

## Supplementary Information

### Novel O-alkyl derivatives of naringenin and their oximes with antimicrobial and anticancer activity

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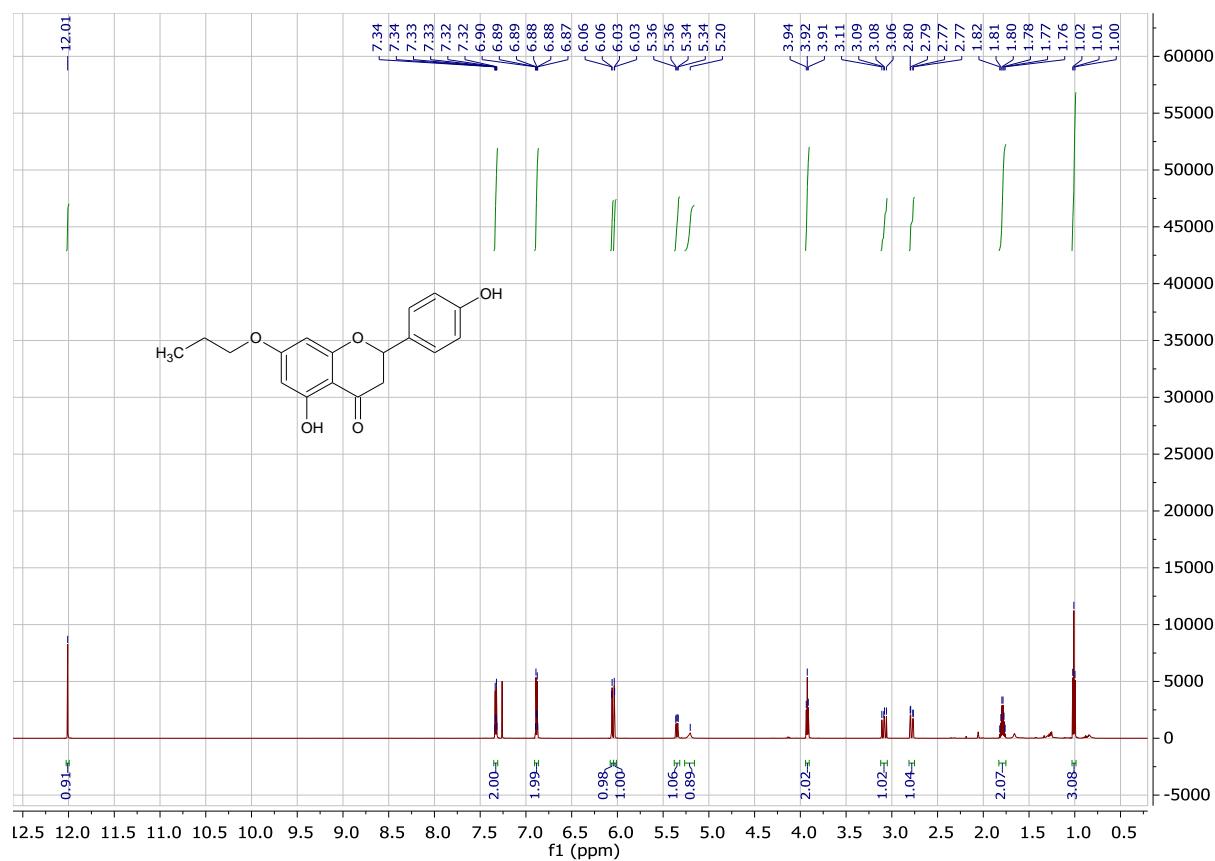


Fig S1. <sup>1</sup>H-NMR (600 MHz, CDCl<sub>3</sub>) spectrum of 7-O-Propynaringenin (7a)

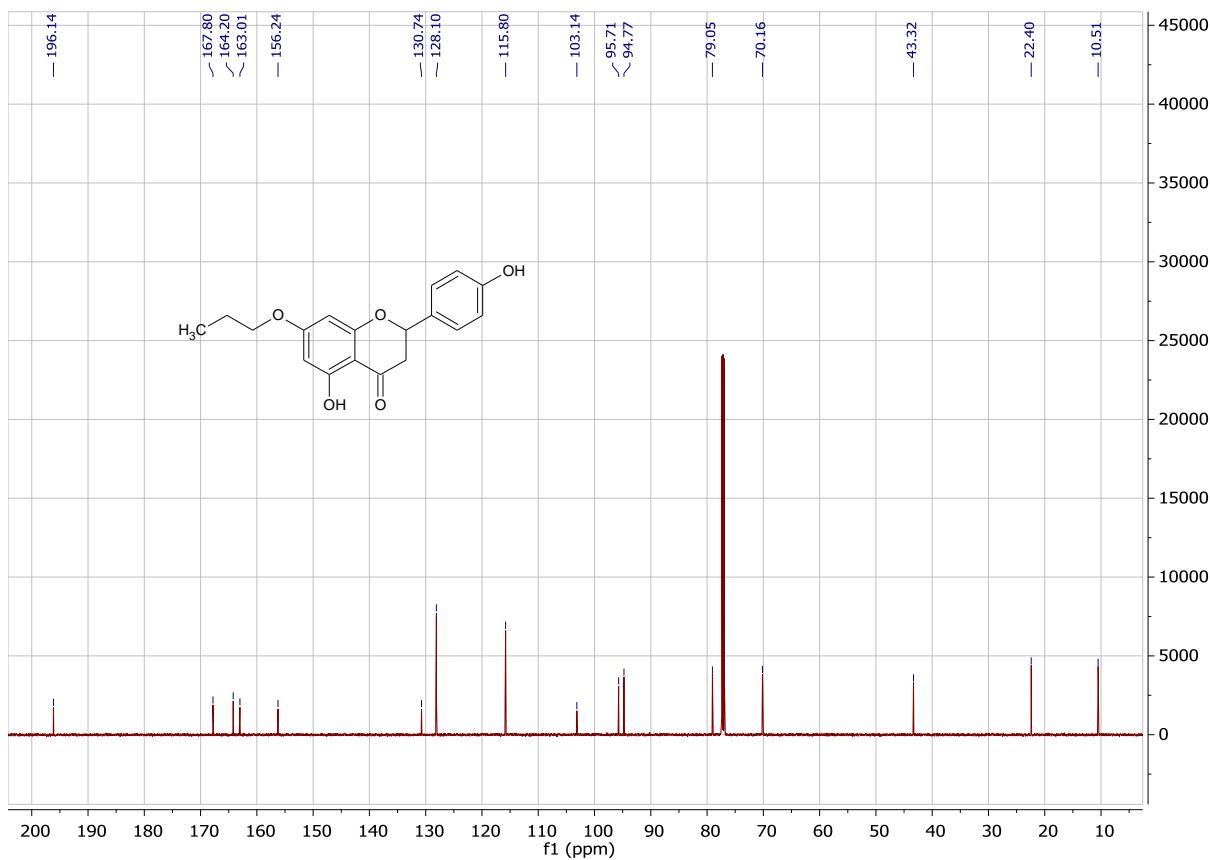


Fig S2. <sup>13</sup>C-NMR (150 MHz, CDCl<sub>3</sub>) spectrum of 7-O-Propynaringenin (7a)

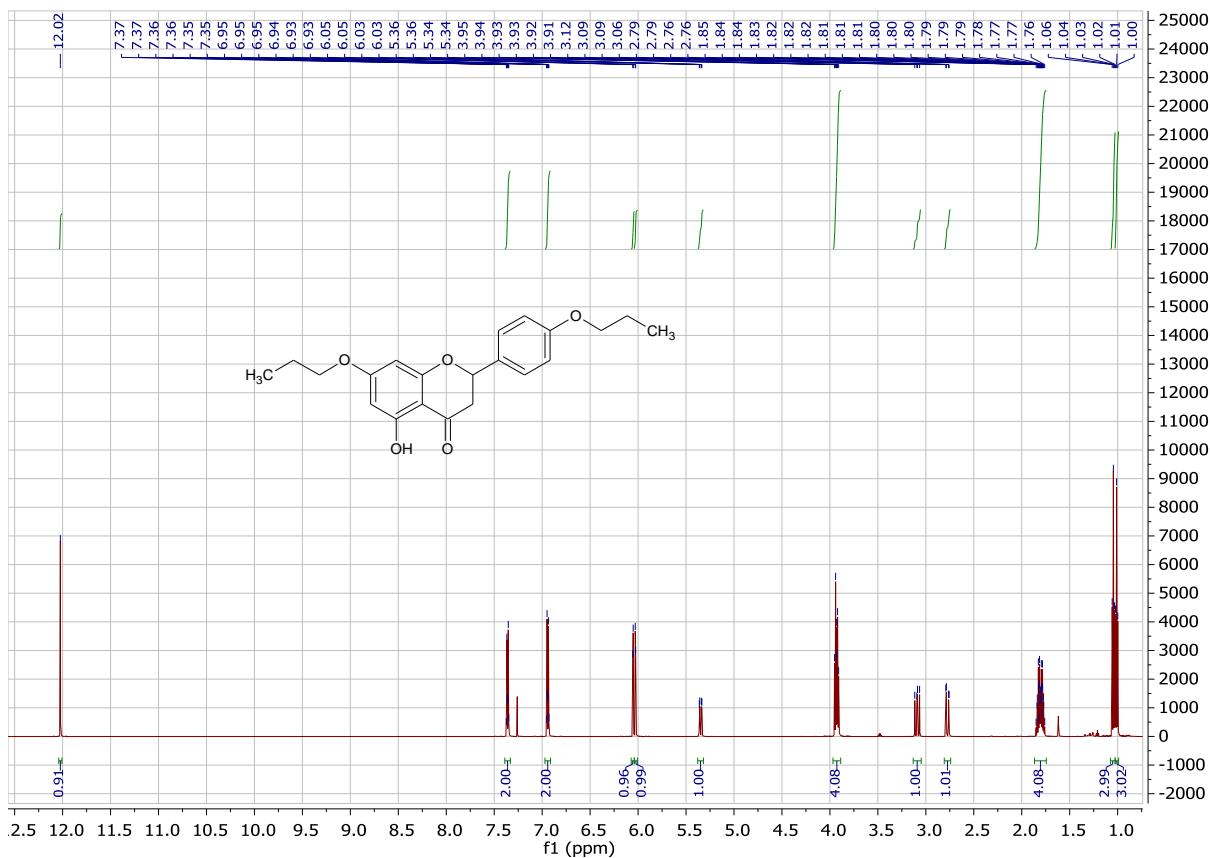


Fig S3. <sup>1</sup>H-NMR (600 MHz, CDCl<sub>3</sub>) spectrum of 7,4'-Di-O-propynaringenin (8a)

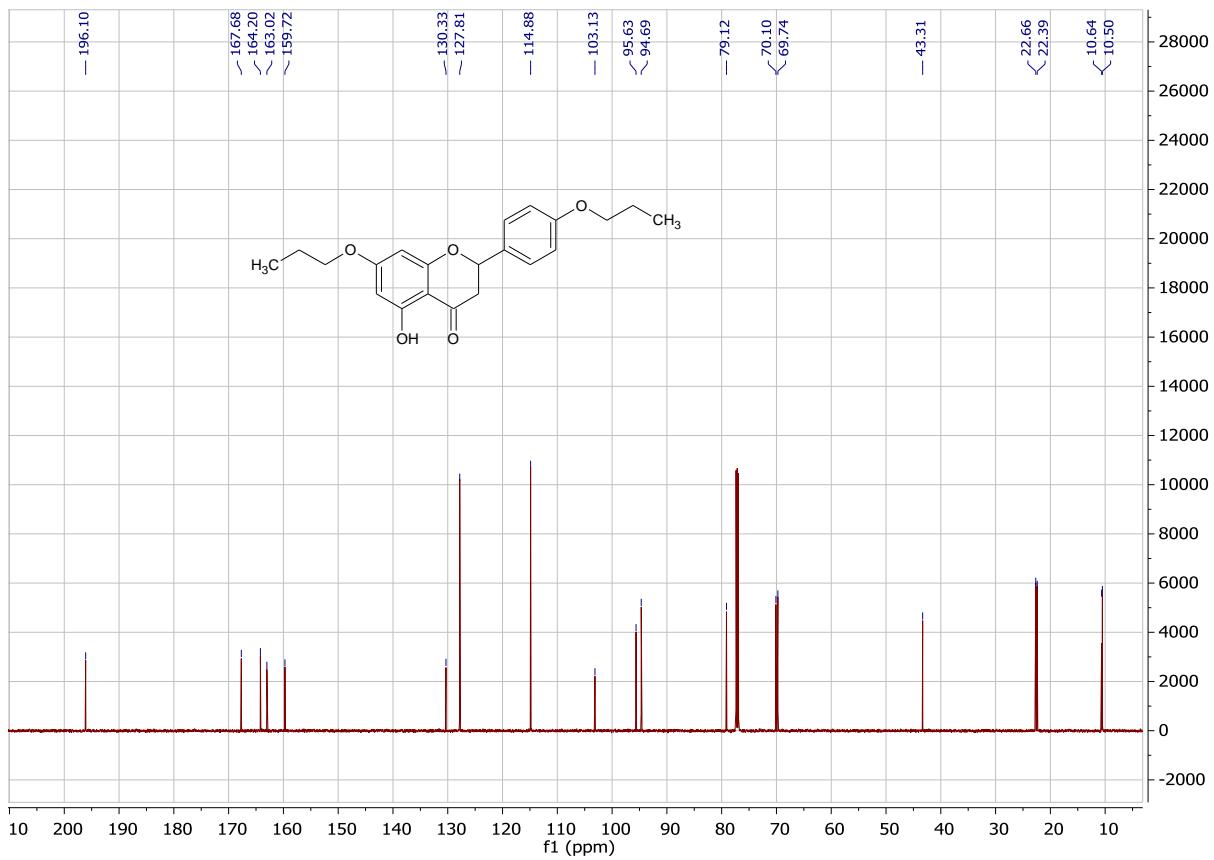


Fig S4. <sup>13</sup>C-NMR (150 MHz, CDCl<sub>3</sub>) spectrum of 7,4'-Di-O-propynaringenin (8a)

