

## Supplementary Information

### Absolute Configuration of Clemateol

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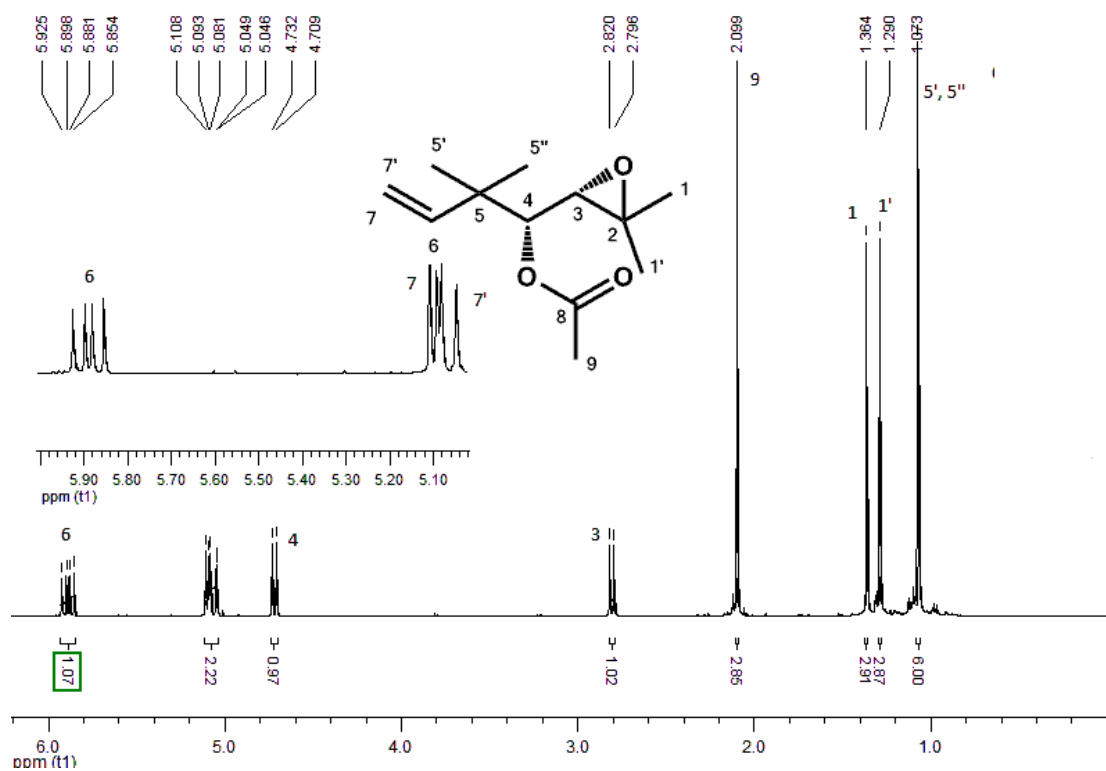
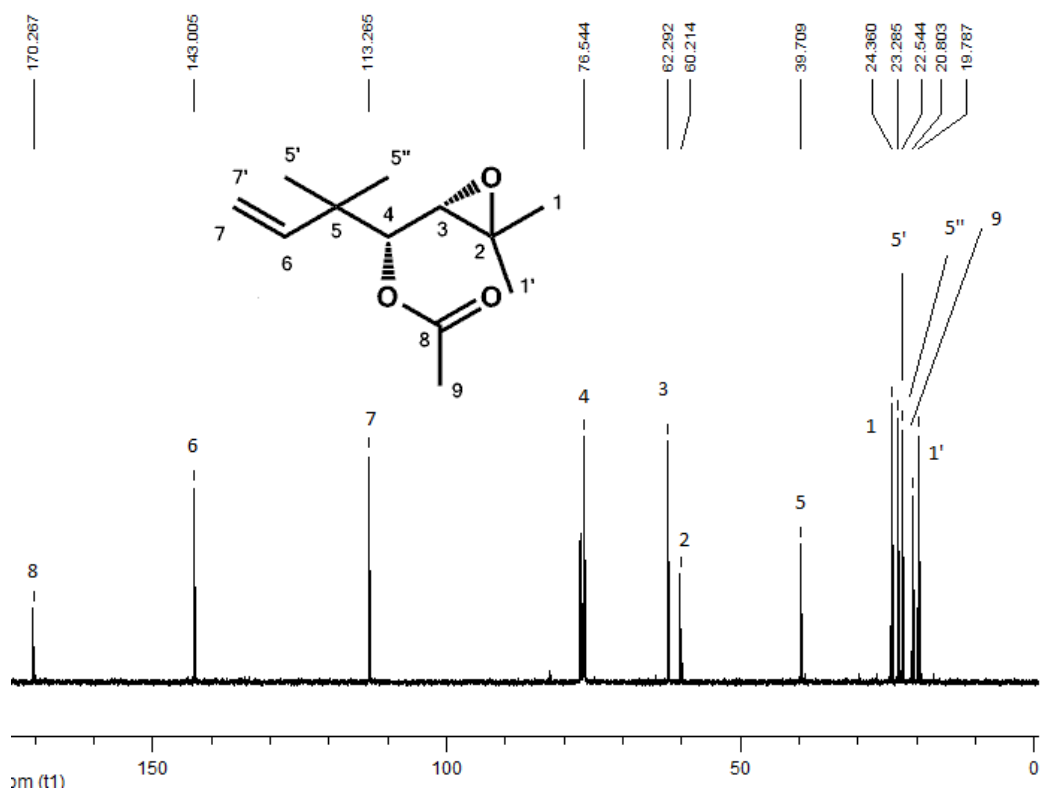
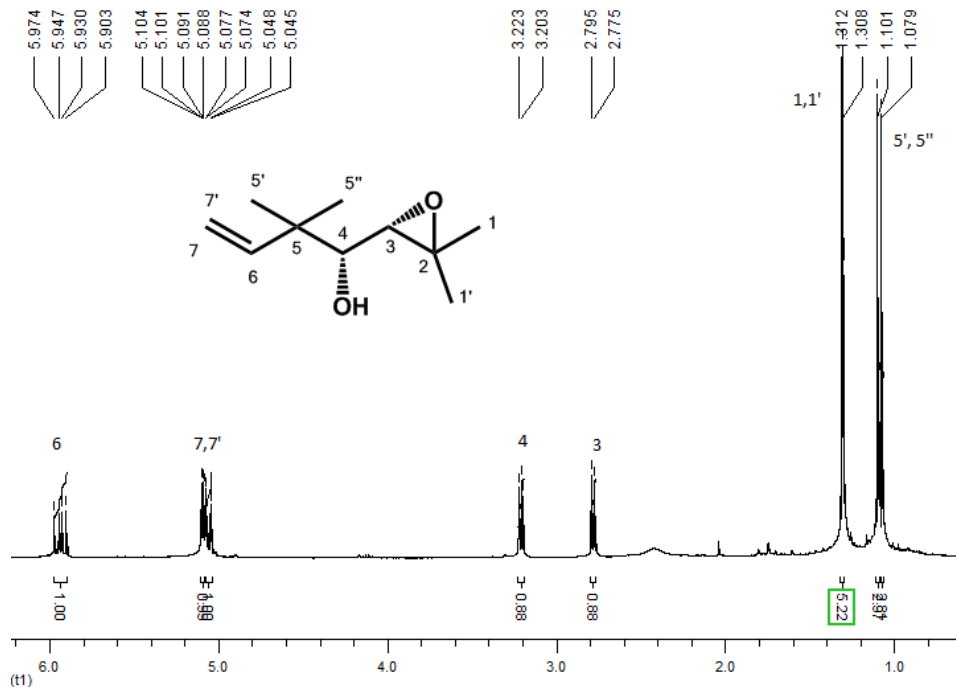


