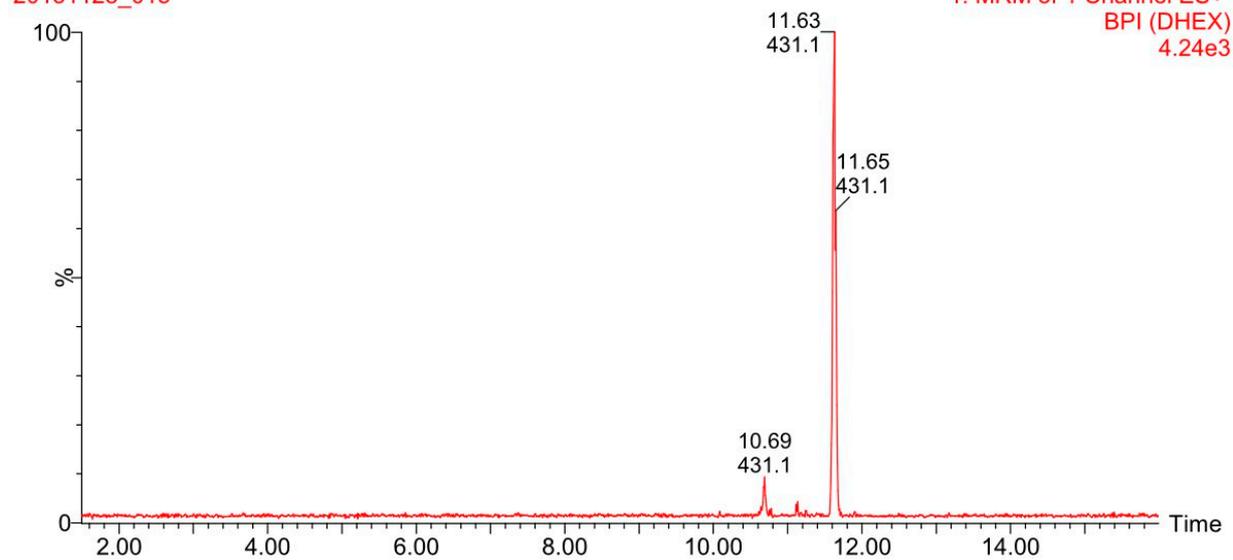
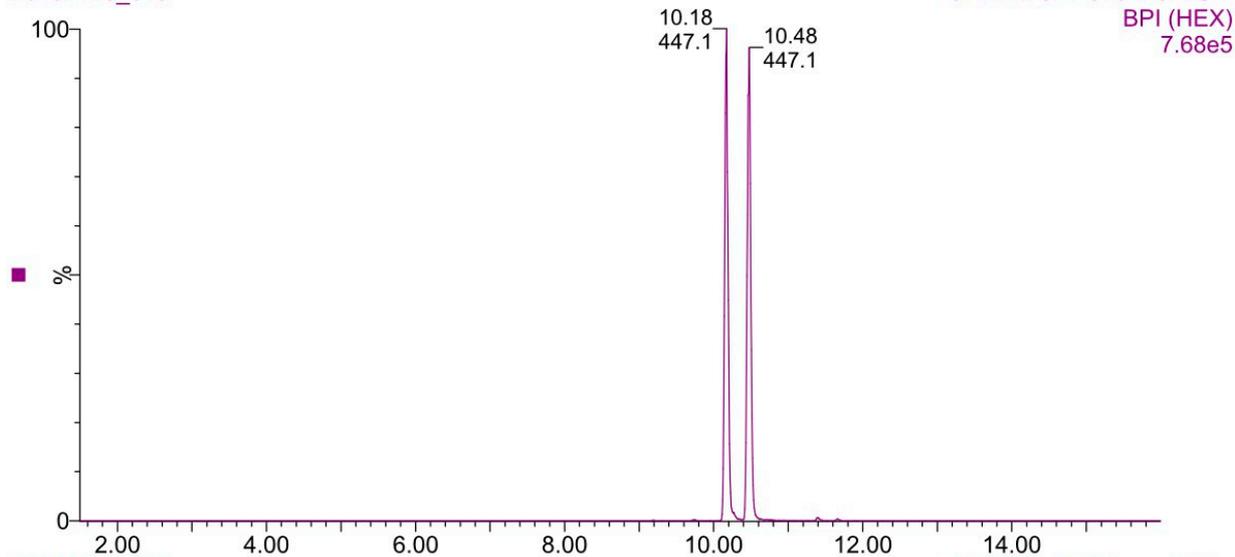
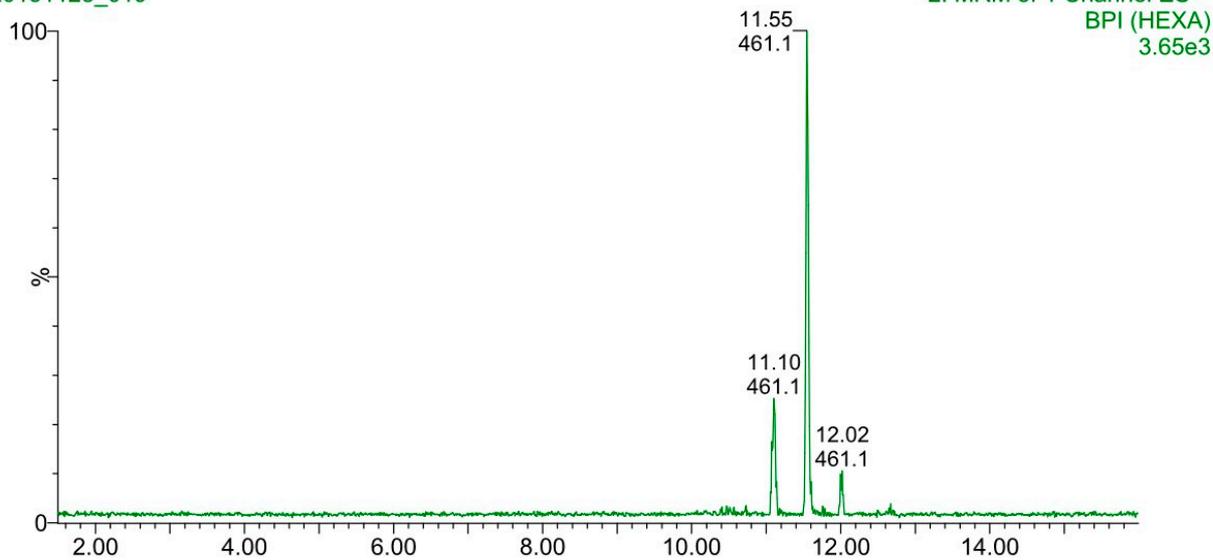


Figure S220. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **11**.