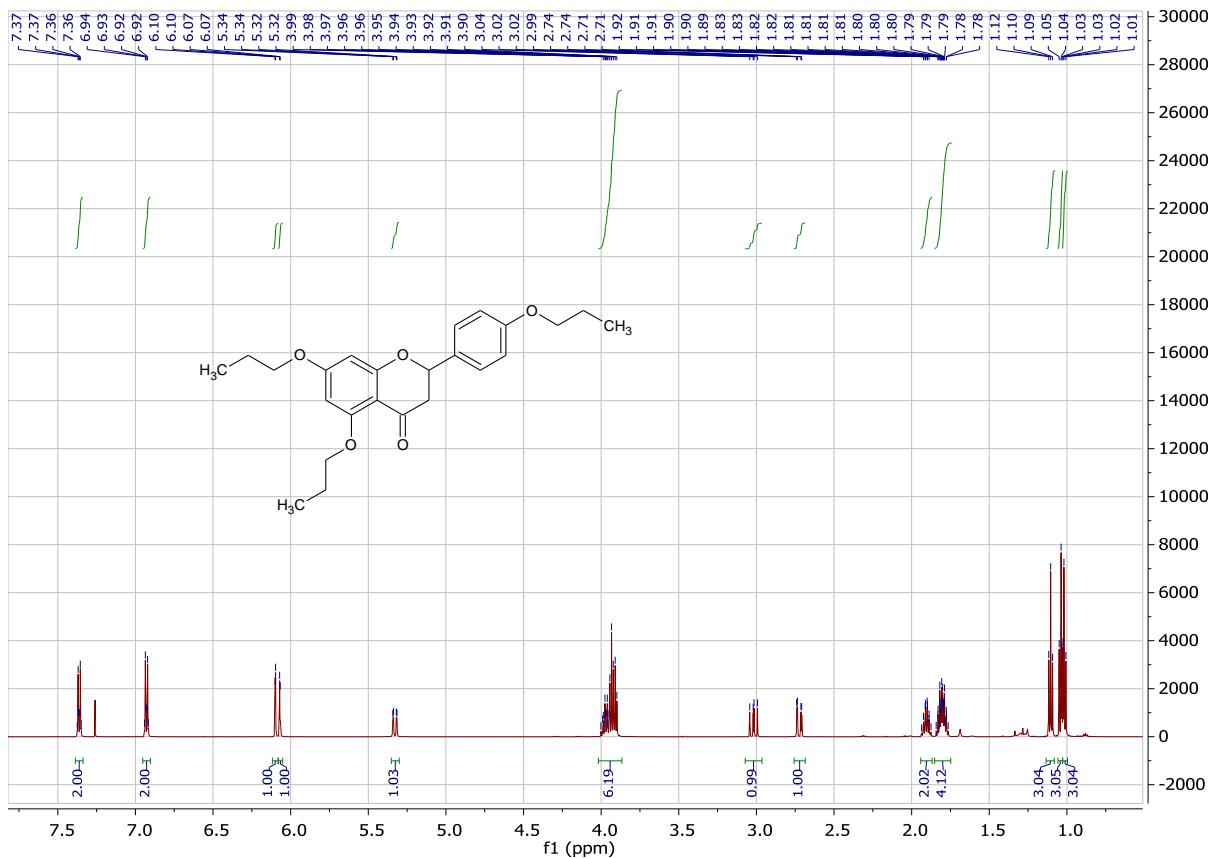


Fig S5. <sup>1</sup>H-NMR (600 MHz, CDCl<sub>3</sub>) spectrum of 5,7,4'-Tri-O-propynaringenin (9a)

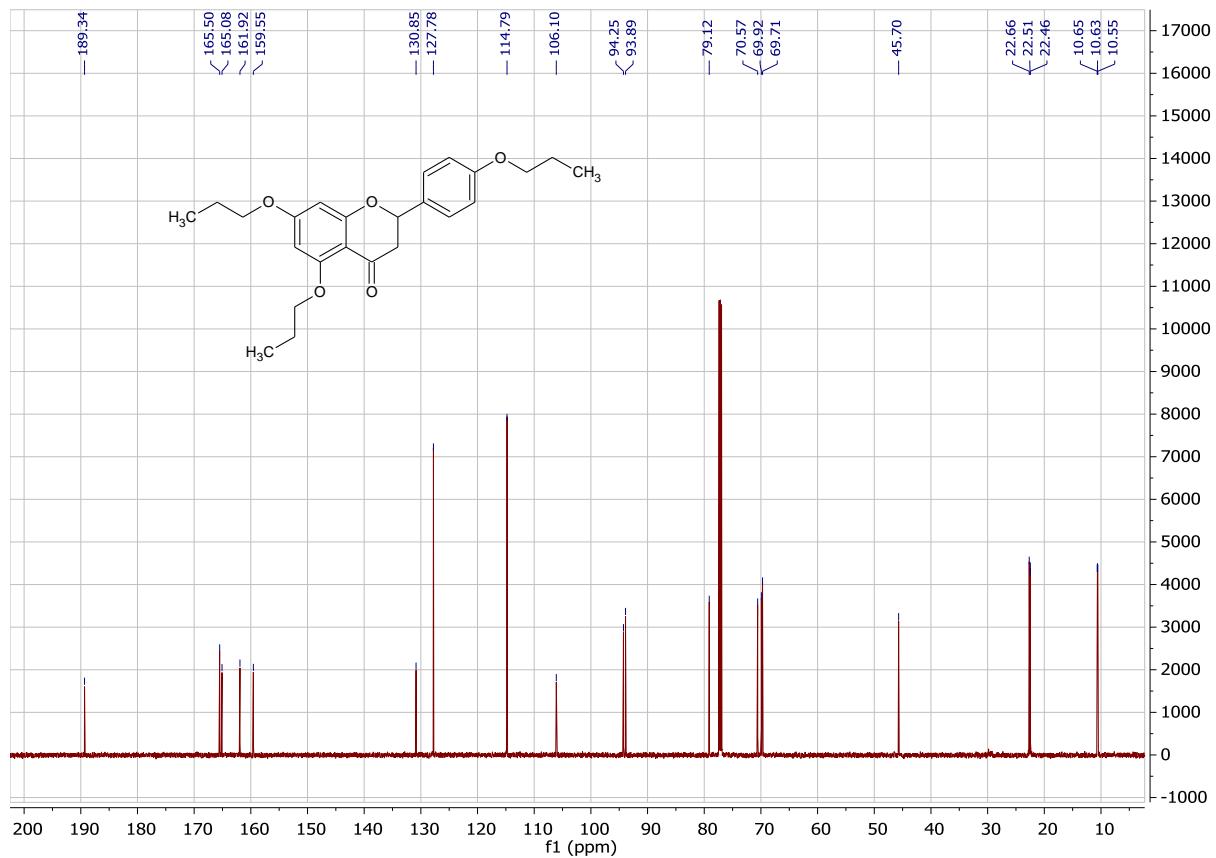


Fig S6.  $^{13}\text{C}$ -NMR (150 MHz,  $\text{CDCl}_3$ ) spectrum of 5,7,4'-Tri-*O*-propylnaringenin (**9a**)

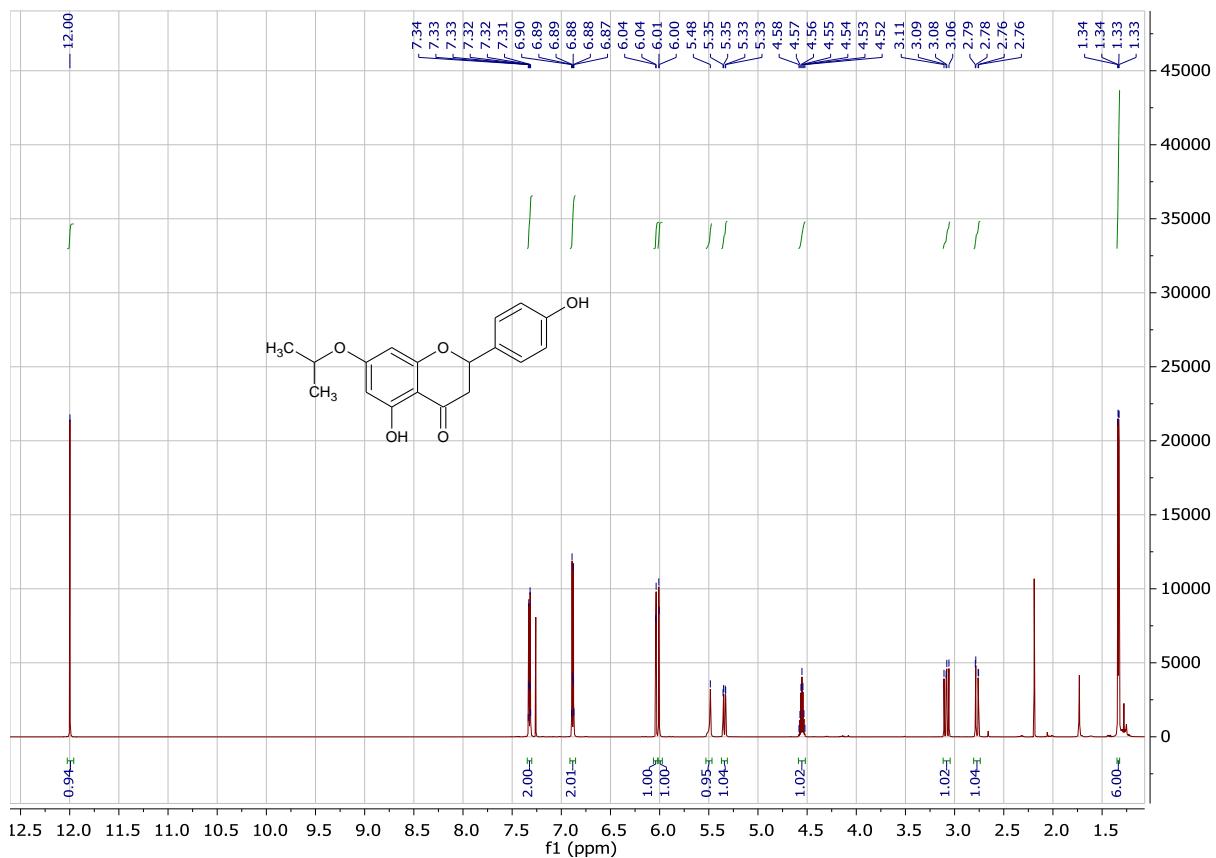


Fig S7.  $^1\text{H}$ -NMR (600 MHz,  $\text{CDCl}_3$ ) spectrum of 7-O-Isopropylnaringenin (**10a**)

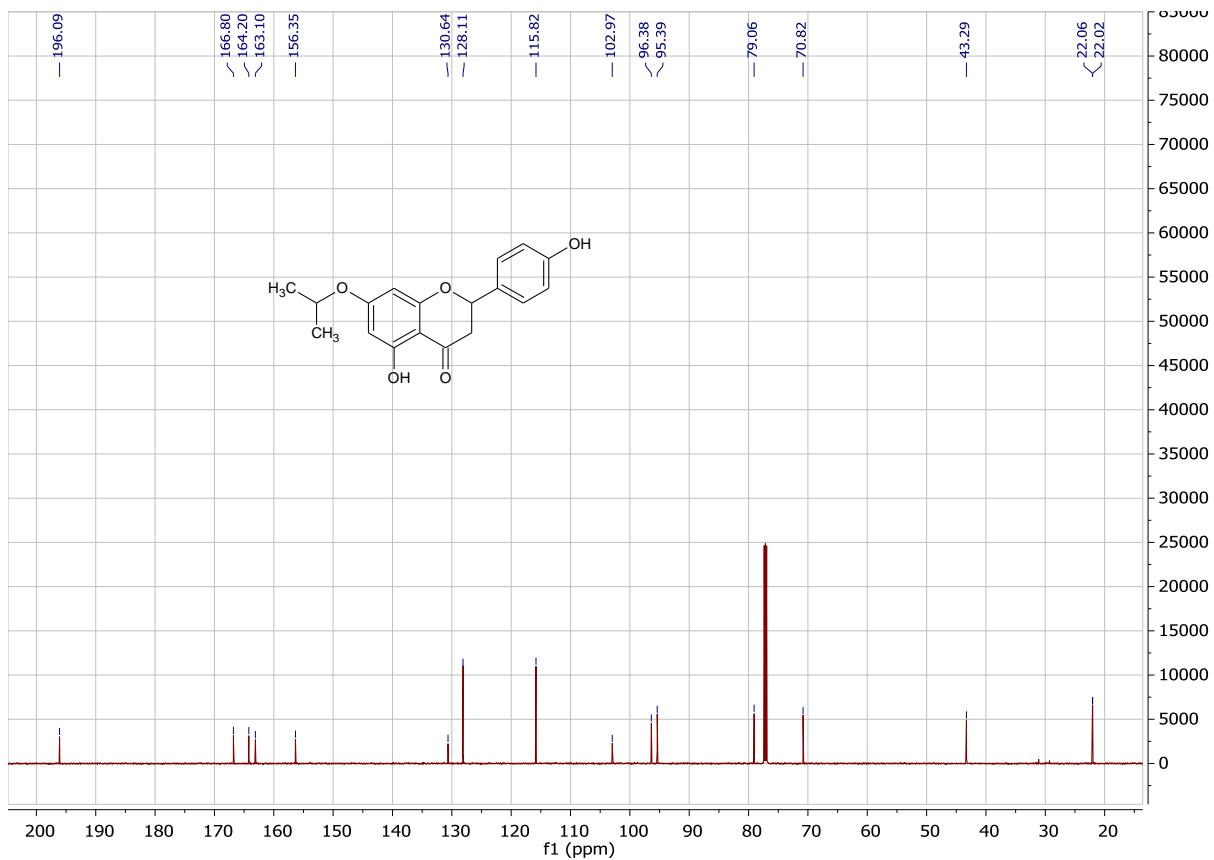


Fig S8.  $^{13}\text{C}$ -NMR (150 MHz,  $\text{CDCl}_3$ ) spectrum of 7-O-Isopropylnaringenin (**10a**)

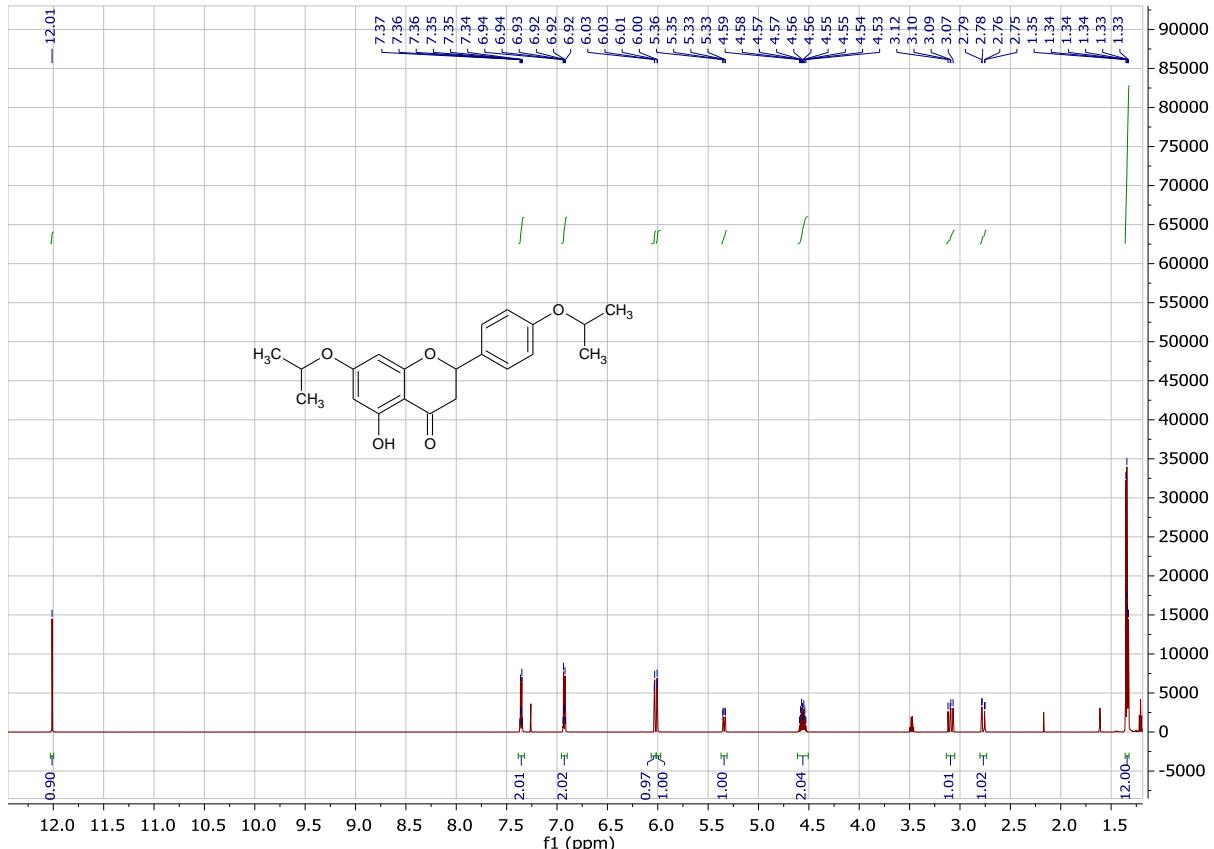


Fig S9.  $^1\text{H}$ -NMR (600 MHz,  $\text{CDCl}_3$ ) spectrum of 7,4'-Di-O-isopropylnaringenin (**11a**)

