

Supplementary Materials

# Qualitative and Quantitative Analysis of Secondary Metabolites in Morphological Parts of Paulownia Clon In Vitro 112® and Their Anticoagulant Properties in Whole Human Blood

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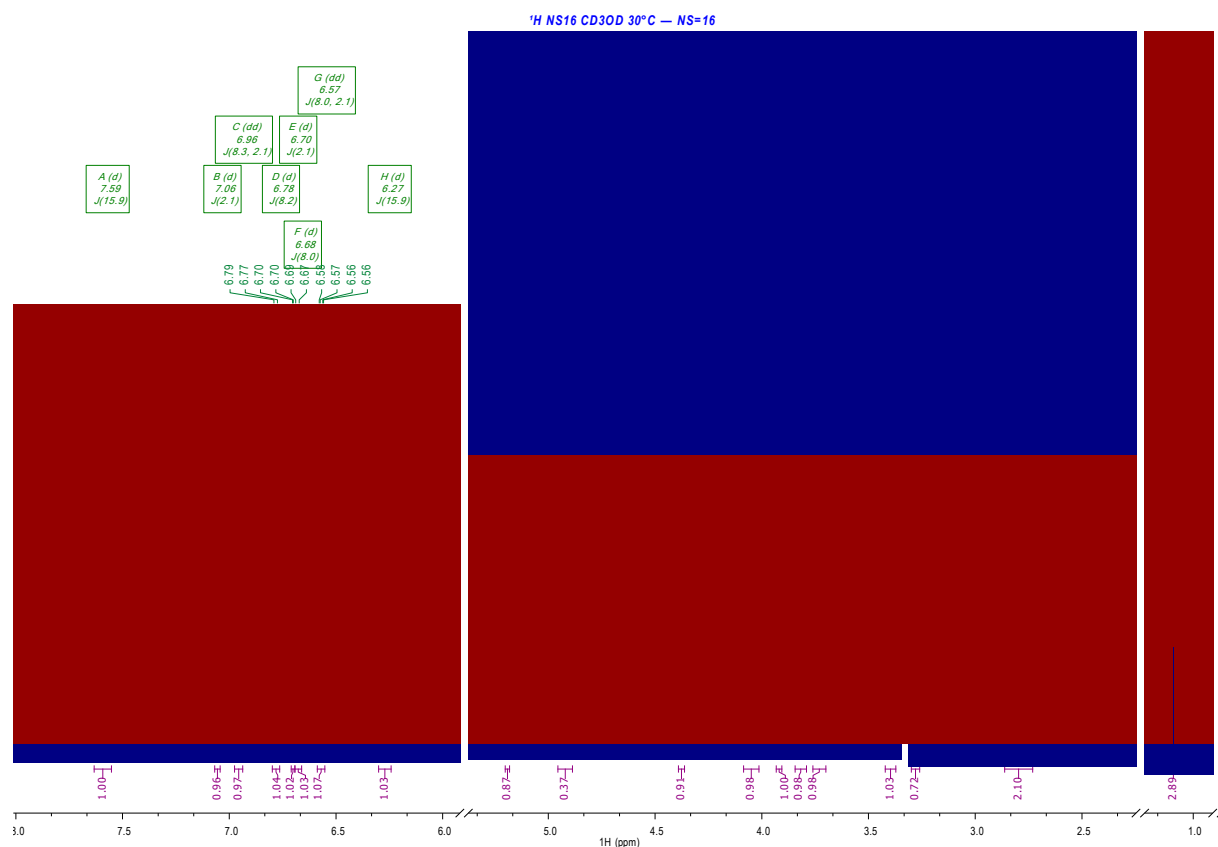
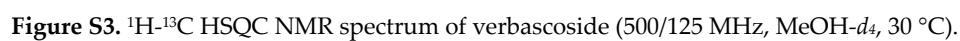
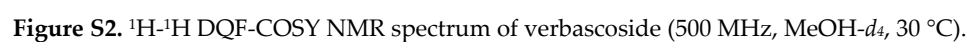


Figure S1. <sup>1</sup>H-NMR spectrum of verbascoside (500 MHz, MeOH-*d*<sub>4</sub>, 30 °C).



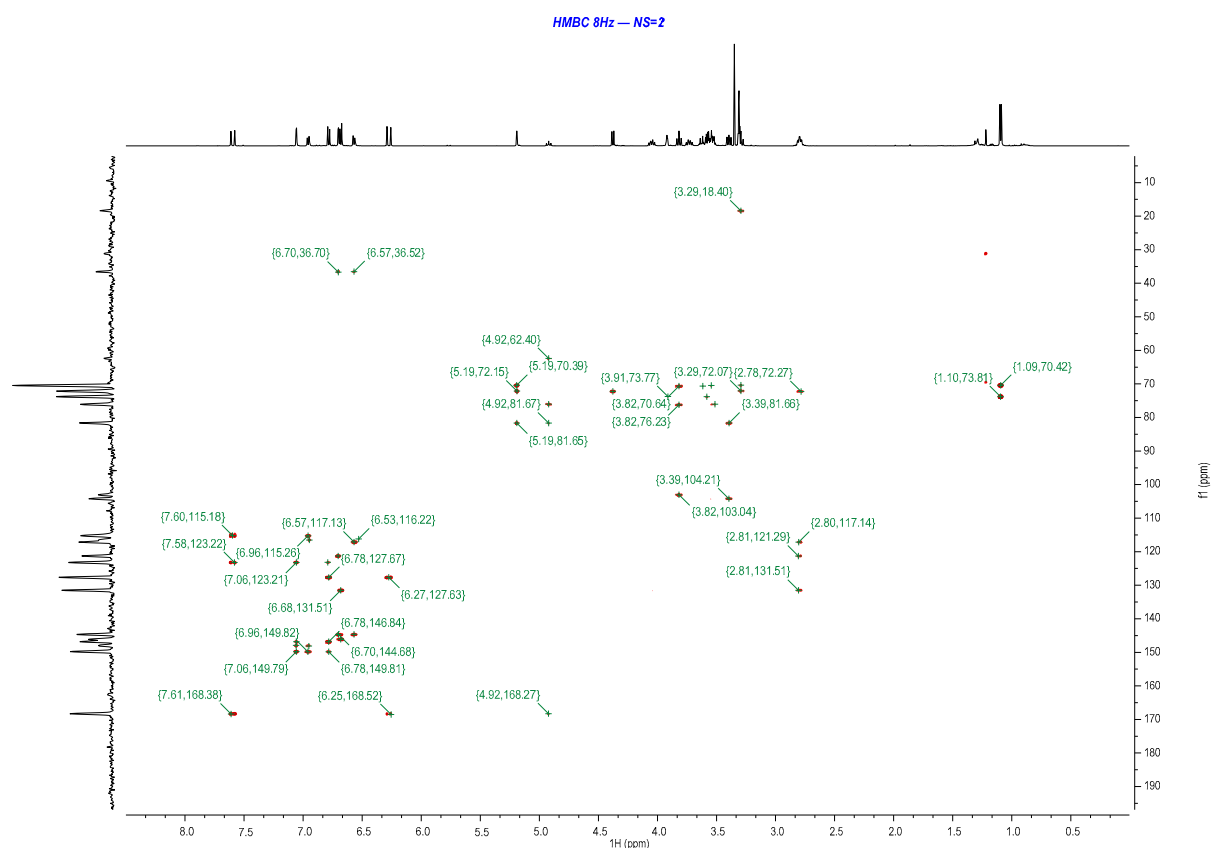


Figure S4.  $^1\text{H}$ - $^{13}\text{C}$  HMBC (8 Hz) NMR spectrum of verbascoside (500/125 MHz,  $\text{MeOH-}d_4$ , 30 °C).

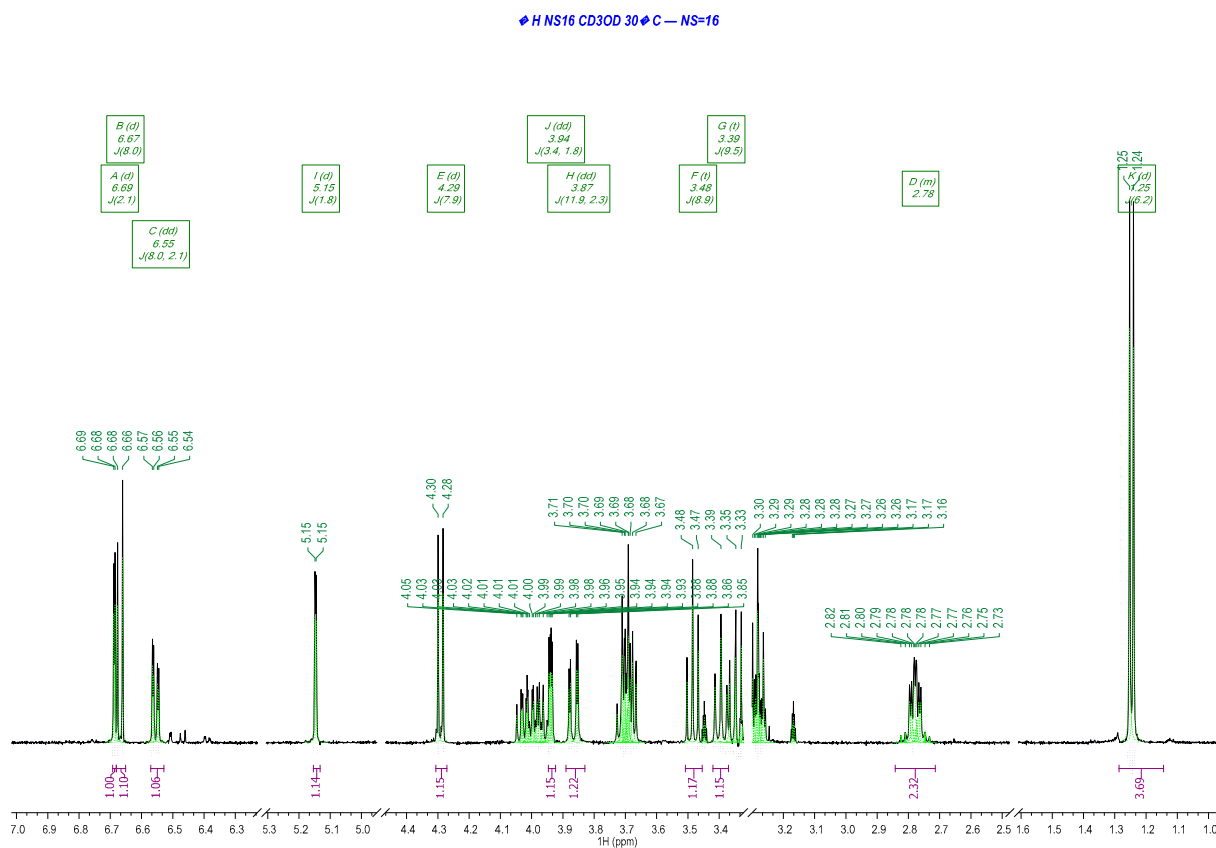


Figure S5.  $^1\text{H}$ -NMR spectrum of verbascoside (500 MHz,  $\text{MeOH-}d_4$ , 30 °C).

