

# Supporting Information

## Efficient and Divergent Enantioselective Syntheses of DHPVs and Anti-Inflammatory Effect on IEC-6 cells

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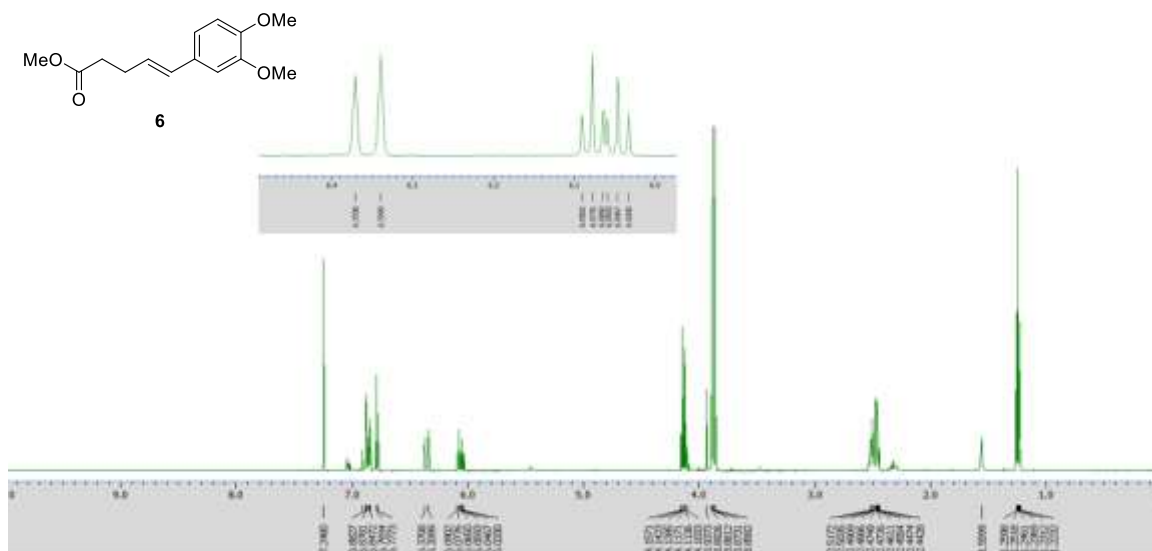
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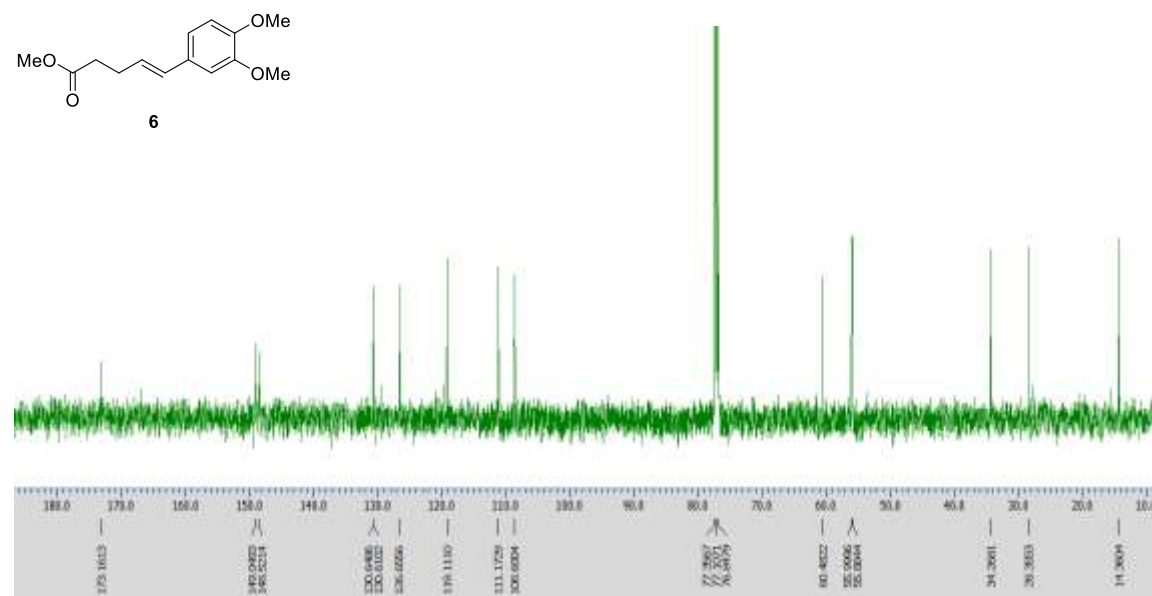
# $^1\text{H}$ and $^{13}\text{C}$ NMR Spectra