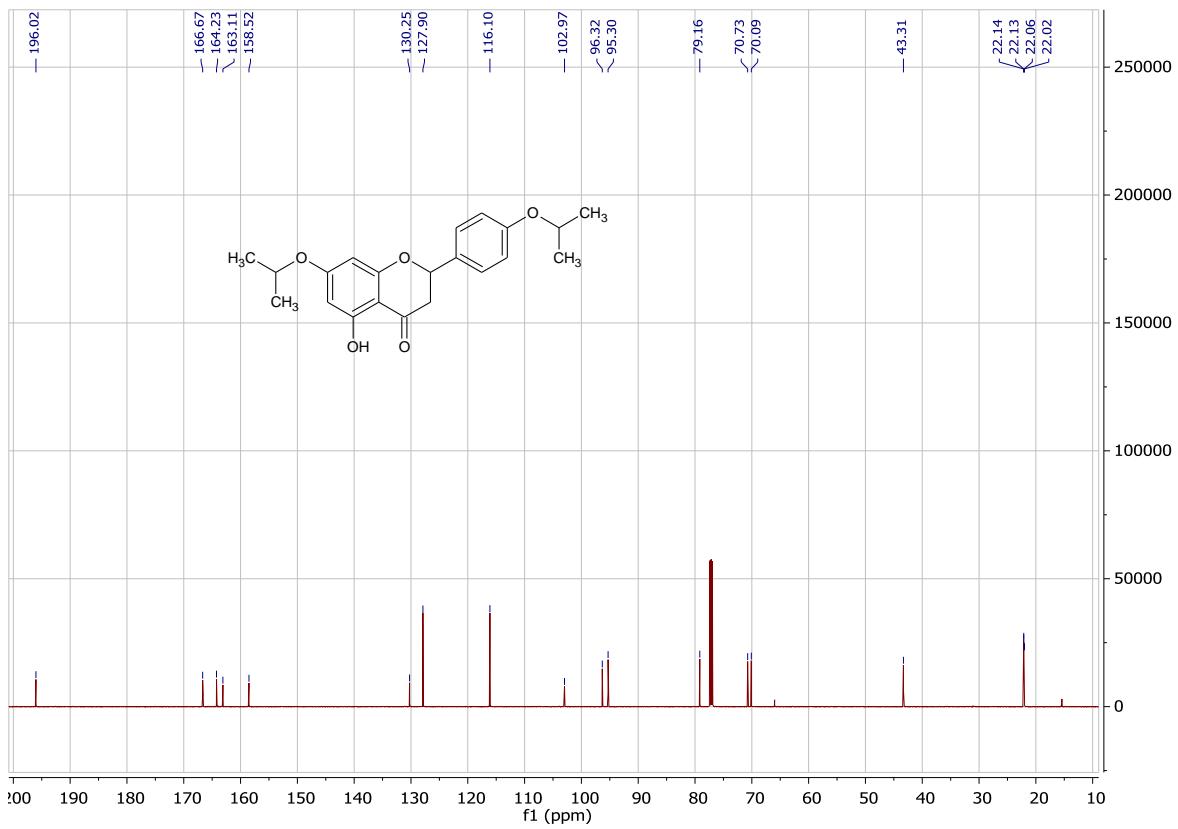


Fig S10. <sup>13</sup>C-NMR (150 MHz, CDCl<sub>3</sub>) spectrum of 7,4'-Di-O-isopropylnaringenin (11a)

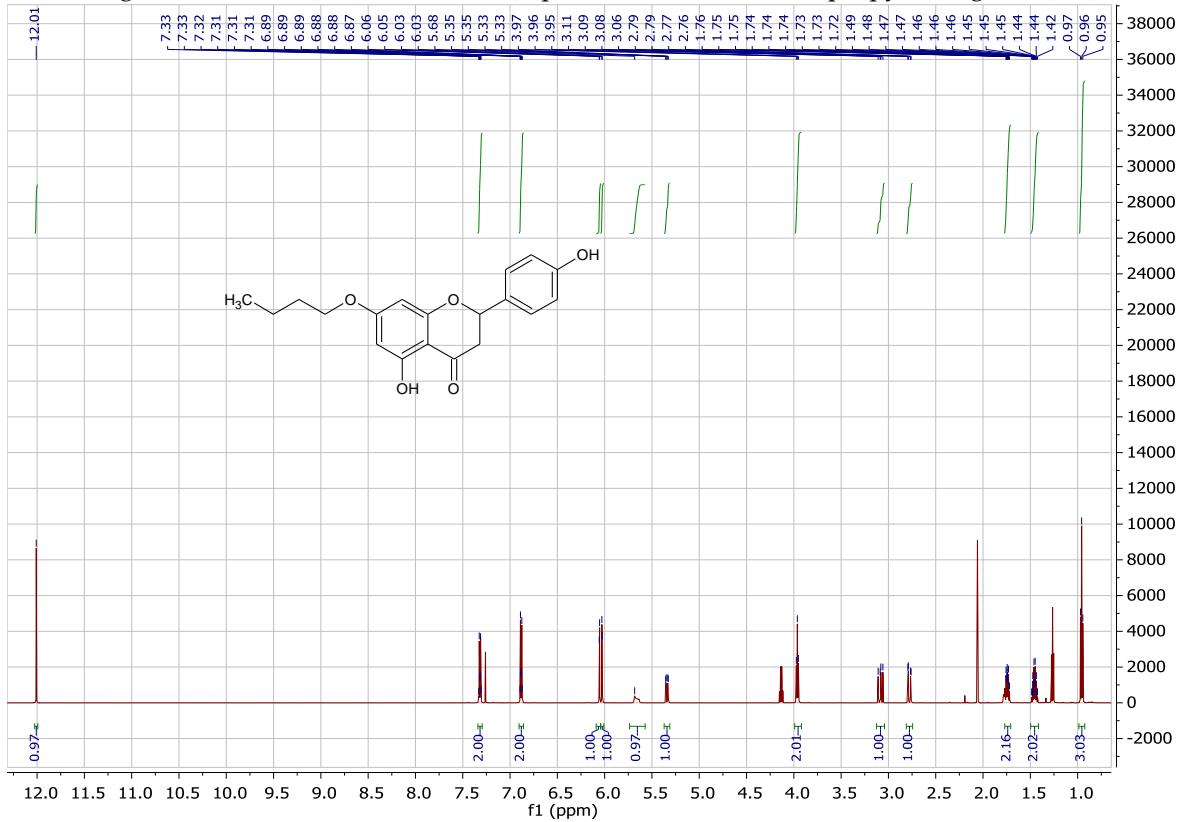


Fig S11. <sup>1</sup>H-NMR (600 MHz, CDCl<sub>3</sub>) spectrum of 7-O-Butylnaringenin (12a)

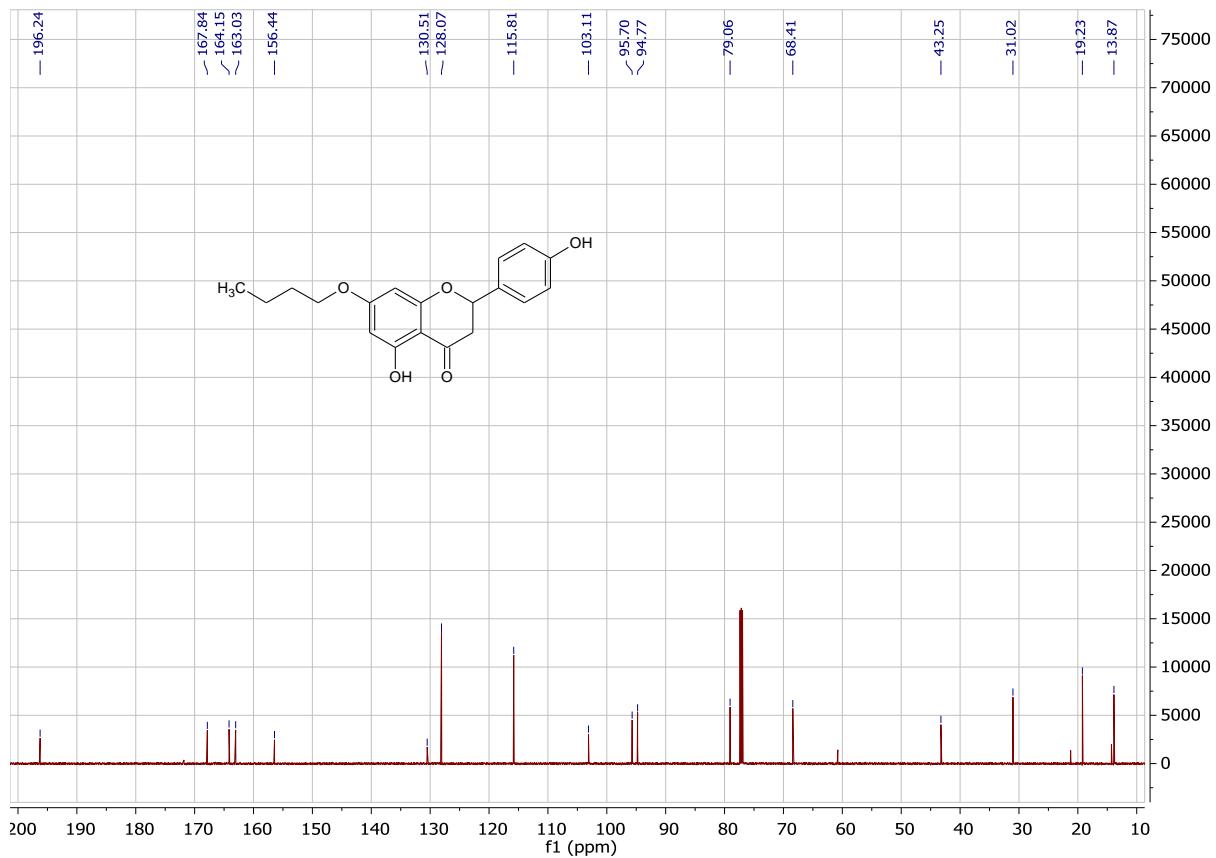


Fig S12. <sup>13</sup>C-NMR (150 MHz, CDCl<sub>3</sub>) spectrum of 7-O-Butylnaringenin (**12a**)

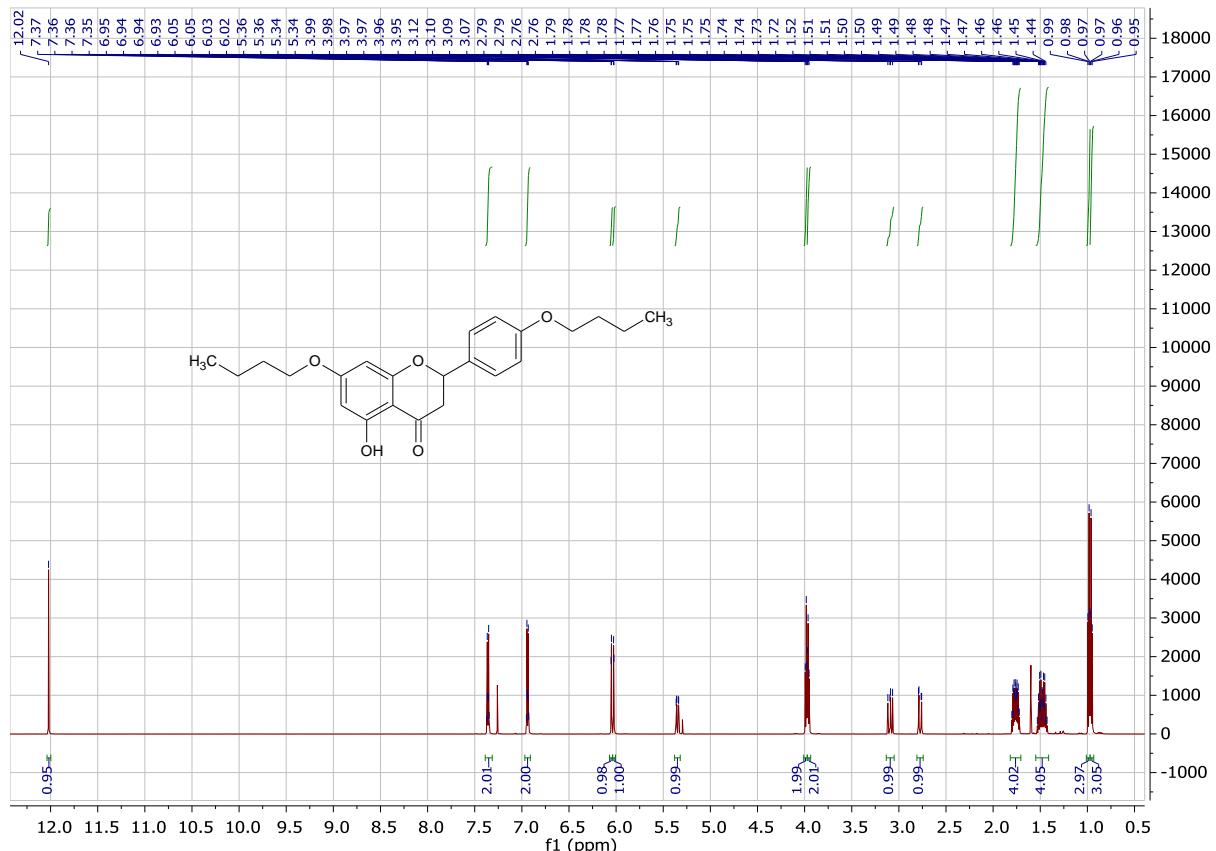


Fig S13. <sup>1</sup>H-NMR (600 MHz, CDCl<sub>3</sub>) spectrum of 7,4'-Di-O-butylnaringenin (**13a**)

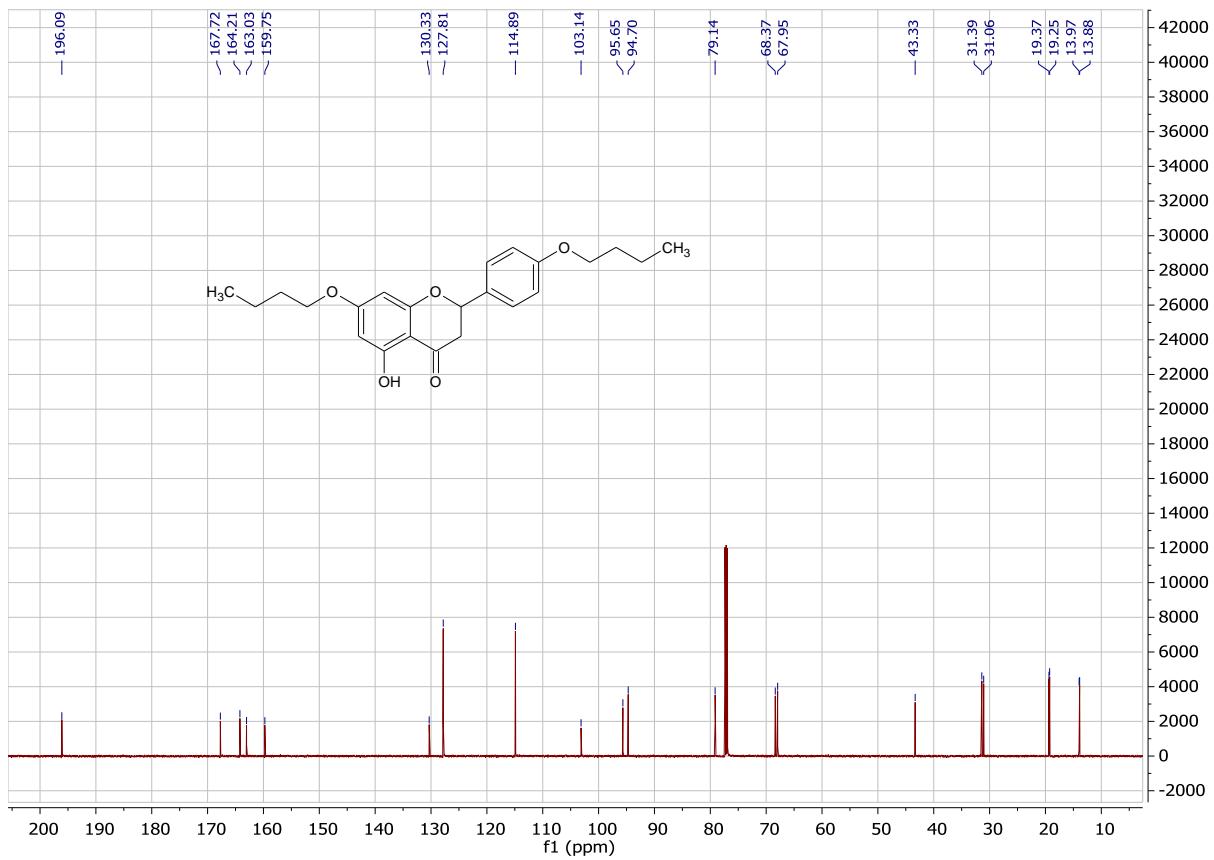


Fig S14. <sup>13</sup>C-NMR (150 MHz, CDCl<sub>3</sub>) spectrum of 7,4'-Di-O-butylnaringenin (**13a**)