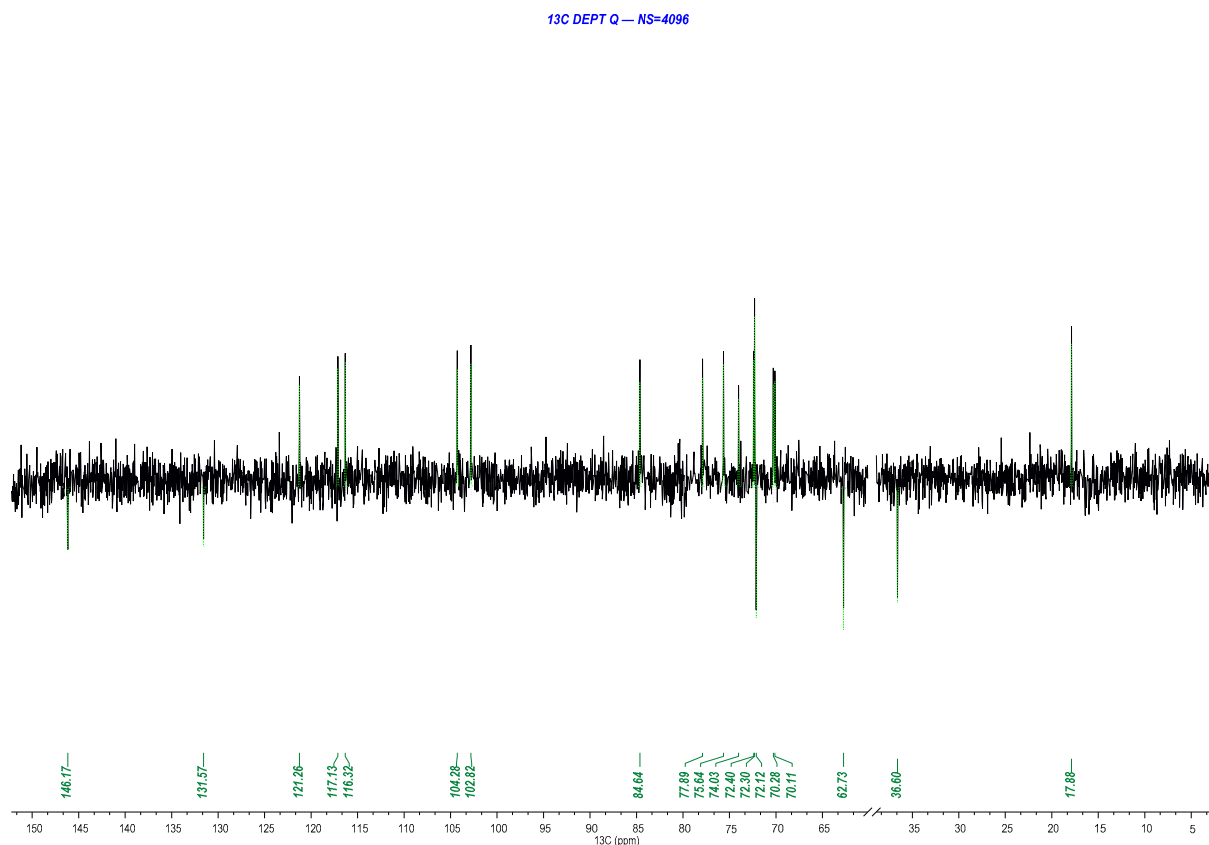


Figure S6. <sup>13</sup>C-NMR spectrum of verbasoside (125 MHz, MeOH-*d*<sub>4</sub>, 30 °C).

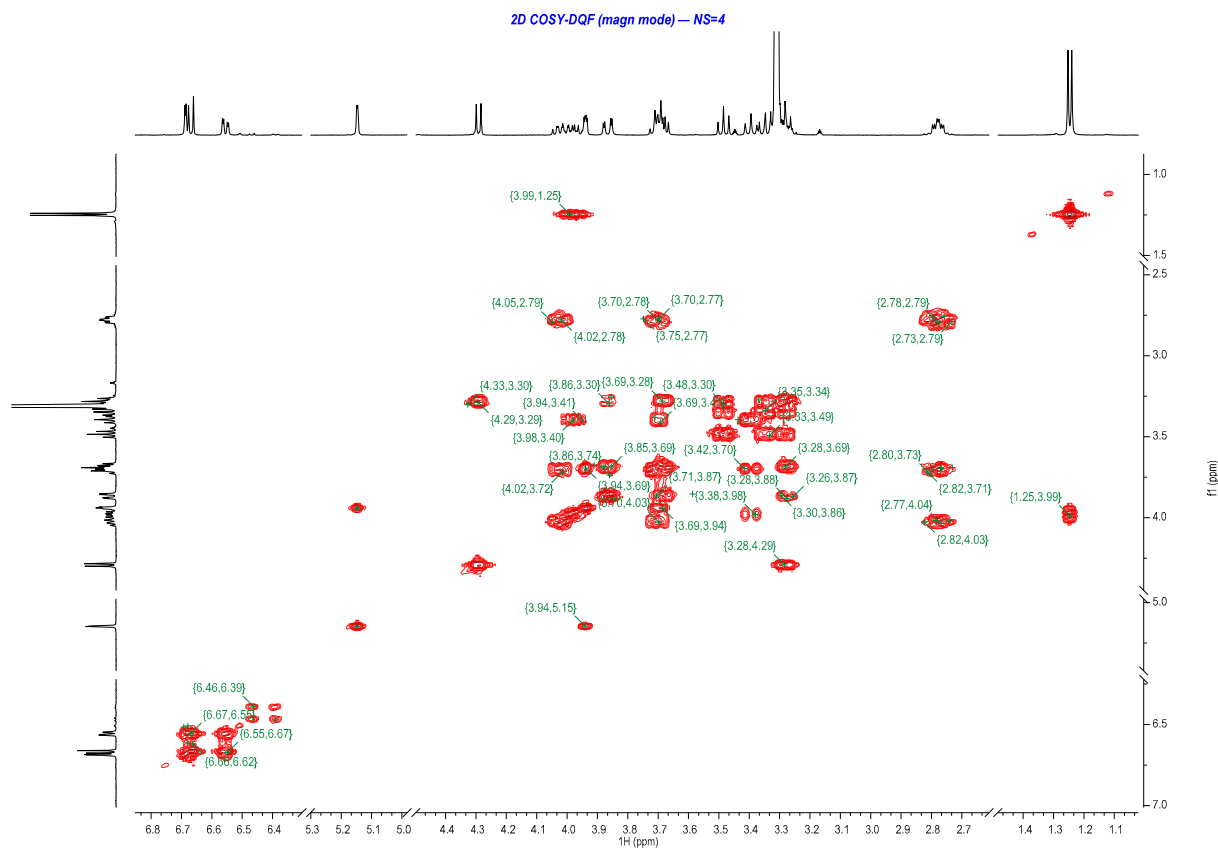


Figure S7. <sup>1</sup>H-<sup>1</sup>H DQF-COSY NMR spectrum of verbasoside (500 MHz, MeOH-*d*<sub>4</sub>, 30 °C).

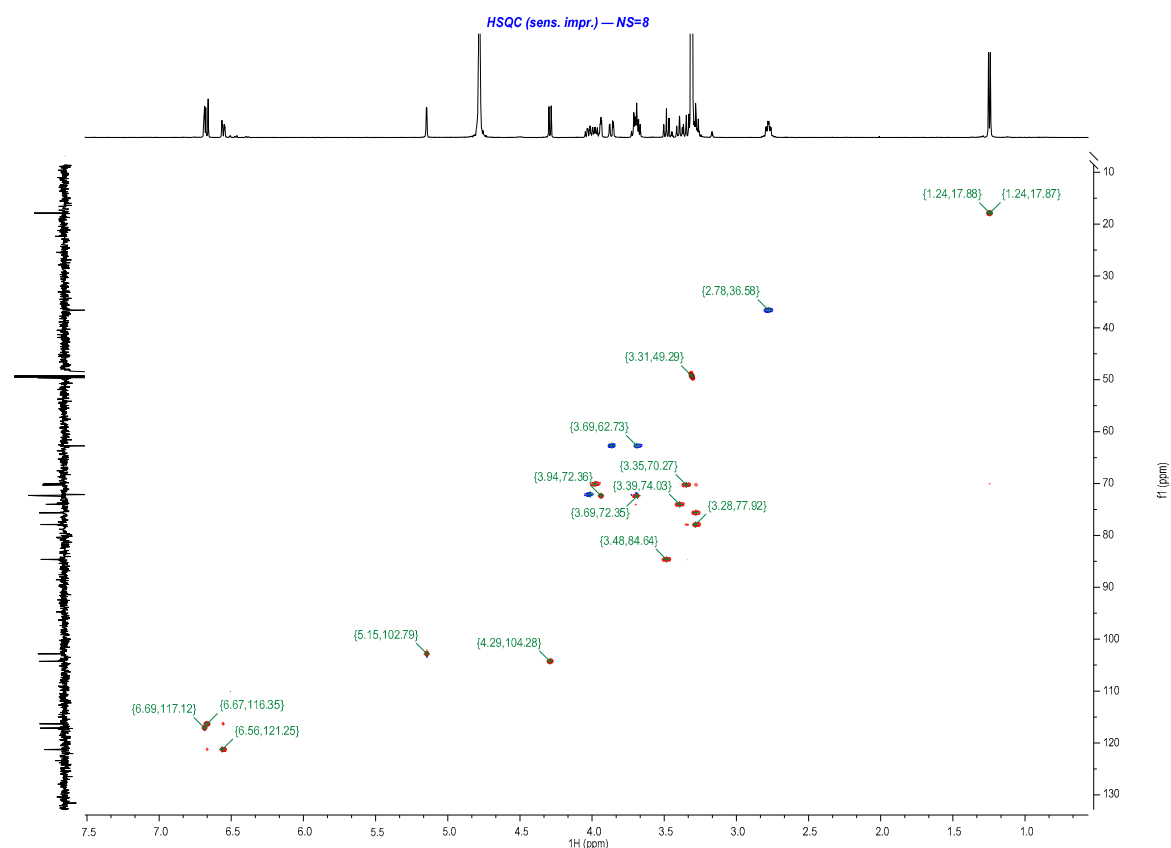


Figure S8.  $^1\text{H}$ - $^{13}\text{C}$  HSQC NMR spectrum of verbasoside (500/125 MHz,  $\text{MeOH-}d_4$ , 30 °C).

