J. Braz. Chem. Soc., Vol. 19, No. 7, S1-S11, 2008.
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0103 - 5053 $6.00+0.00

Enantioselective Synthesis of (*R*)-Isocarvone from (*S*)-Perillaldehyde

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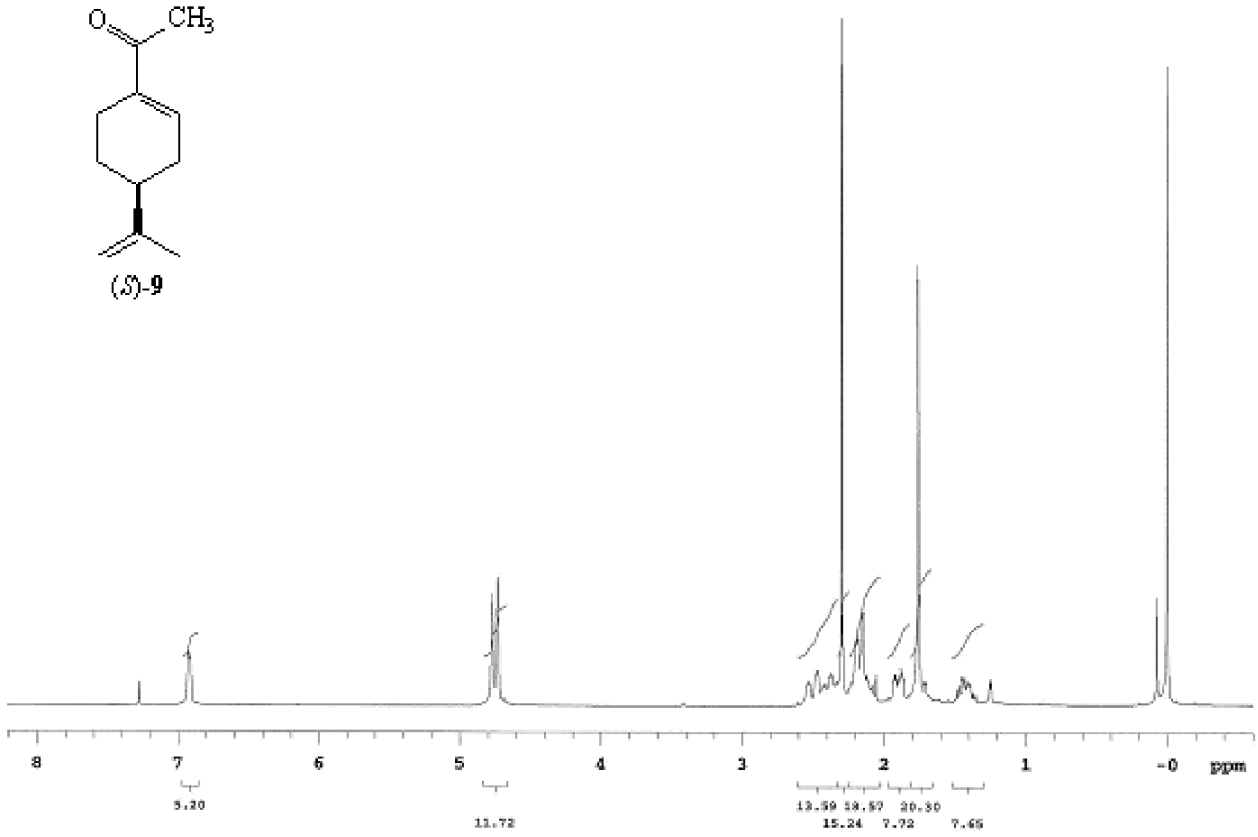

Figure S1. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of compound (*S*)-**9**.

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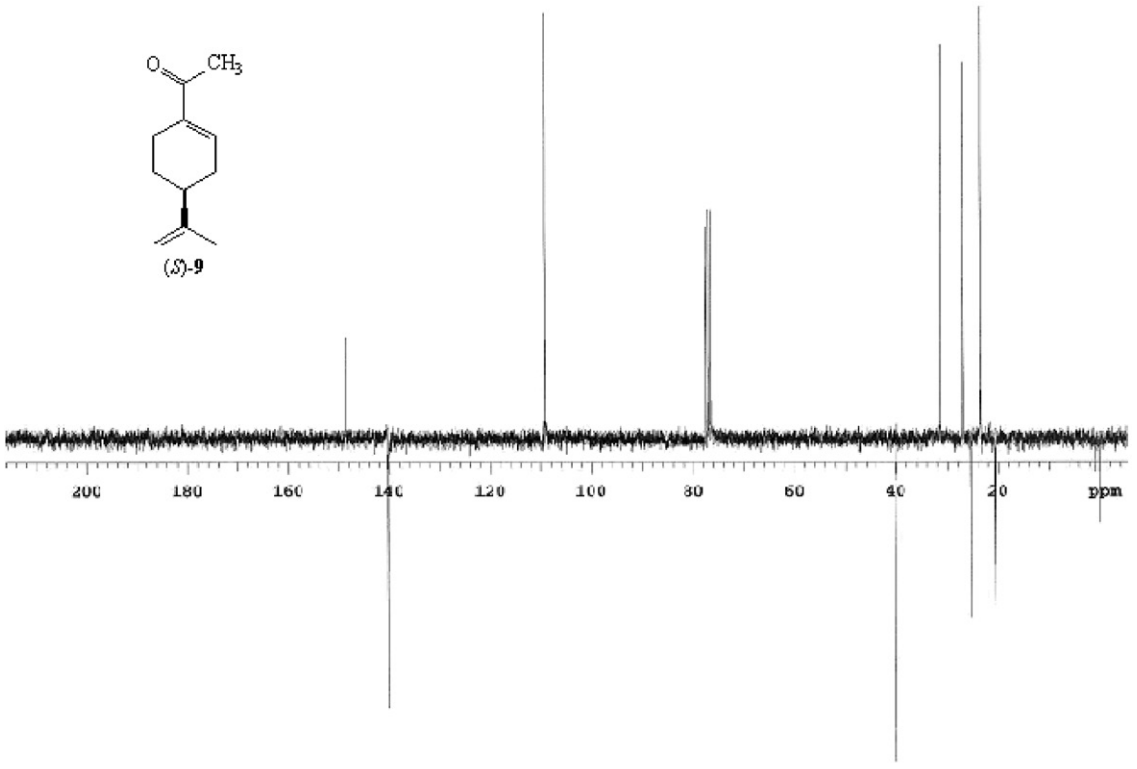

Figure S2. ^{13}C NMR spectrum APT (75 MHz, $CDCl_3$) of compound (*S*)-**9**.