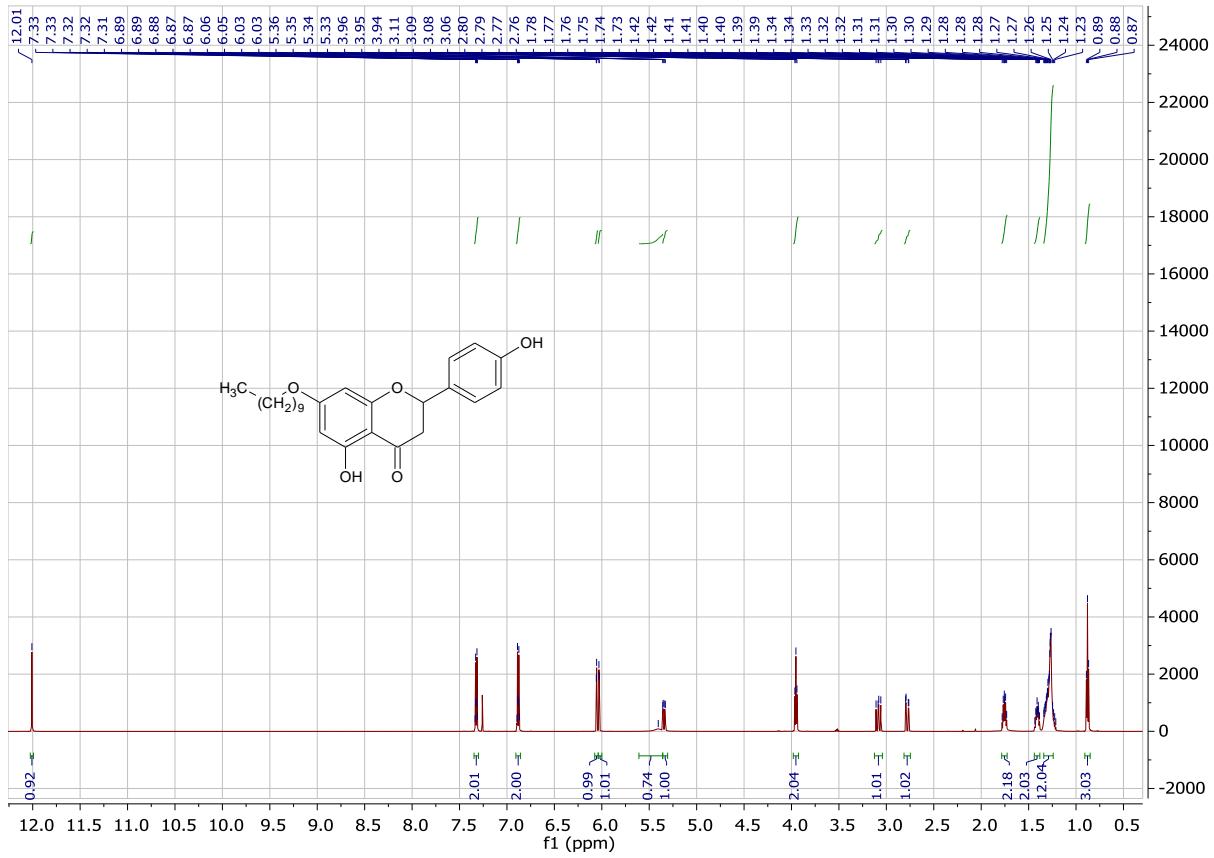


Fig S15. <sup>1</sup>H-NMR (600 MHz, CDCl<sub>3</sub>) spectrum of 7-O-Decylnaringenin (**16a**)

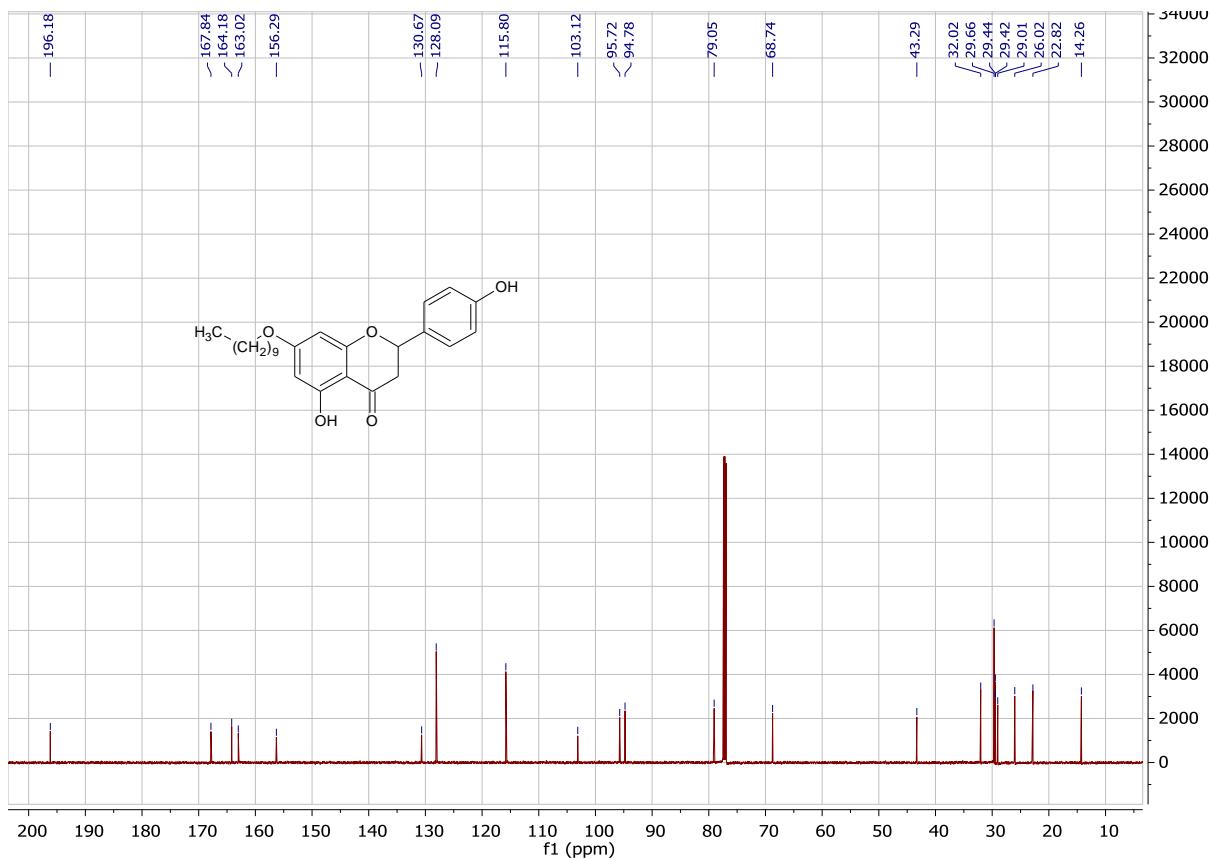


Fig S16. <sup>13</sup>C-NMR (150 MHz, CDCl<sub>3</sub>) spectrum of 7-O-Decynaringenin (**16a**)

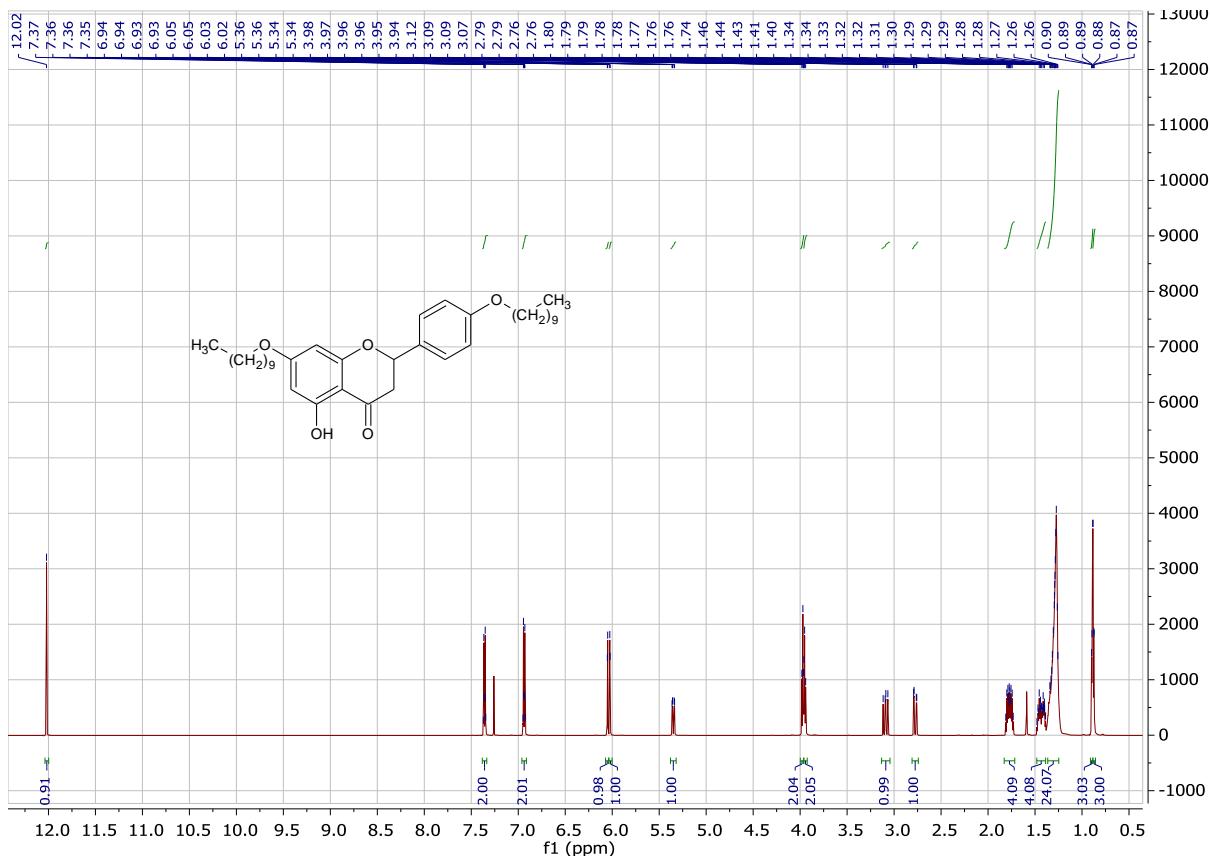


Fig S17. <sup>1</sup>H-NMR (600 MHz, CDCl<sub>3</sub>) spectrum of 7,4'-Di-O-decynaringenin (**17a**)

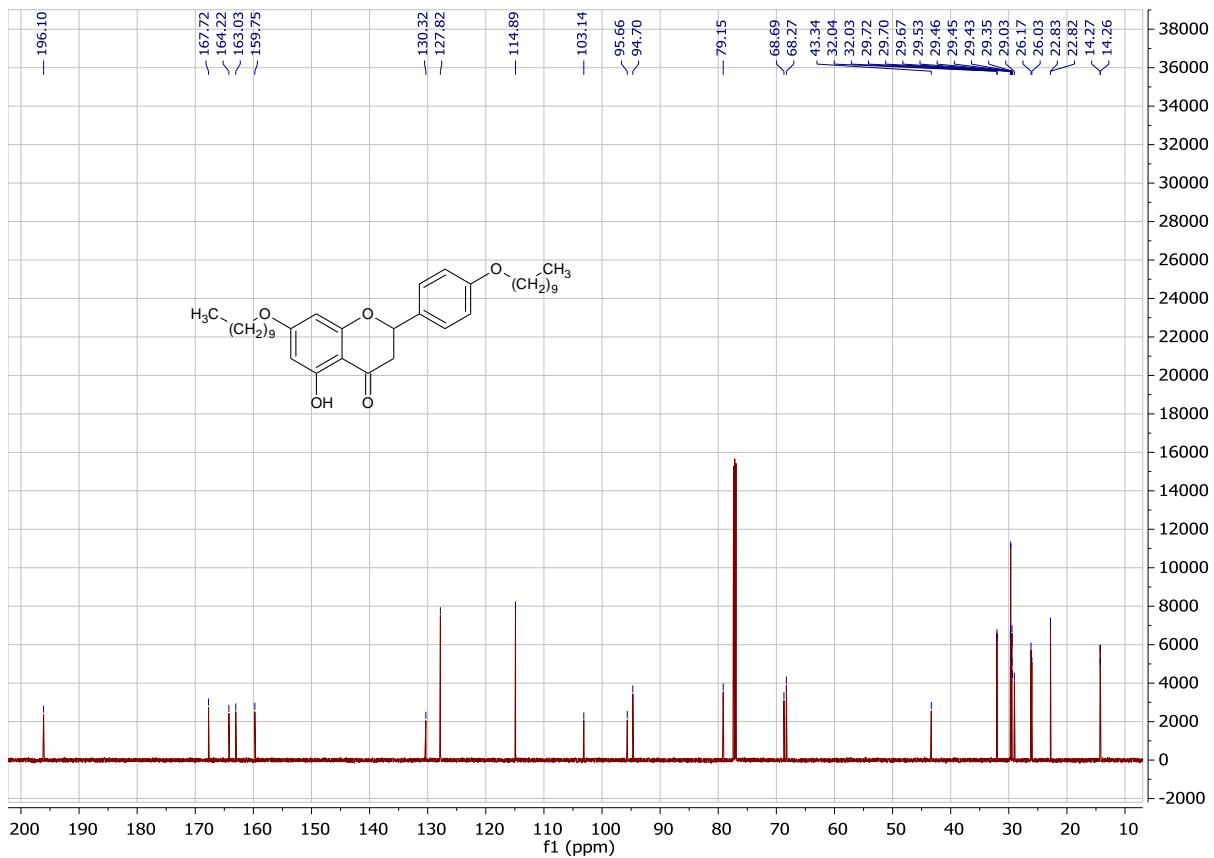


Fig S18. <sup>13</sup>C-NMR (150 MHz, CDCl<sub>3</sub>) spectrum of 7,4'-Di-O-decynaringenin (**17a**)