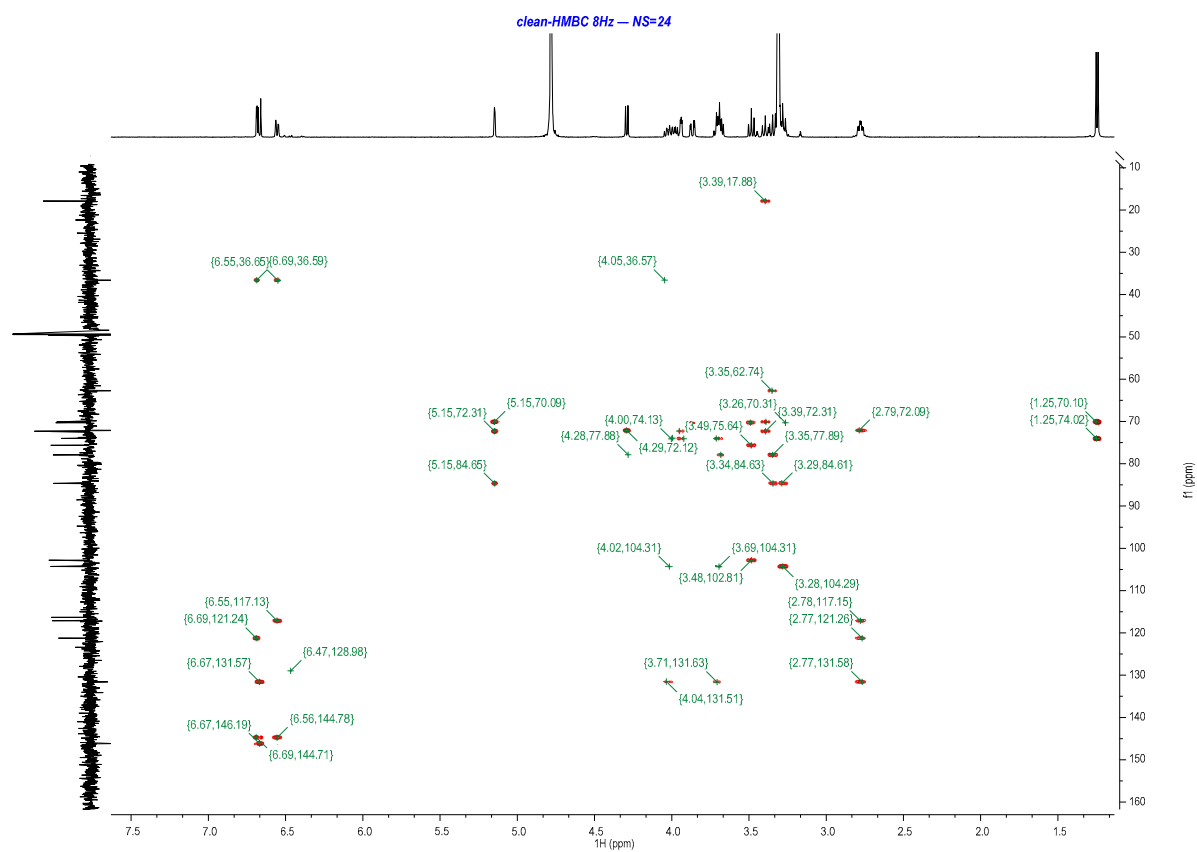
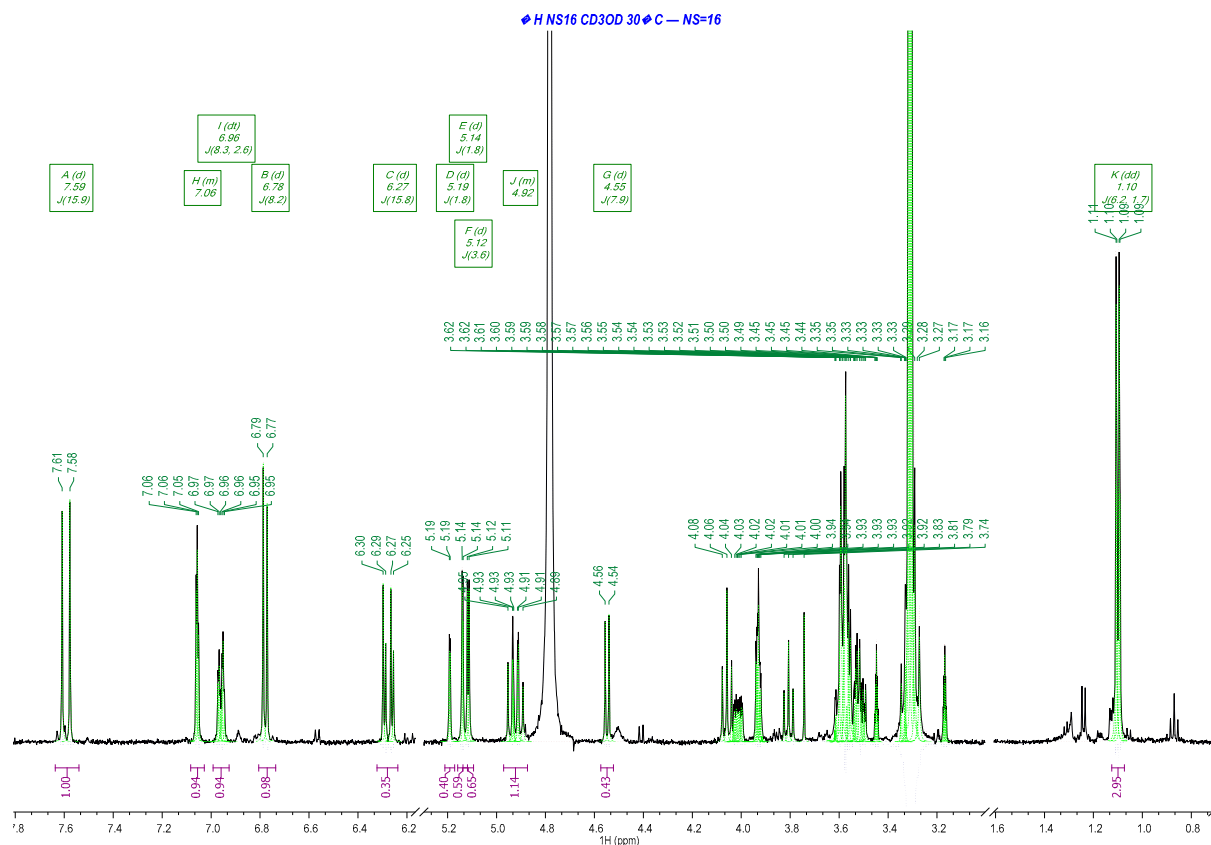
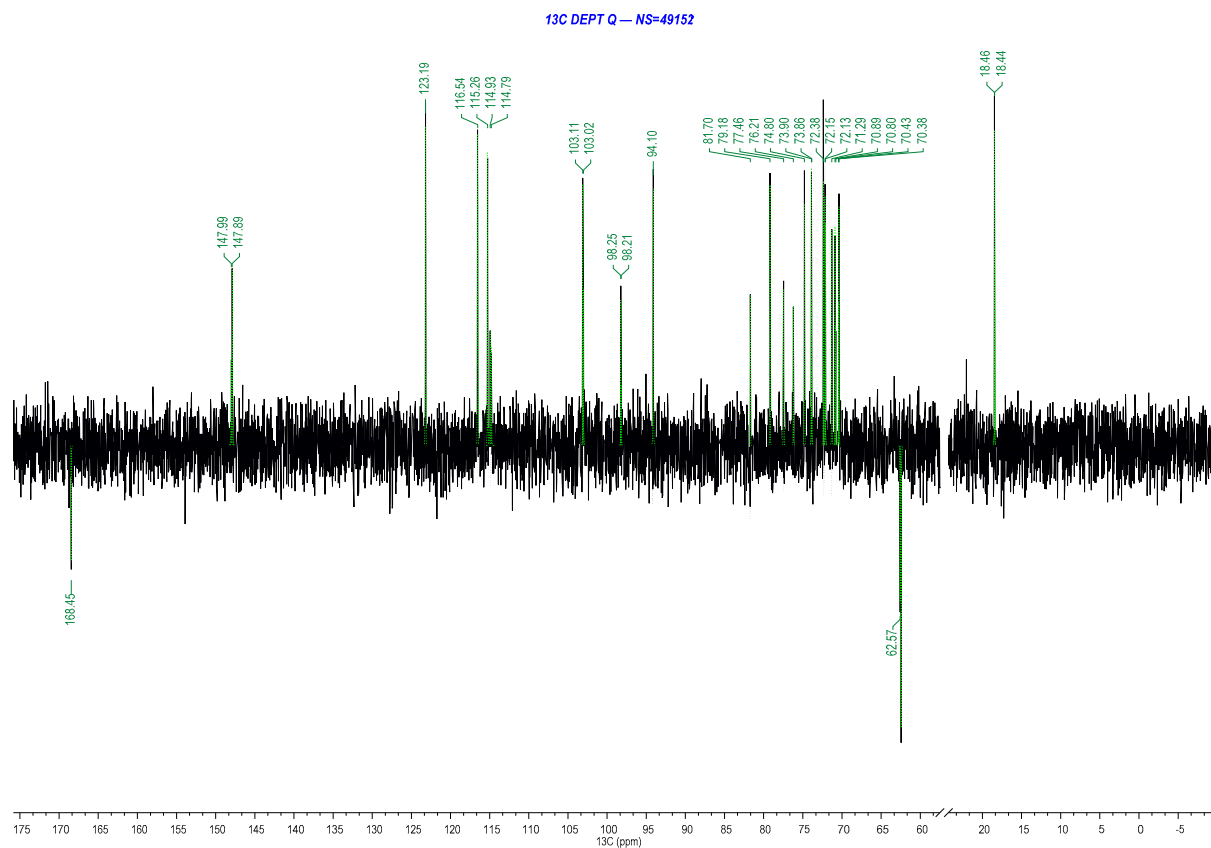
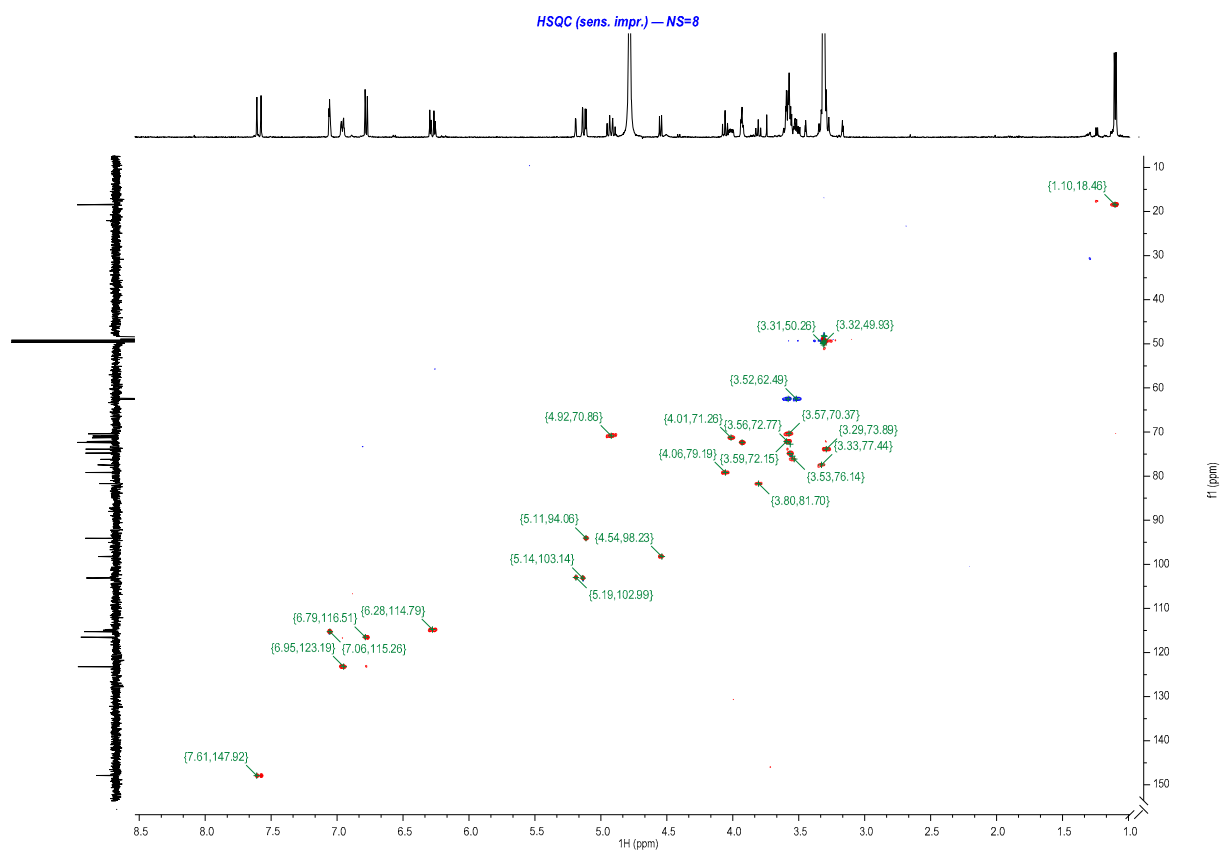
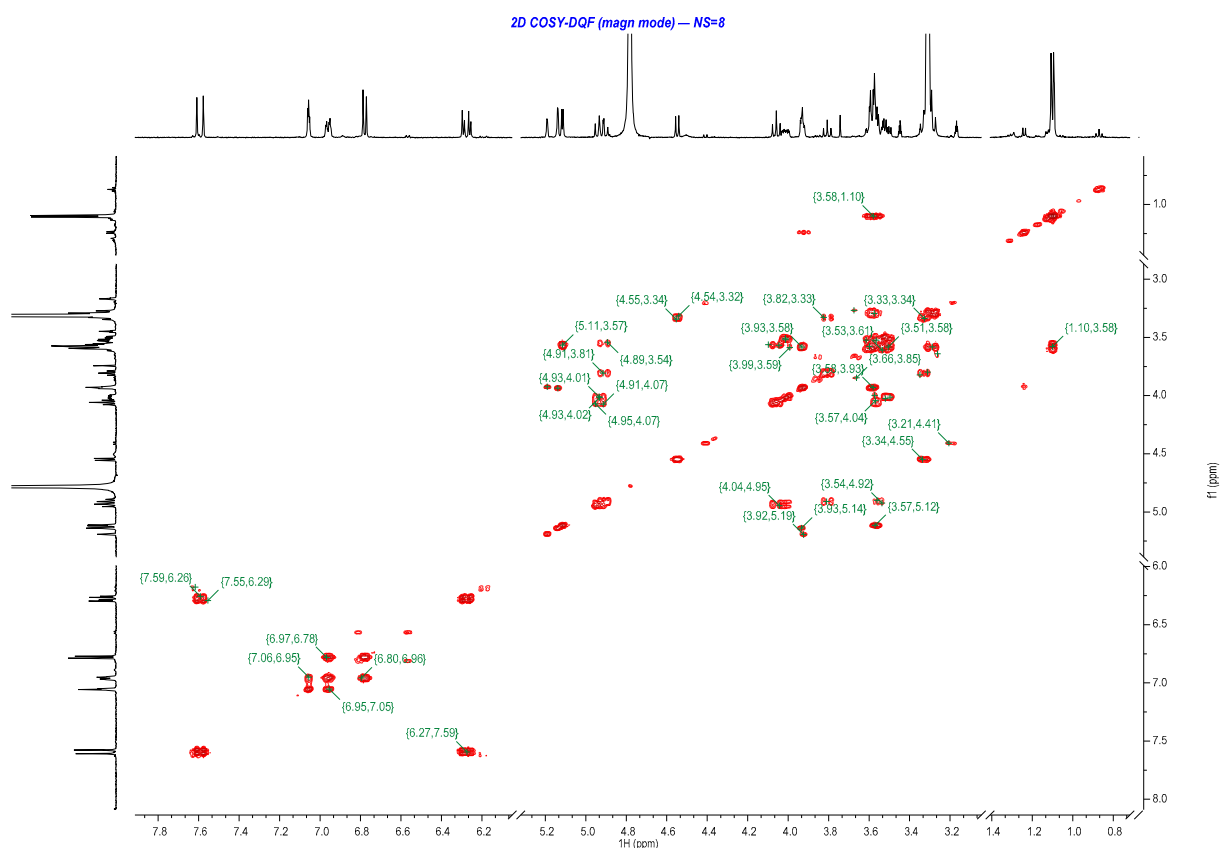