Figure S1. <sup>1</sup>H NMR spectrum (400 MHz, CDCl<sub>3</sub>) of clemateol (1).

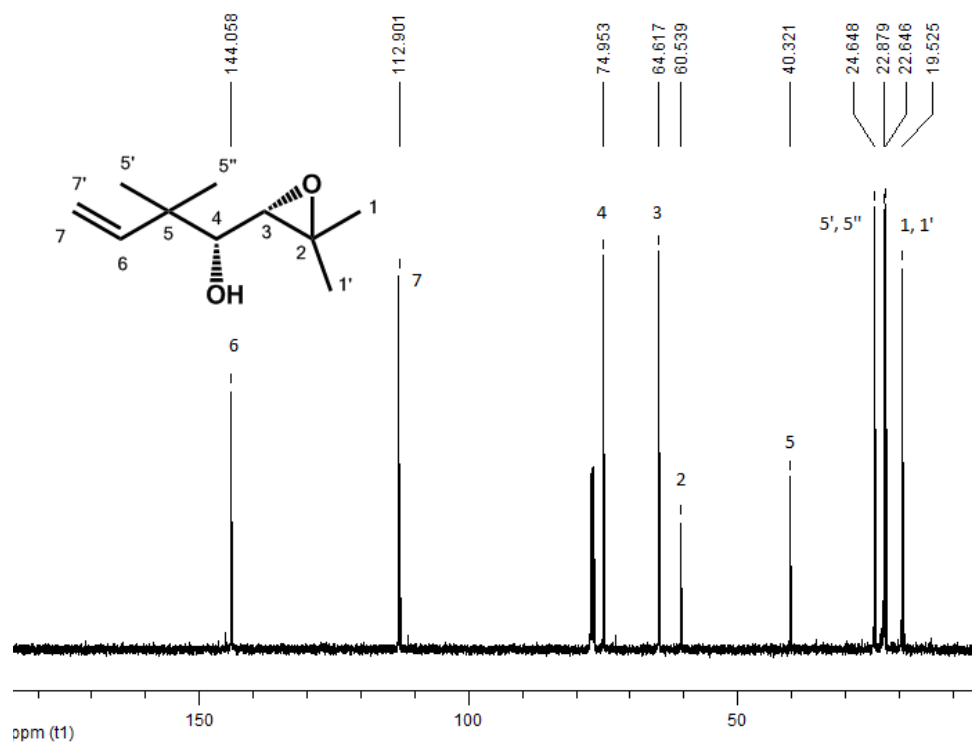
\*e-mail: afmorel@base.ufsm.br



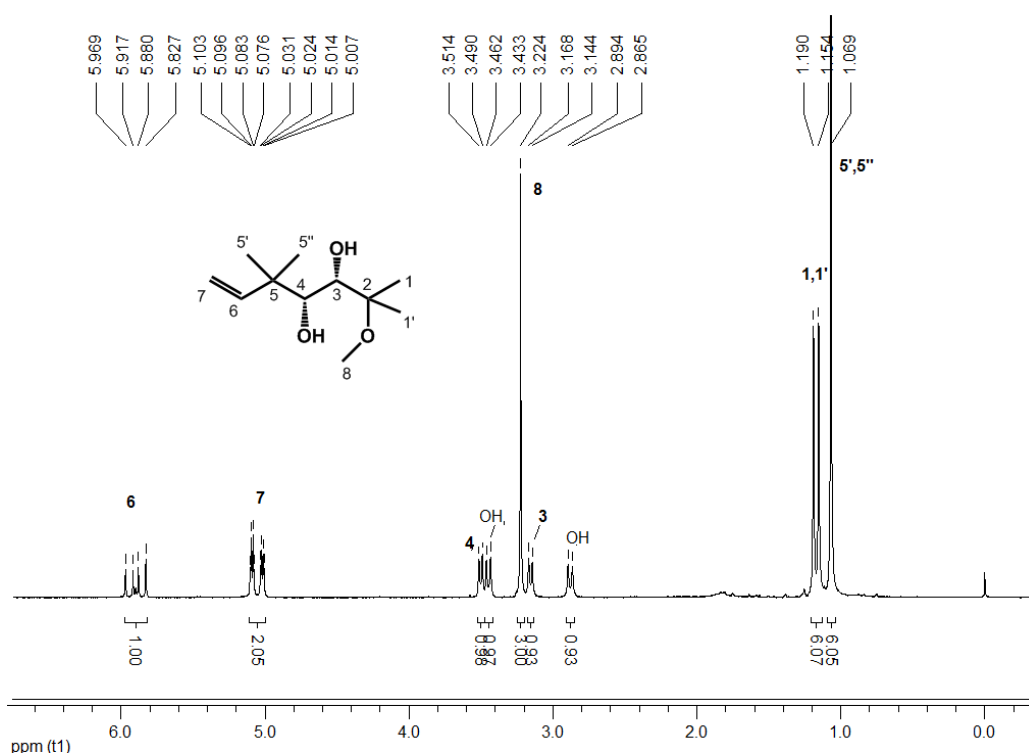
**Figure S2.**  $^{13}\text{C}$  NMR spectrum (100 MHz,  $\text{CDCl}_3$ ) of clemateol (**2**).



