

ELECTRONIC SUPPLEMENTARY INFORMATION

**A heteroatom of difference: investigation of thiazolidine- and oxazolidine-4-carboxylates as hydrolytically cleavable profragrances**

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**Instrumentation and methods**

Nuclear magnetic resonance (NMR) spectra were measured on Bruker Avance III HD 500 and 600 spectrometers; the chemical displacements  $\delta\text{H}$  and  $\delta\text{C}$  are indicated in ppm with respect to  $\text{Si}(\text{CH}_3)_4$  (TMS) as the internal standard. Quantitative  $^1\text{H}$  NMR spectra ( $d_1 = 20$  s) were recorded on an instrument (500 MHz) equipped with a BB/H&F cryoprobe and an AVIII HD console. Multiplets indicated together with the chemical shifts obtained from decoupled  $^{13}\text{C}$  NMR spectra were determined by distortionless enhancement of polarisation transfer (DEPT) measurements; two sets of spectra (DEPT-90 and DEPT-135, data not shown) were systematically recorded. Nuclear Overhauser effect spectroscopy (NOESY) experiments and density functional theory (DFT) calculations with SPARTAN<sup>S1</sup> were carried out to determine the stereochemistry of the molecules.

Two-dimensional NOESY experiments with zero-quantum filtering<sup>S2</sup> (Bruker pulse sequence: noesygp-phz) were acquired by using a standard pulse sequence with a mixing time of 0.85 s, a spectral width in both dimensions of 6.24 ppm and a relaxation delay of 1.43 s. A total of

256 and 2048 points were acquired in  $t_1$  and  $t_2$  dimensions, respectively. Phase-sensitive detection was achieved by using States-TPPI.

High-resolution mass spectra were recorded on a Thermo Fisher Scientific Q-Exactive system (0726020) equipped with a heated electrospray ionisation (H-ESI) probe source operated in the full scan/MS2 mode ( $m/z$  from 100 to 1500) with the H-ESI probe source in the positive or negative mode, depending on the ionisation potential of the molecule, and at a spray voltage of 3500 V with a resolution of 35000 (full scan) and 17500 (MS2). A Waters Acquity I-Class UPLC system equipped with an Acquity UPLC BEH C18 1.7 mm column ( $2.1 \times 100$  mm) was coupled to the Thermo Fisher Q-Exactive system by using a 9 min elution program at a flow rate of  $0.4 \text{ mL min}^{-1}$ , with water (containing 0.1% formic acid) as solvent A and acetonitrile (containing 0.1% formic acid) as solvent B, starting at 98% A from 0 to 1 min, 98% A to 100% B from 1 to 6 min, 100% B from 6 to 7 min, 100% B to 98% A from 7 to 8 min, and 98% A from 8 to 9 min.

Infrared (IR) spectra were measured on a Perkin Elmer Frontier FTIR spectrometer, with maxima  $\tilde{\nu}_{\text{max}}$  given in  $\text{cm}^{-1}$  and the intensities of the IR bands indicated as strong (s), medium (m) or weak (w), br. = broad band.

Analytical gas chromatography (GC) for the hydrolysis experiments at acidic or alkaline pH was carried out by injecting the extracted *n*-heptane solutions ( $1 \mu\text{L}$ ) into an Agilent 7890A GC instrument. The samples were eluted with He ( $1.5 \text{ mL min}^{-1}$ ) on a J&W HP-5 capillary column (30 m,  $32 \mu\text{m}$  inner diameter (i.d.), film  $0.25 \mu\text{m}$ ) with a temperature gradient starting at  $100^\circ\text{C}$  and moving to  $300^\circ\text{C}$  at  $15^\circ\text{C min}^{-1}$  and analysed with a flame ionisation detector (FID). Amounts of extracted compounds were determined by external standard calibration with *n*-heptane solutions at four different concentrations.