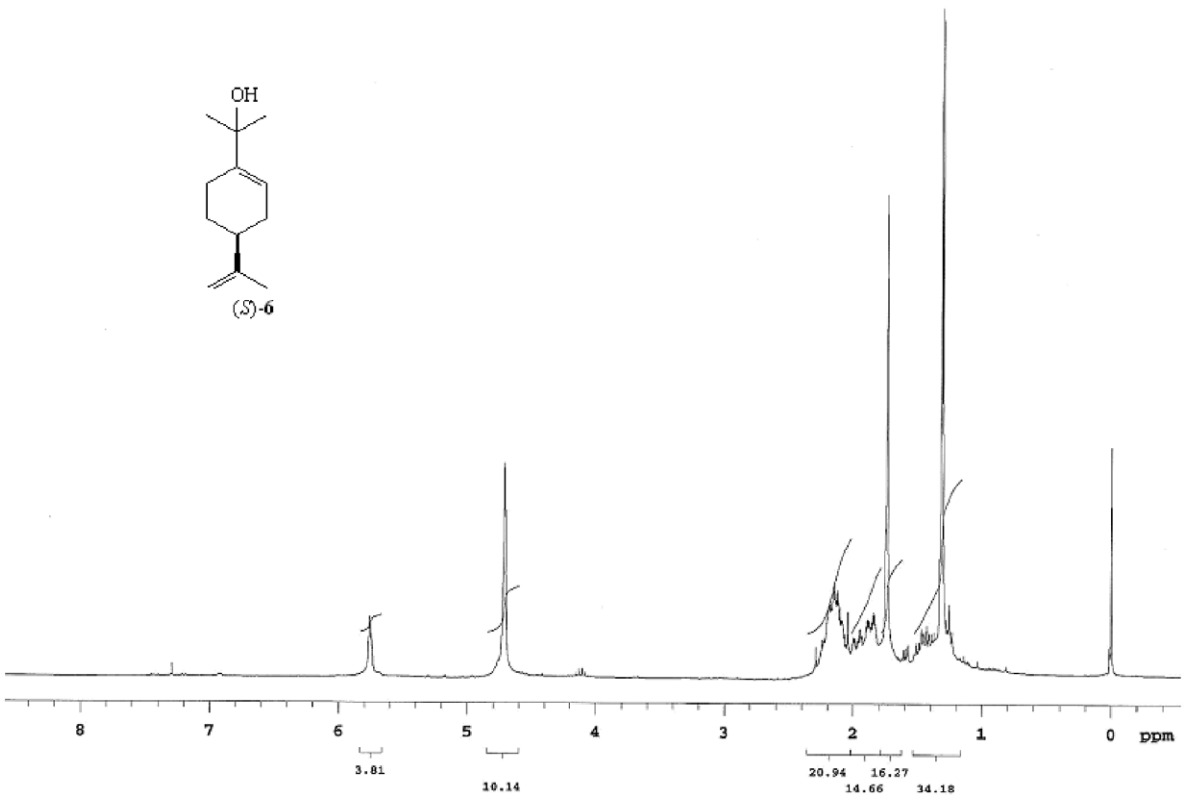

Figure S3. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of compound (*S*)-**6**.

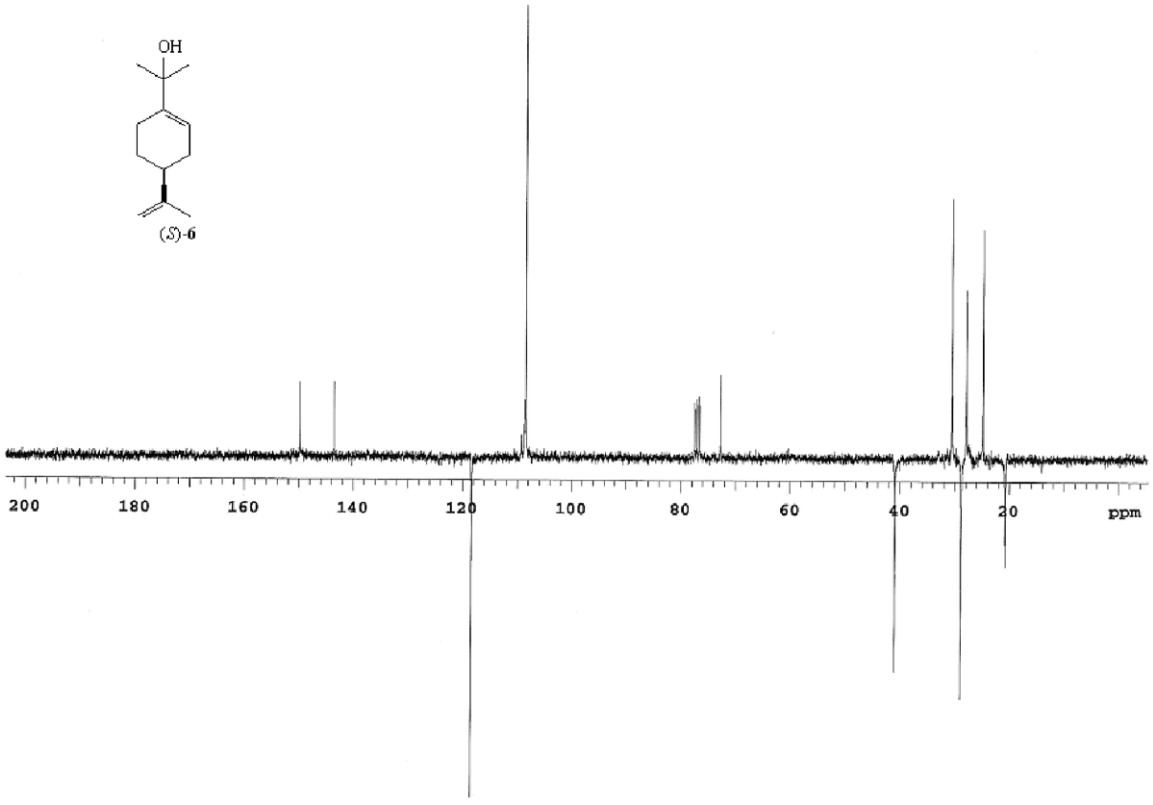

Figure S4. ^{13}C NMR spectrum APT (75 MHz, $CDCl_3$) of compound (*S*)-**6**.

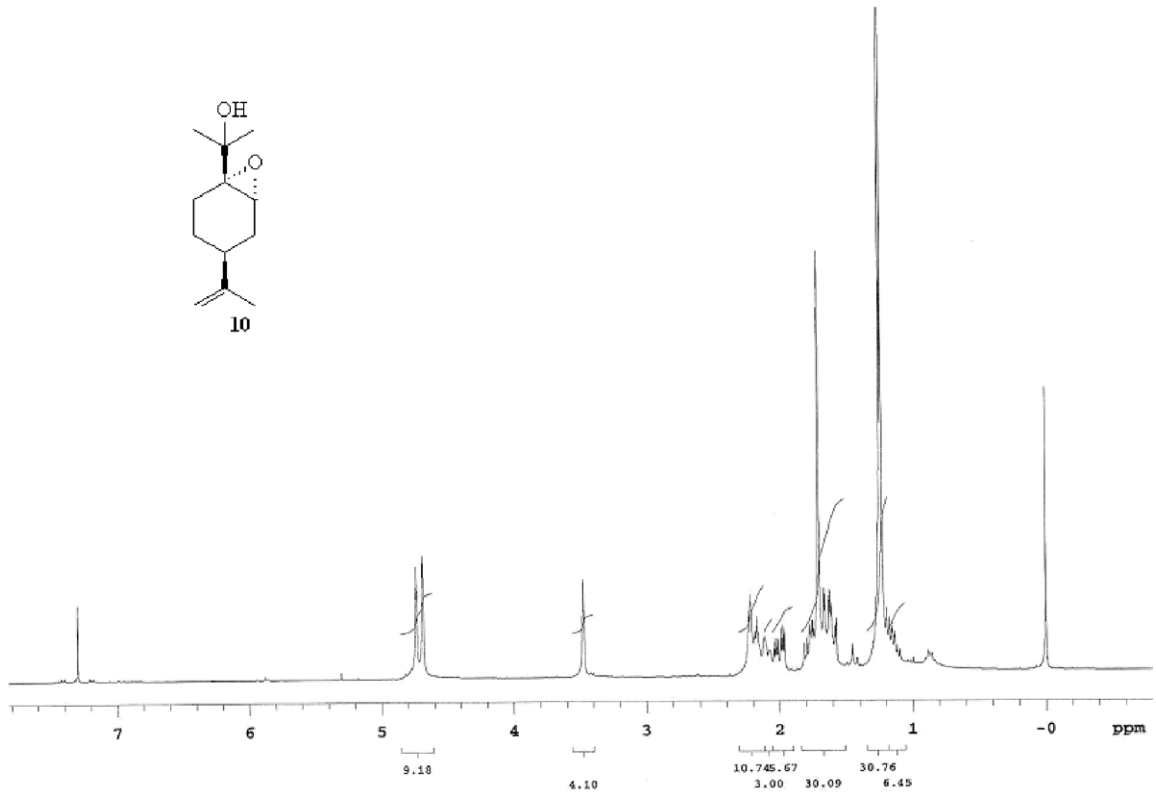

Figure S5. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of compound **10**.