(*E*)-Methyl 5-(3,4-dimethoxyphenyl)pent-4-enoate (**6**)

$^1\text{H}$  NMR ( $\text{CDCl}_3$ , 500 MHz)

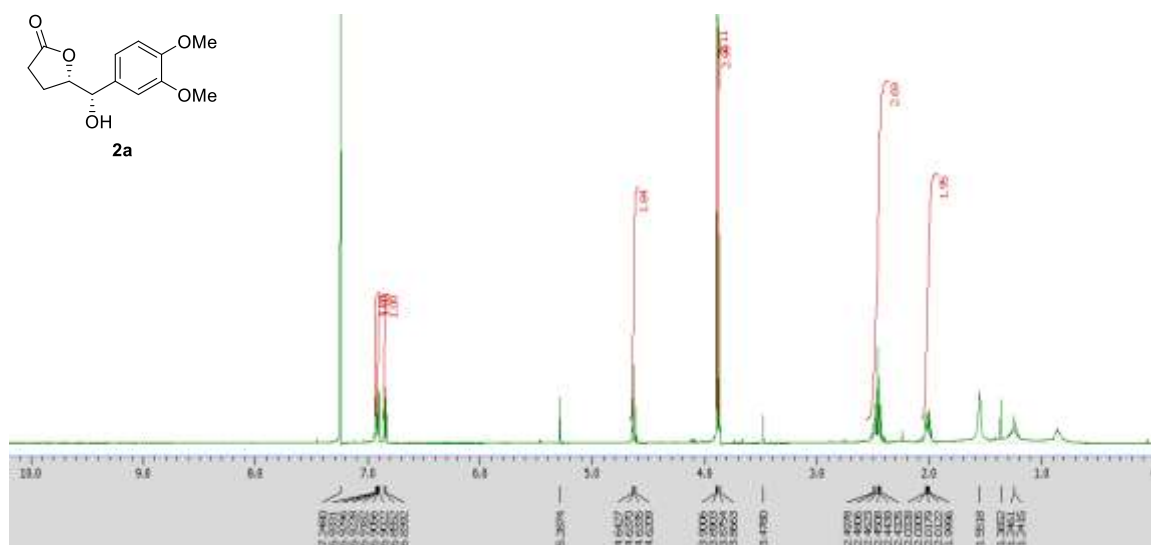


$^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 125 MHz)