Icmz 1047 + L-Cys
20131128_019



20131128_019



20131128_019

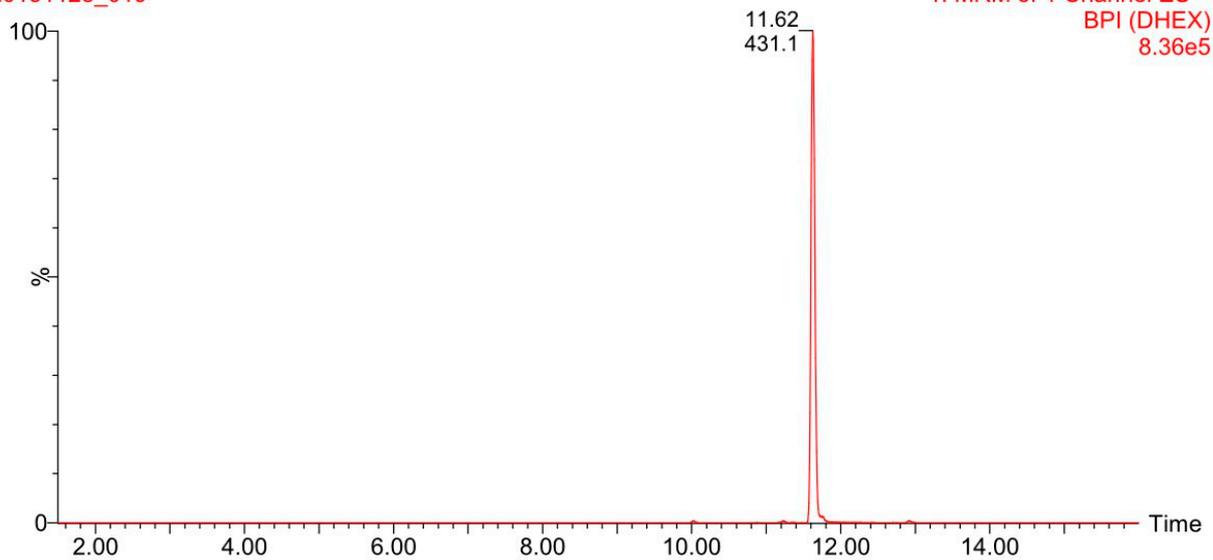
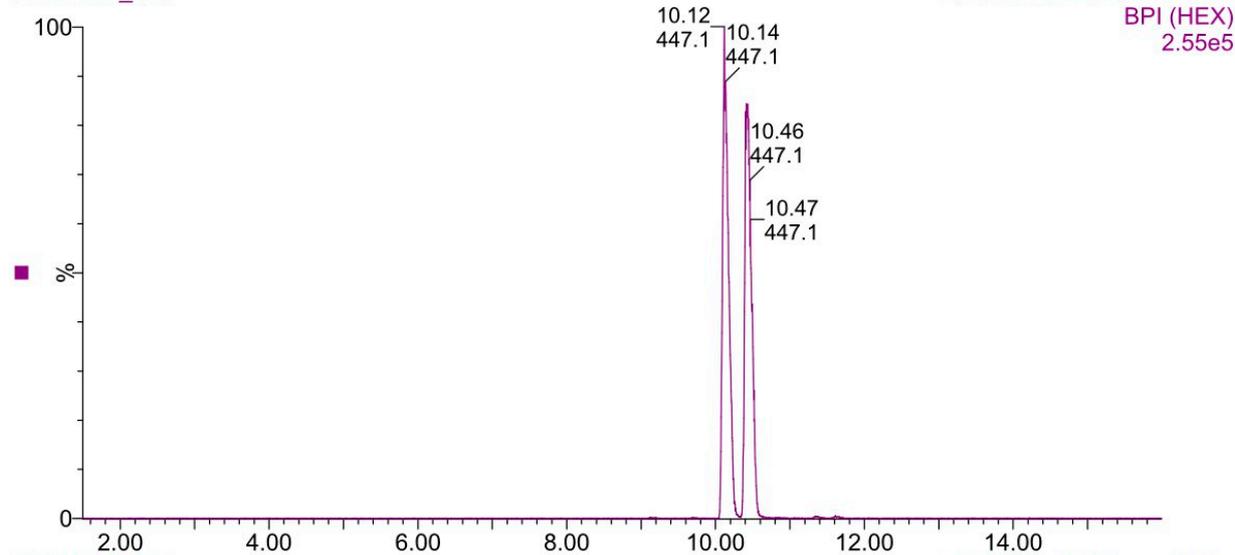
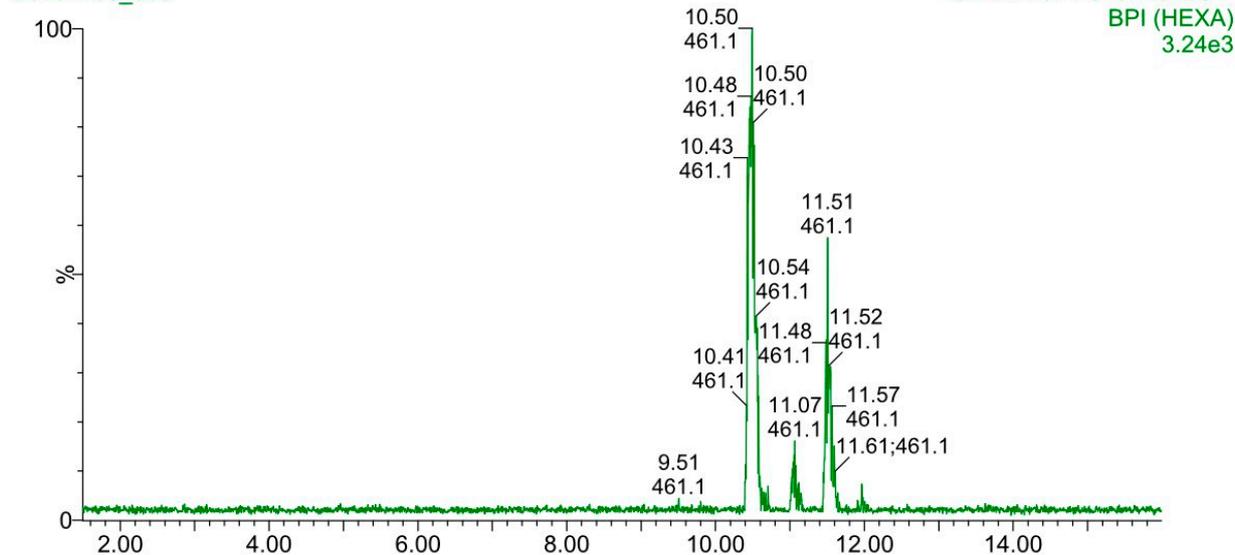