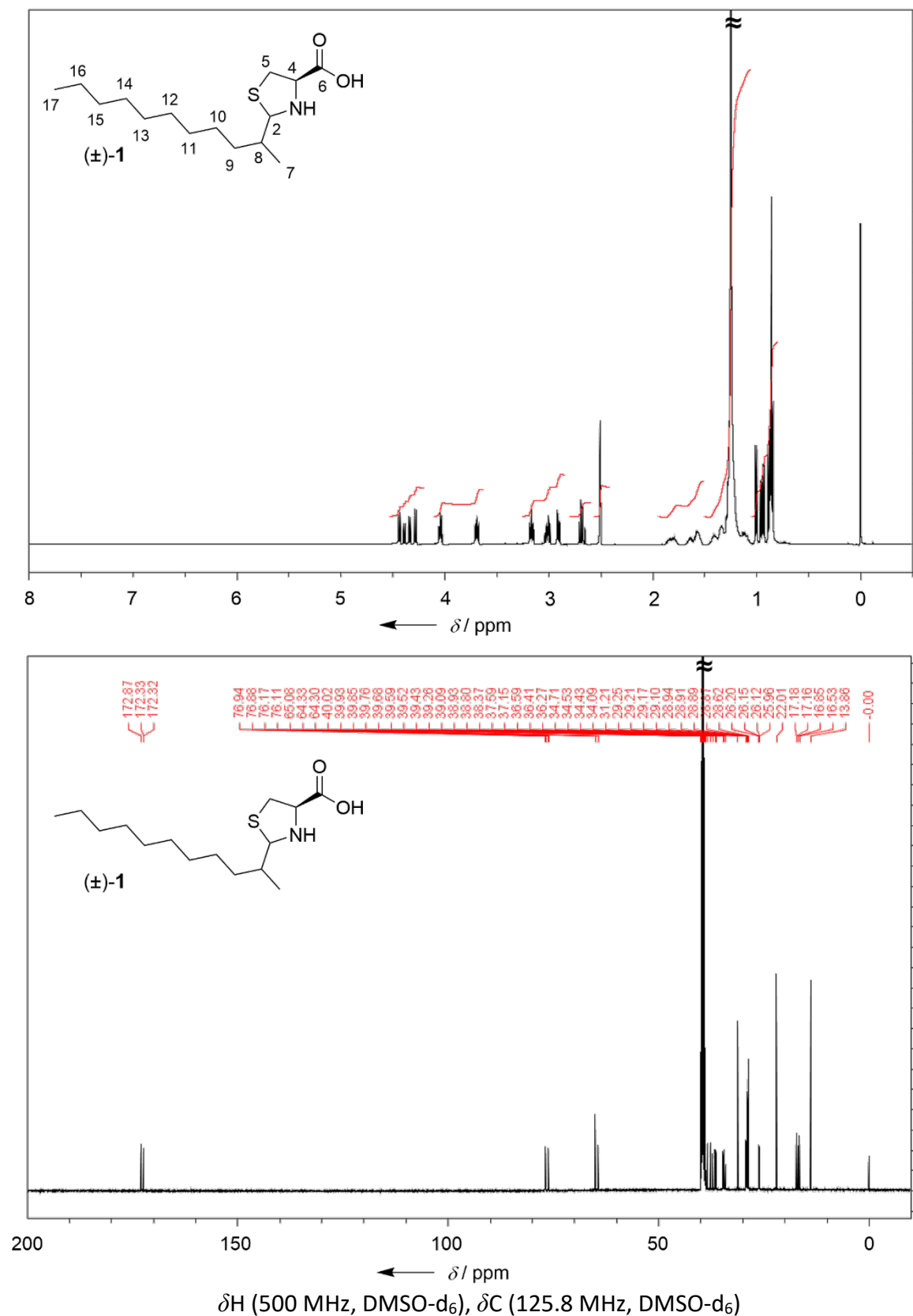
Dynamic headspace measurements were carried out as described in previous reports<sup>S3,S4</sup> by placing one of the line dried cotton sheets treated with a fabric softener or a liquid detergent formulation, as described in the Experimental Part, into a home-made headspace sampling cell (*ca.* 160 mL inner volume). Each headspace sampling cell was thermostatted at  $25^\circ\text{C}$  and exposed to a constant air flow of *ca.*  $200 \text{ mL min}^{-1}$ . The air was filtered through active