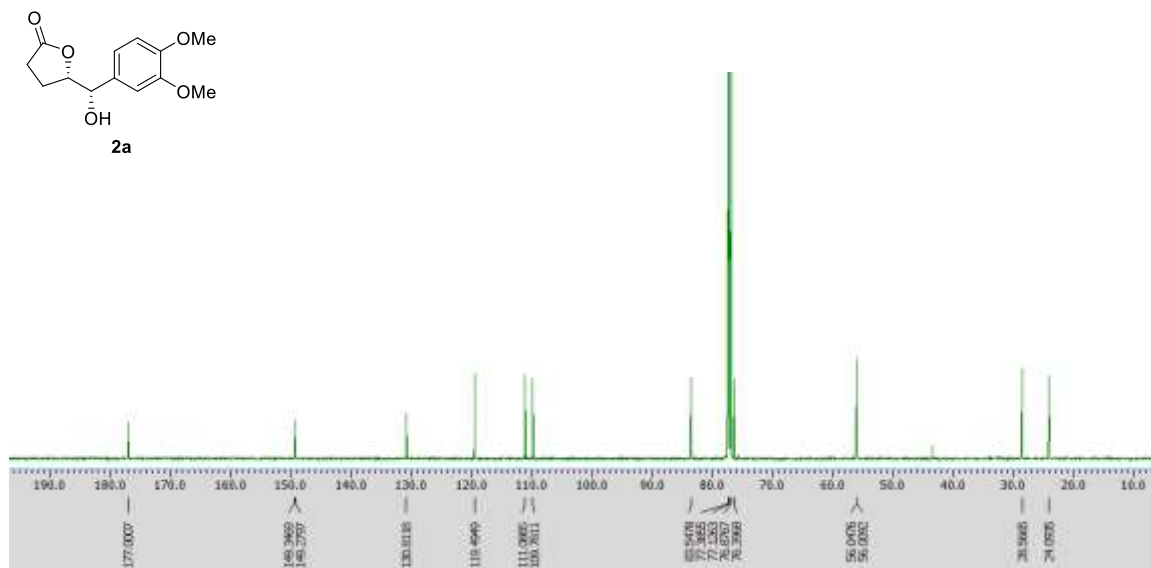


(S)-5-((S)-(3,4-dimethoxyphenyl)(hydroxy)methyl)dihydrofuran-2(3H)-one (**2a**)

<sup>1</sup>H NMR (CDCl<sub>3</sub>, 500 MHz)



<sup>13</sup>C NMR (CDCl<sub>3</sub>, 125 MHz)