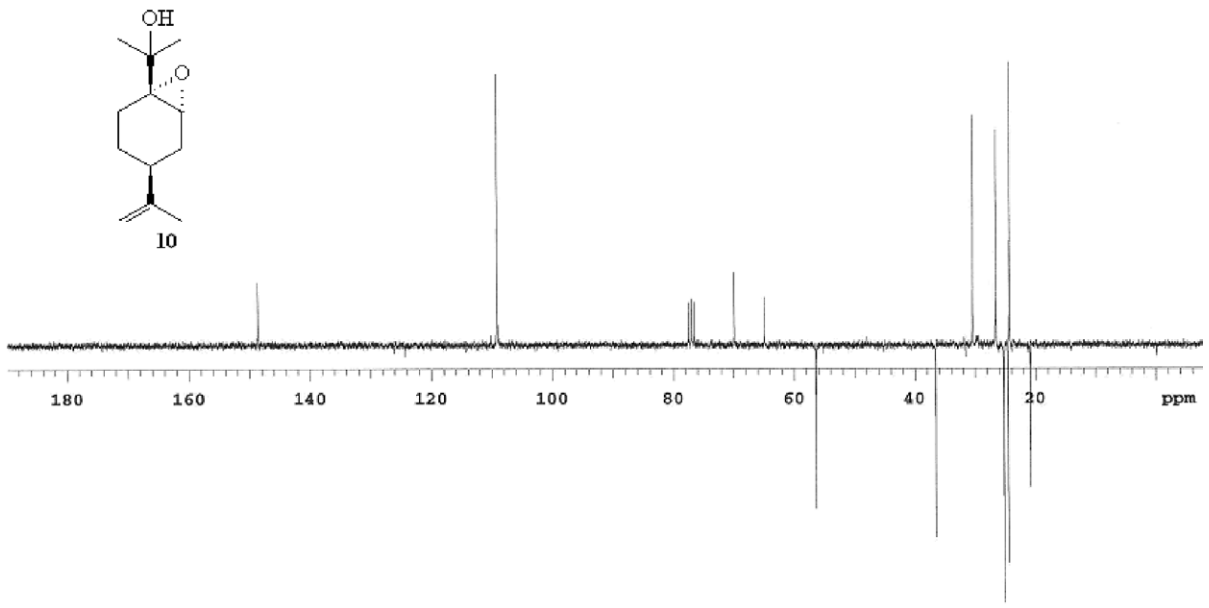

Figure S6. ^{13}C NMR spectrum APT (75 MHz, $CDCl_3$) of compound **10**.

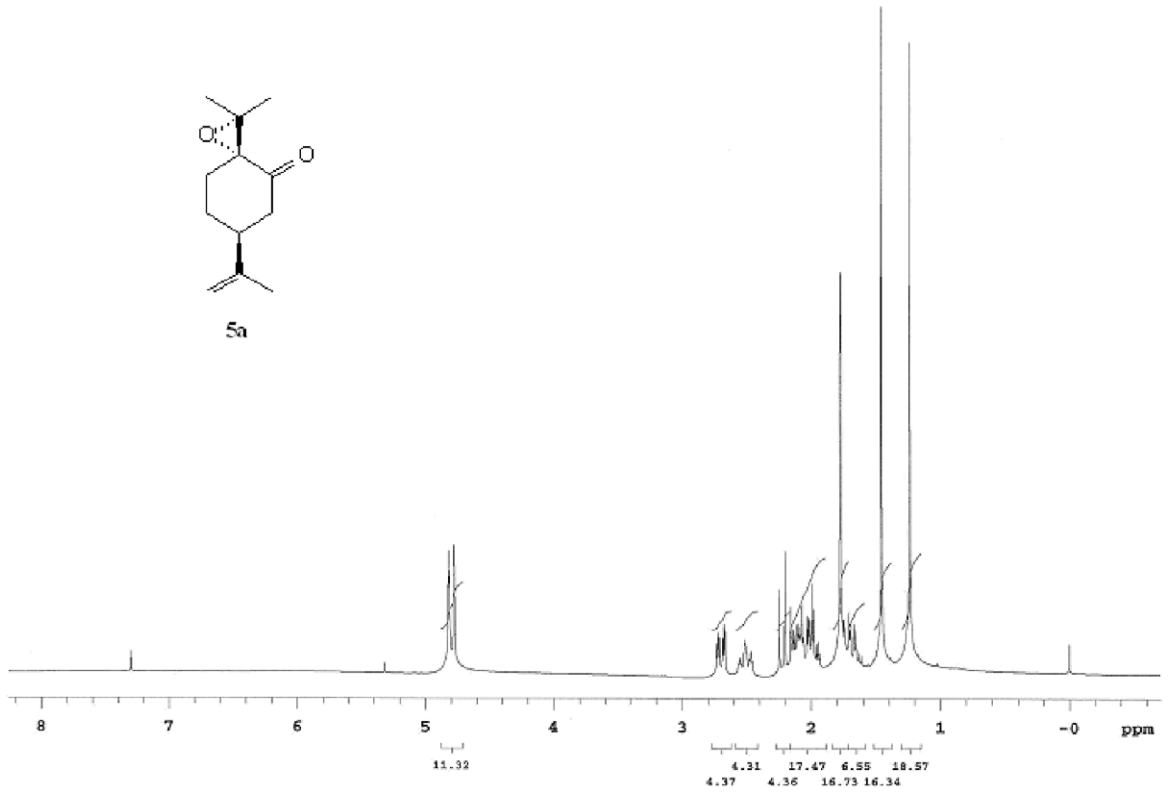

Figure S7. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of compound **5a**.