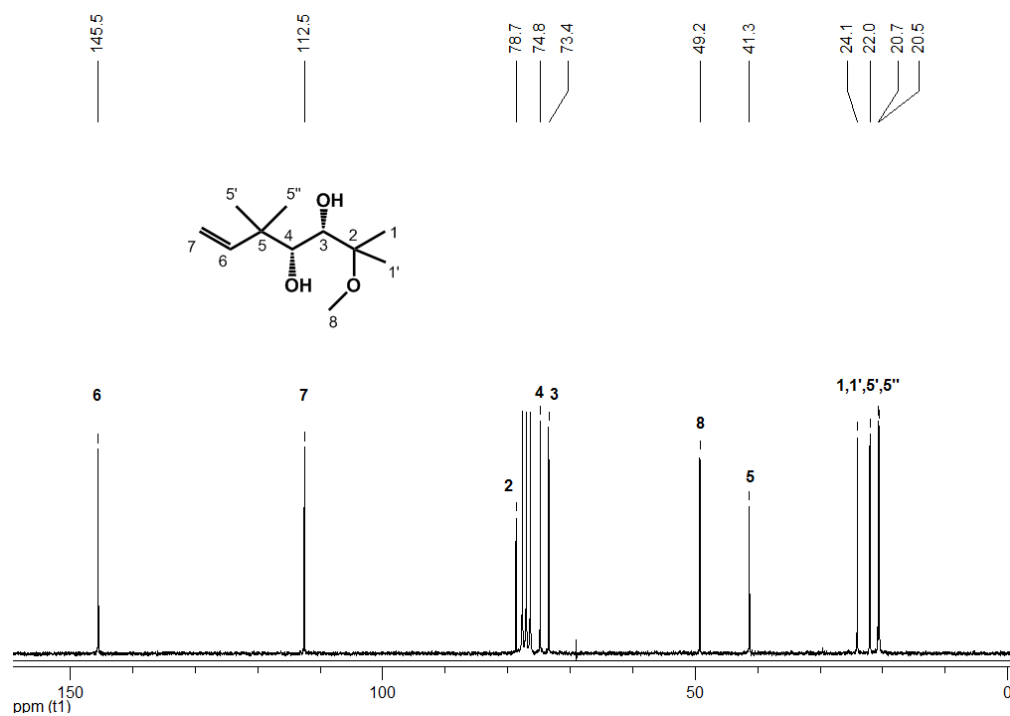
**Figure S3.**  $^1\text{H}$  NMR spectrum (400 MHz,  $\text{CDCl}_3$ ) of  $\{(R)\text{-}1\text{-}[(S)\text{-}3,3\text{-dimethyloxiran-}2\text{-yl}]\text{-}2,2\text{-dimethylbut-}3\text{-en-}1\text{-ol}\}$  (**2**).