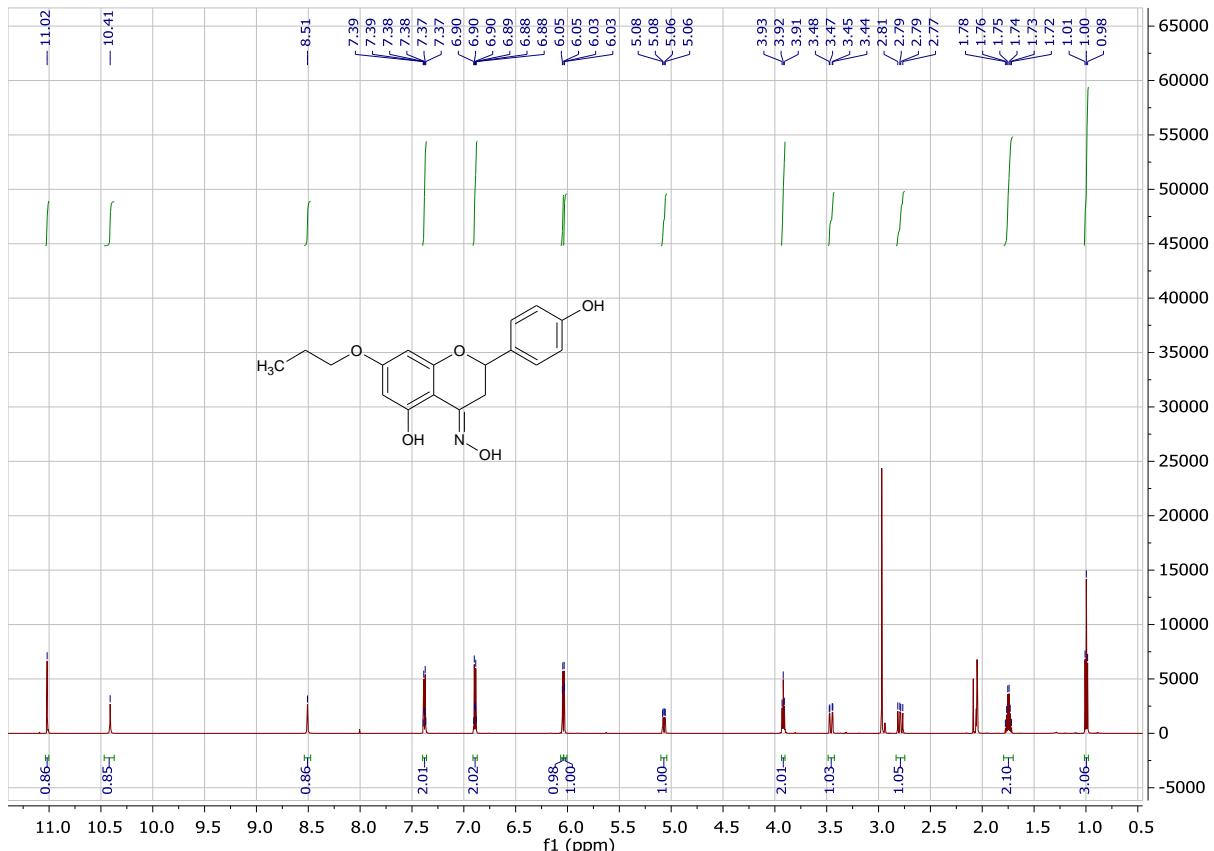


Fig S19. <sup>1</sup>H-NMR (600 MHz, (CD<sub>3</sub>)<sub>2</sub>CO) spectrum of 7-O-Propynaringenin oxime (**7b**)

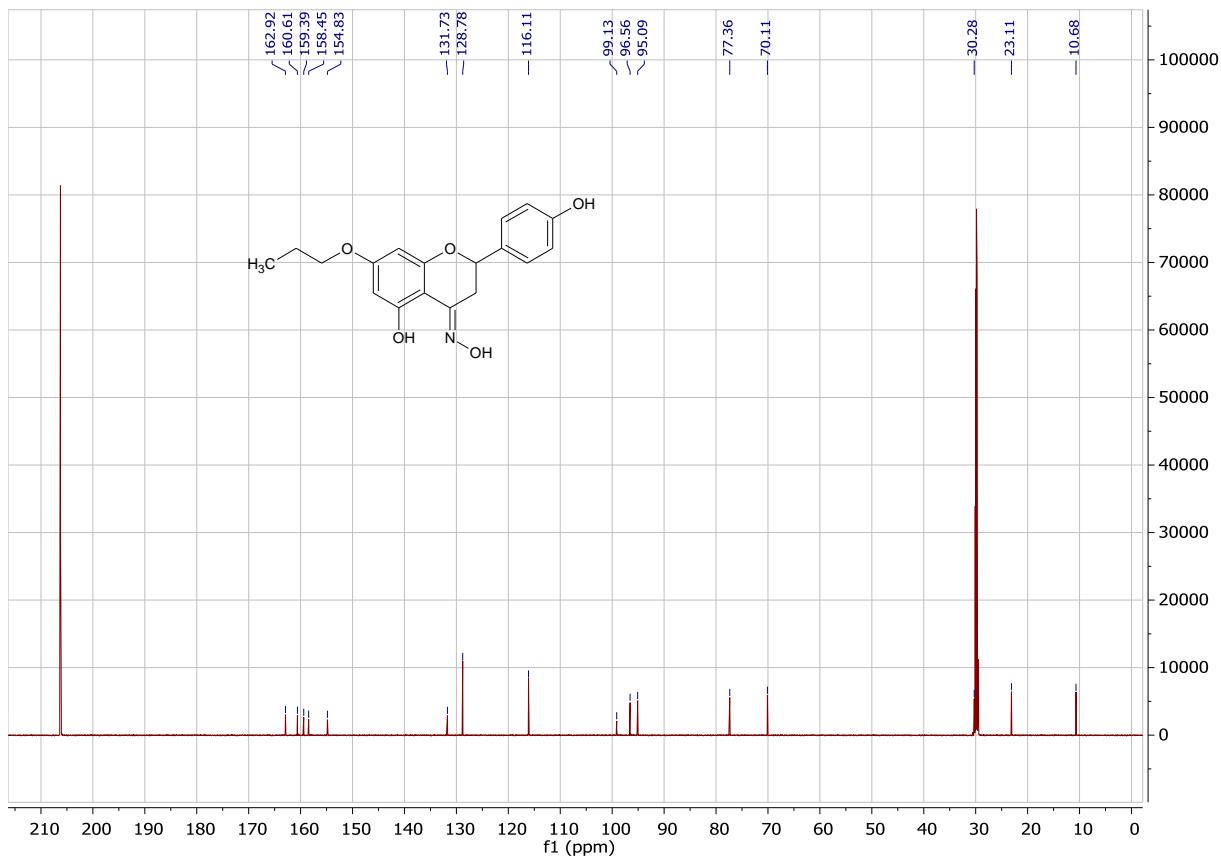


Fig S20.  $^{13}\text{C}$ -NMR (150 MHz,  $(\text{CD}_3)_2\text{CO}$ ) spectrum of 7-O-Propynaringenin oxime (**7b**)

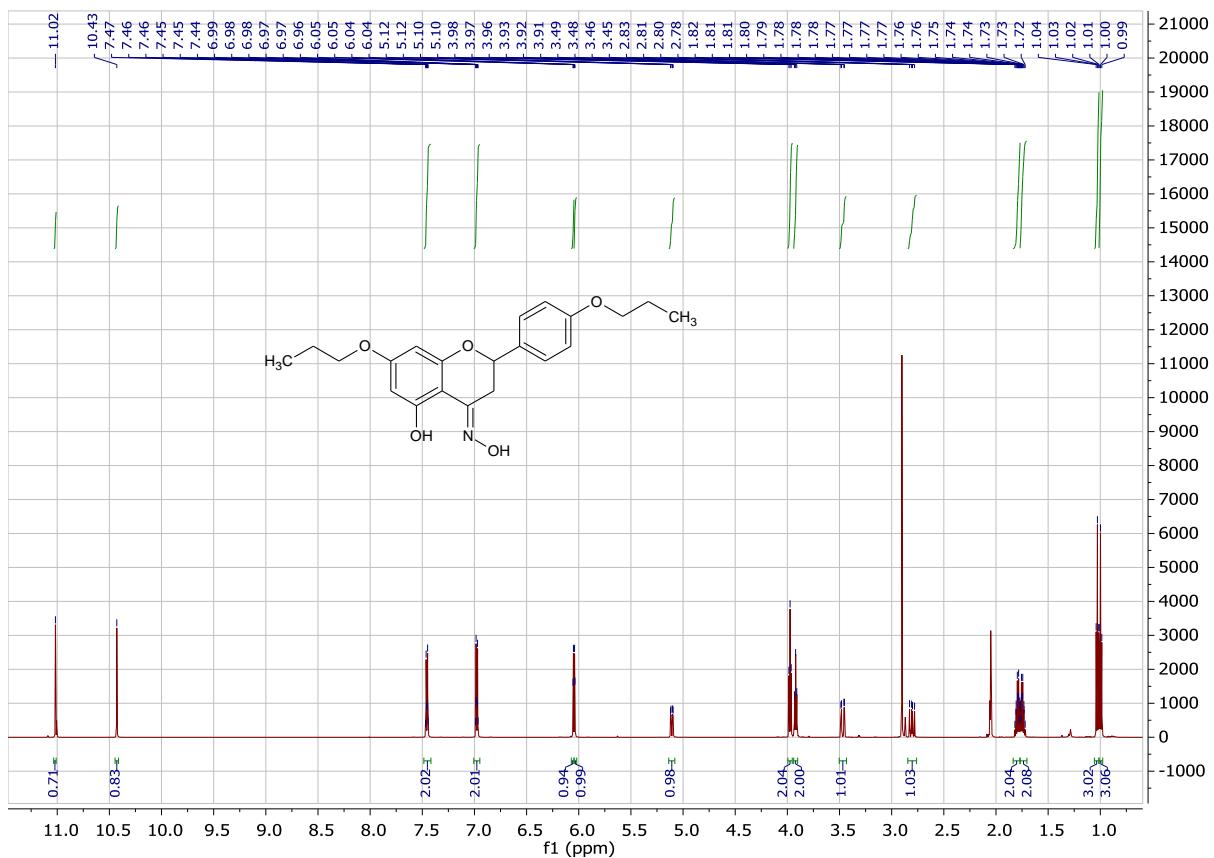


Fig S21.  $^1\text{H}$ -NMR (600 MHz,  $(\text{CD}_3)_2\text{CO}$ ) spectrum of 7,4'-Di-O-propynaringenin oxime (**8b**)

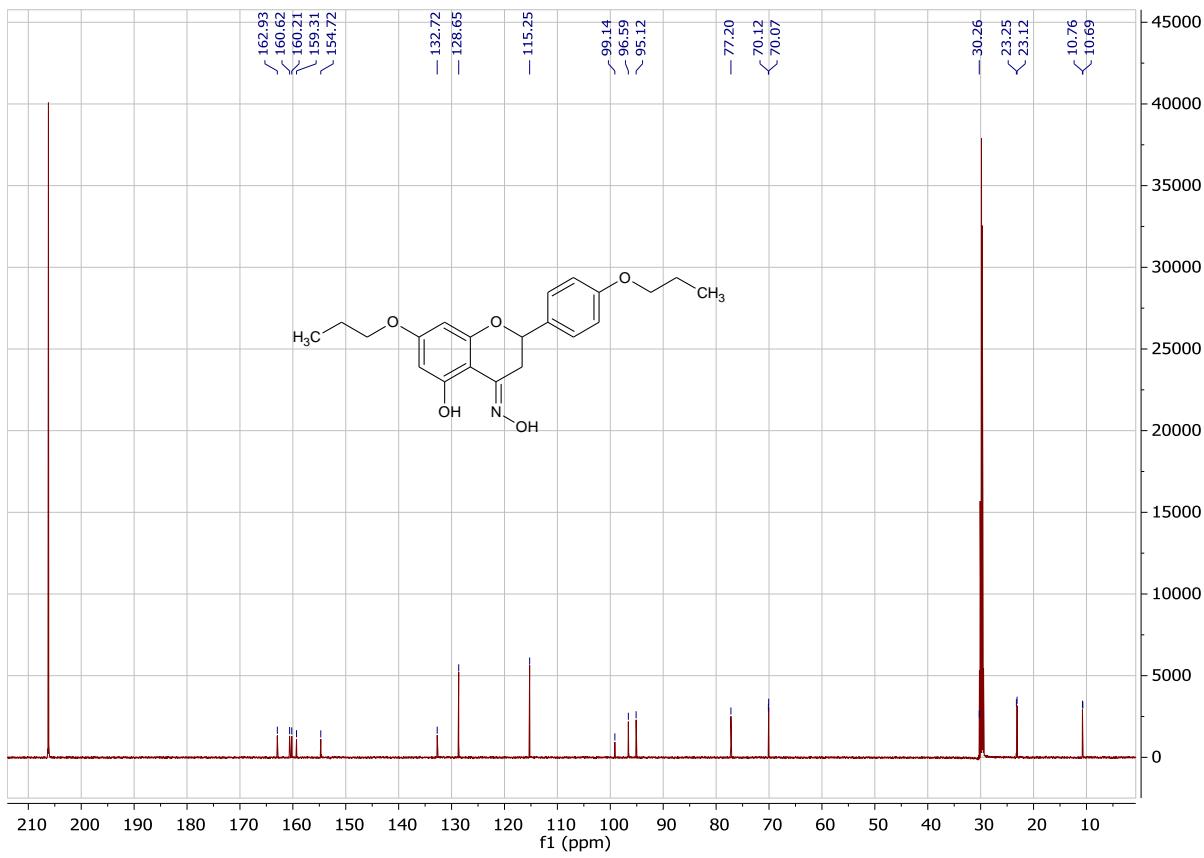


Fig S22.  $^{13}\text{C}$ -NMR (150 MHz,  $(\text{CD}_3)_2\text{CO}$ ) spectrum of 7,4'-Di-*O*-propynaringenin oxime (**8b**)

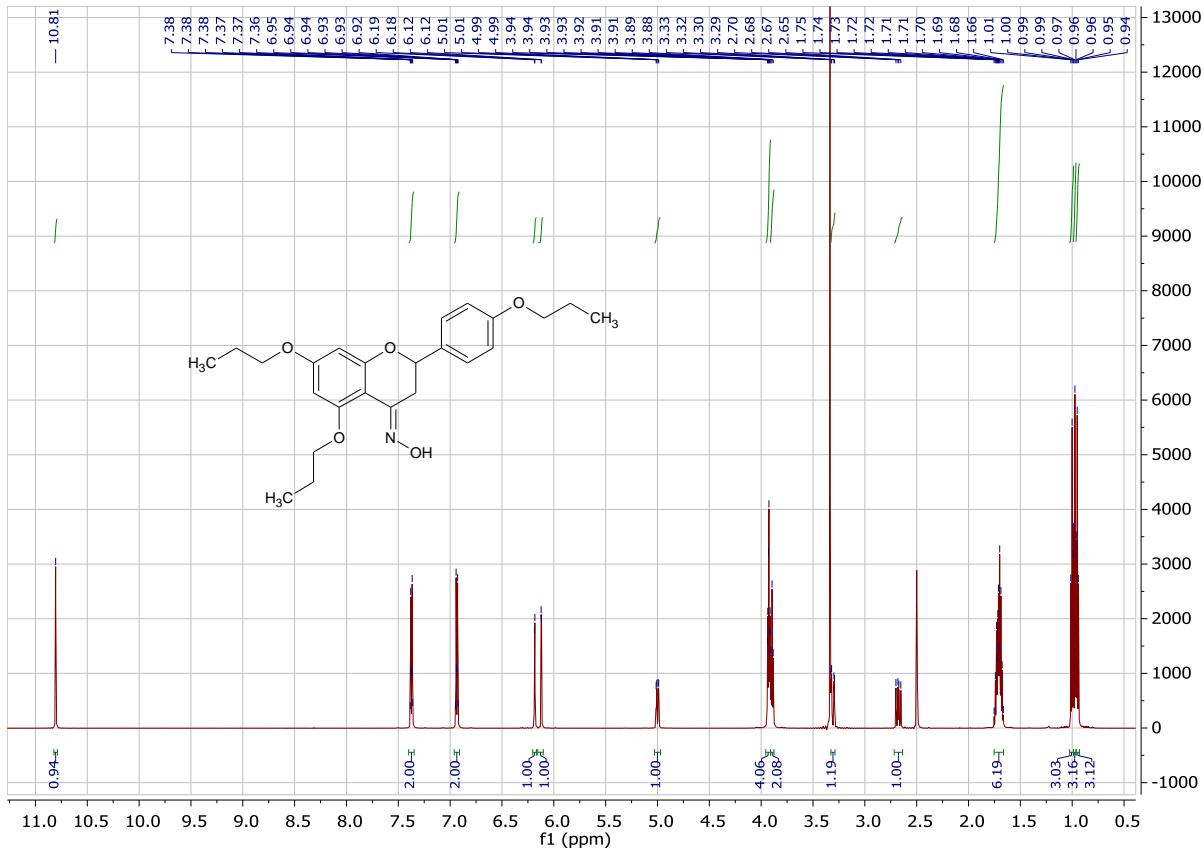


Fig S23.  $^1\text{H}$ -NMR (600 MHz,  $(\text{CD}_3)_2\text{SO}$ ) spectrum of 5,7,4'-Tri-*O*-propynaringenin oxime (**9b**)