Figure S221. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **12**.

lcmz_1125 + L-Cys
20131106_036



20131106_036



20131106_036

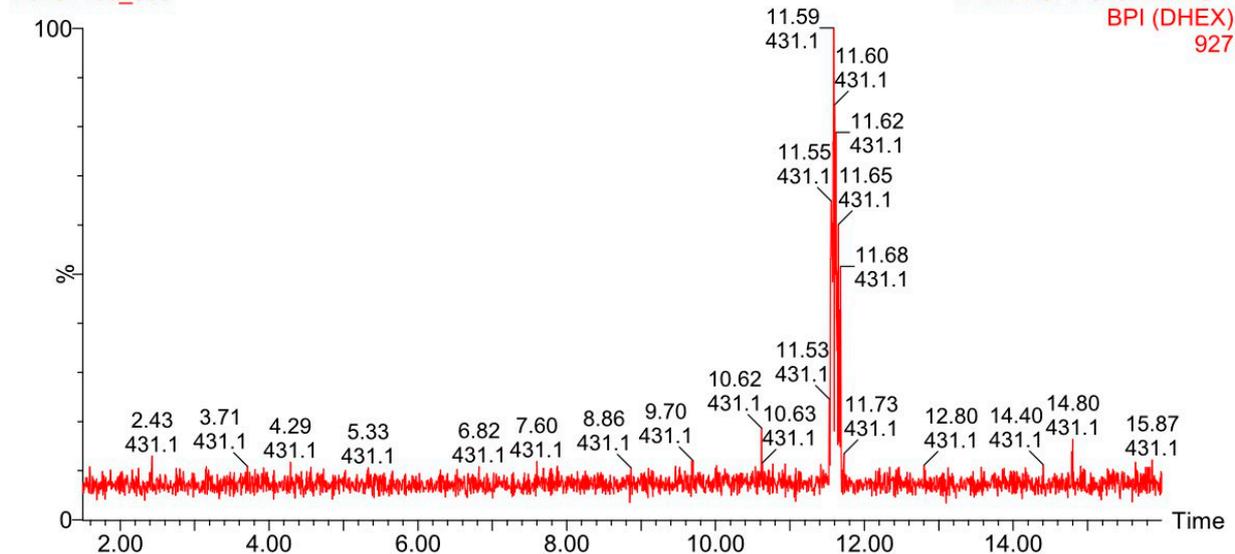


Figure S222. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **13**.