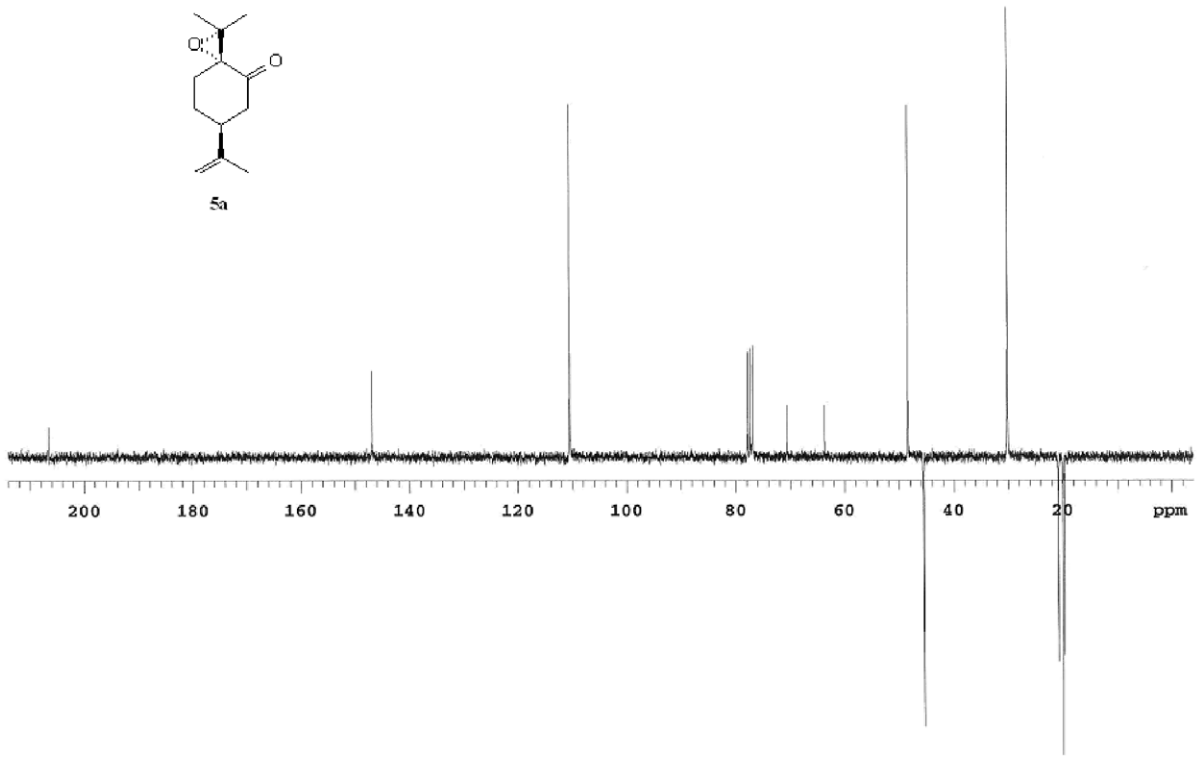

Figure S8. ^{13}C NMR spectrum APT (75 MHz, $CDCl_3$) of compound **5a**.

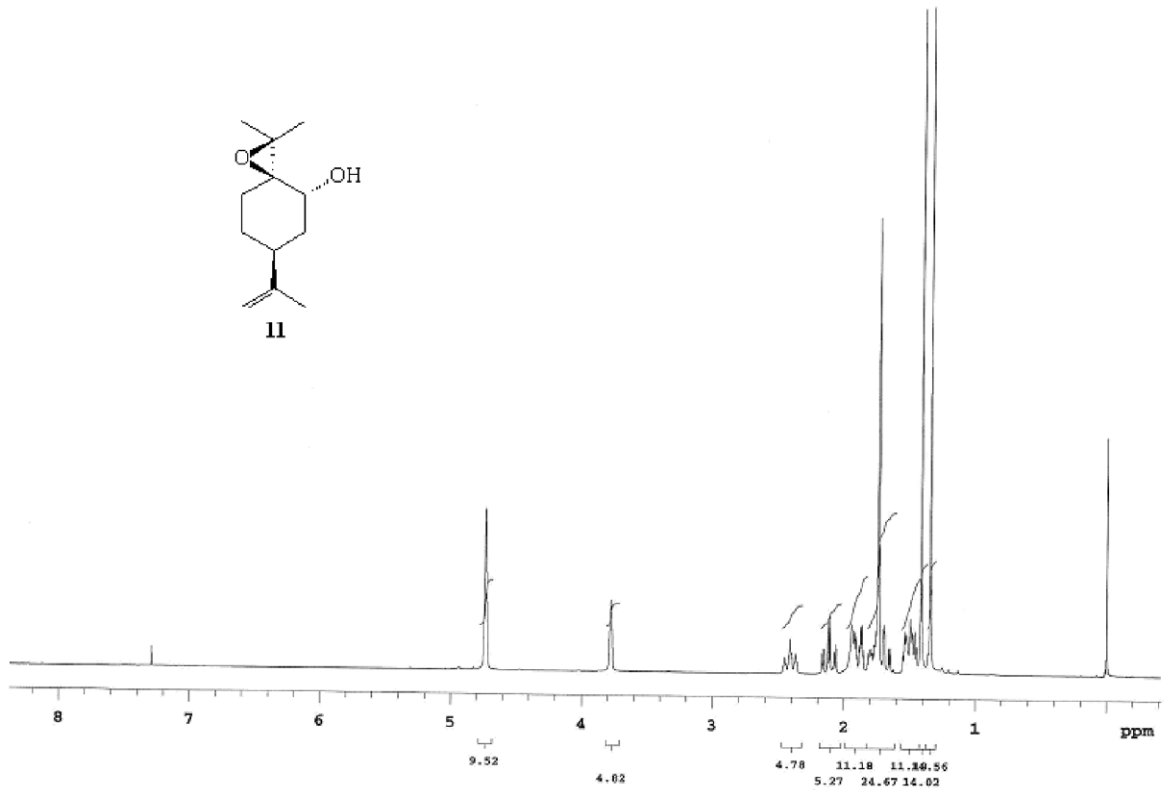

Figure S9. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of compound **11**.

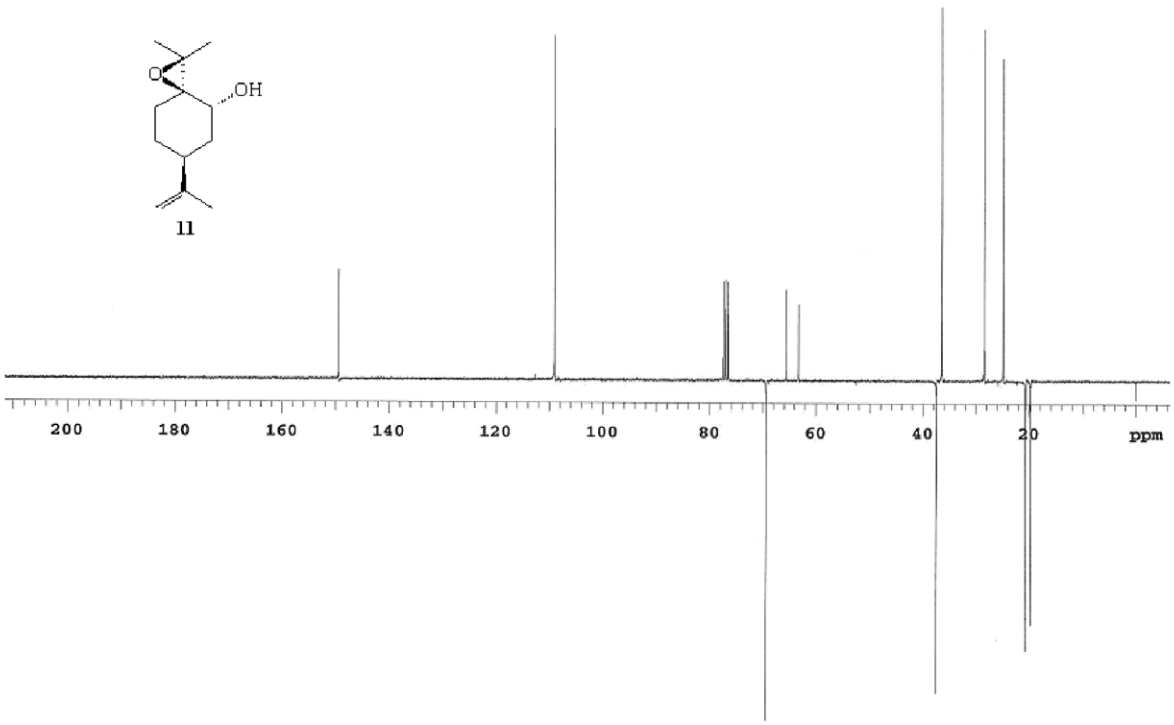

Figure S10. ^{13}C NMR spectrum APT (75 MHz, $CDCl_3$) of compound **11**.