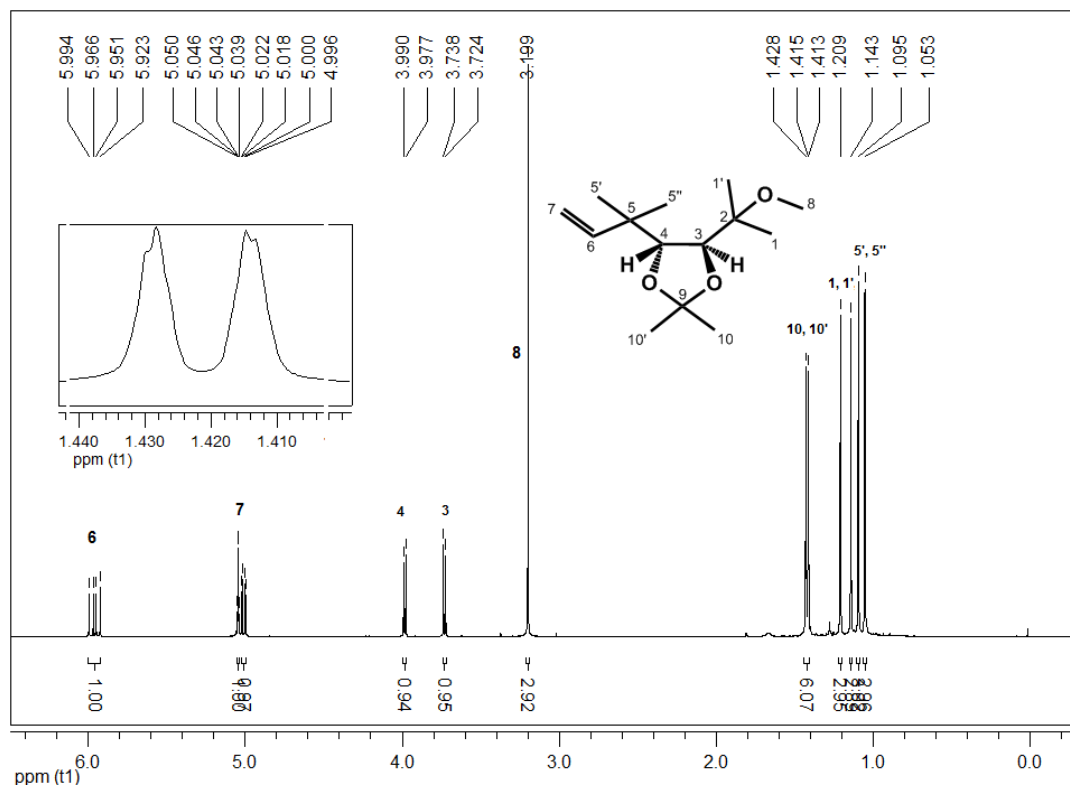
**Figure S4.**  $^1\text{H}$  NMR spectrum (100 MHz,  $\text{CDCl}_3$ ) of  $\{(R)-1-[(S)-3,3\text{-dimethyloxiran-2-yl}]-2,2\text{-dimethylbut-3-en-1-ol}\}$  (**2**).



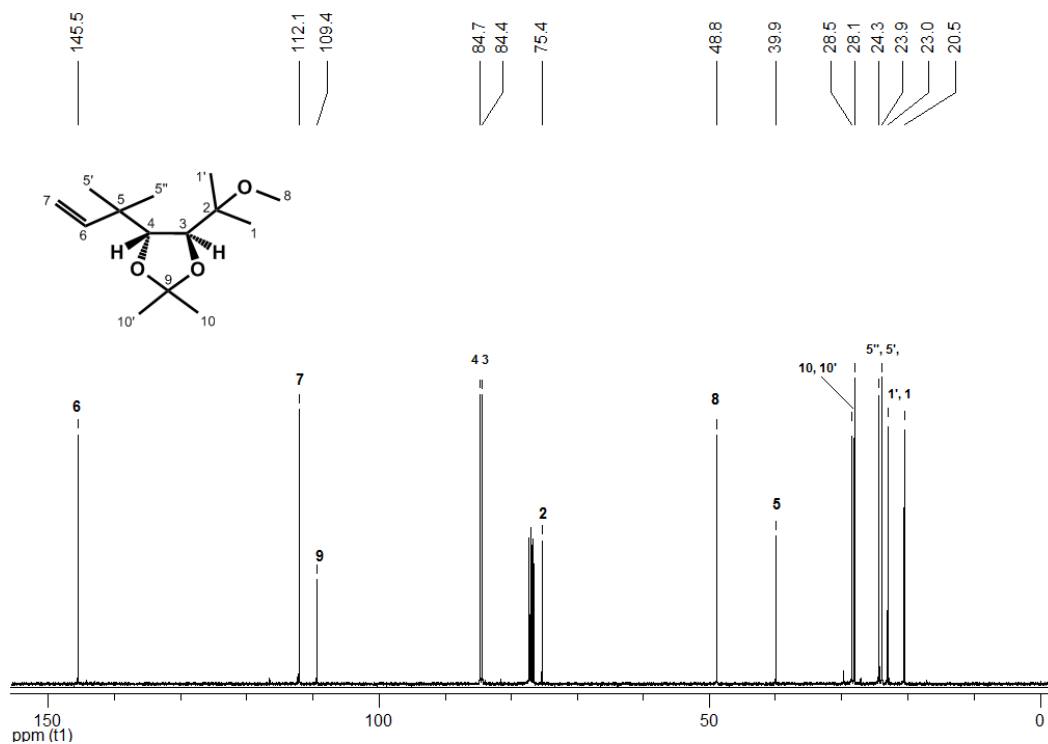
**Figure S5.**  $^1\text{H}$  NMR spectrum (400 MHz,  $\text{CDCl}_3$ ) of  $(3S,4R)\text{-2-methoxy-2,5,5-trimethylhept-6-ene-3,4-diol}$  (**3**).