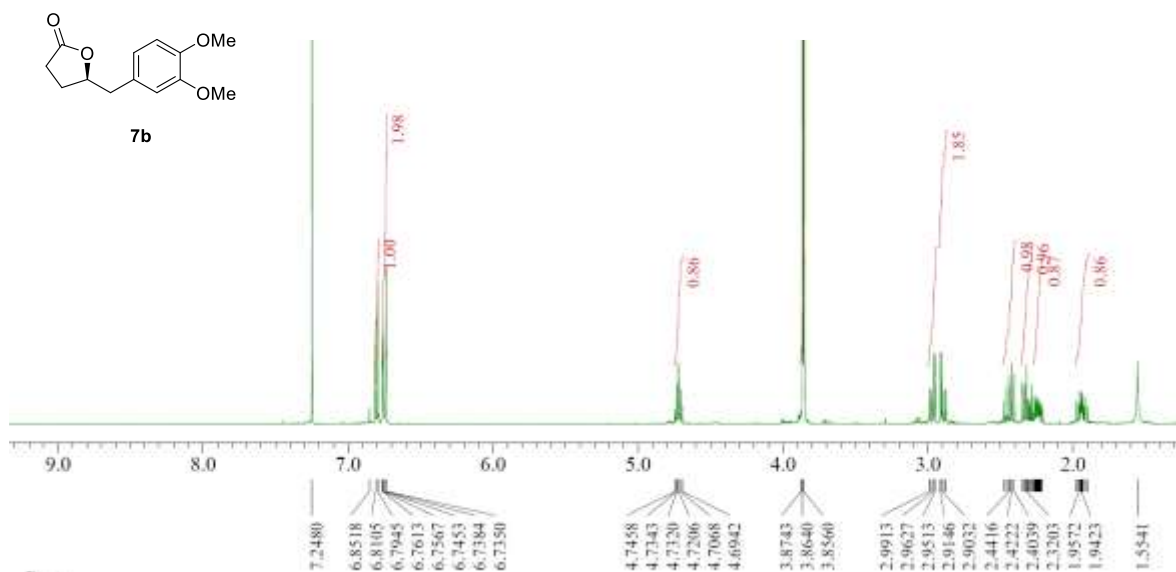




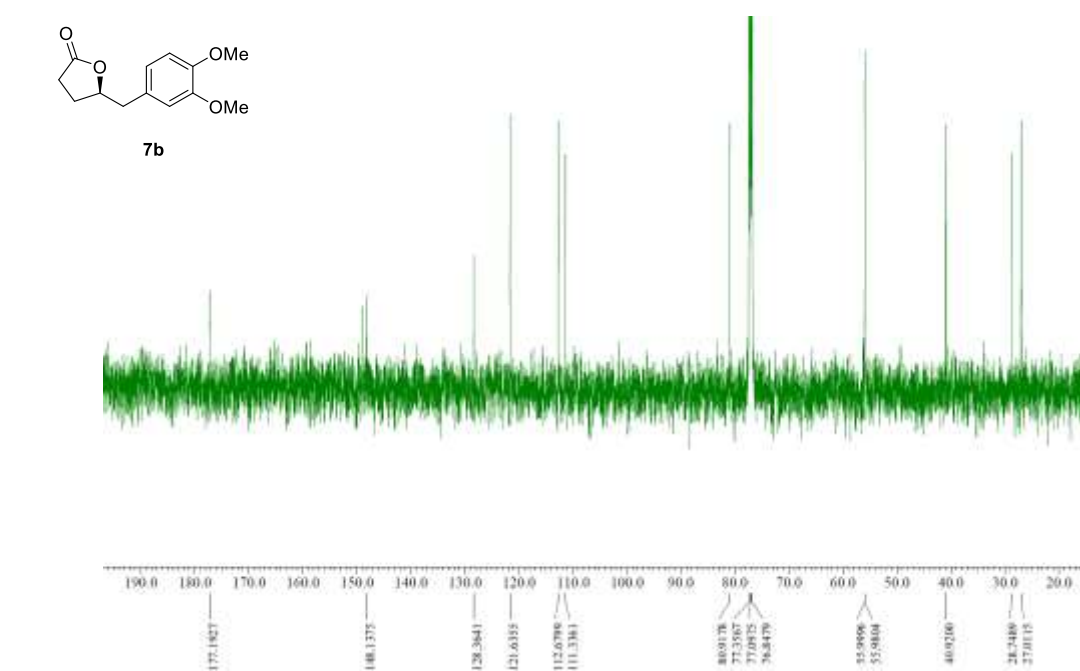


(R)-5-(3,4-dimethoxybenzyl)dihydrofuran-2(3H)-one (**7b**)

<sup>1</sup>H NMR (CDCl<sub>3</sub>, 500 MHz)

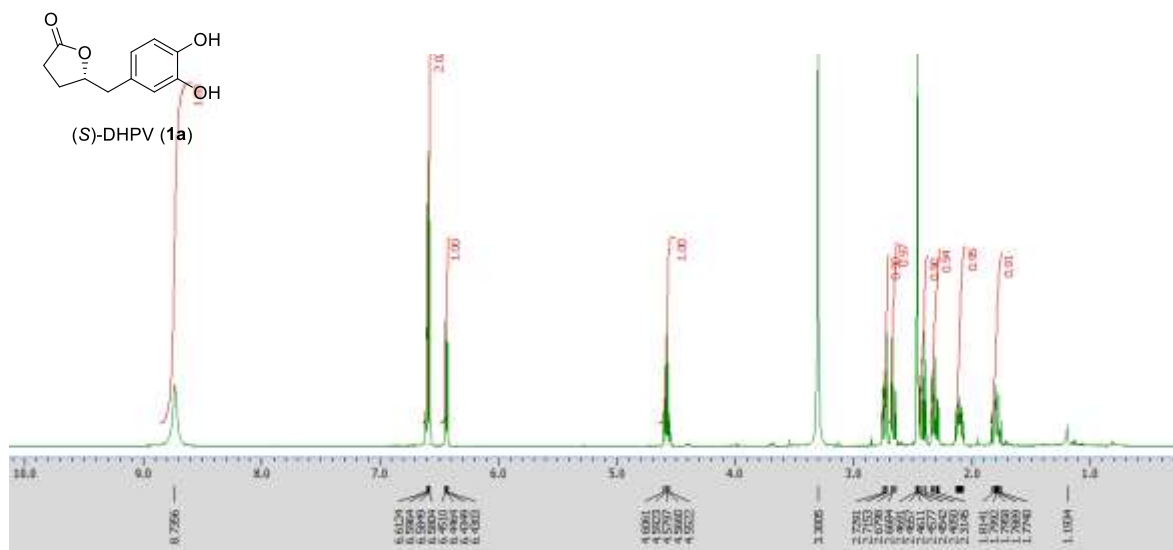


<sup>13</sup>C NMR (CDCl<sub>3</sub>, 125 MHz)