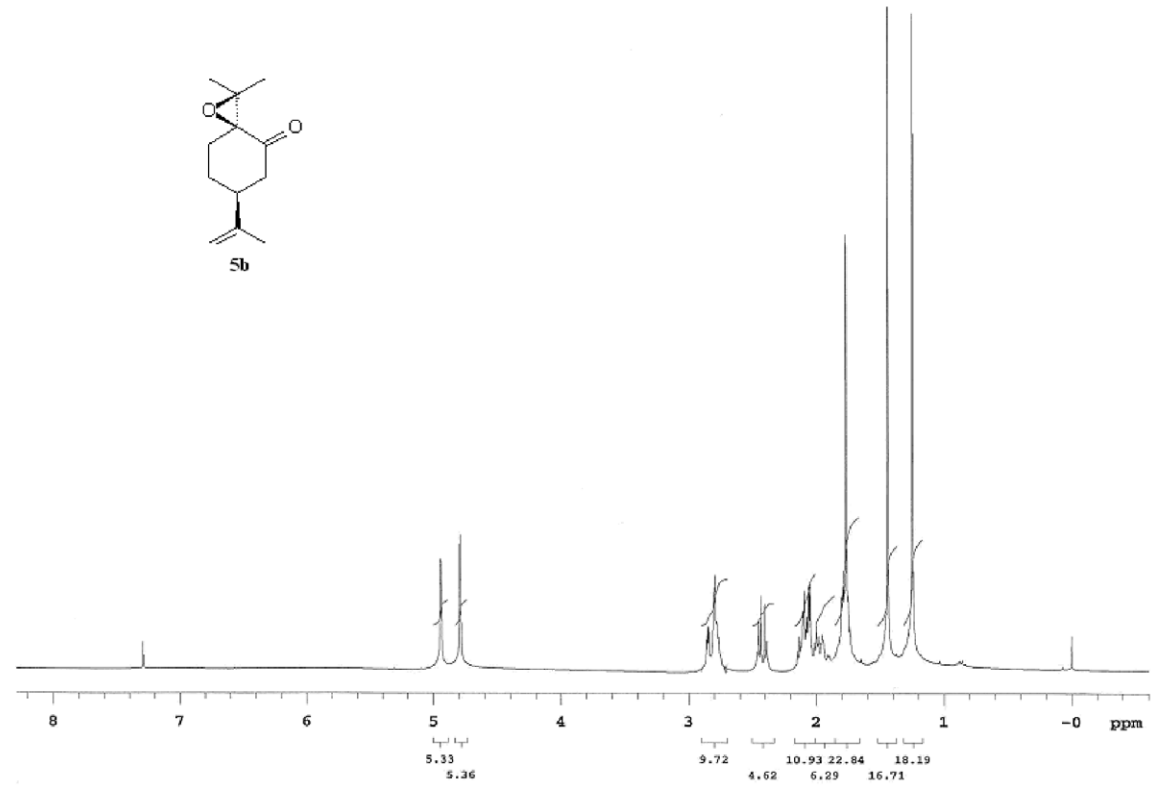

Figure S11. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of compound **5b**.

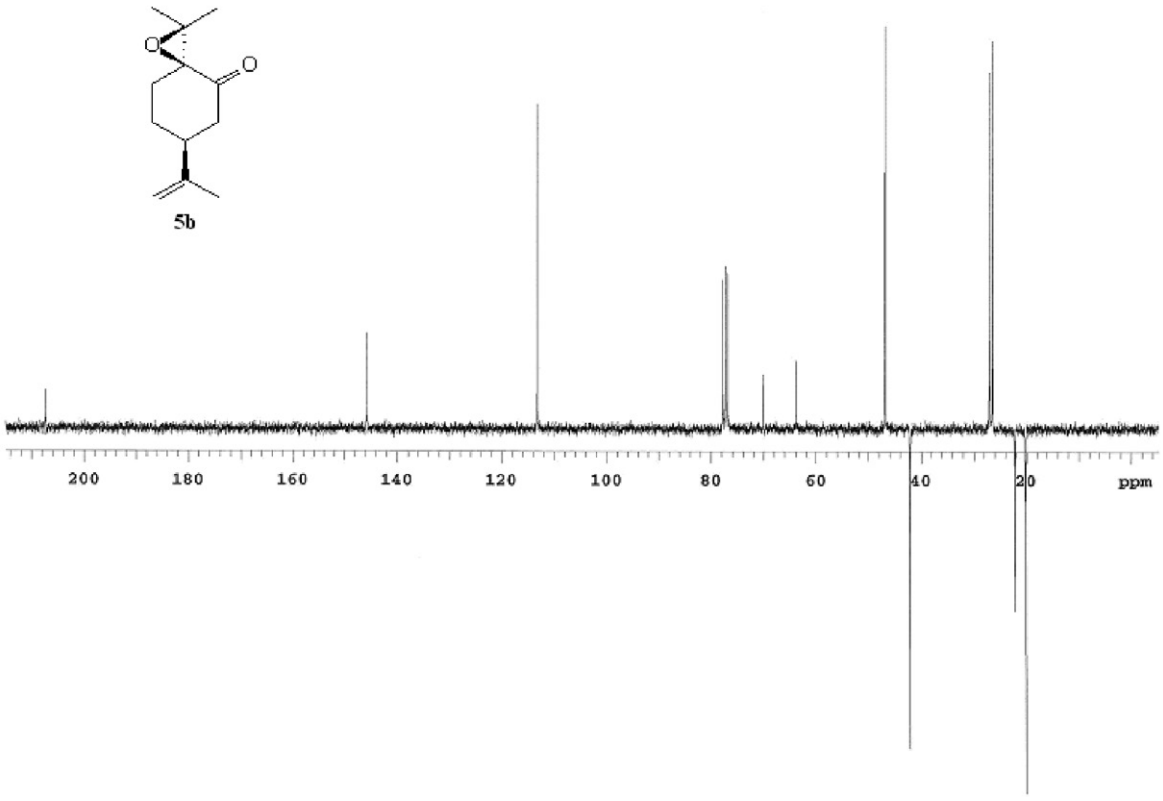

Figure S12. ^{13}C NMR spectrum APT (75 MHz, $CDCl_3$) of compound **5b**.