Figure S9.  $^1\text{H}$ - $^{13}\text{C}$  HMBC (8 Hz) NMR spectrum of verbasoside (500/125 MHz,  $\text{MeOH-}d_4$ , 30 °C).

Figure S10.  $^1\text{H}$  NMR spectrum of castanoside F (500 MHz,  $\text{MeOH-}d_4$ , 30 °C).Figure S11.  $^{13}\text{C}$ -NMR spectrum of castanoside F (125 MHz,  $\text{MeOH-}d_4$ , 30 °C).



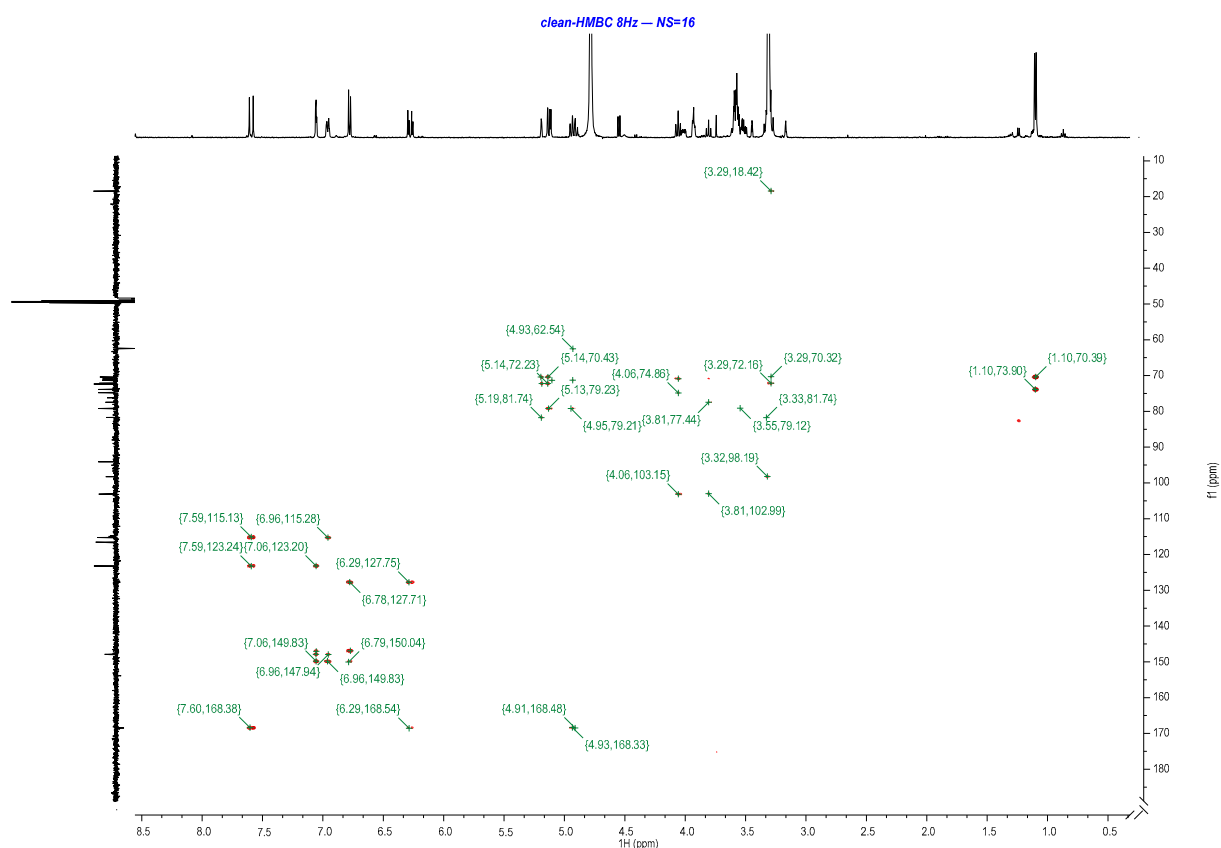


Figure S14.  $^1\text{H}$ - $^{13}\text{C}$  HMBC (8 Hz) NMR spectrum of castanoside F (500/125 MHz,  $\text{MeOH}-d_4$ , 30 °C).

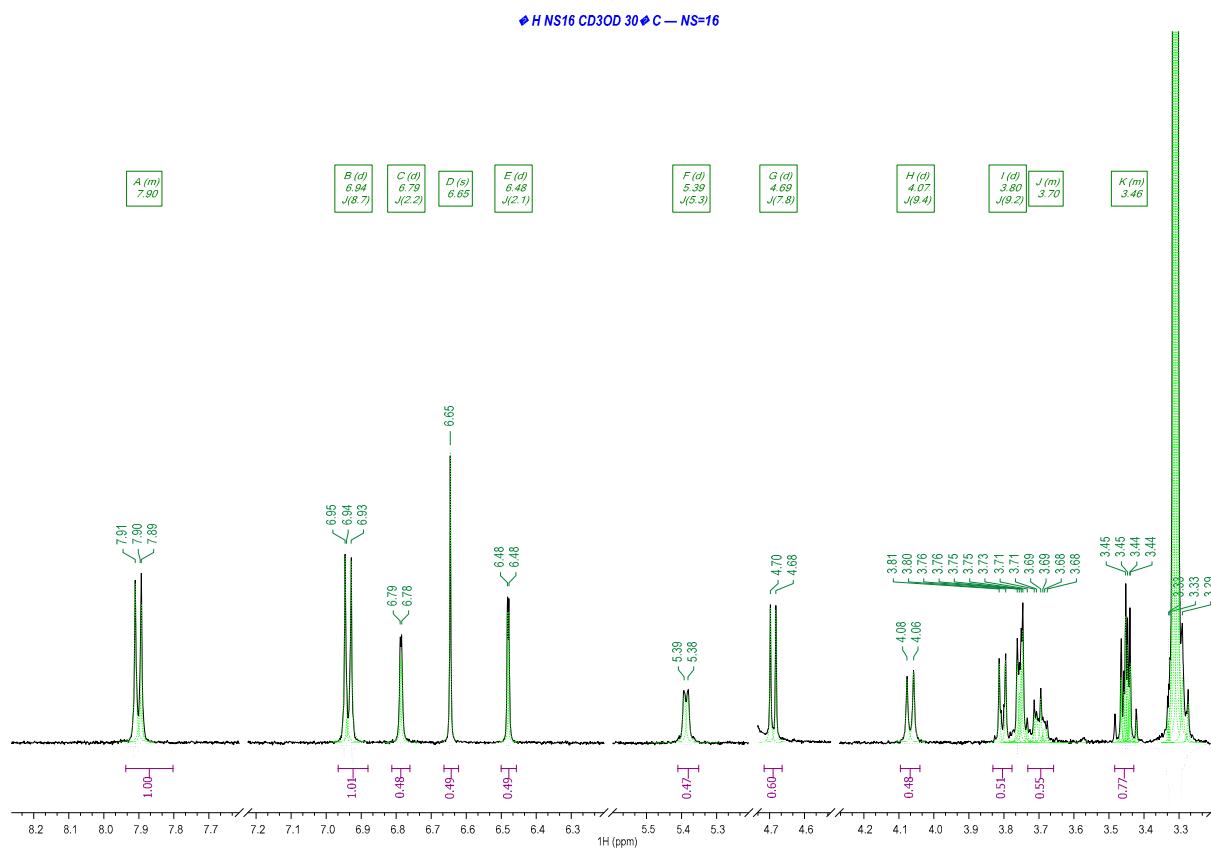
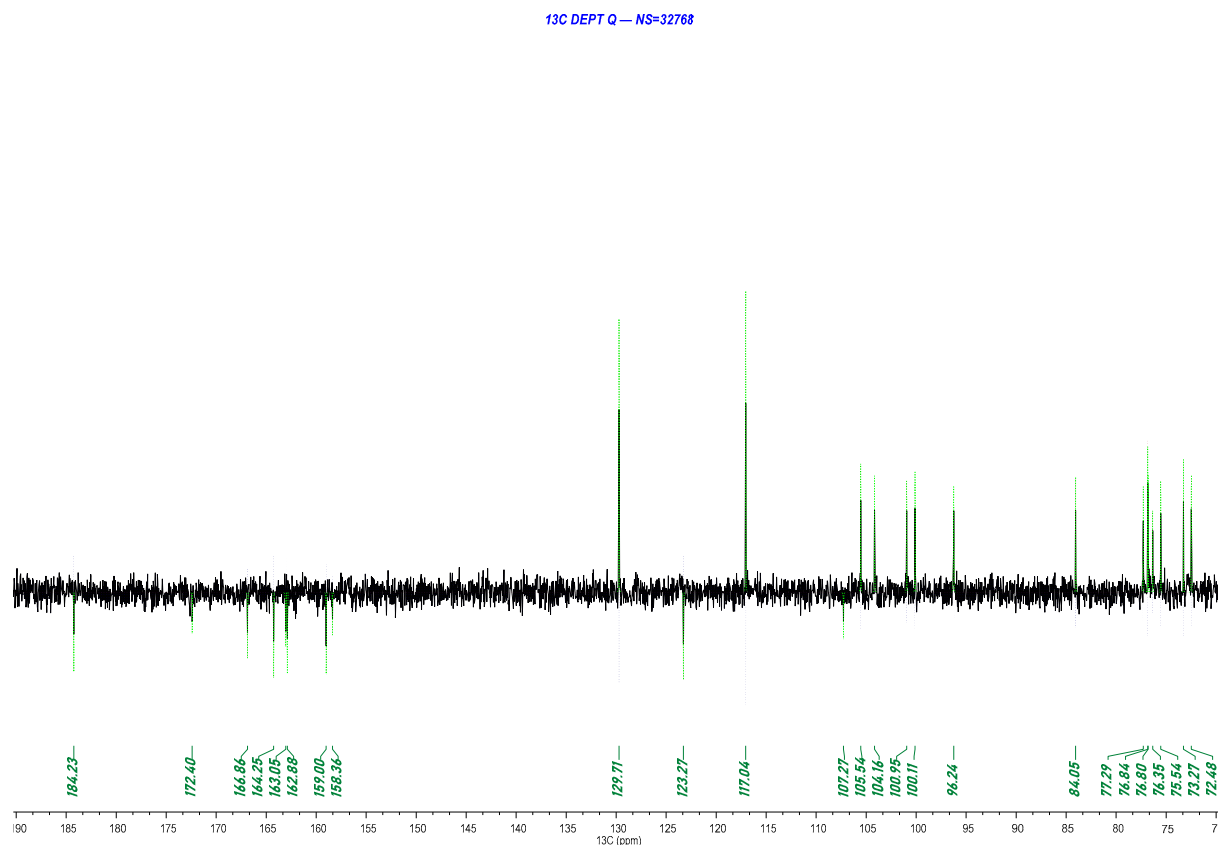
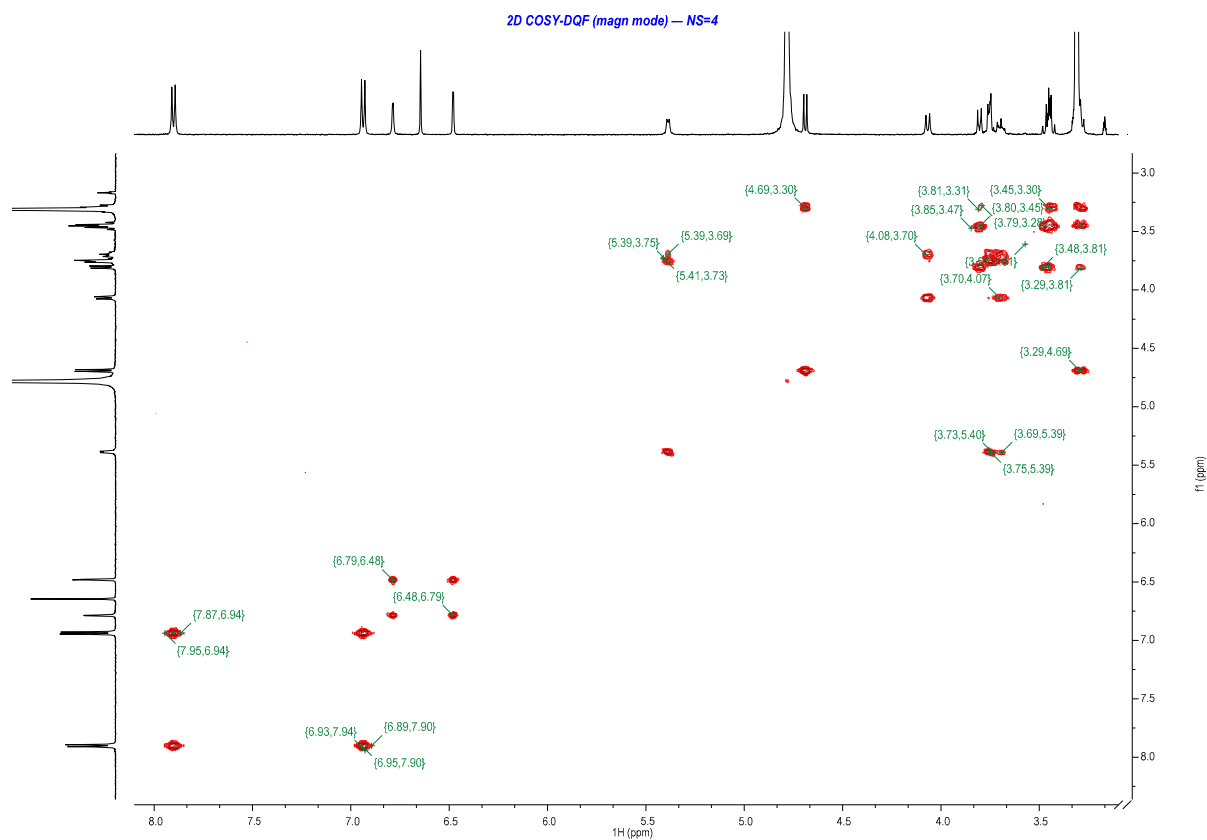