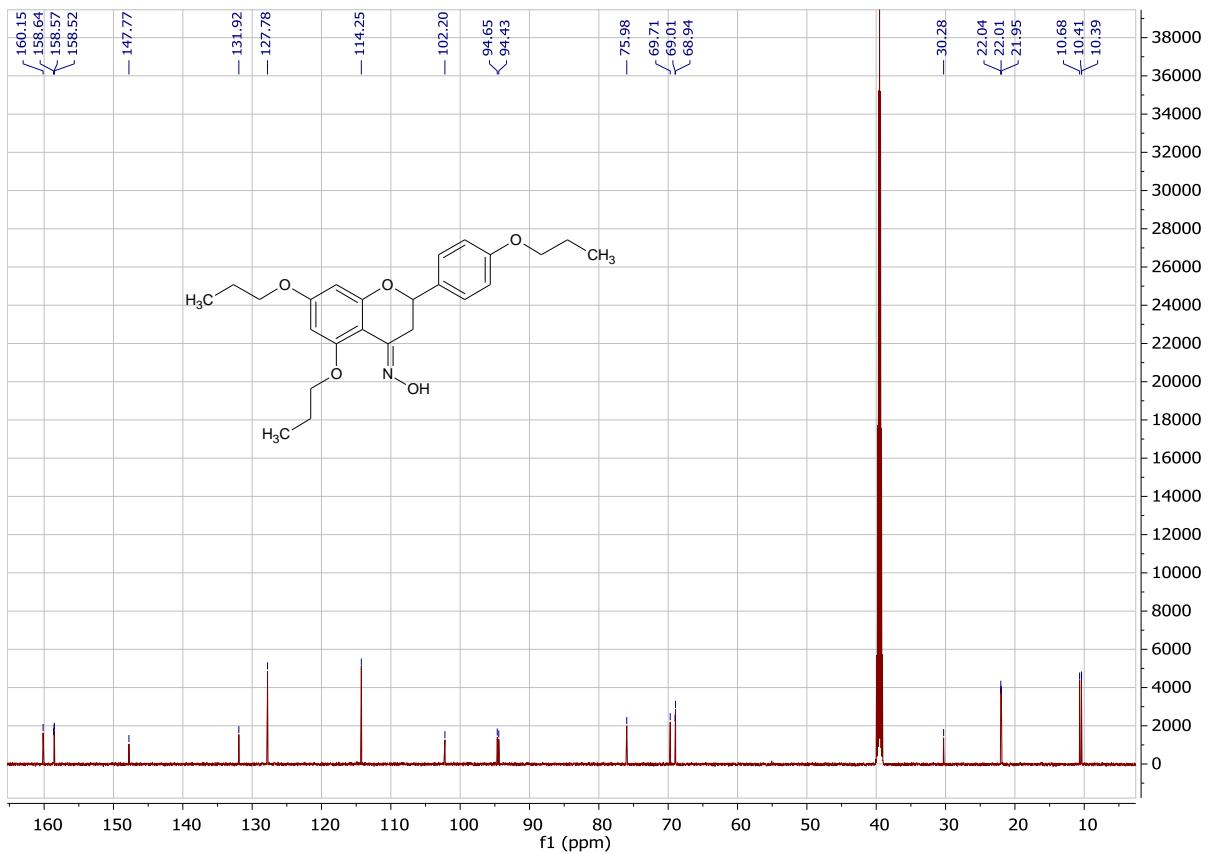


Fig S24. <sup>13</sup>C-NMR (150 MHz,  $(\text{CD}_3)_2\text{SO}$ ) spectrum of 5,7,4'-Tri-O-propynaringenin oxime (**9b**)

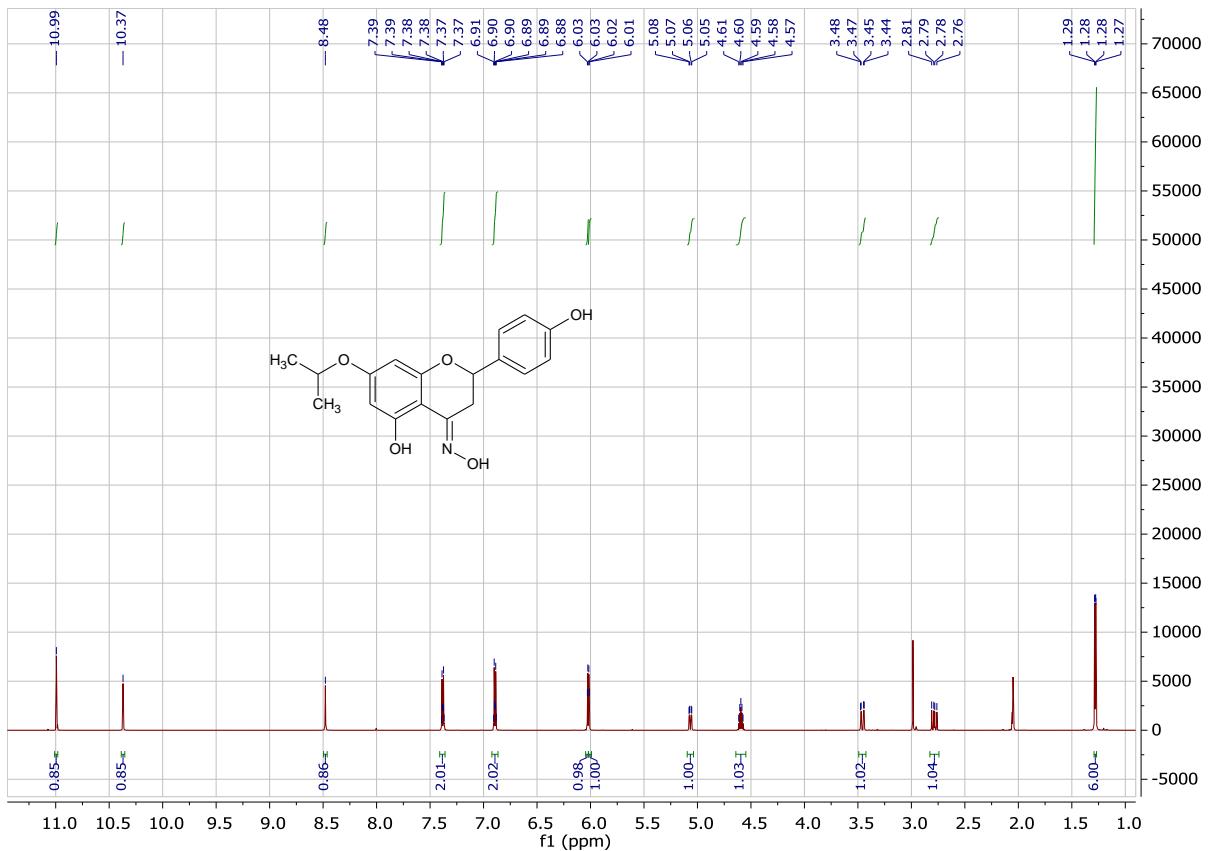


Fig S25. <sup>1</sup>H-NMR (600 MHz,  $(\text{CD}_3)_2\text{CO}$ ) spectrum of 7-O-Isopropynaringenin oxime (**10b**)

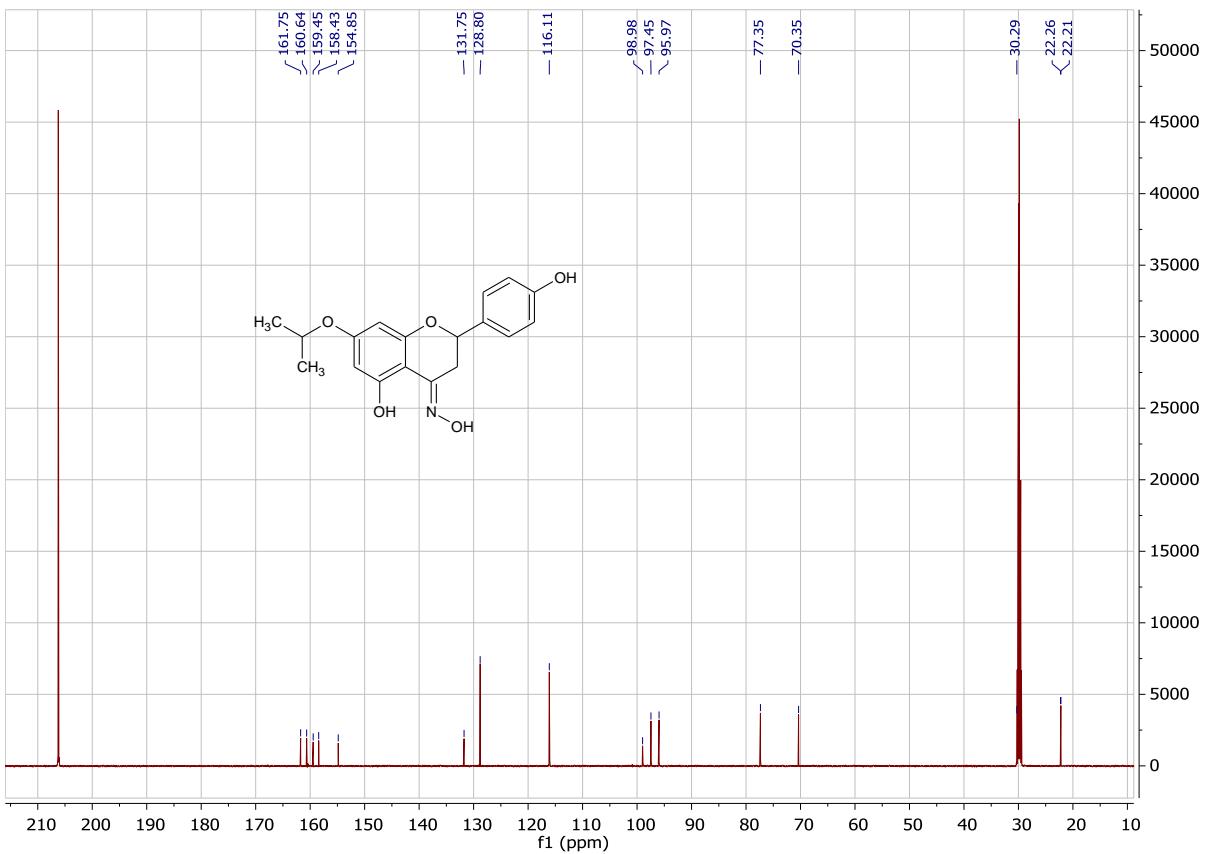


Fig S26. <sup>13</sup>C-NMR (150 MHz,  $(CD_3)_2CO$ ) spectrum of 7-O-Isopropynaringenin oxime (**10b**)

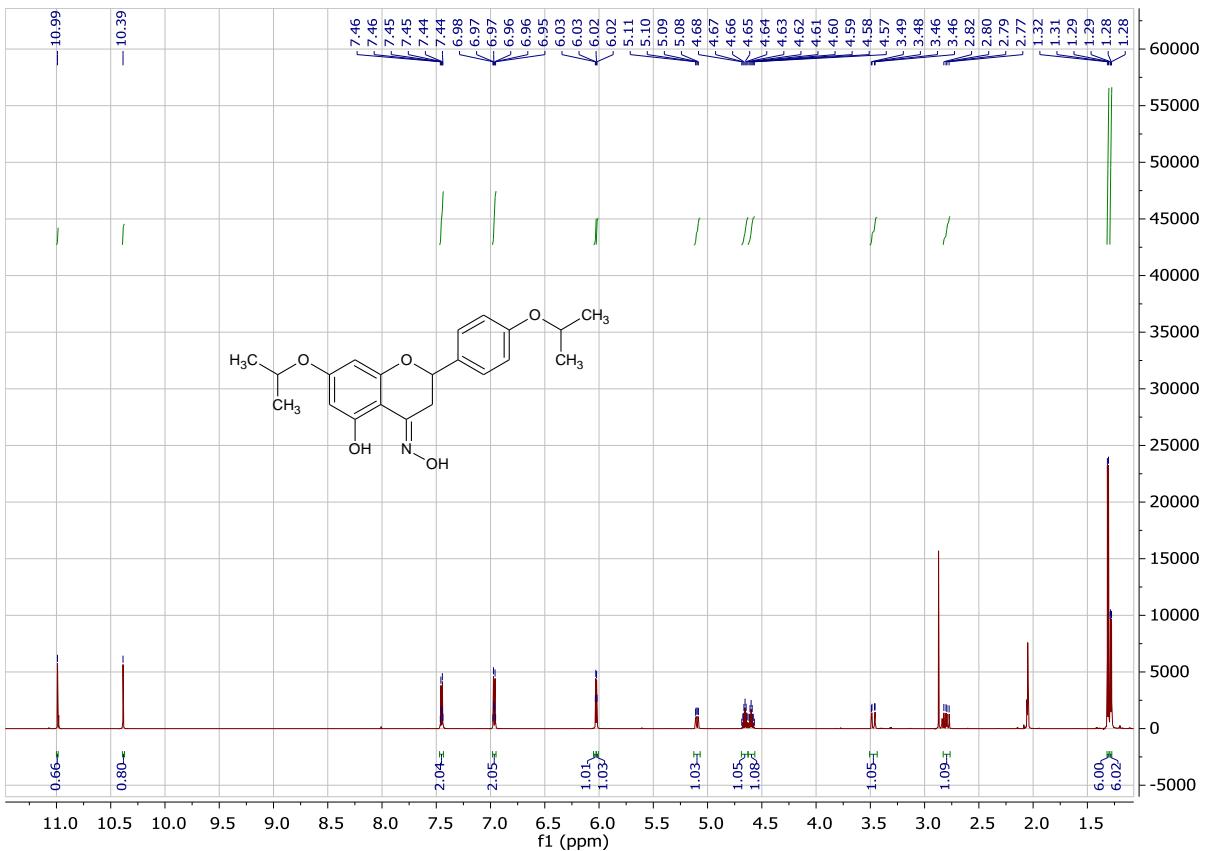


Fig S27. <sup>1</sup>H-NMR (600 MHz,  $(CD_3)_2CO$ ) spectrum of 7,4'-Di-O-isopropynaringenin oxime (**11b**)