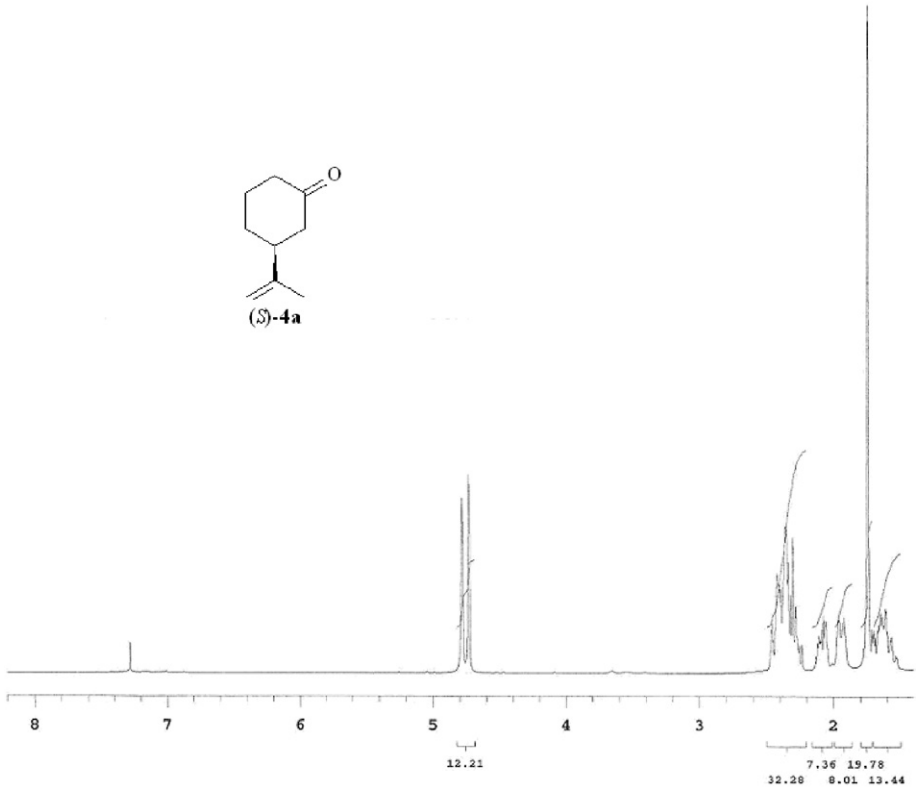

Figure S13. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of compound (*S*)-**4a**.

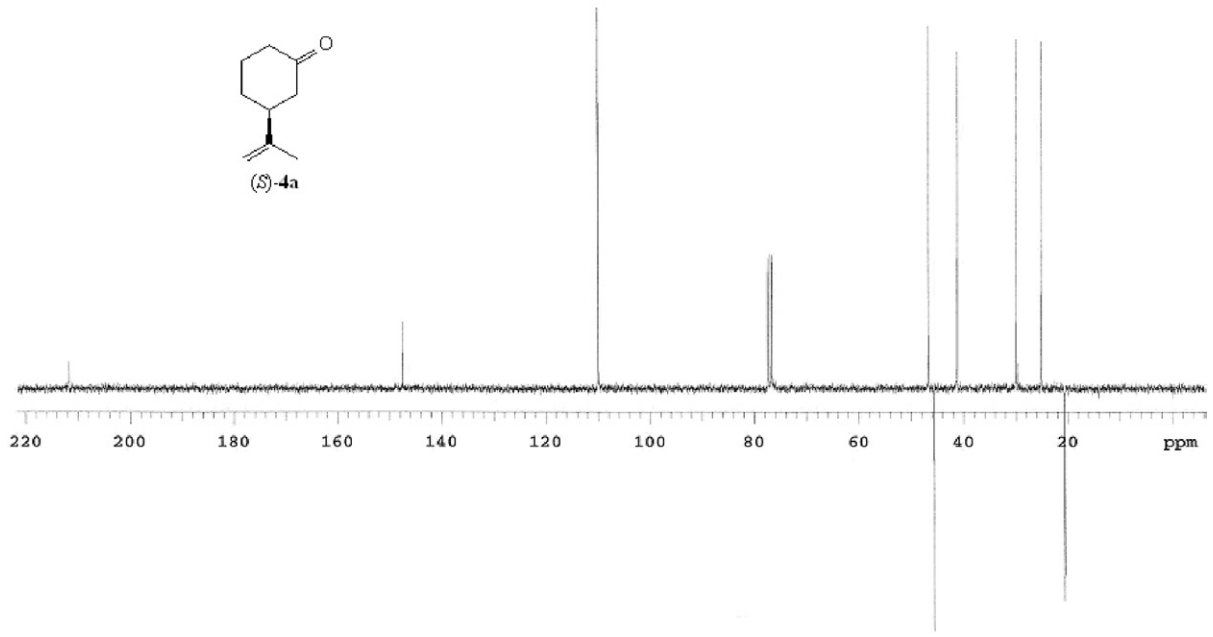

Figure S14. ^{13}C NMR spectrum APT (75 MHz, $CDCl_3$) of compound (*S*)-**4a**.

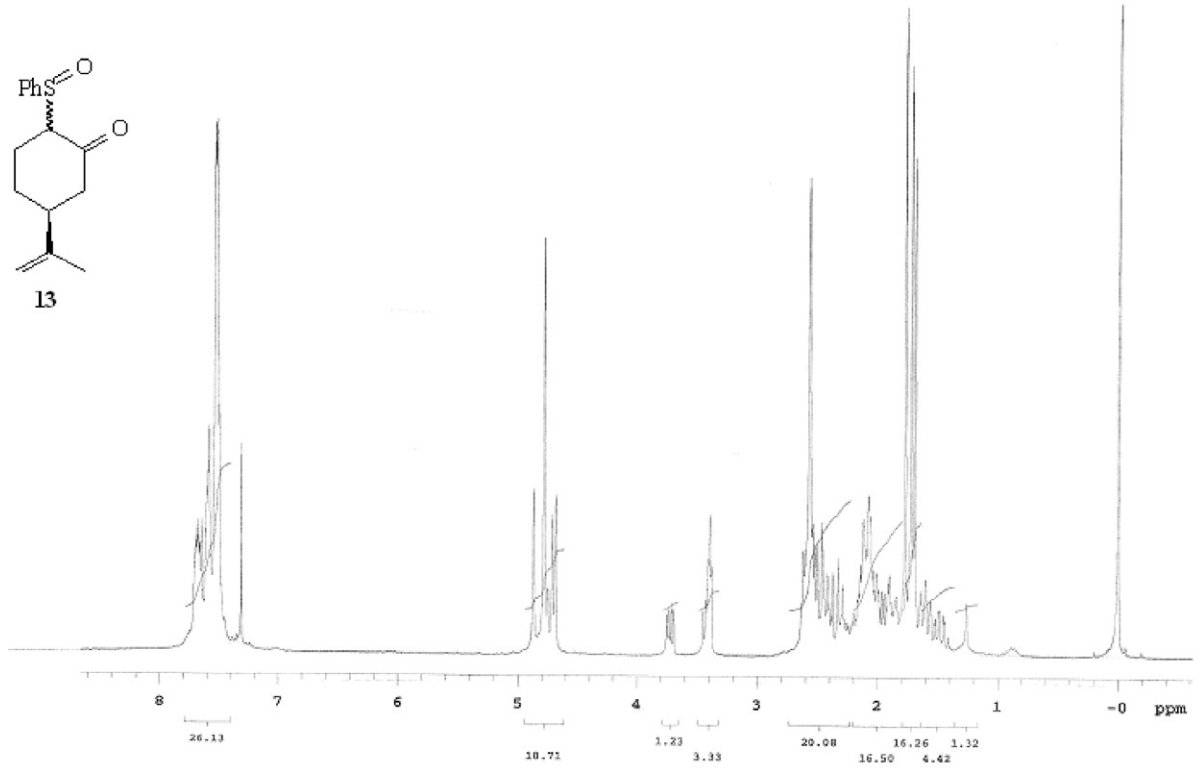

Figure S15. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of compound **13**.