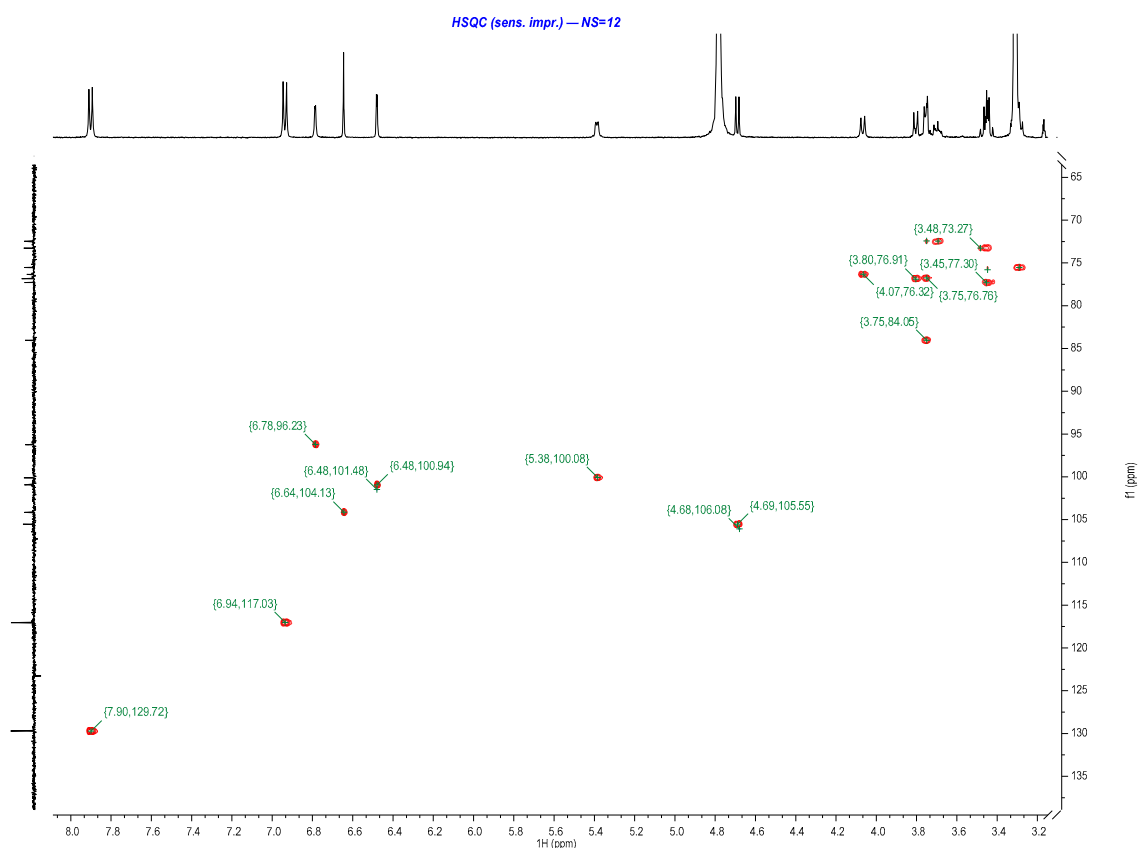
Figure S15.  $^1\text{H}$ -NMR spectrum of clerodendrin—apigenin 7-O- $[\beta\text{-D-glucuronopyranosyl}(1\rightarrow2)\text{-}\beta\text{-D-glucuronopyranoside}]$  (500 MHz,  $\text{MeOH}-d_4$ , 30 °C).



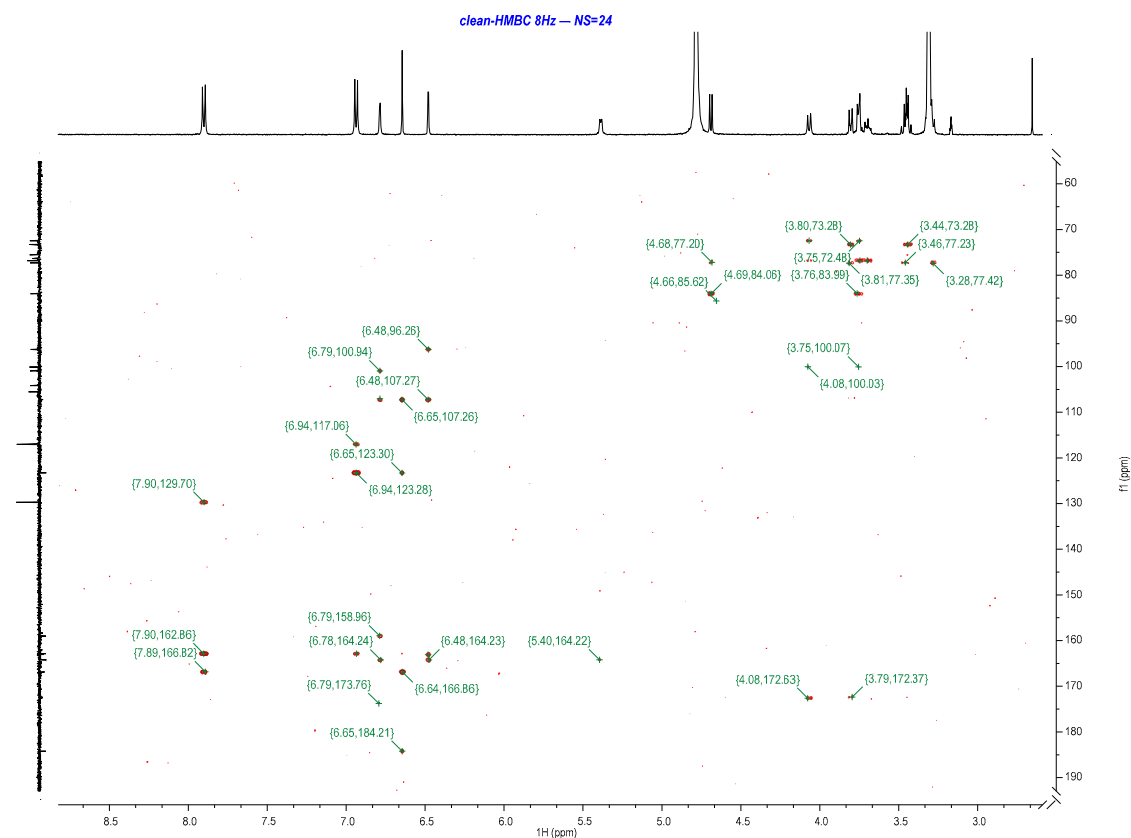
**Figure S16.**  $^{13}\text{C}$ -NMR spectrum of clerodendrin-apigenin 7-O-[ $\beta$ -D-glucuronopyranosyl(1 $\rightarrow$ 2)- $\beta$ -D-glucuronopyranoside] (125 MHz,  $\text{MeOH-}d_4$ , 30  $^{\circ}\text{C}$ ).