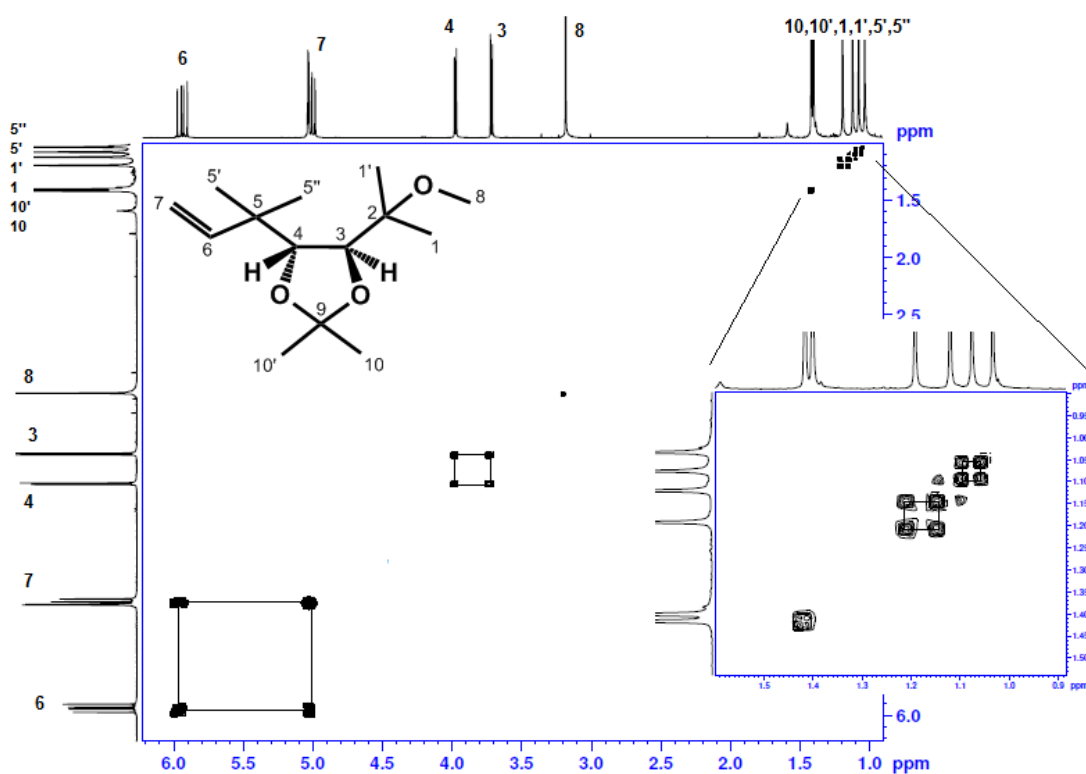
**Figure S6.** <sup>13</sup>C NMR spectrum (100 MHz, CDCl<sub>3</sub>) of (3*S*,4*R*)-2-methoxy-2,5,5-trimethylhept-6-ene-3,4-diol (3).



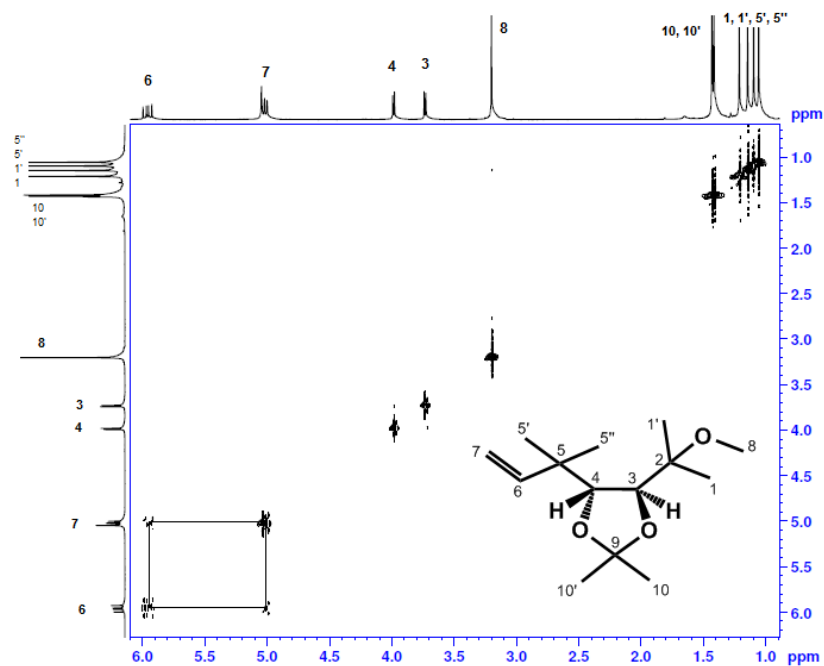
**Figure S7.** <sup>1</sup>H NMR spectrum (400 MHz, CDCl<sub>3</sub>) of (4*S*,5*R*)-4-(2-methoxypropan-2-yl)-2,2-dimethyl-5-(2-methylbut-3-en-2-yl)-1,3-dioxolane (4).