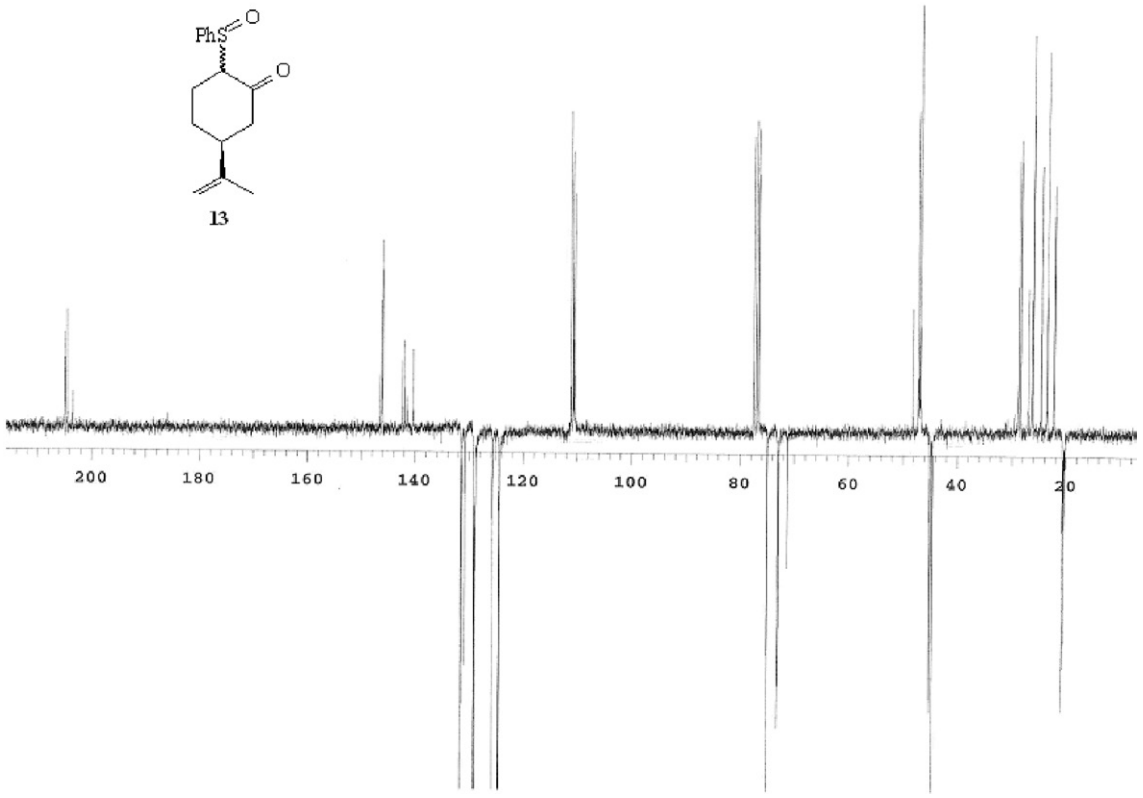

Figure S16. ^{13}C NMR spectrum APT (75 MHz, $CDCl_3$) of compound **13**.

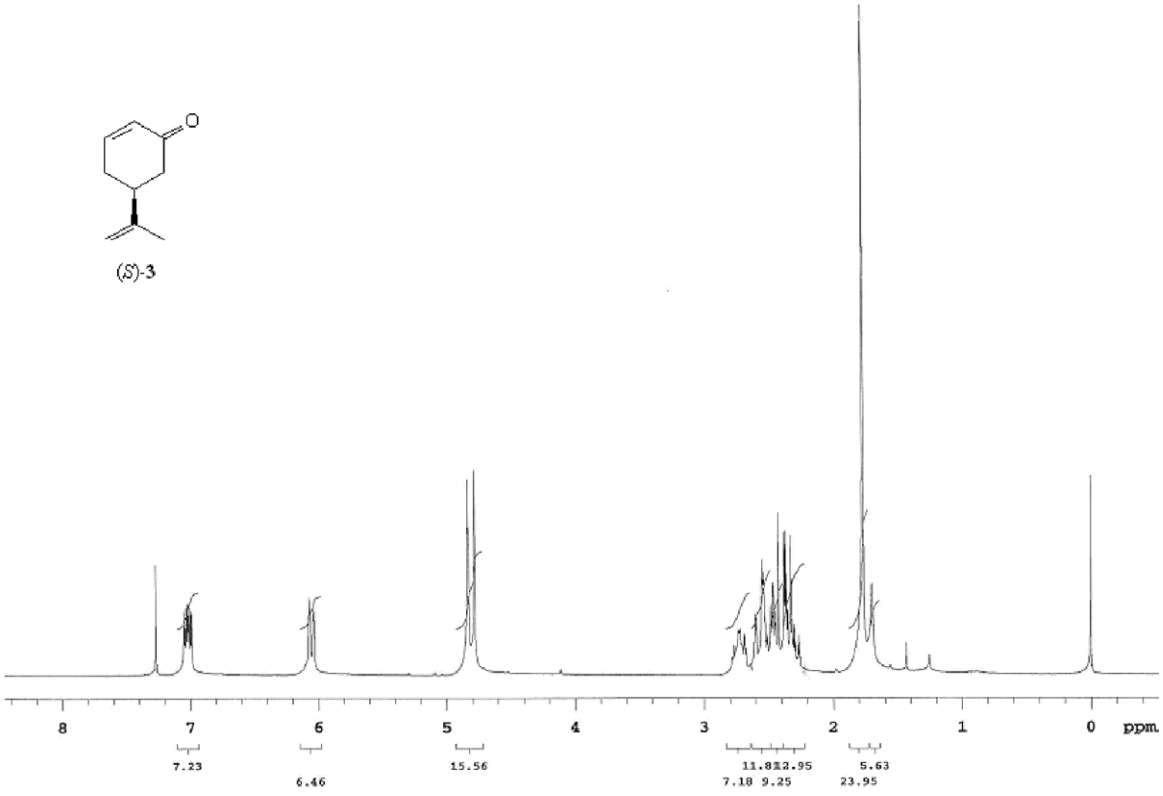

Figure S17. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of compound (*S*)-**3**.