charcoal and aspirated through a saturated solution of NaCl (to ensure a constant humidity of the air of *ca.* 75% during the headspace sampling). The system was equilibrated during 15 min while adsorbing the volatiles on a waste cartridge. Then, seven times consecutively, the volatiles evaporating from the cotton surface were adsorbed for 15 min on a clean cartridge and for 45 min on a waste cartridge. A final data point was collected by adsorbing the volatiles for 15 min on a clean cartridge. Each cartridge contained 100 mg of poly(2,6-diphenyl-*p*-phenylene oxide) (Tenax® TA). Altogether eight data points were collected. The waste cartridges were discarded; the other cartridges were desorbed either on a Perkin Elmer TurboMatrix ATD thermodesorber coupled to an Agilent Technologies 7890A gas chromatograph equipped with an HP-1 capillary column (30 m, 0.32 mm i.d., film 0.25 µm) and an FID or on a Markes TD100-xr thermodesorber coupled to an Agilent Technologies 7890A gas chromatograph equipped with a Supelco MDN-1 capillary column (30 m, 0.32 mm i.d., film 1 µm) and an FID. The volatiles were eluted with He at 1 mL min<sup>-1</sup> by using a temperature gradient moving either from 80°C to 260°C at 15°C min<sup>-1</sup> (HP-1 column) or from 60°C (held for 1 min) to 250°C at 10°C min<sup>-1</sup> (MDN-1 column). Headspace concentrations (in ng L<sup>-1</sup> air) were obtained by external standard calibration with different concentrations of the fragrance to be released in ethanol. Each calibration solution (0.2 µL) was injected onto a clean cartridge, which was desorbed and analysed under the same conditions. All data are average values of at least two measurements. Variations with respect to some of the previously reported data<sup>S5</sup> are due to additional measurements.