Icmz 1109 1 + L-Cys
20131128_020

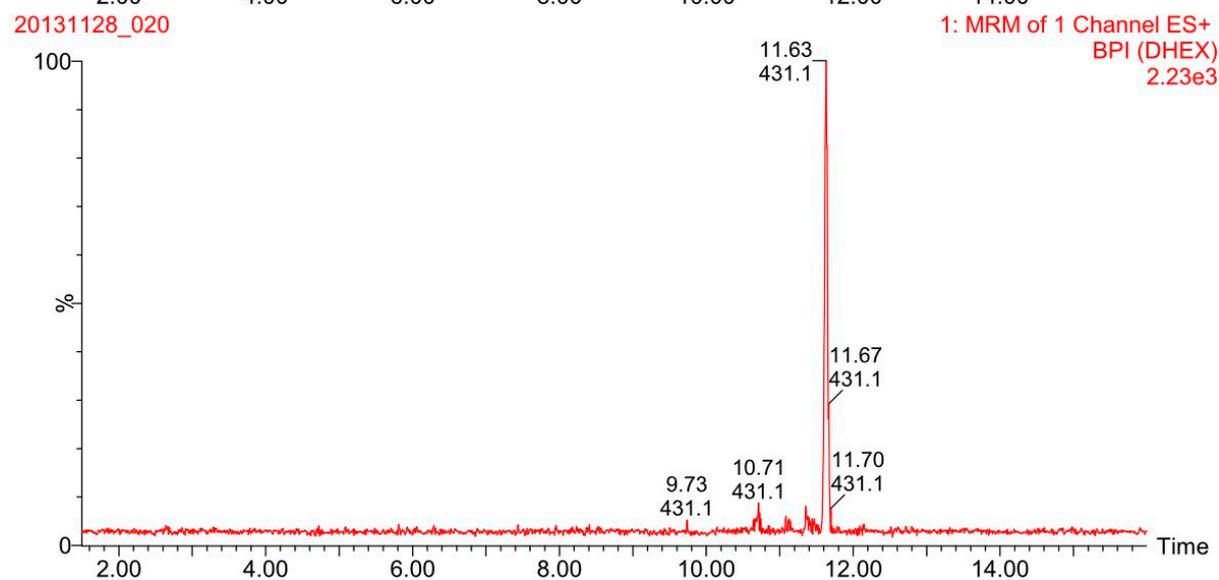
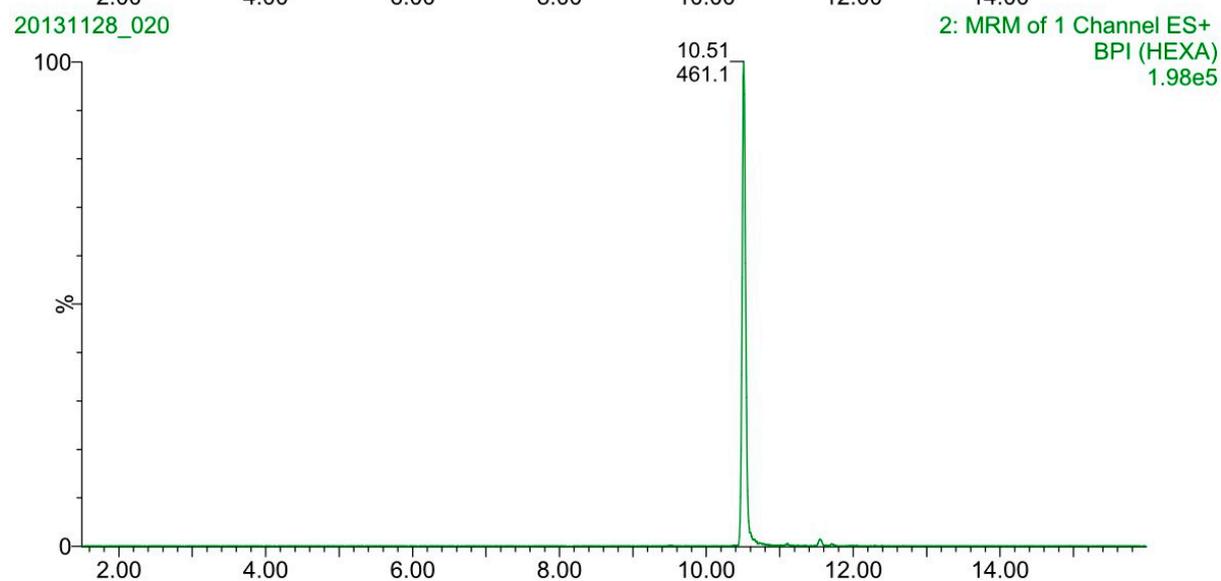
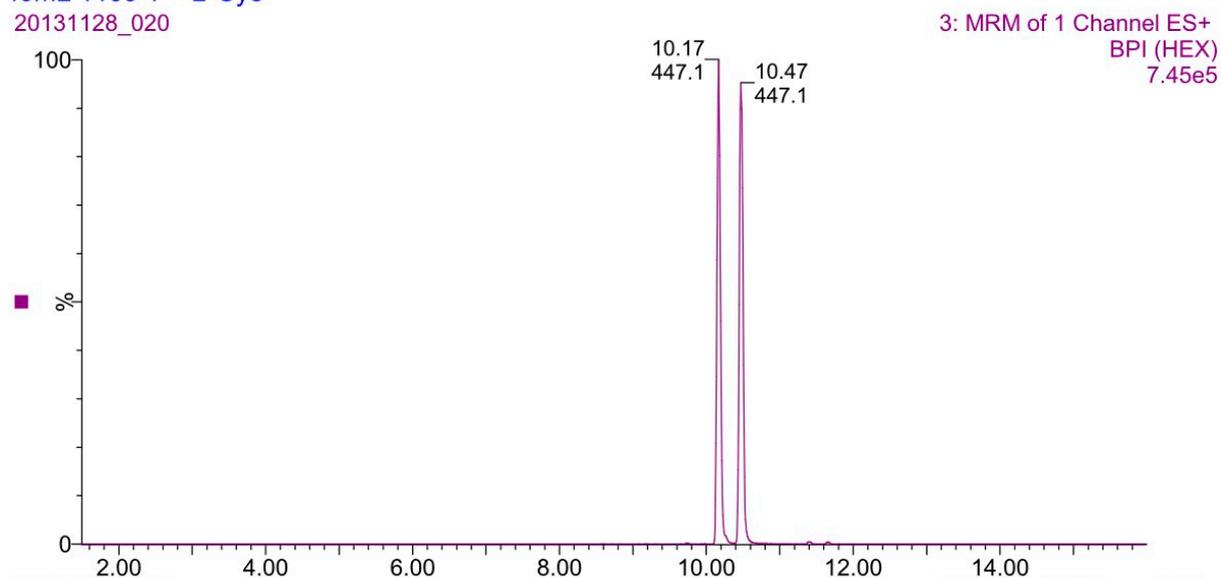


Figure S223. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **14**.