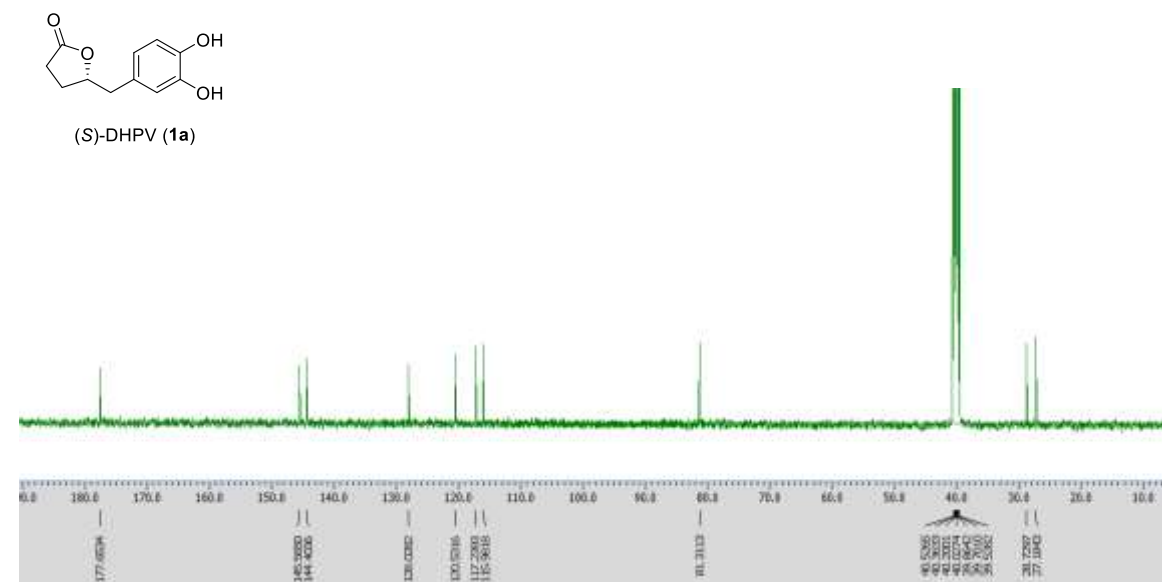


(S)-5-(3,4-dihydroxybenzyl)dihydrofuran-2(3H)-one (**1a**)

<sup>1</sup>H NMR (DMSO-*d*<sub>6</sub>, 500 MHz)

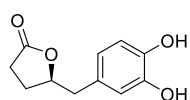


<sup>13</sup>C NMR (DMSO-*d*<sub>6</sub>, 125 MHz)

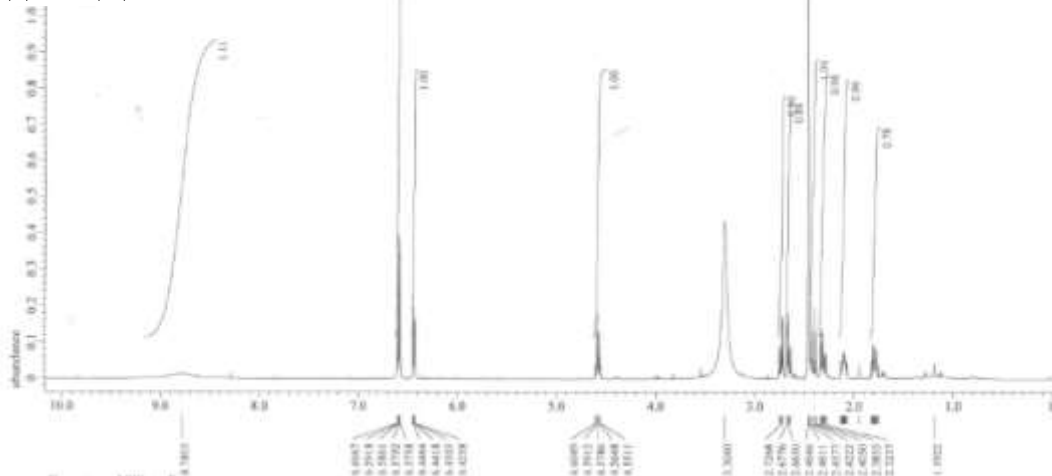


(R)-5-(3,4-dihydroxybenzyl)dihydrofuran-2(3H)-one (**1b**)