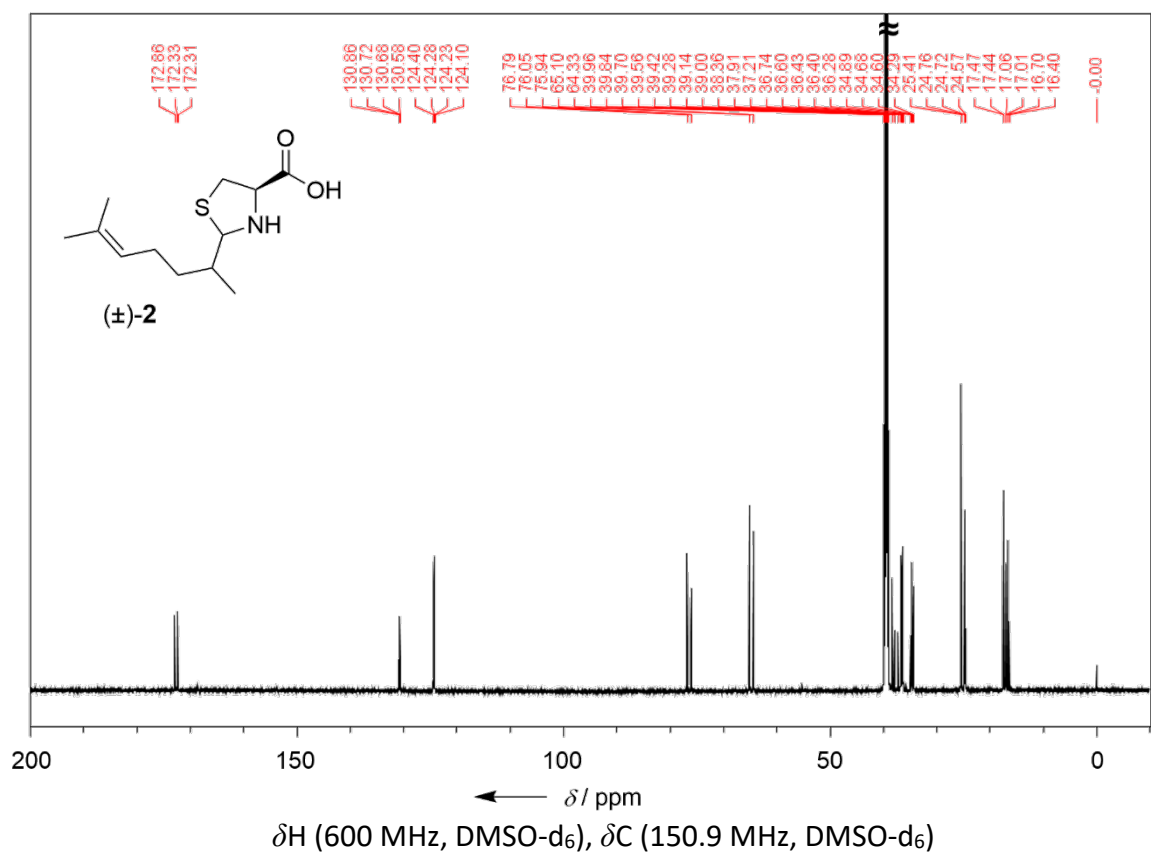
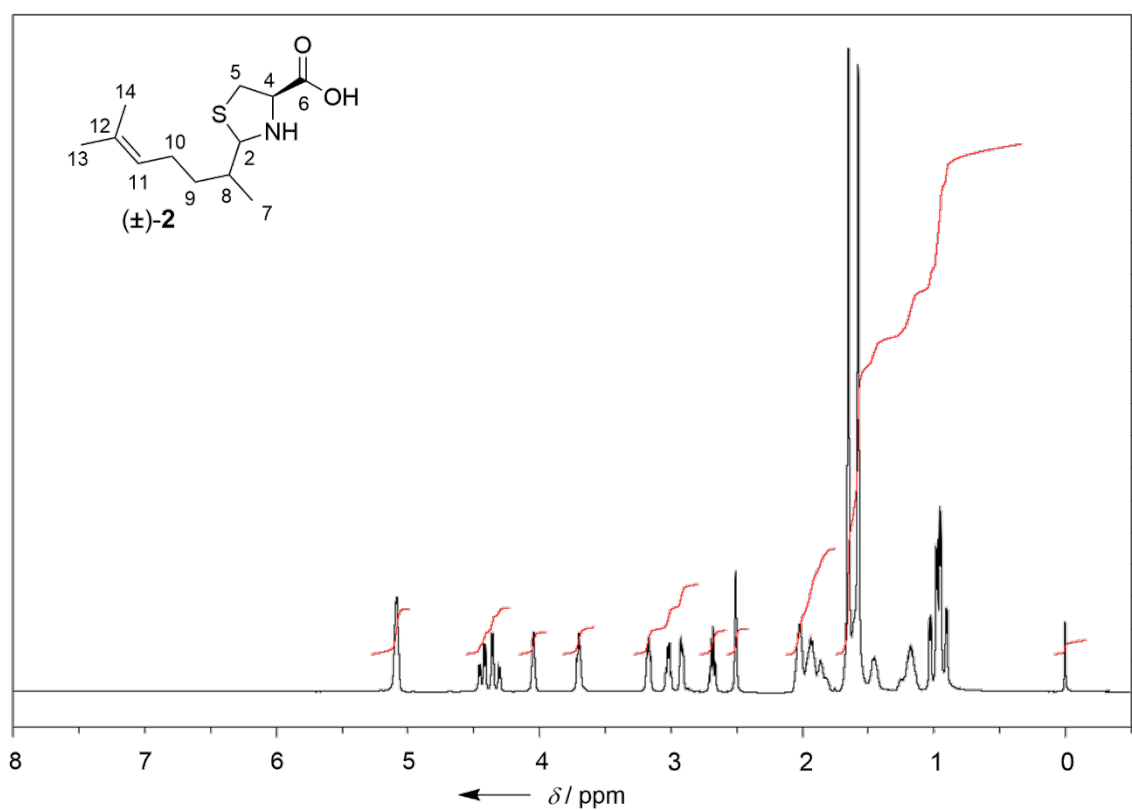
## References

- S1 *Spartan'24*, Wavefunction Inc., Irvine, 2024.
- S2 M. J. Thrippleton, J. Keeler, *Angew. Chem., Int. Ed.*, 2003, **42**, 3938.
- S3 S. Lamboley, B. Vuichoud, J.-Y. de Saint Laumer, A. Herrmann, *Molecules*, 2023, **28**, 382.
- S4 A. Trachsel, S. Leocata, J.-Y. de Saint Laumer, A. Herrmann, *Helv. Chim. Acta*, 2024, **107**, e202400046.
- S5 A. Herrmann, S. Lamboley, C. Hansen, H. Jerri, K. Brady (to Firmenich SA), *PCT Int. Patent Appl.*, WO 2025/093456, 2025.