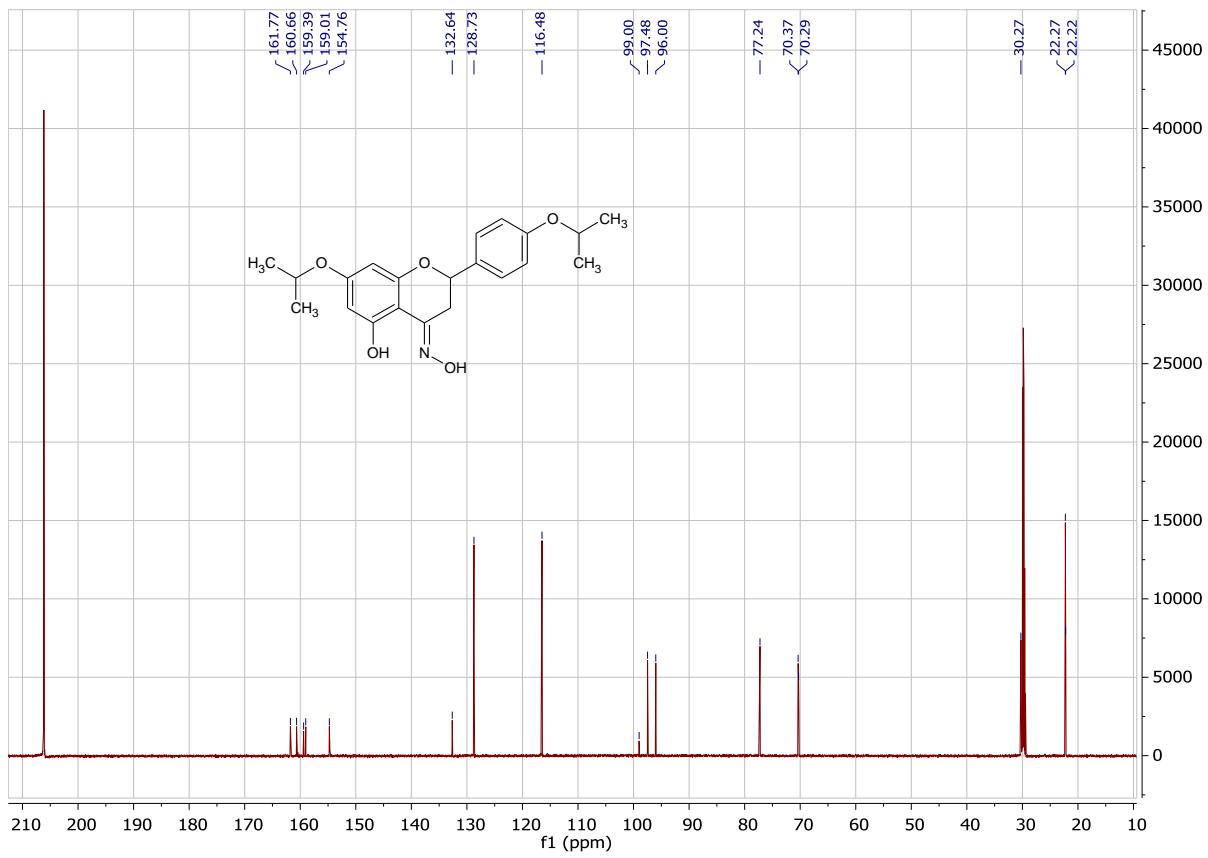


Fig S28.  $^{13}\text{C}$ -NMR (150 MHz,  $(\text{CD}_3)_2\text{CO}$ ) spectrum of 7,4'-Di-*O*-isopropylnaringenin oxime (**11b**)

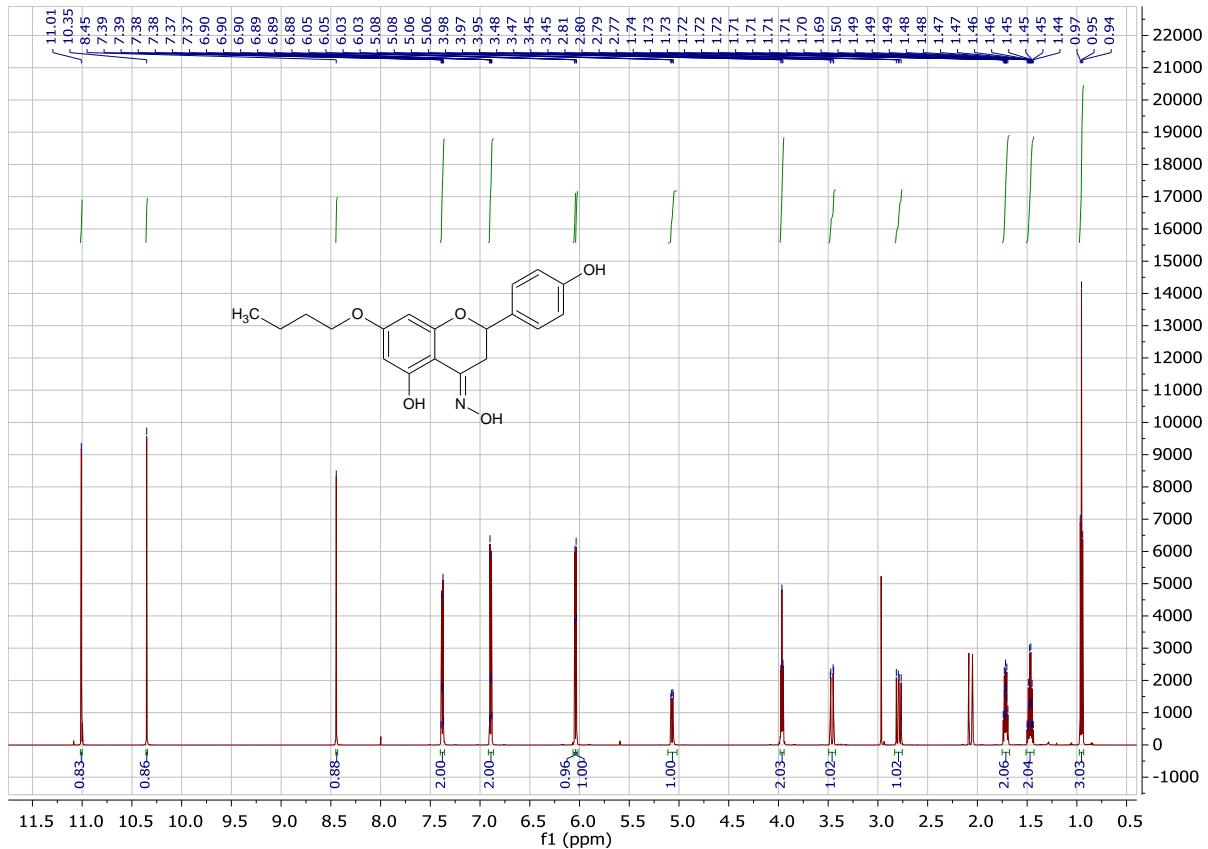


Fig S29.  $^1\text{H}$ -NMR (600 MHz,  $(\text{CD}_3)_2\text{CO}$ ) spectrum of 7-O-Butylnaringenin oxime (**12b**)

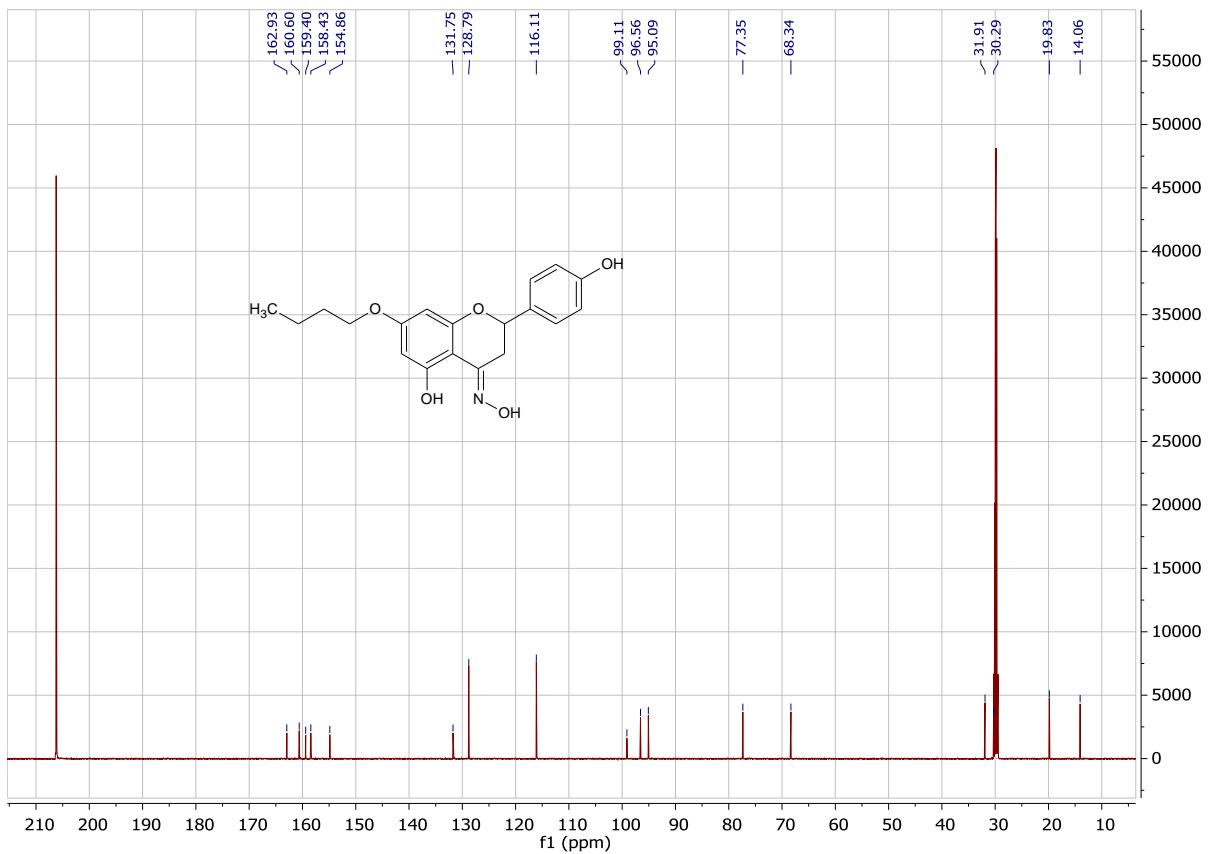


Fig S30. <sup>13</sup>C-NMR (150 MHz, (CD<sub>3</sub>)<sub>2</sub>CO) spectrum of 7-O-Butylnaringenin oxime (12b)

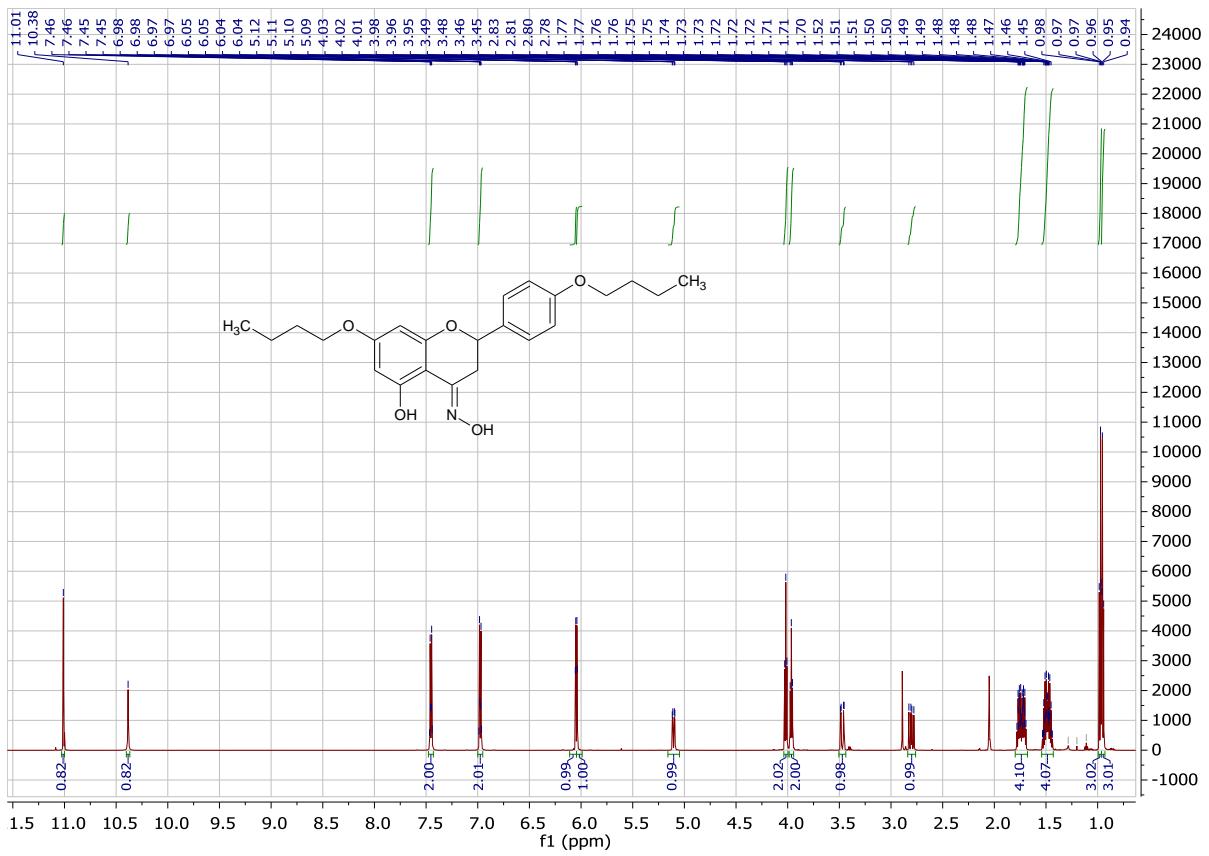


Fig S31. <sup>1</sup>H-NMR (600 MHz, (CD<sub>3</sub>)<sub>2</sub>CO) spectrum of 7,4'-Di-O-butyl naringenin oxime (13b)