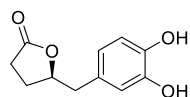
<sup>1</sup>H NMR (DMSO-*d*<sub>6</sub>, 500 MHz)



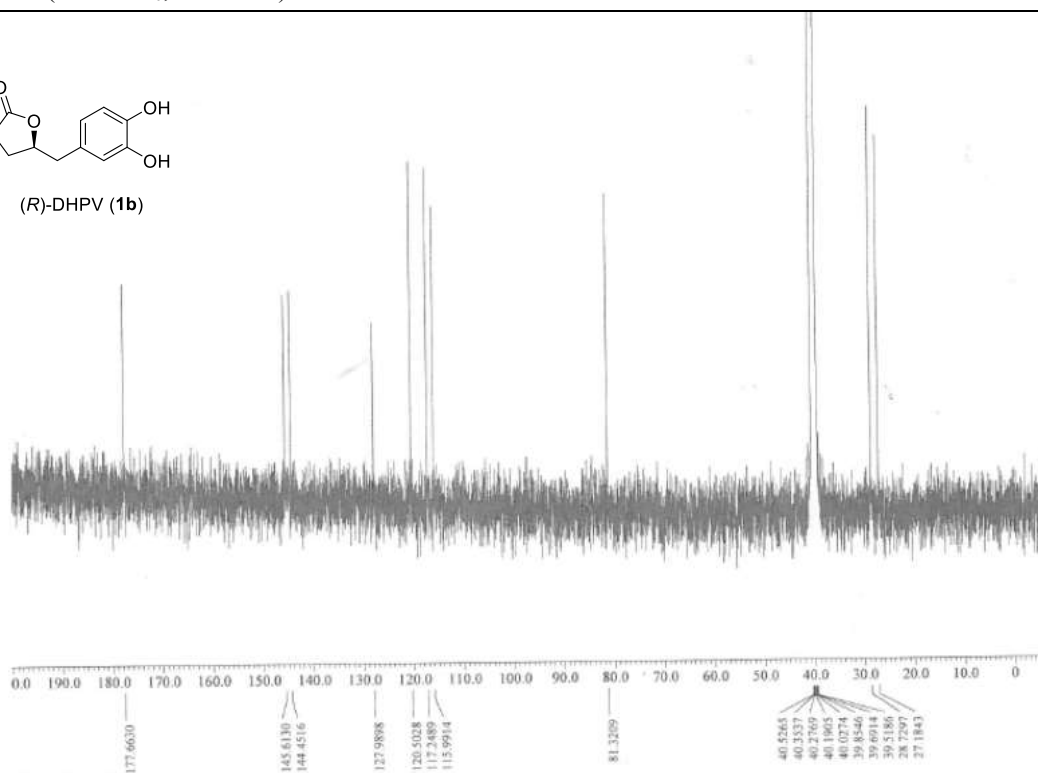
(R)-DHPV (**1b**)



<sup>13</sup>C NMR (DMSO-*d*<sub>6</sub>, 125 MHz)



(R)-DHPV (**1b**)