lcmz 1109 2 + L-Cys
20131128_021

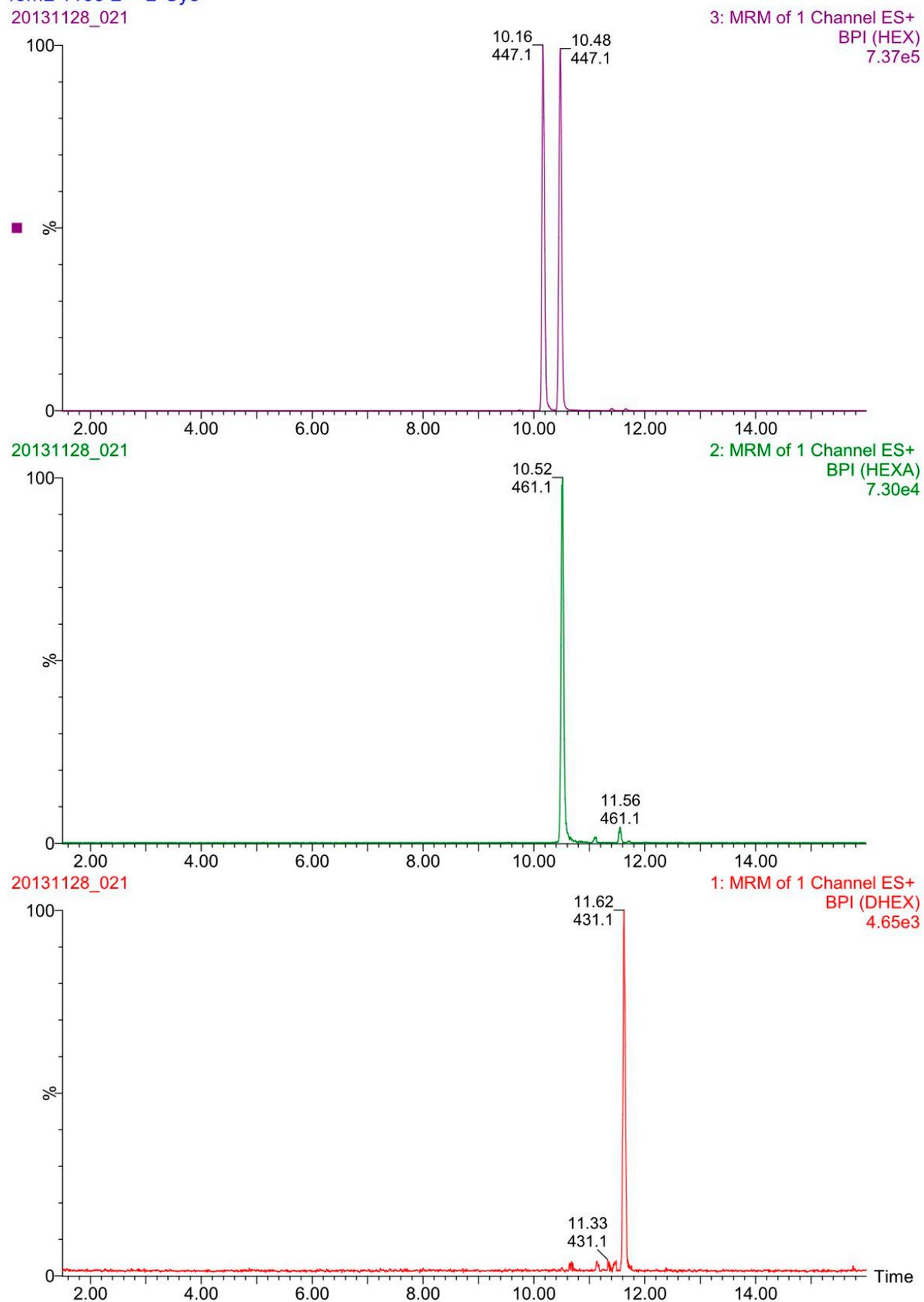
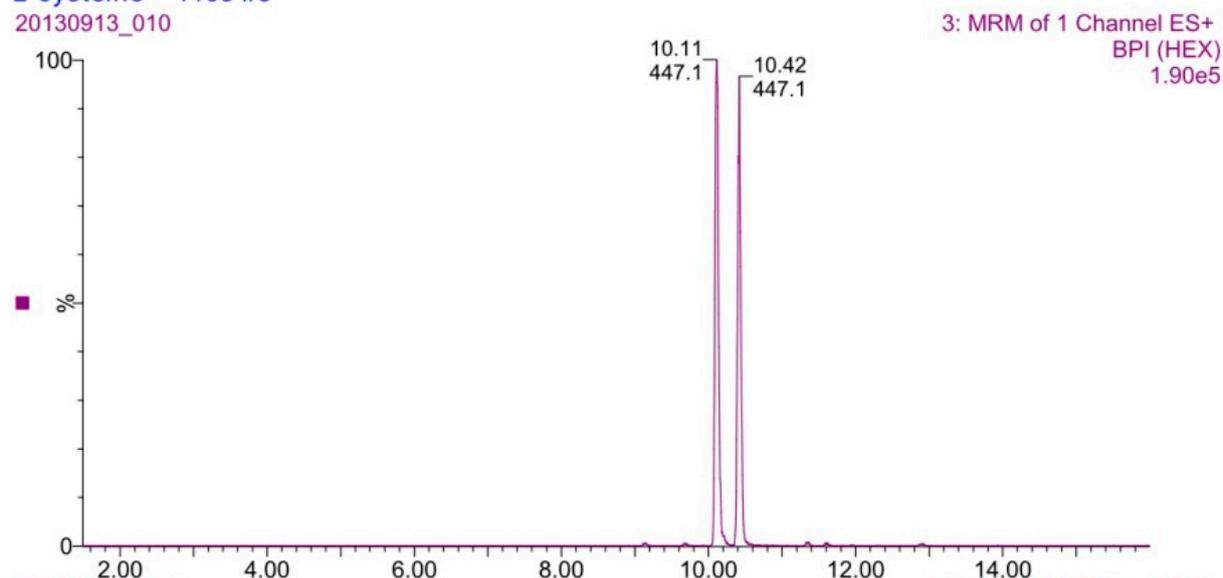
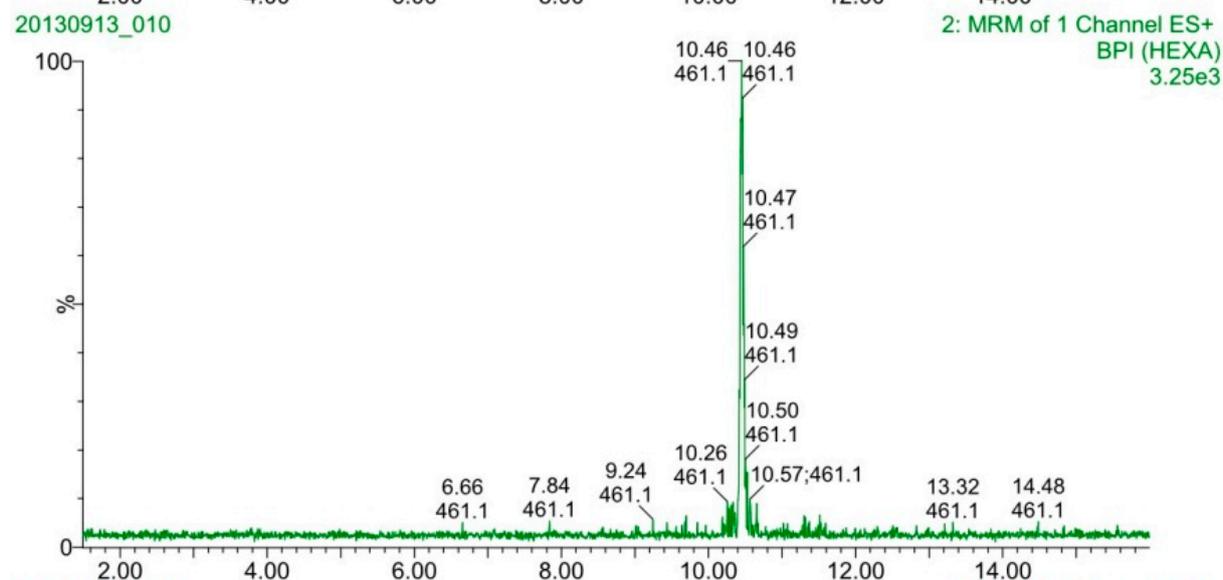