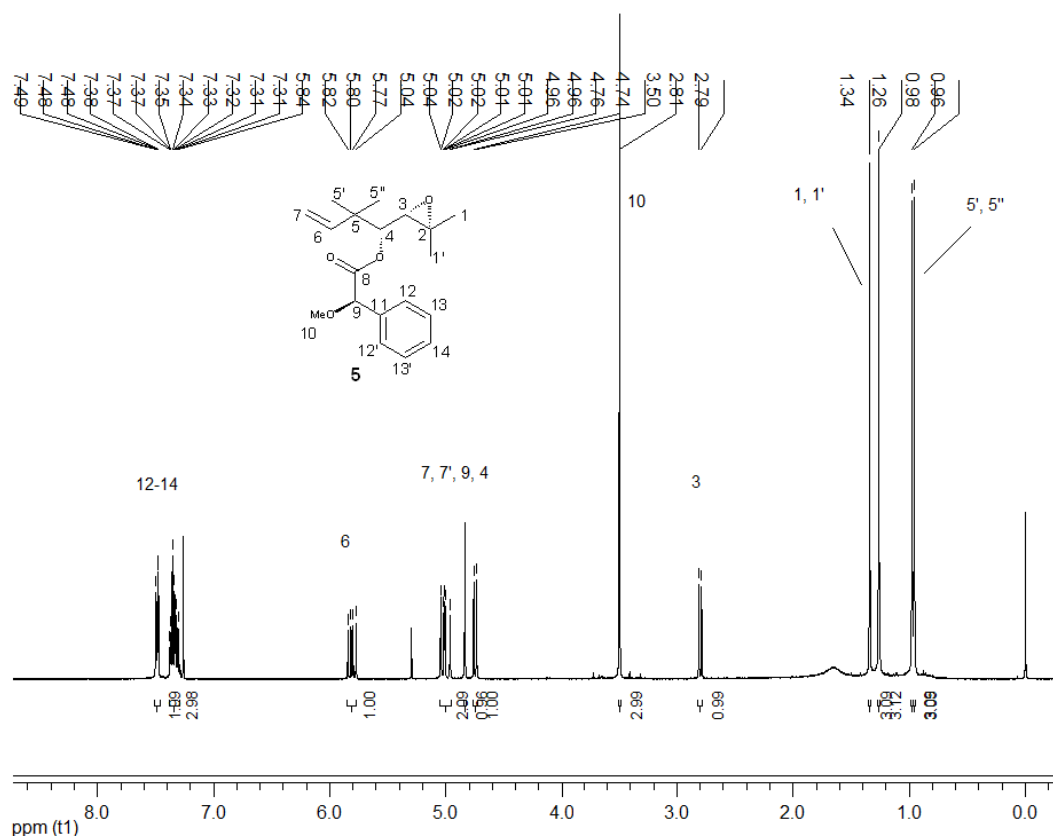
**Figure S8.** <sup>13</sup>C NMR spectrum (100 MHz, CDCl<sub>3</sub>) of (4*S*,5*R*)-4-(2-methoxypropan-2-yl)-2,2-dimethyl-5-(2-methylbut-3-en-2-yl)-1,3-dioxolane (**4**).



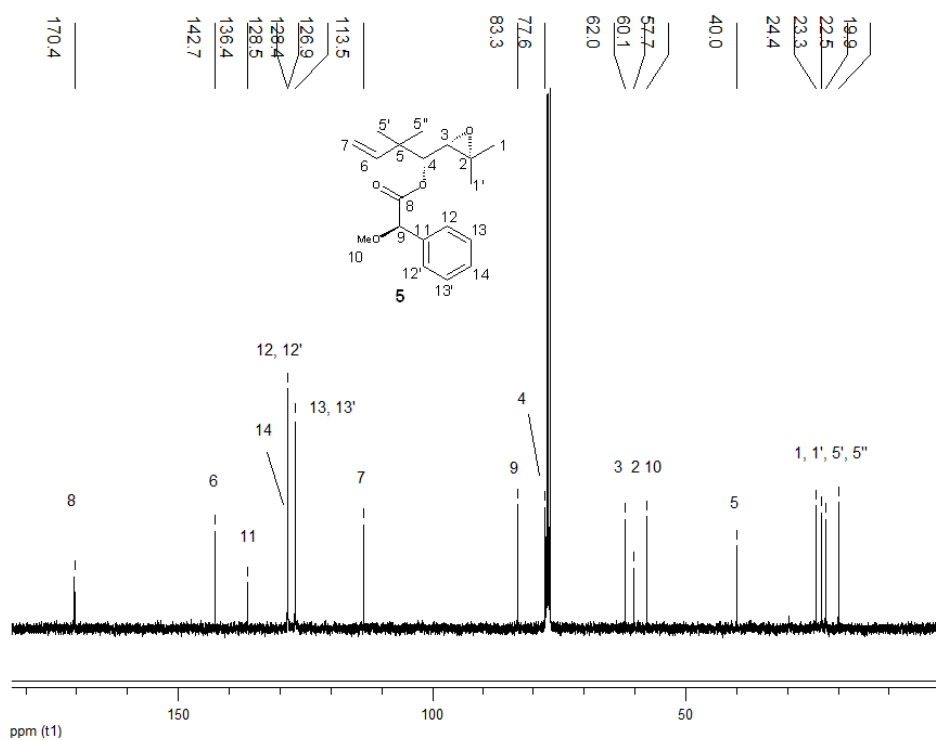
**Figure S9.** COSY (<sup>1</sup>H-<sup>1</sup>H) NMR spectrum (400 MHz, CDCl<sub>3</sub>) of (4*S*, 5*R*)-4-(2-methoxypropan-2-yl)-2,2-dimethyl-5-(2-methylbut-3-en-2-yl)-1,3-dioxolane (**4**).