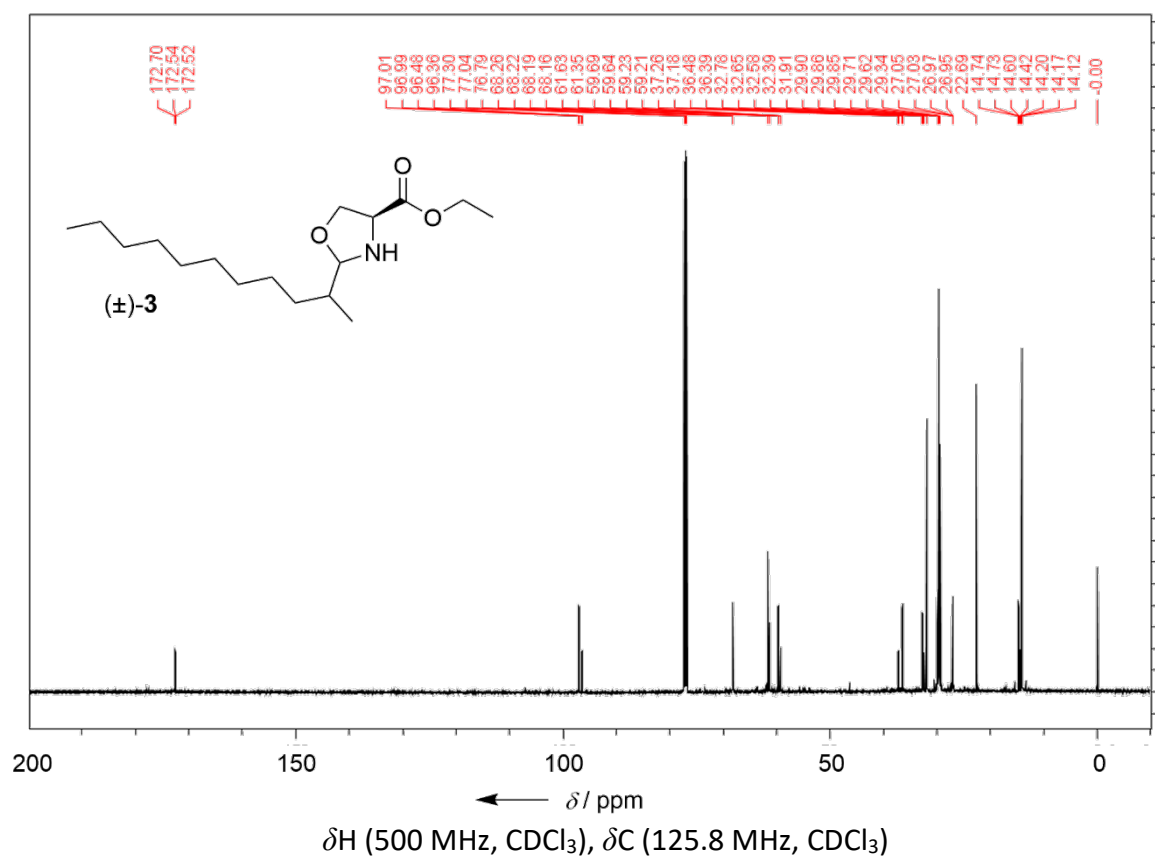
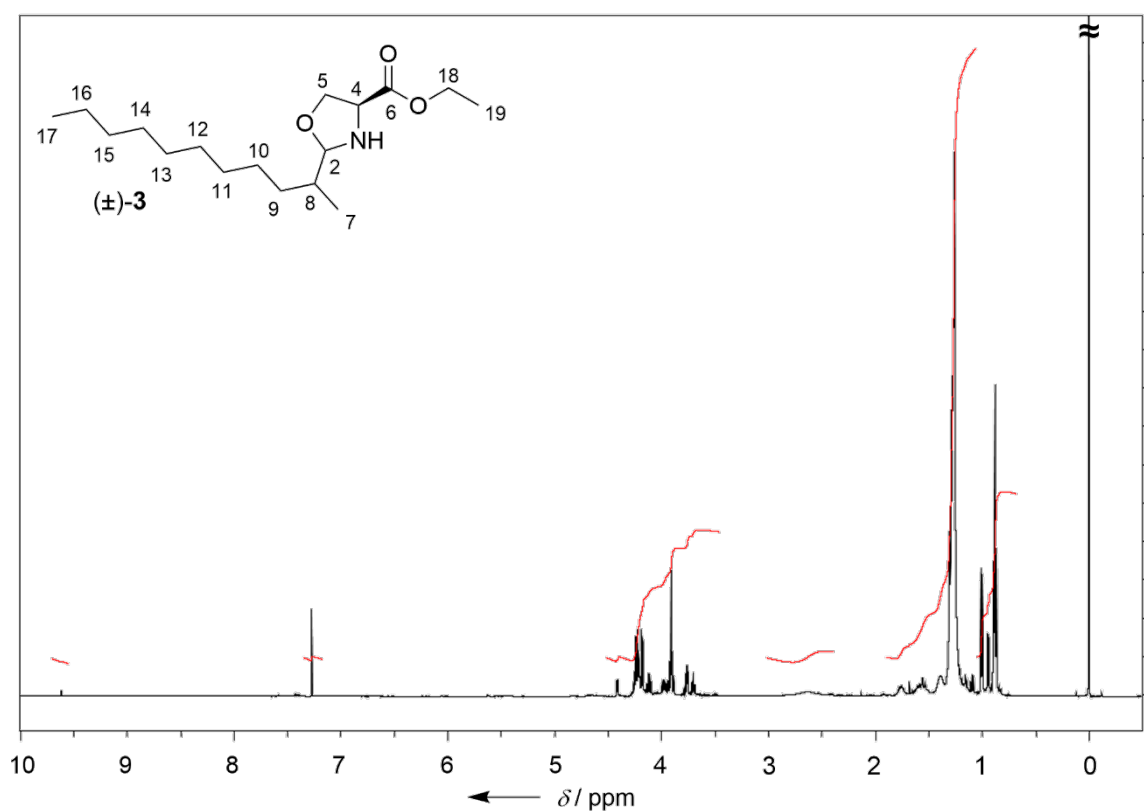
Spectroscopic data for profragrances (±)-1–(±)-22