Figure S224. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **15**.

L-cysteine + 1109 #3
20130913_010



20130913_010



20130913_010

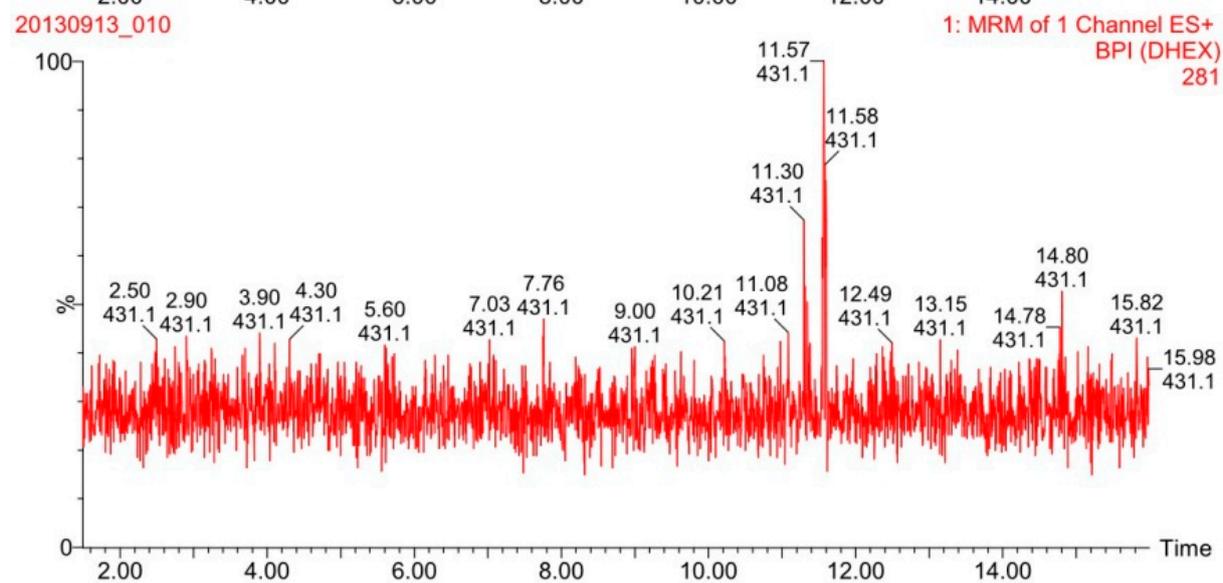
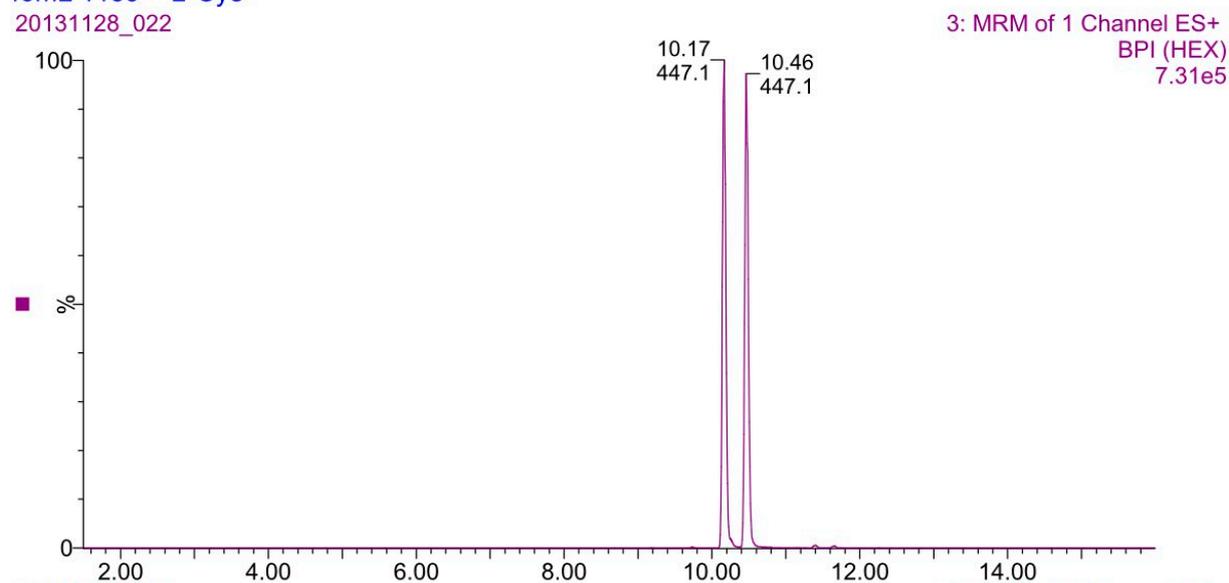
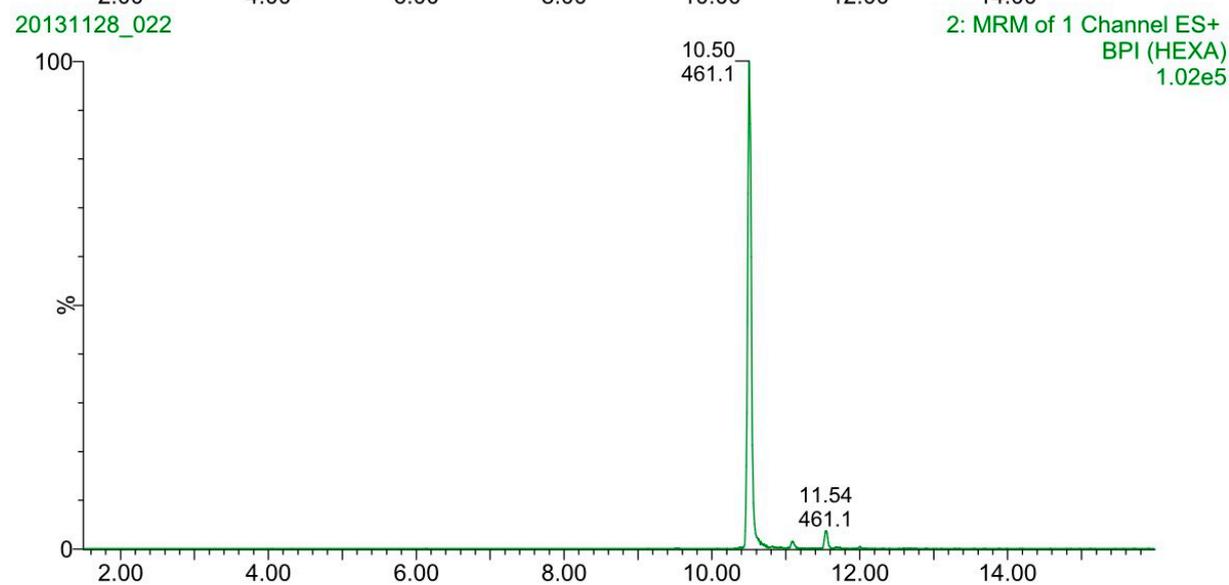