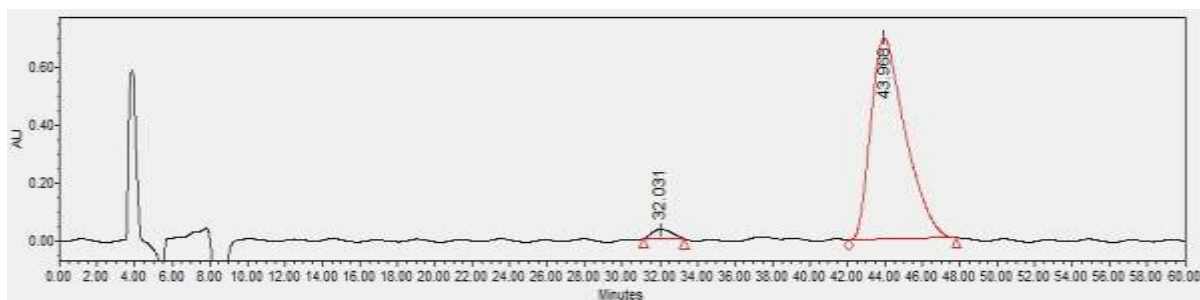




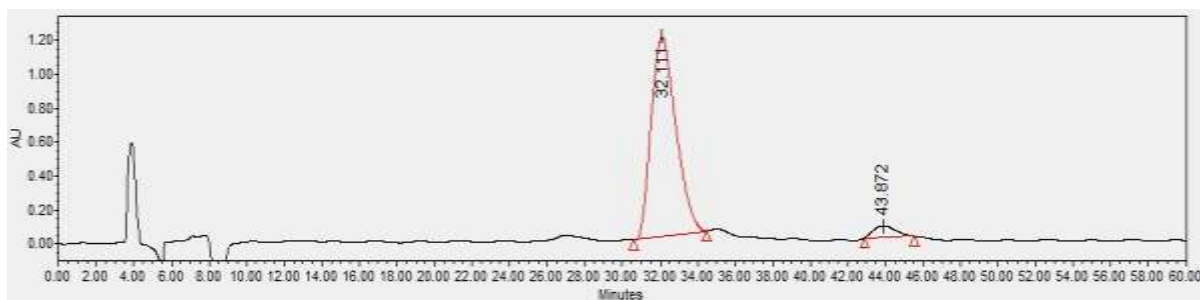
**Table 1. Comparison of <sup>1</sup>H-NMR data for Synthetic and reported DHPV.**

	( <i>R</i> )-DHPV	( <i>S</i> )-DHPV	( <i>R</i> )-DHPV	( <i>S</i> )-DHPV
	$\delta$	$\delta$	$\delta$ (mult, <i>J</i> )	$\delta$ (mult, <i>J</i> )
C2-CH <sub>2</sub>	28.7	28.7	2.41 (dd, 17.8, 9.2), 2.31 (ddd, 17.2, 9.2, 4.6)	2.41 (dd, 17.8, 8.6), 2.31 (ddd, 17.8, 9.8, 5.2)
C3-CH <sub>2</sub>	27.1	27.1	2.13-2.08 (m), 1.83-1.75 (m)	2.14-2.07 (m), 1.83-1.76 (m)
C4-CH	81.3	81.3	4.58 (quint, 6.7)	4.58 (quint, 6.7)
C5-CH <sub>2</sub>	40.2	40.2	2.73 (dd, 14.3, 6.8), 2.65 (dd, 14.3, 6.5)	2.73 (dd, 13.8, 6.9), 2.66 (dd, 13.7, 5.8)
C1'	127.9	128.0		
C2'-H	115.9	115.9	6.57 (d, 1.7)	6.58 (d, 2.3)
C3'-OH	145.6	145.5	8.78 (bs)	8.74 (bs)
C4'-OH	144.4	144.4	8.78 (bs)	8.74 (bs)
C5'-H	117.2	117.2	6.60 (d, 7.5),	6.60 (d, 8.0)
C6'-H	120.5	120.5	6.44 (dd, 8.0, 2.3)	6.44 (dd, 8.0, 2.3)

## Chiral HPLC analysis of Synthetic compounds



(S)-DHPV (**1a**)



(R)-DHPV (**1b**)

Chiral HPLC chromatograms were obtained under the following conditions; Column, DAICEL CHIRALPAK® AD-H, 4.6 x 250 mm, 5  $\mu$ m; detection, UV 210 nm; flow rate 0.8 mL/min; Mobile phase, A: Isopropyl alcohol, B: *n*-Hexane; Isocratic, A:B = 10:70

**Figure S1.** Chiral HPLC analysis of (S)-DHPV (**1a**) and (R)-DHPV (**1b**).