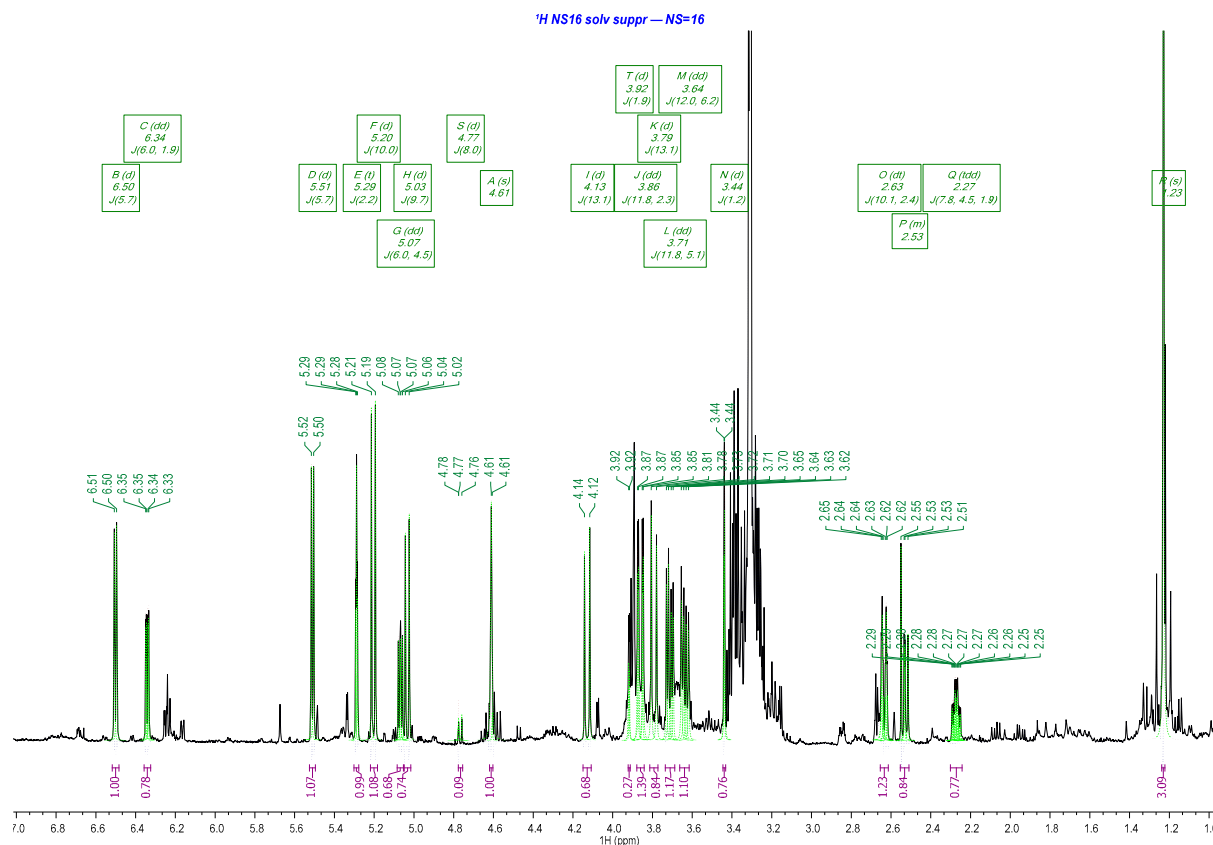
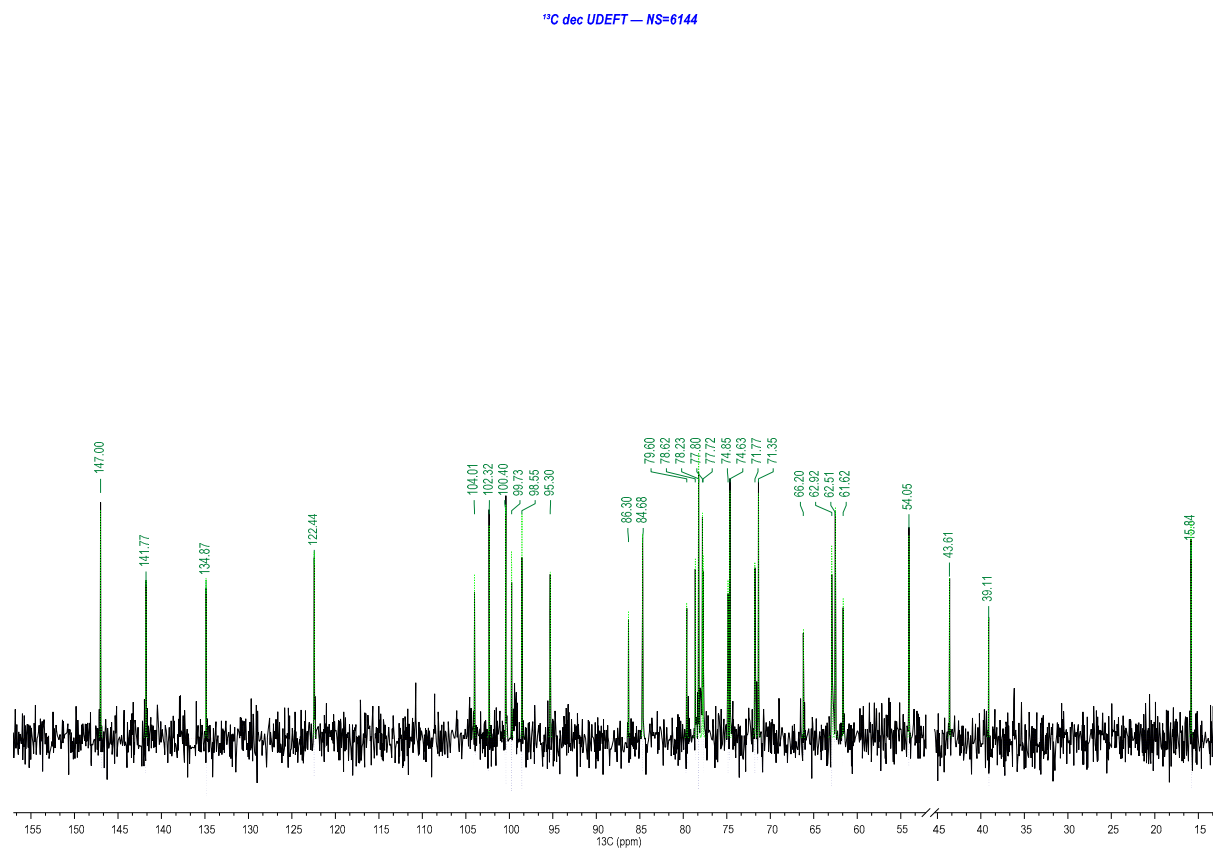
**Figure S17.**  $^1\text{H}$ - $^1\text{H}$  DQF-COSY NMR spectrum of clerodendrin - apigenin 7-O-[ $\beta$ -D-glucuronopyranosyl(1 $\rightarrow$ 2)- $\beta$ -D-glucuronopyranoside] (500 MHz,  $\text{MeOH-}d_4$ , 30  $^{\circ}\text{C}$ ).



**Figure S18.**  $^1\text{H}$ - $^{13}\text{C}$  HSQC NMR spectrum of clerodendrin-apigenin 7-O- $[\beta\text{-D-glucuronopyranosyl}(1\rightarrow2)\text{-}\beta\text{-D-glucuronopyranoside}]$  (500/125 MHz,  $\text{MeOH-}d_4$ , 30 °C).



**Figure S19.**  $^1\text{H}$ - $^{13}\text{C}$  HMBC (8 Hz) NMR spectrum of clerodendrin-apigenin 7-O- $[\beta\text{-D-glucuronopyranosyl}(1\rightarrow2)\text{-}\beta\text{-D-glucuronopyranoside}]$  (500/125 MHz,  $\text{MeOH-}d_4$ , 30 °C).

Figure S20. <sup>1</sup>H NMR spectrum of catalpol (500 MHz, MeOH-*d*<sub>4</sub>, 30 °C).Figure S21. <sup>13</sup>C-NMR spectrum of catalpol (125 MHz, MeOH-*d*<sub>4</sub>, 30 °C).

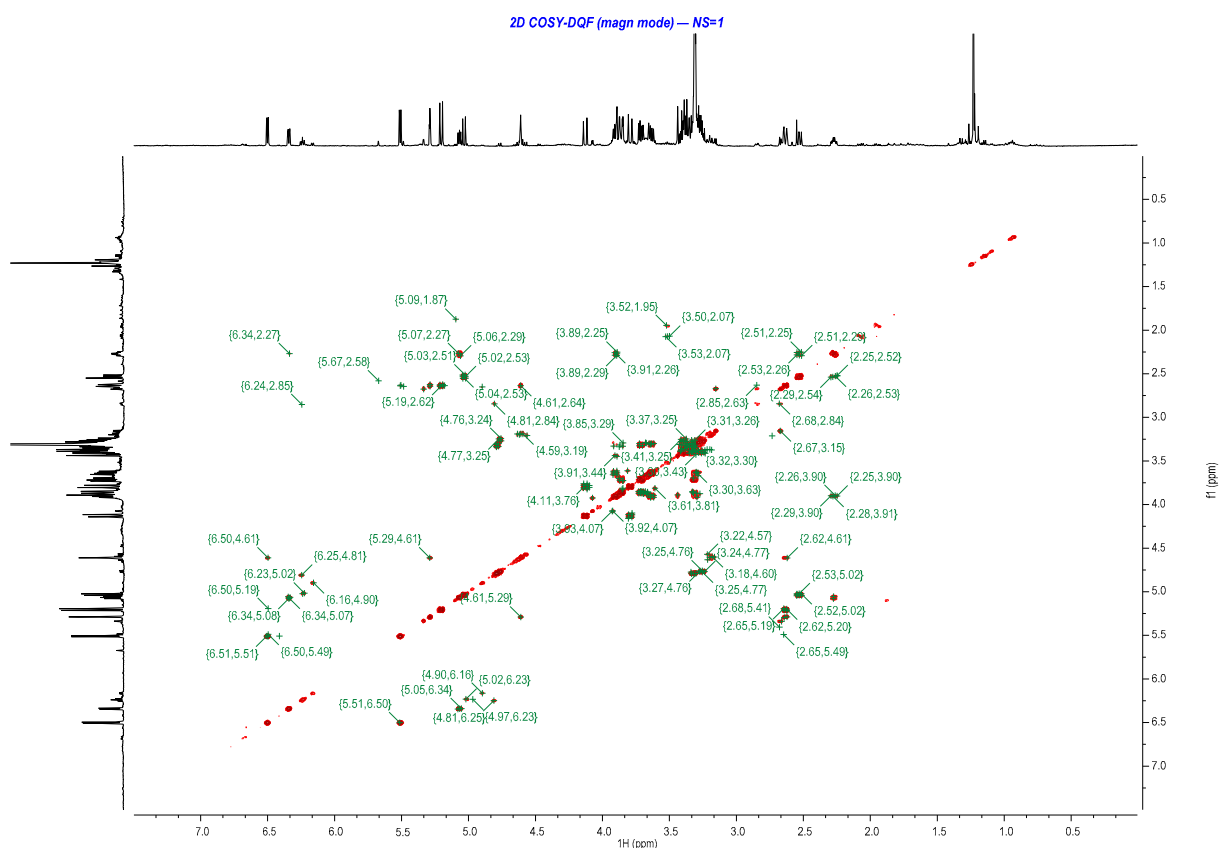


Figure S22.  $^1\text{H}$ - $^1\text{H}$  DQF-COSY NMR spectrum of catalpol (500 MHz,  $\text{MeOH-}d_4$ , 30 °C).