Figure S225. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **17**.

lcmz 1139 + L-Cys
20131128_022



20131128_022



20131128_022

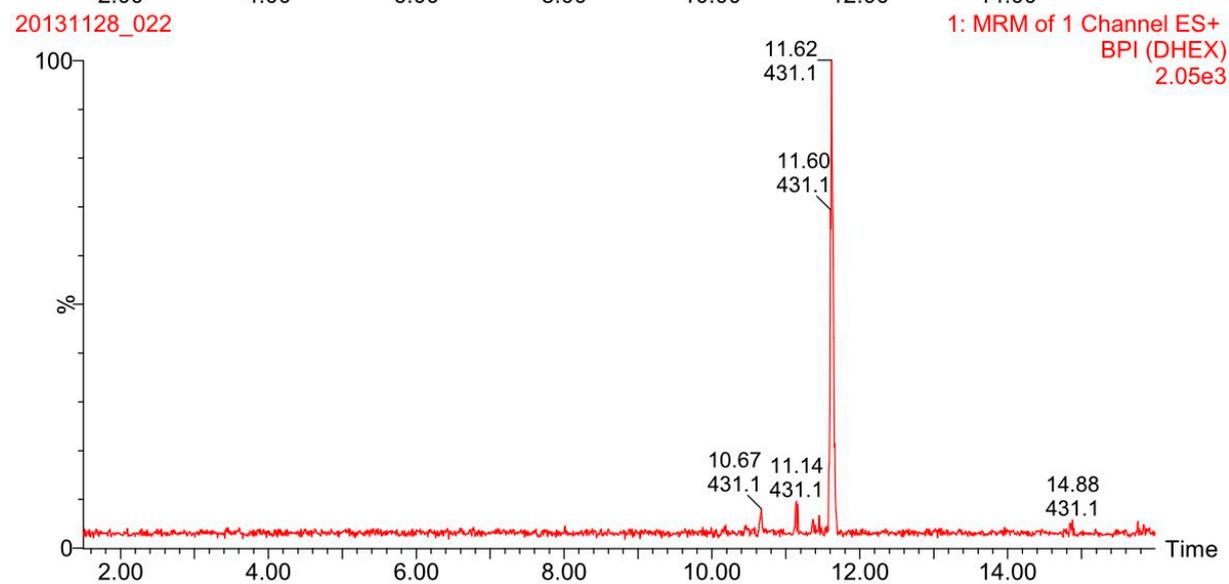
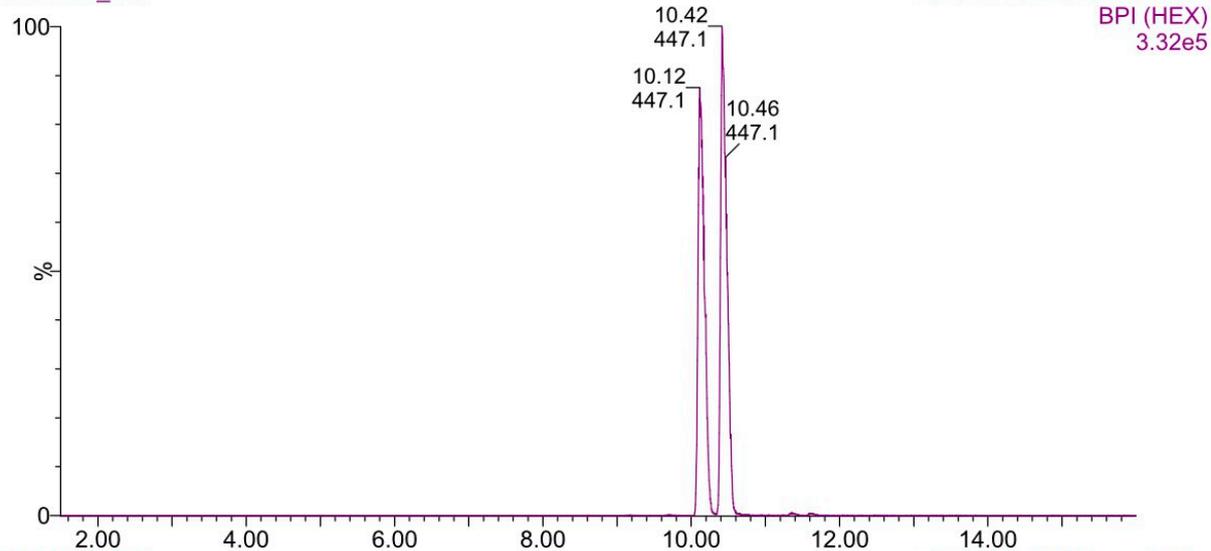
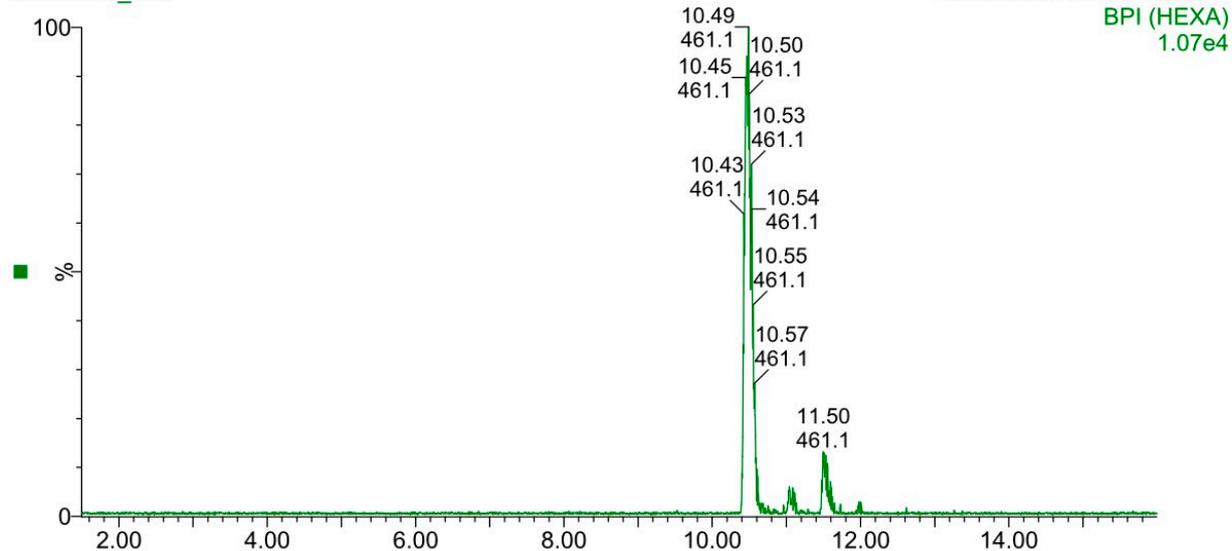


Figure S226. UPLC-MS chromatograms of sugars