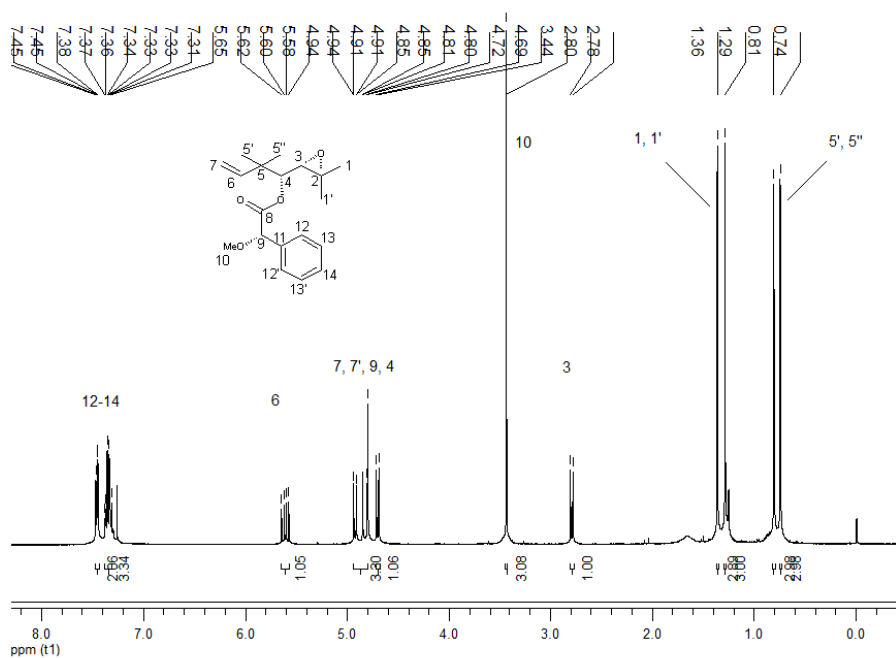
**Figure S10.** NOESY ( $^1\text{H}$ - $^1\text{H}$ ) NMR spectrum (400 MHz,  $\text{CDCl}_3$ ) of (4*S*, 5*R*)-4-(2-methoxypropan-2-yl)-2,2-dimethyl-5-(2-methylbut-3-en-2-yl)-1,3-dioxolane (**4**).



**Figure S11.**  $^1\text{H}$  NMR spectrum (400 MHz,  $\text{CDCl}_3$ ) of {(*R*)-1-[(*S*)-3,3-dimethyloxiran-2-yl]-2,2-dimethylbut-3-en-1-yl} @-2-methoxy-2-phenylacetate (**5**).



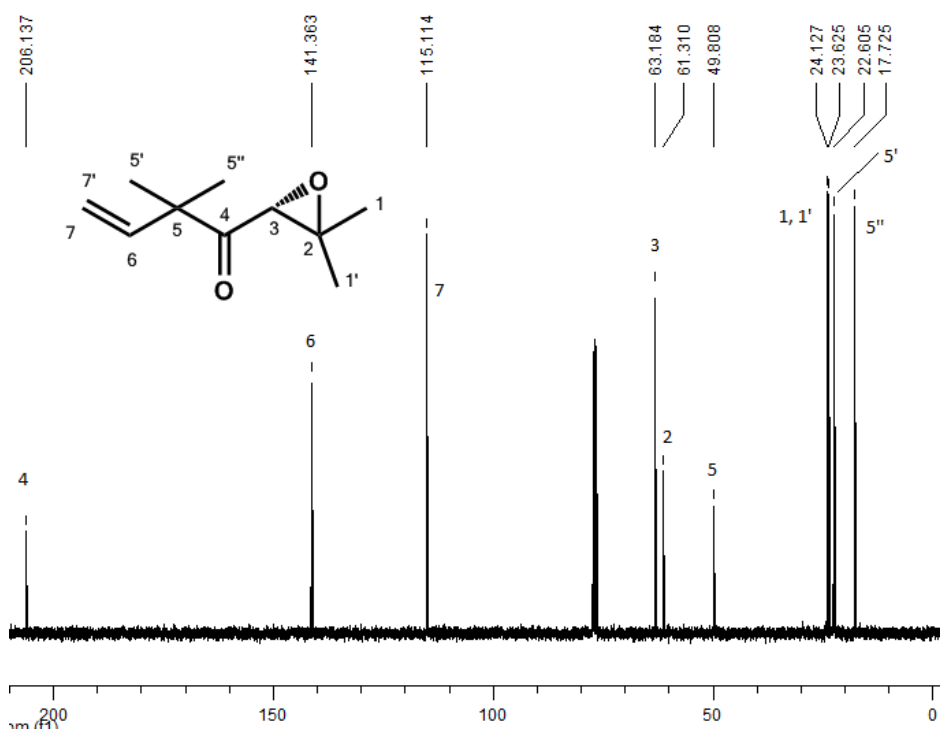
**Figure S12.**  $^{13}\text{C}$  NMR spectrum (100 MHz,  $\text{CDCl}_3$ ) of { $\text{R}$ -1-[(*S*)-3,3-dimethyloxiran-2-yl]-2,2-dimethylbut-3-en-1-yl} (*R*)-2-methoxy-2-phenylacetate (**5**).



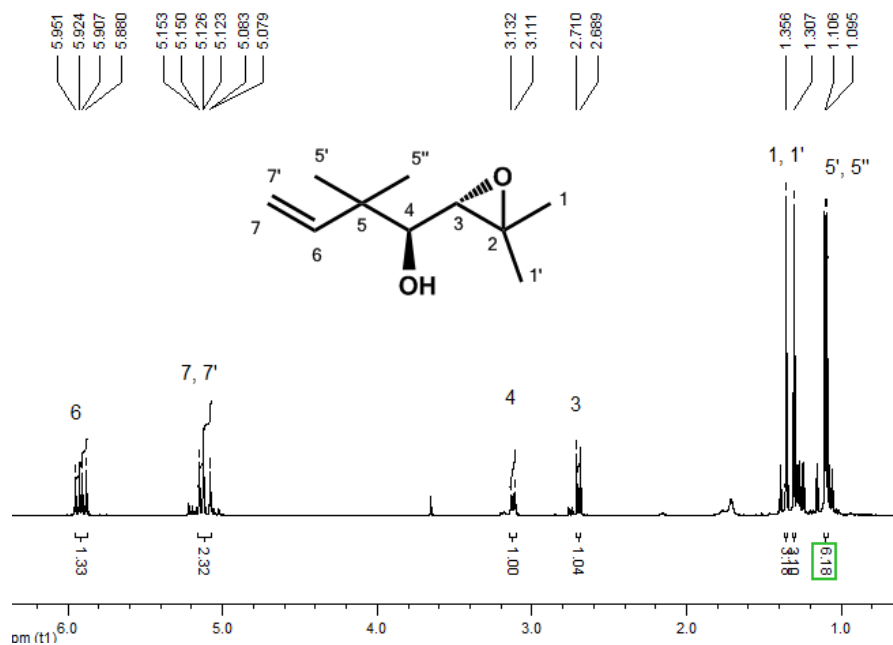
**Figure S13.**  $^1\text{H}$  NMR spectrum (400 MHz,  $\text{CDCl}_3$ ) of {(*R*)-1-[(*S*)-3,3-dimethyloxiran-2-yl]-2,2-dimethylbut-3-en-1-yl} (*S*)-2-methoxy-2-phenylacetate (**6**).