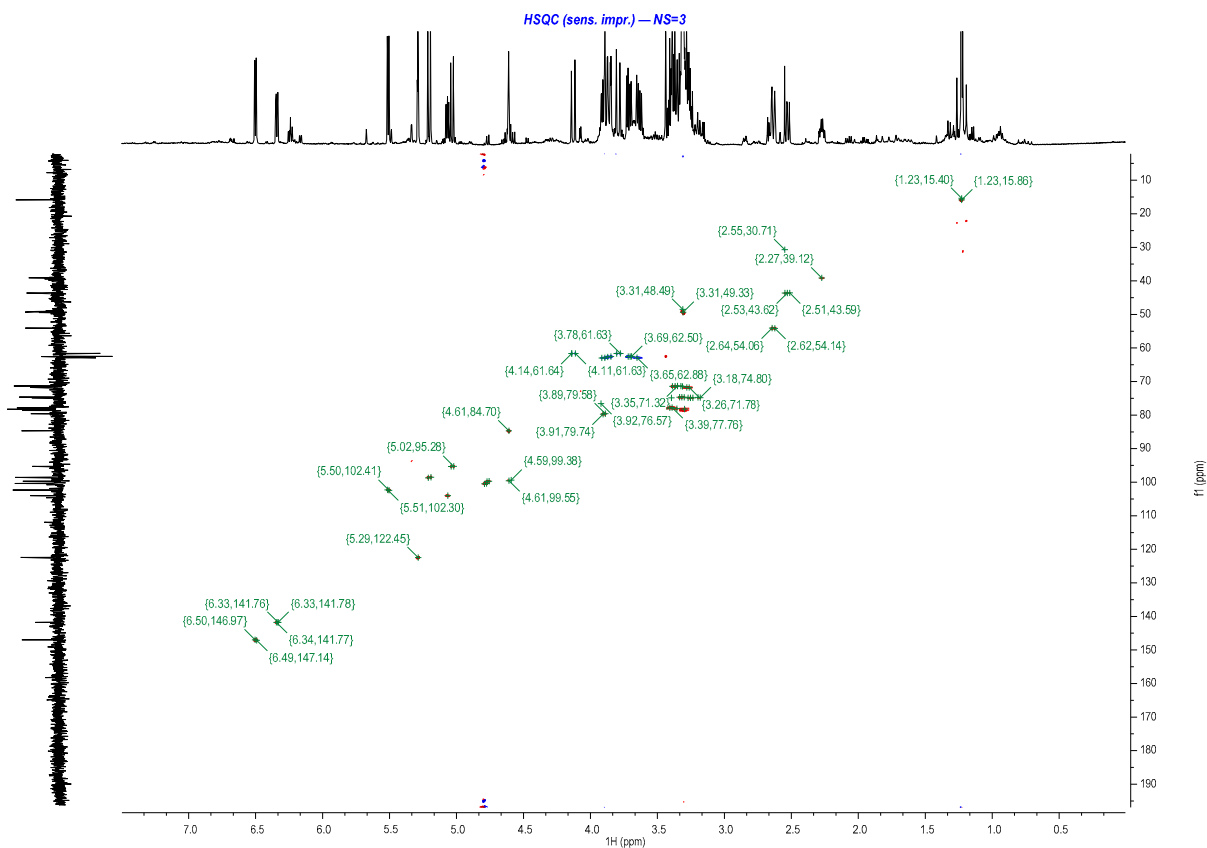


Figure S23.  $^1\text{H}$ - $^{13}\text{C}$  HSQC NMR spectrum of catalpol (500/125 MHz,  $\text{MeOH-}d_4$ , 30 °C).

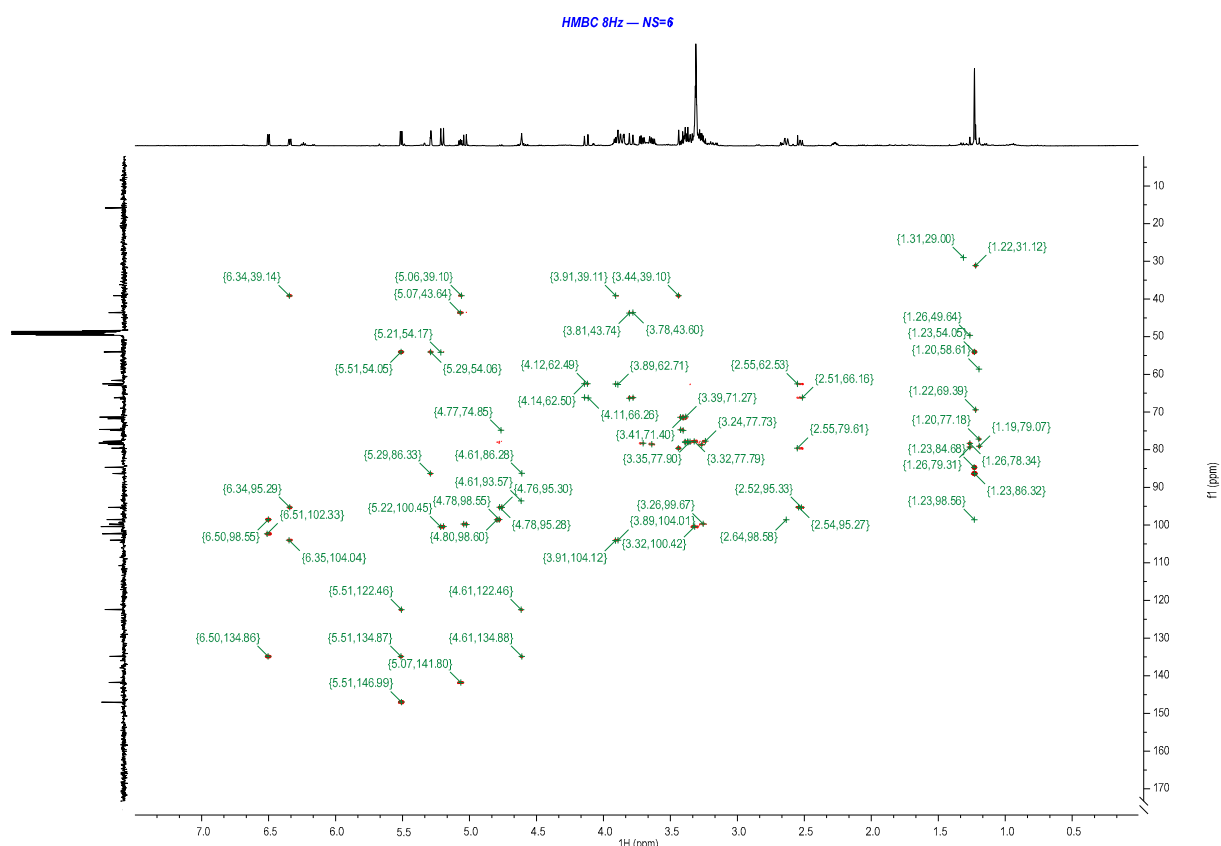


Figure S24.  $^1\text{H}$ - $^{13}\text{C}$  HMBC (8 Hz) NMR spectrum of catalpol (500/125 MHz,  $\text{MeOH-}d_4$ , 30 °C).

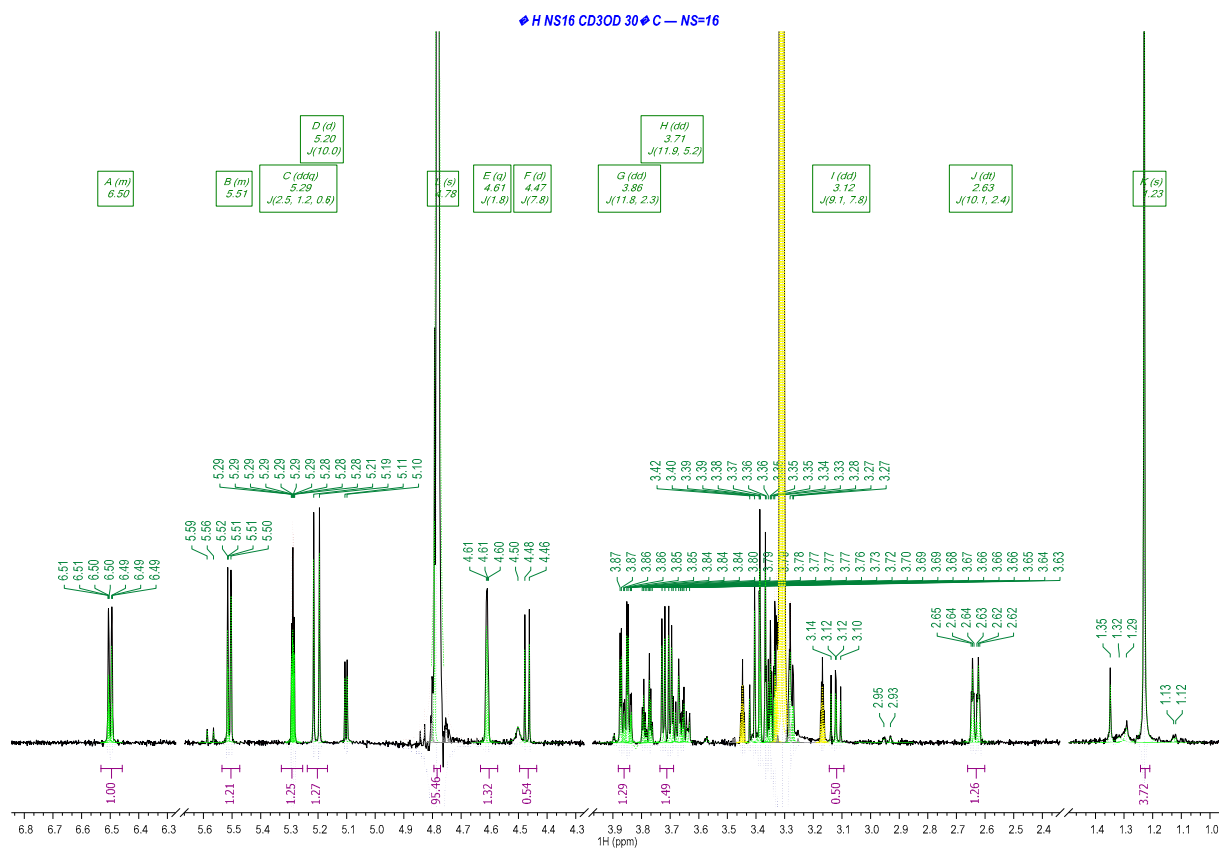
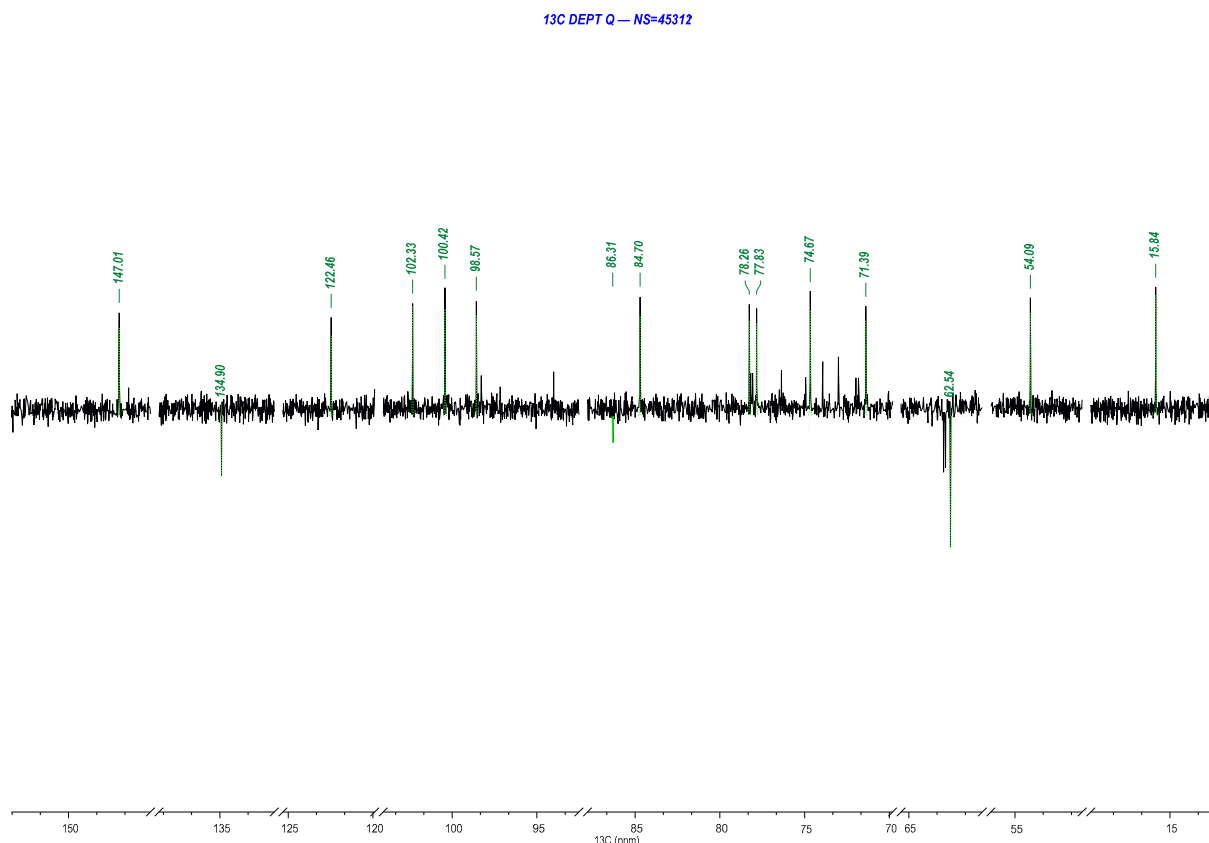
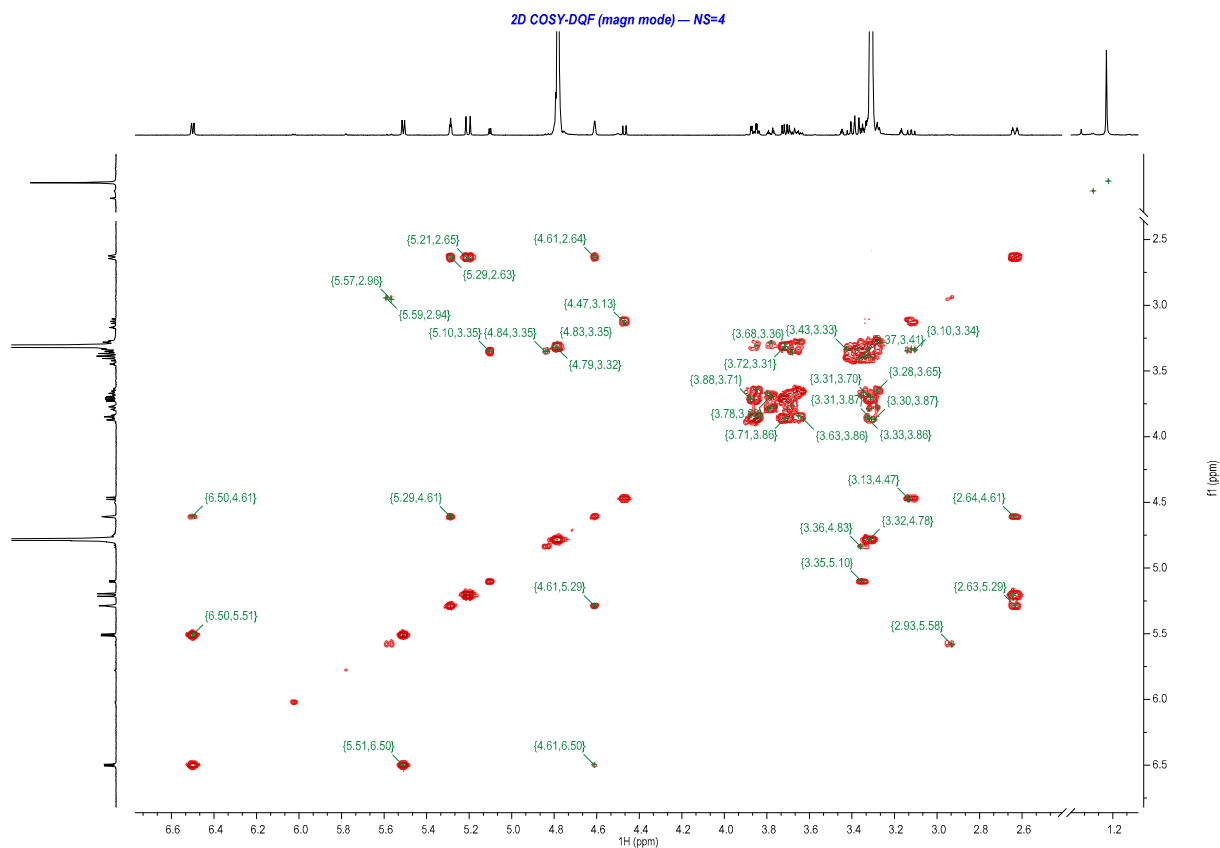