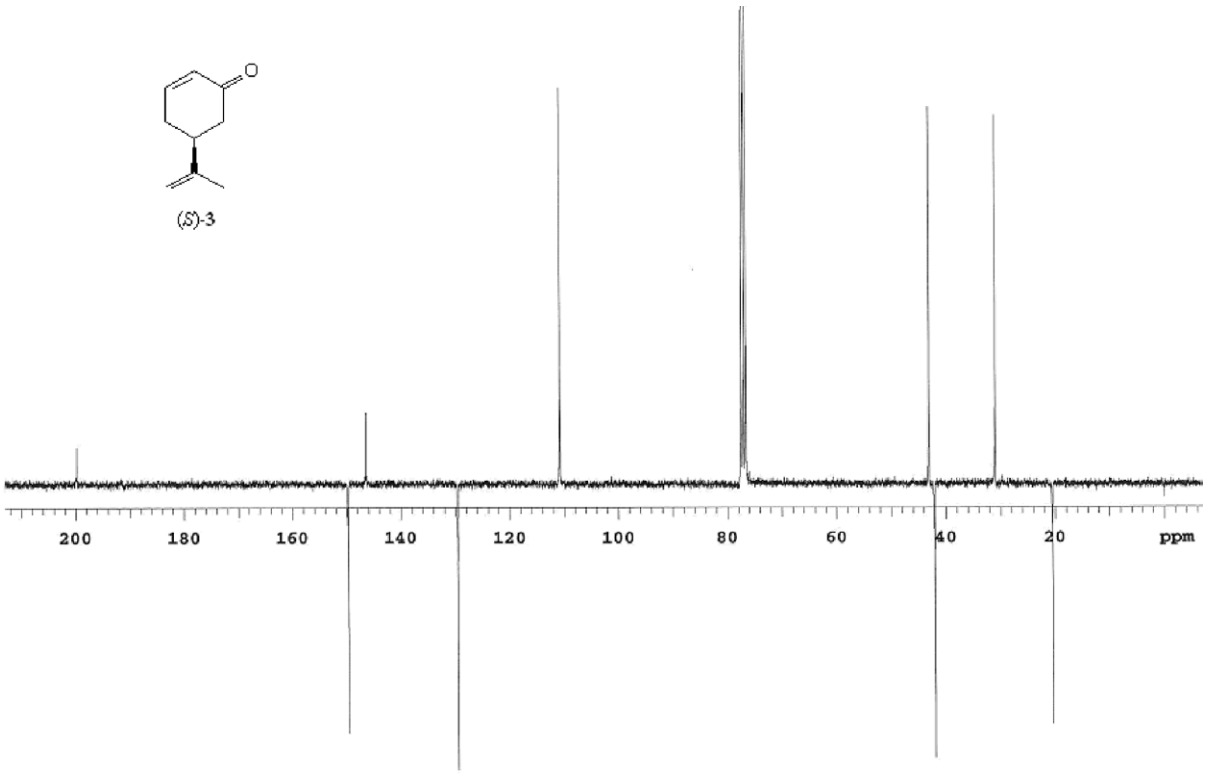

Figure S18. ^{13}C NMR spectrum APT (75 MHz, $CDCl_3$) of compound (*S*)-**3**.

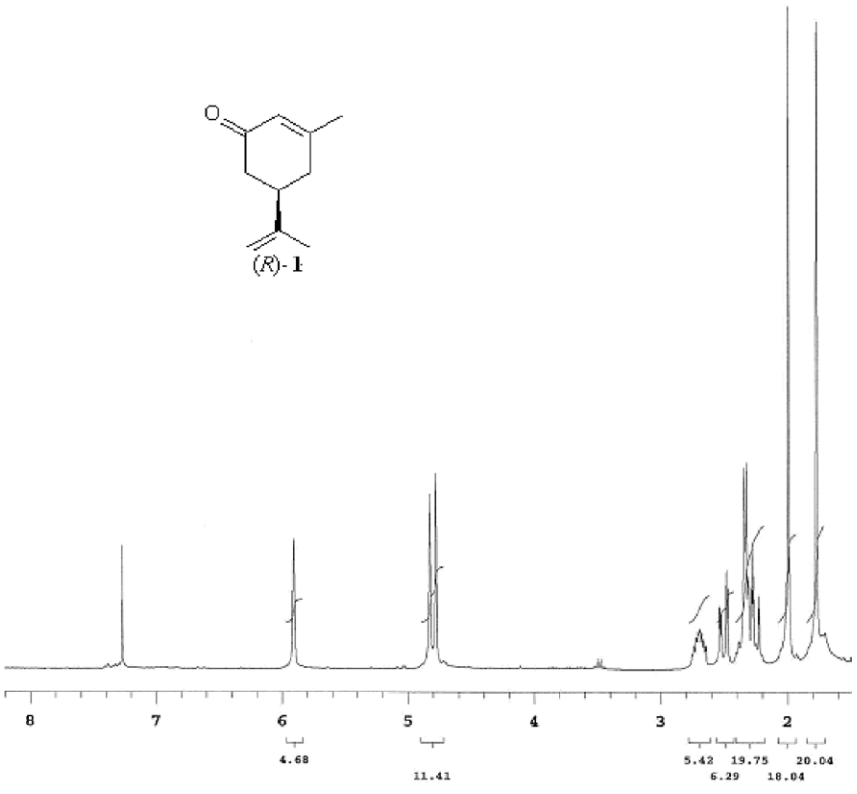

Figure S19. ^{1}H NMR spectrum (300 MHz, $CDCl_3$) of compound (*R*)-**1**.

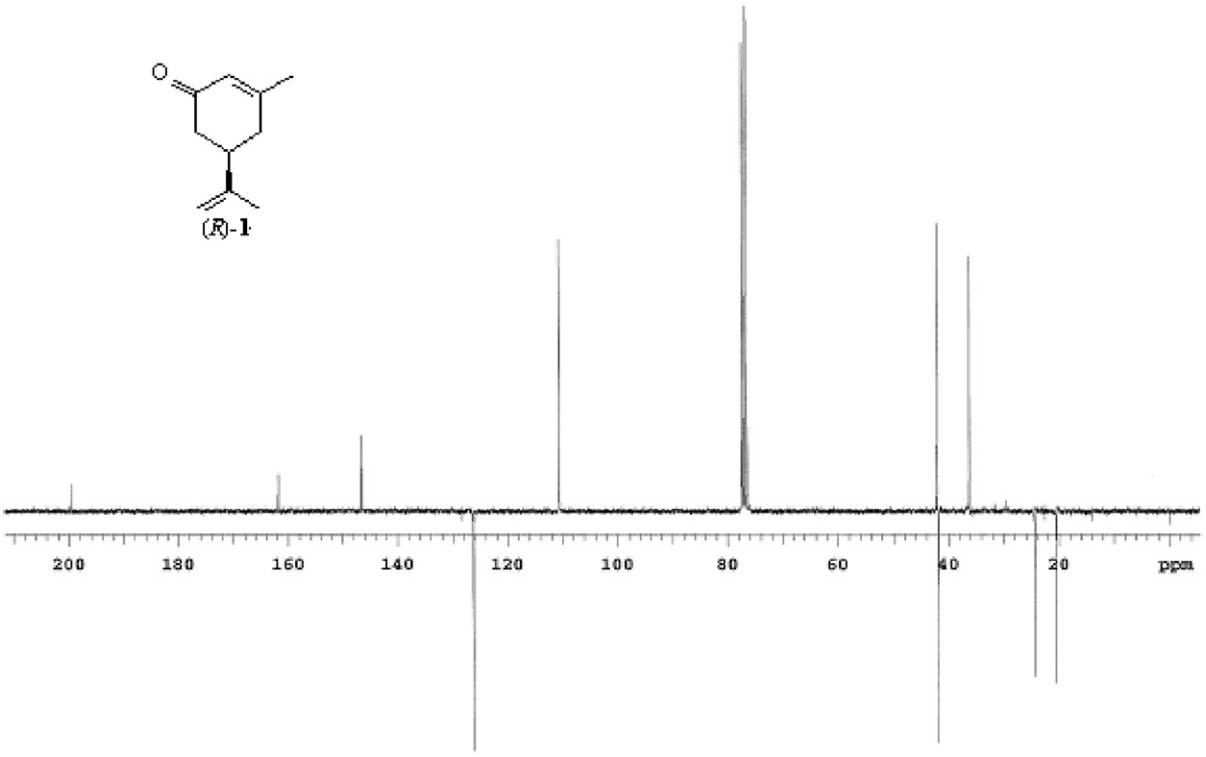

Figure S20. ^{13}C NMR spectrum APT (75 MHz, $CDCl_3$) of compound (*R*)-**1**.