released during the acid hydrolysis of the compound **18**.

lcmz_1093 + L-Cys
20131106_035



20131106_035



20131106_035

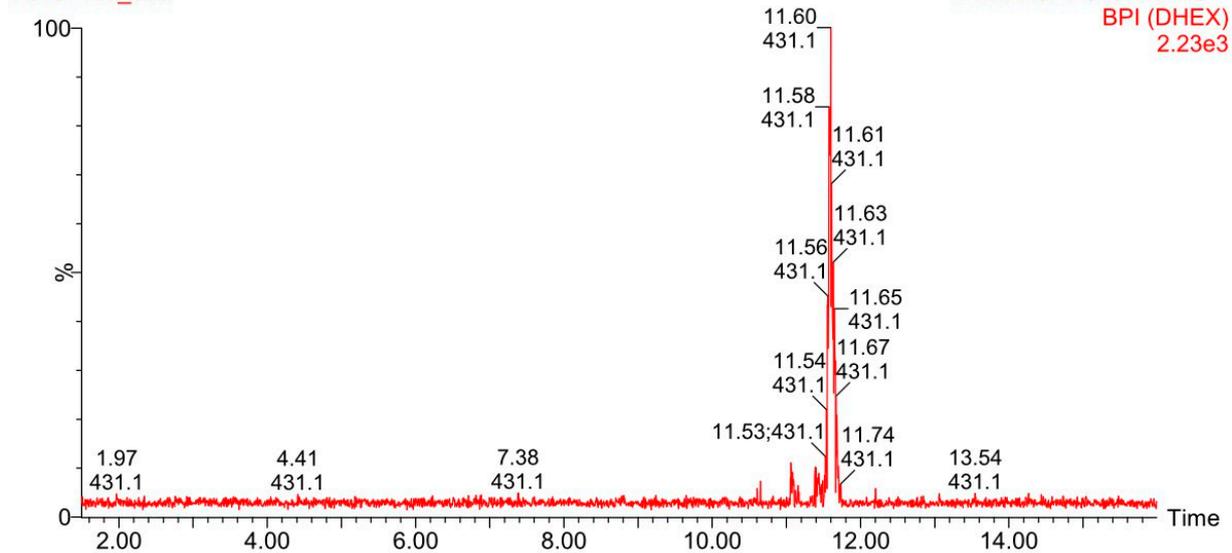


Figure S227. UPLC-MS chromatograms of the methanol extract of lentil seeds (var. Tina), and the UV spectrum of the dominant phenolic compound.