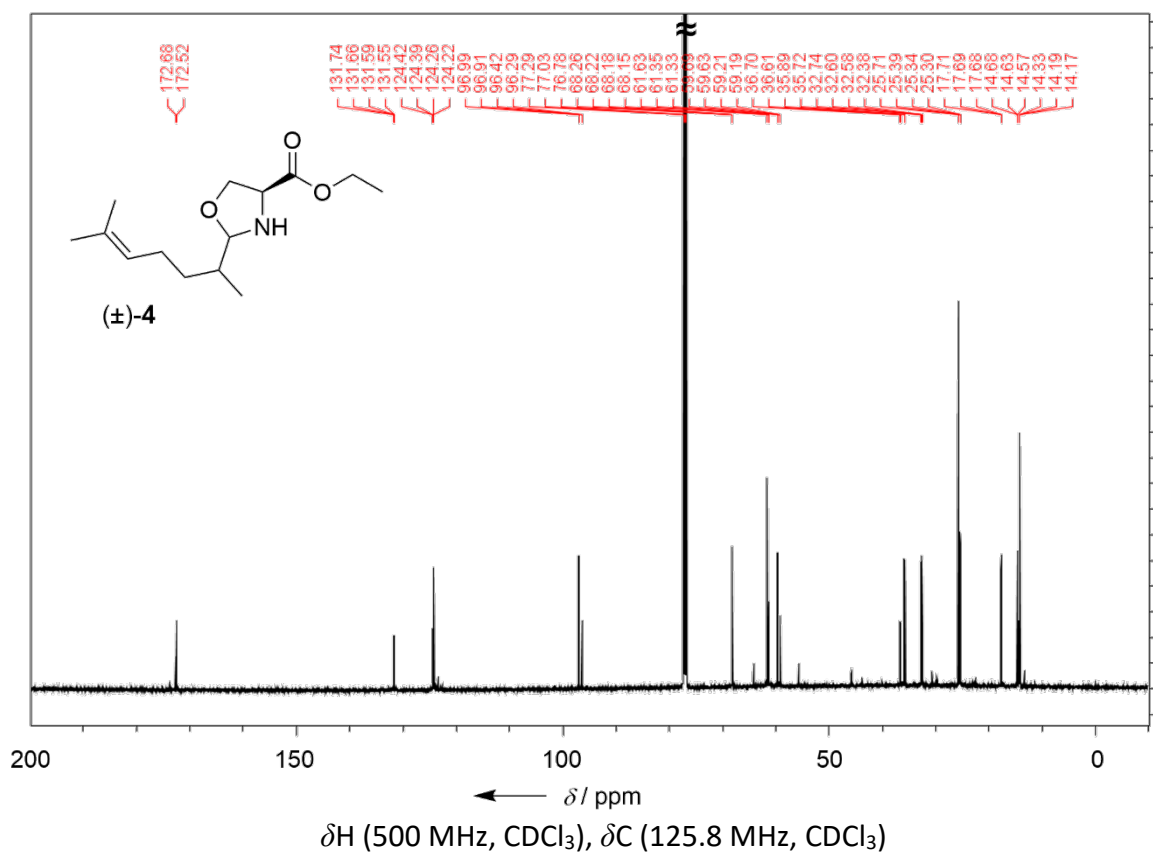
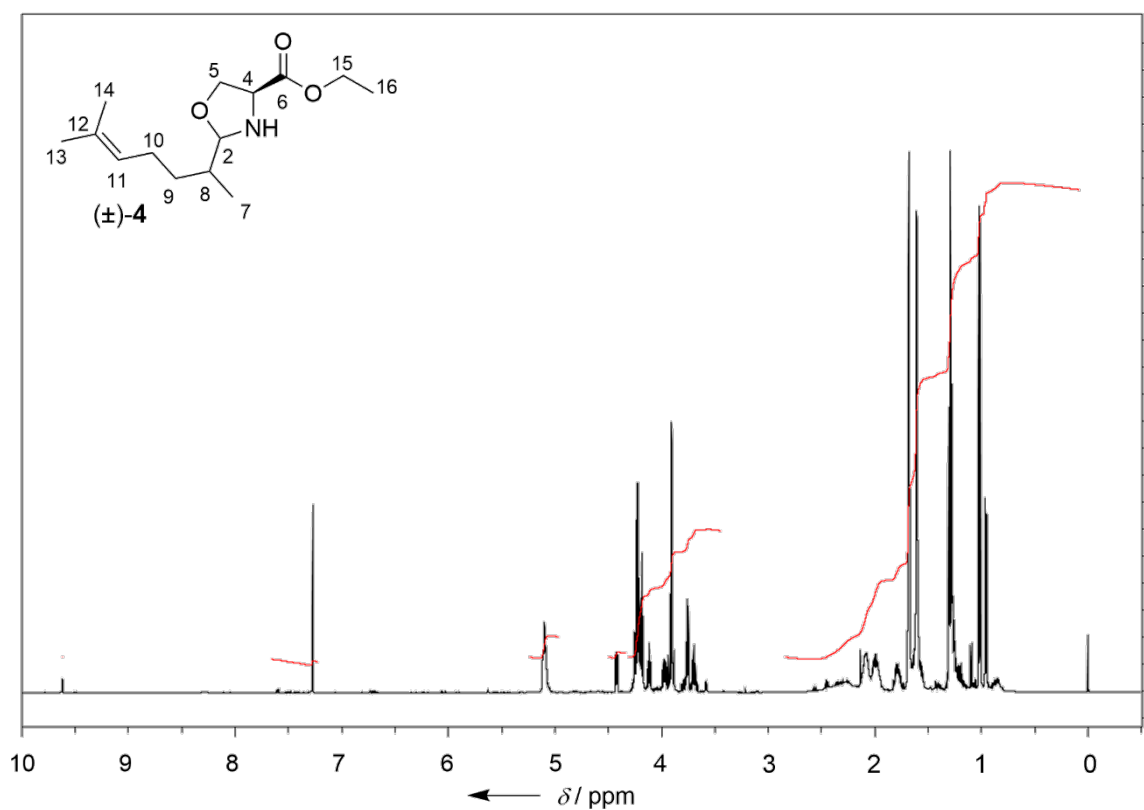