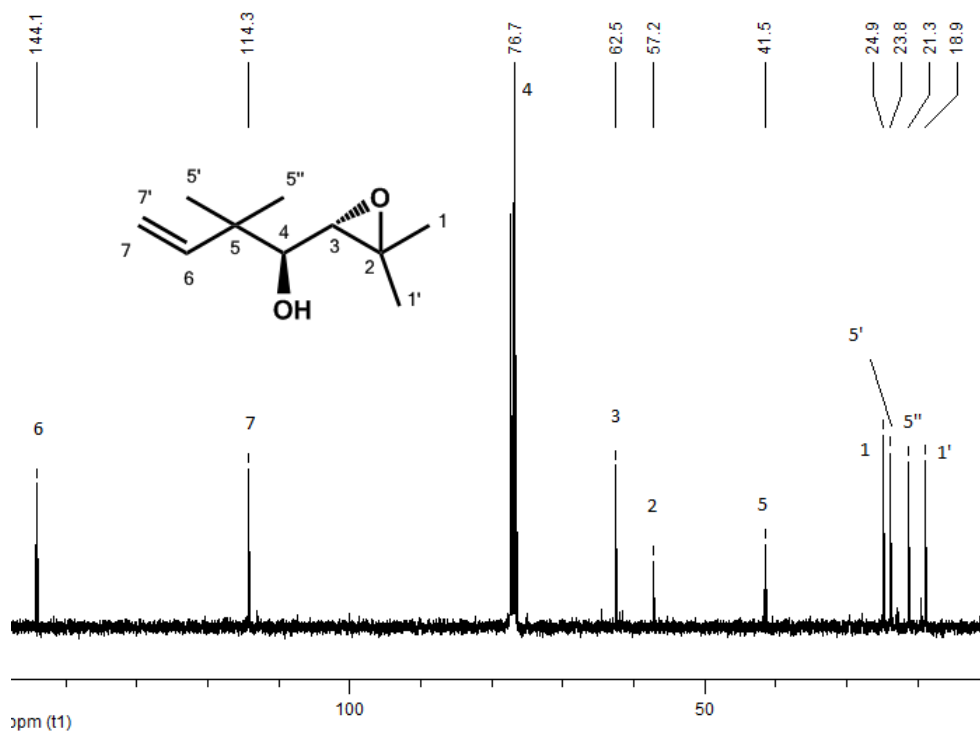




**Figure S16.** <sup>13</sup>C NMR spectrum (100 MHz, CDCl<sub>3</sub>) of (R)-1-(3,3-dimethyloxiran-2-yl)-2,2-dimethylbut-3-en-1-one (7).



**Figure S17.** <sup>1</sup>H NMR spectrum (400 MHz, CDCl<sub>3</sub>) of (S)-1-[(S)-3,3-dimethyloxiran-2-yl]-2,2-dimethylbut-3-en-1-ol (8).



**Figure S18.**  $^{13}\text{C}$  NMR spectrum (100 MHz,  $\text{CDCl}_3$ ) of (*S*)-1-[(*S*)-3,3-dimethyloxiran-2-yl]-2,2-dimethylbut-3-en-1-ol (**8**).

**Table S1.** Crystallographic information framework (CIF) of compound **5**

**Datablock: RB\_UFSM\_AM\_Calbmand**

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Bond precision: C-C = 0.0045 A                  Wavelength=1.54178

Cell:                    a=11.3289(4)              b=11.3563(3)              c=14.2294(4)  
                                alpha=90                  beta=90                    gamma=90

Temperature:            100 K

	Calculated	Reported
Volume	1830.68(10)	1830.67(10)
Space group	P 21 21 21	P 21 21 21
Hall group	P 2ac 2ab	P 2ac 2ab
Moiety formula	C19 H26 O4	C19 H26 O4
Sum formula	C19 H26 O4	C19 H26 O4
Mr	318.40	318.40
Dx, g cm <sup>-3</sup>	1.155	1.155
Z	4	4
Mu (mm <sup>-1</sup> )	0.643	0.643
F000	688.0	688.0
F000'	690.09	
h,k,lmax	14,14,18	14,14,18
Nref	3942 [ 2248]	3548
Tmin,Tmax	0.853,0.967	0.730,0.970
Tmin'	0.774	

Correction method= # Reported T Limits: Tmin=0.730 Tmax=0.970  
 AbsCorr = MULTI-SCAN

Data completeness= 1.58/0.90                  Theta(max)= 78.610

R(reflections)= 0.0454( 3023)              wR2(reflections)= 0.1137( 3548)

S = 1.089    Npar= 213

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