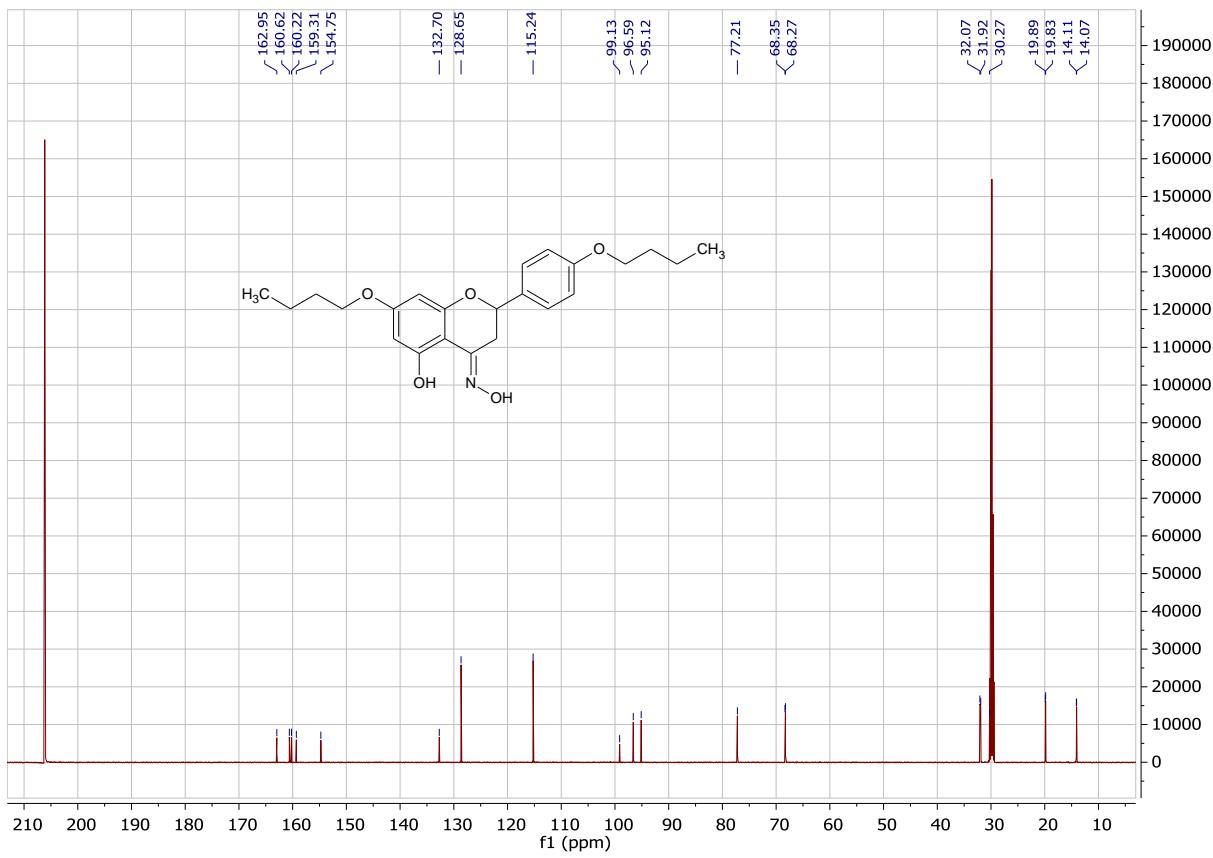


Fig S32.  $^{13}\text{C}$ -NMR (150 MHz,  $(\text{CD}_3)_2\text{CO}$ ) spectrum of 7,4'-Di-*O*-butylnaringenin oxime (**13b**)

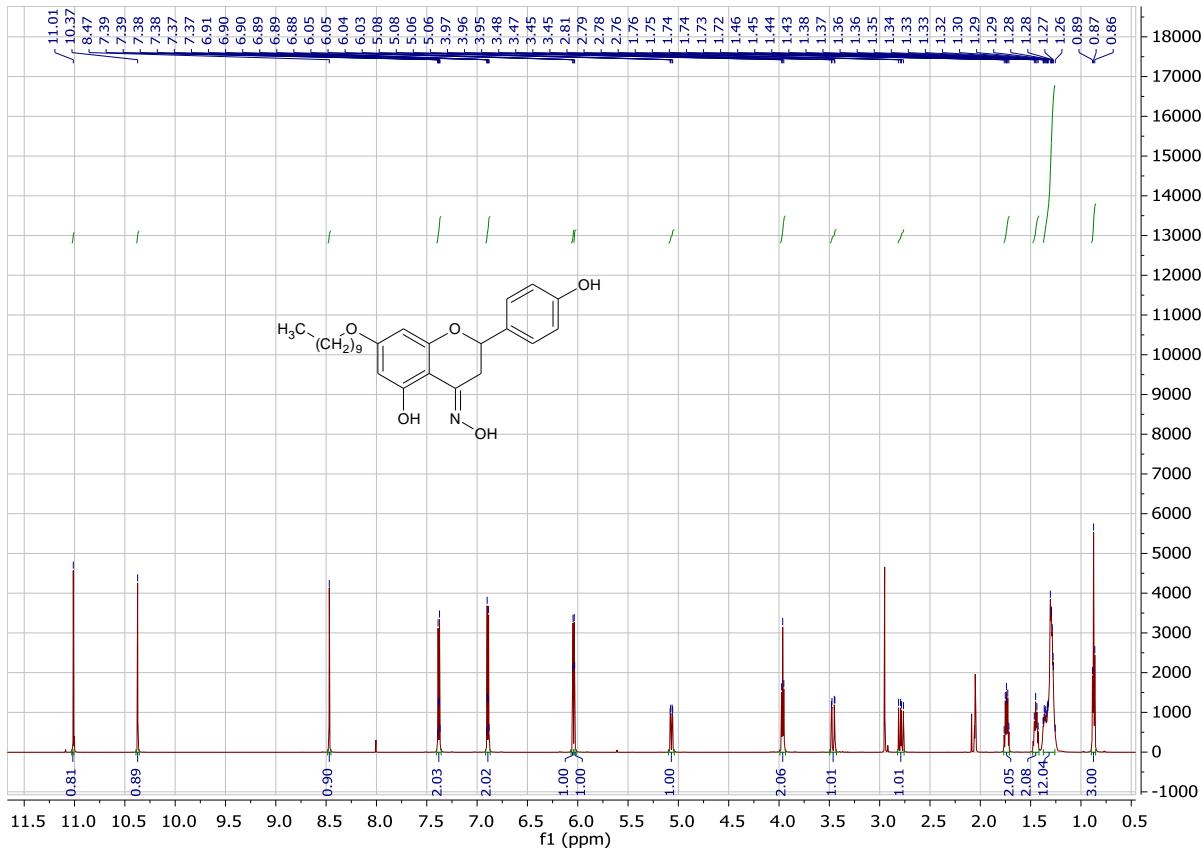


Fig S33.  $^1\text{H}$ -NMR (600 MHz,  $(\text{CD}_3)_2\text{CO}$ ) spectrum of 7-O-Decynaringenin oxime (**16b**)

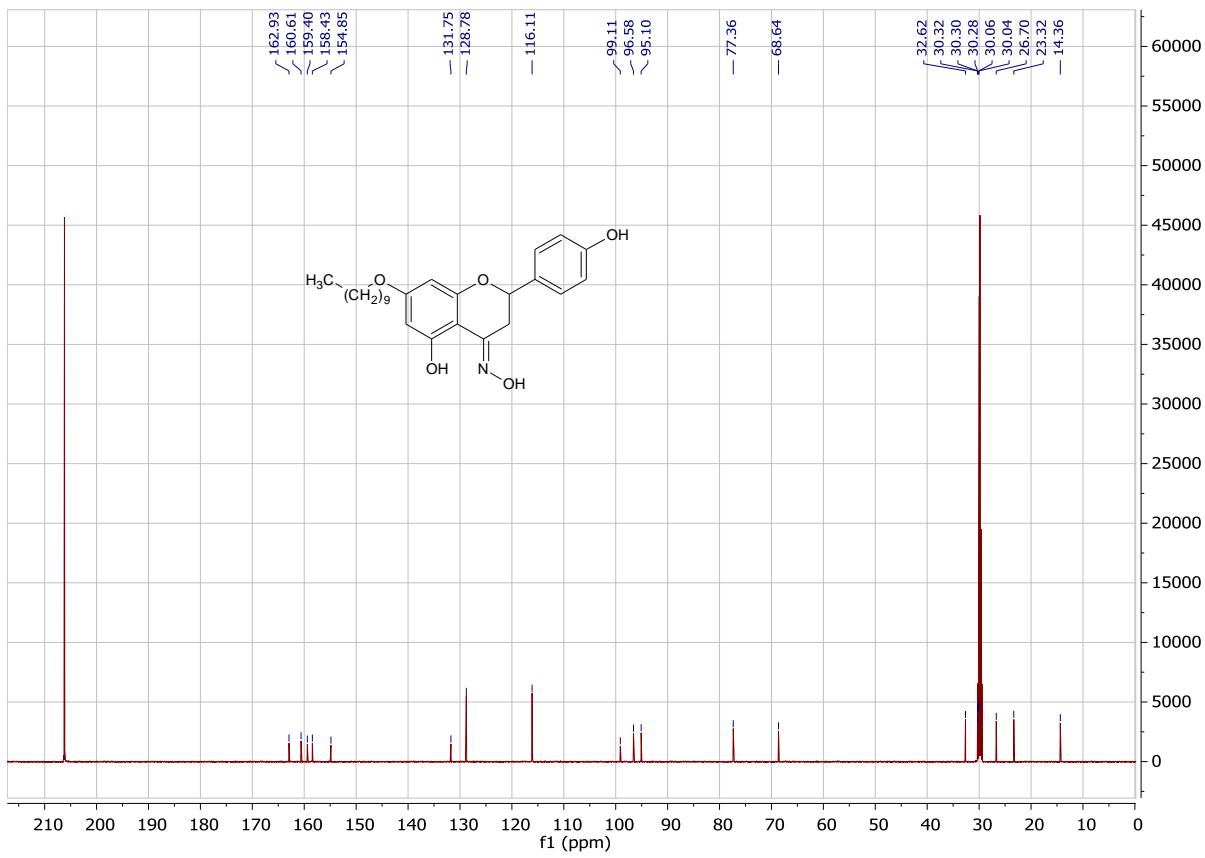


Fig S34.  $^{13}\text{C}$ -NMR (150 MHz,  $(\text{CD}_3)_2\text{CO}$ ) spectrum of 7-O-Decynaringenin oxime (**16b**)

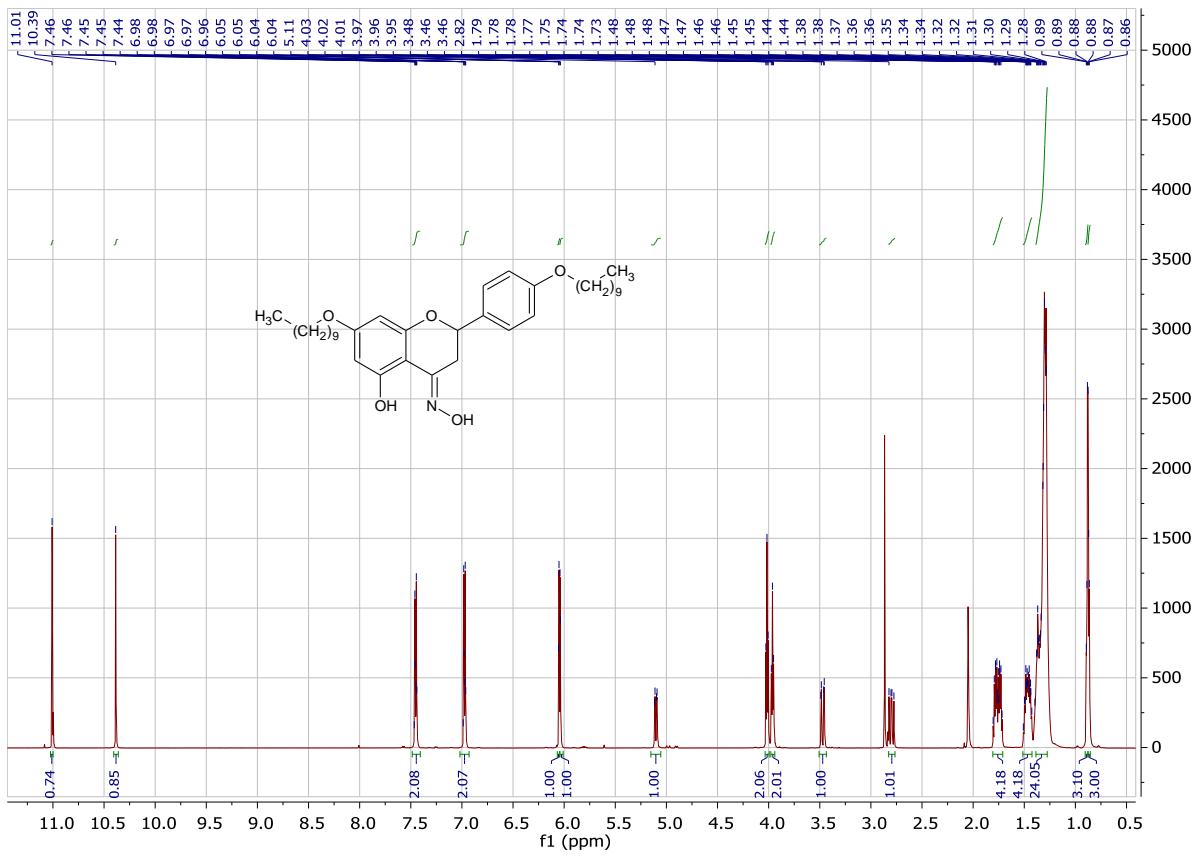


Fig S35.  $^1\text{H}$ -NMR (600 MHz,  $(\text{CD}_3)_2\text{CO}$ ) spectrum of 7,4'-Di-*O*-decynaringenin oxime (**17b**)

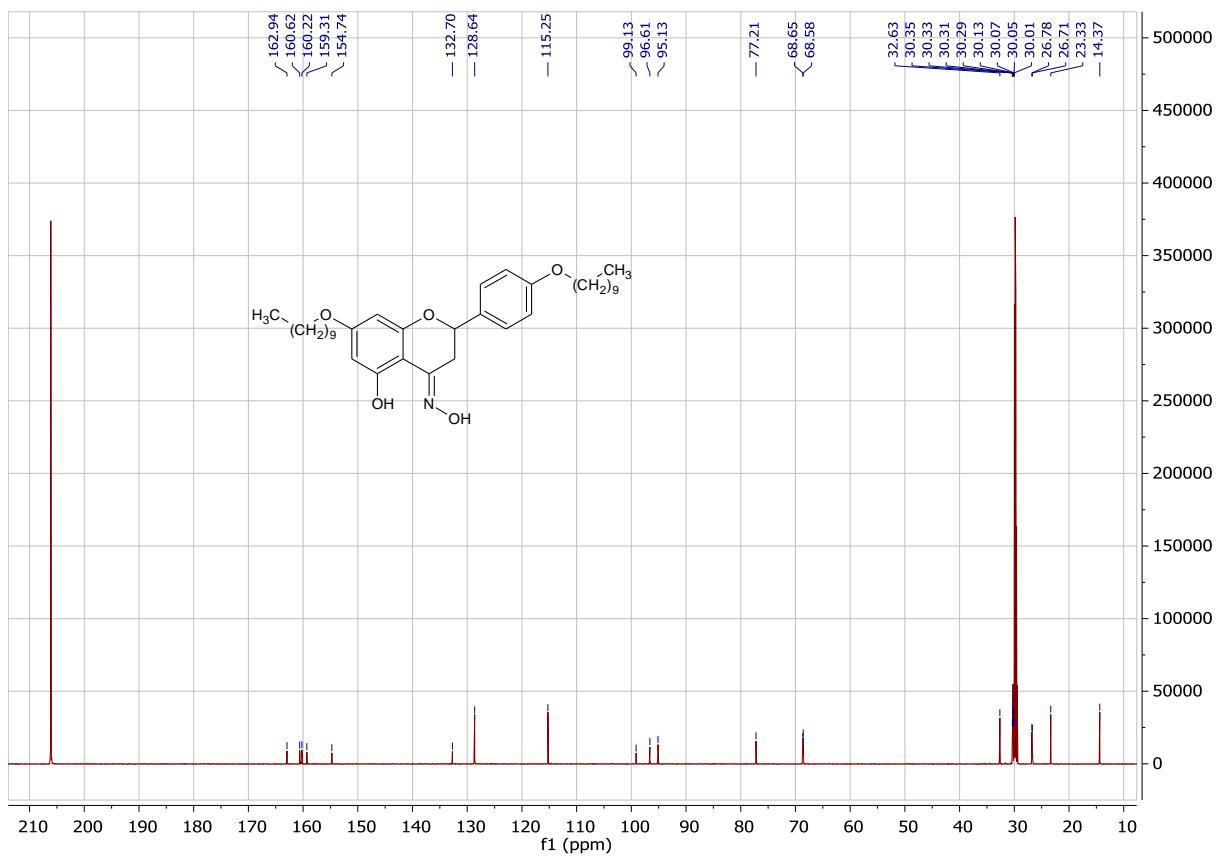


Fig S36. <sup>13</sup>C-NMR (150 MHz, (CD<sub>3</sub>)<sub>2</sub>CO) spectrum of 7,4'-Di-O-decylnaringenin oxime (**17b**)