Figure S25.  $^1\text{H}$  NMR spectrum of 7-hydroxytomentoside (500 MHz,  $\text{MeOH-}d_4$ , 30 °C).



**Figure S26.** <sup>13</sup>C-NMR spectrum of 7-hydroxytomentoside (125 MHz, MeOH-*d*<sub>4</sub>, 30 °C).



**Figure S27.** <sup>1</sup>H-<sup>1</sup>H DQF-COSY NMR spectrum of 7-hydroxytomentoside (500 MHz, MeOH-*d*<sub>4</sub>, 30 °C).

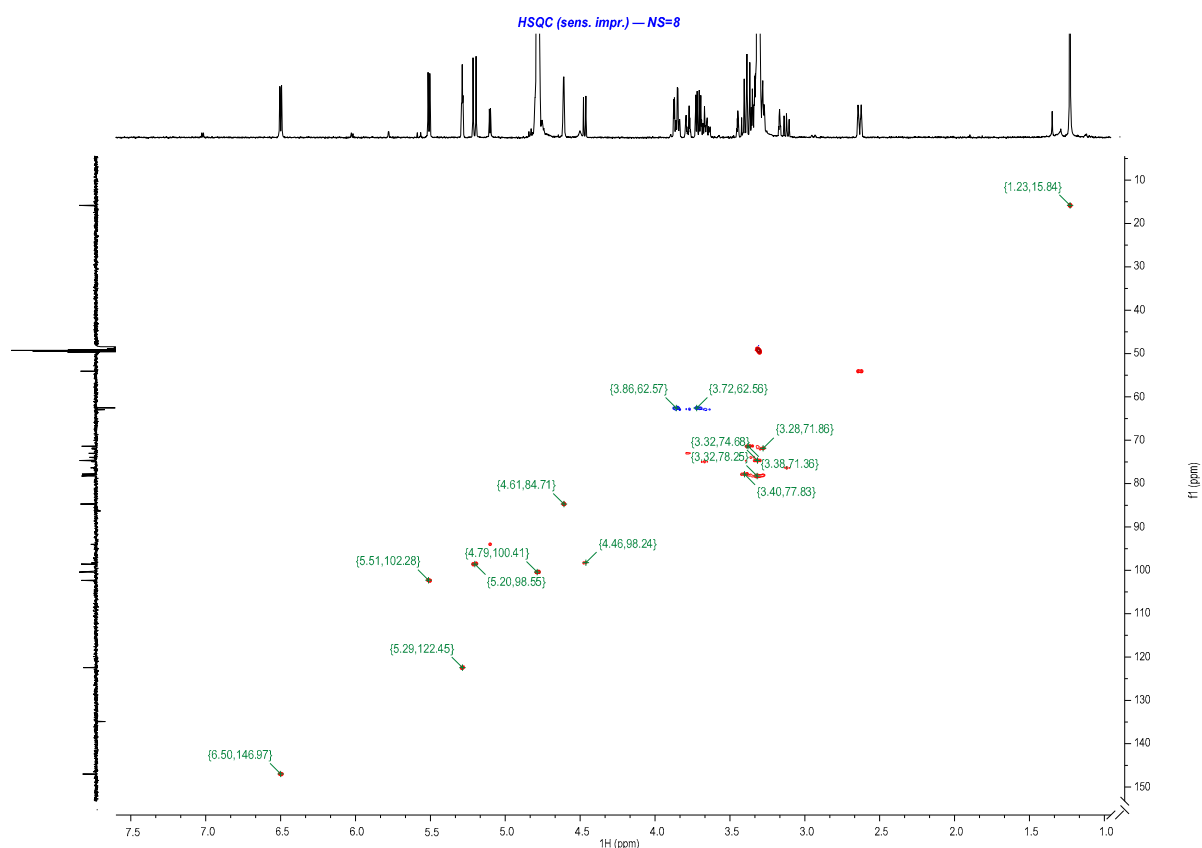


Figure S28.  $^1\text{H}$ - $^{13}\text{C}$  HSQC NMR spectrum of 7-hydroxytomentoside (500/125 MHz,  $\text{MeOH-}d_4$ , 30 °C).

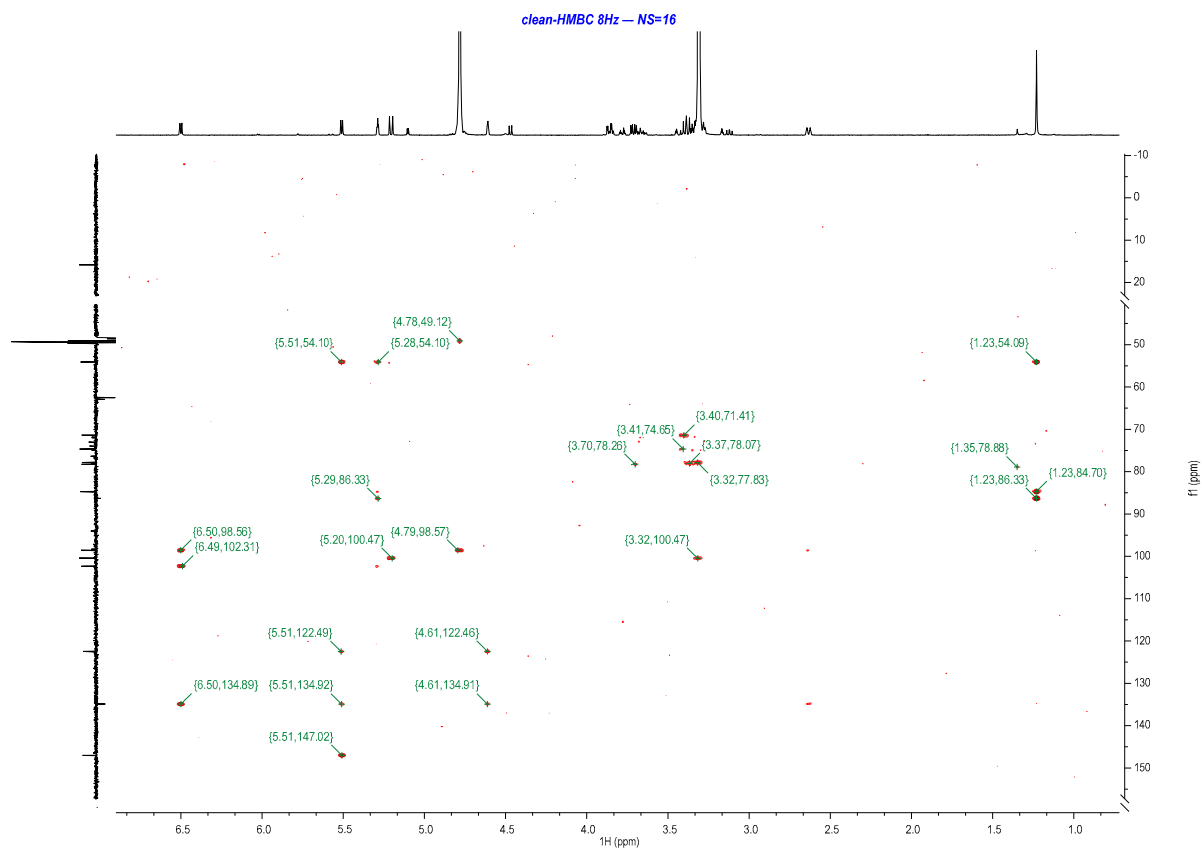


Figure S29.  $^1\text{H}$ - $^{13}\text{C}$  HMBC (8 Hz) NMR spectrum of 7-hydroxytomentoside (500/125 MHz,  $\text{MeOH-}d_4$ , 30 °C).