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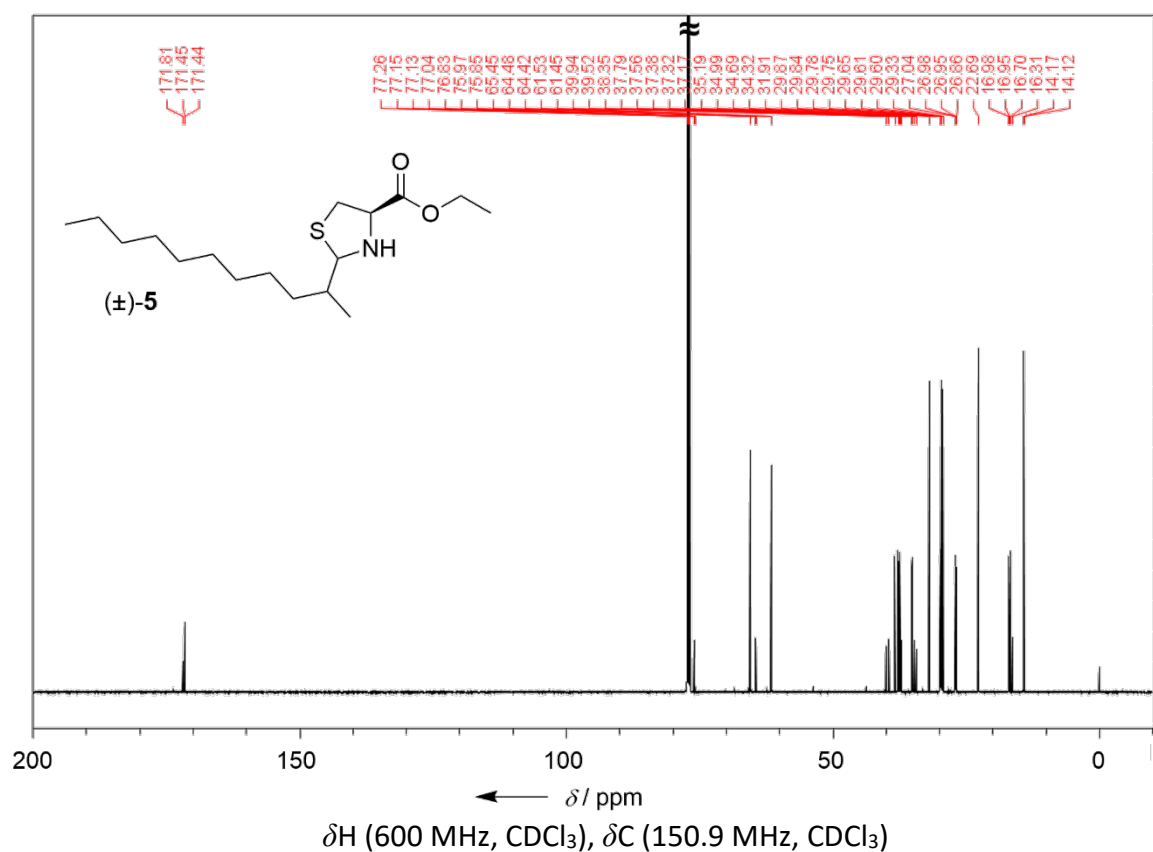
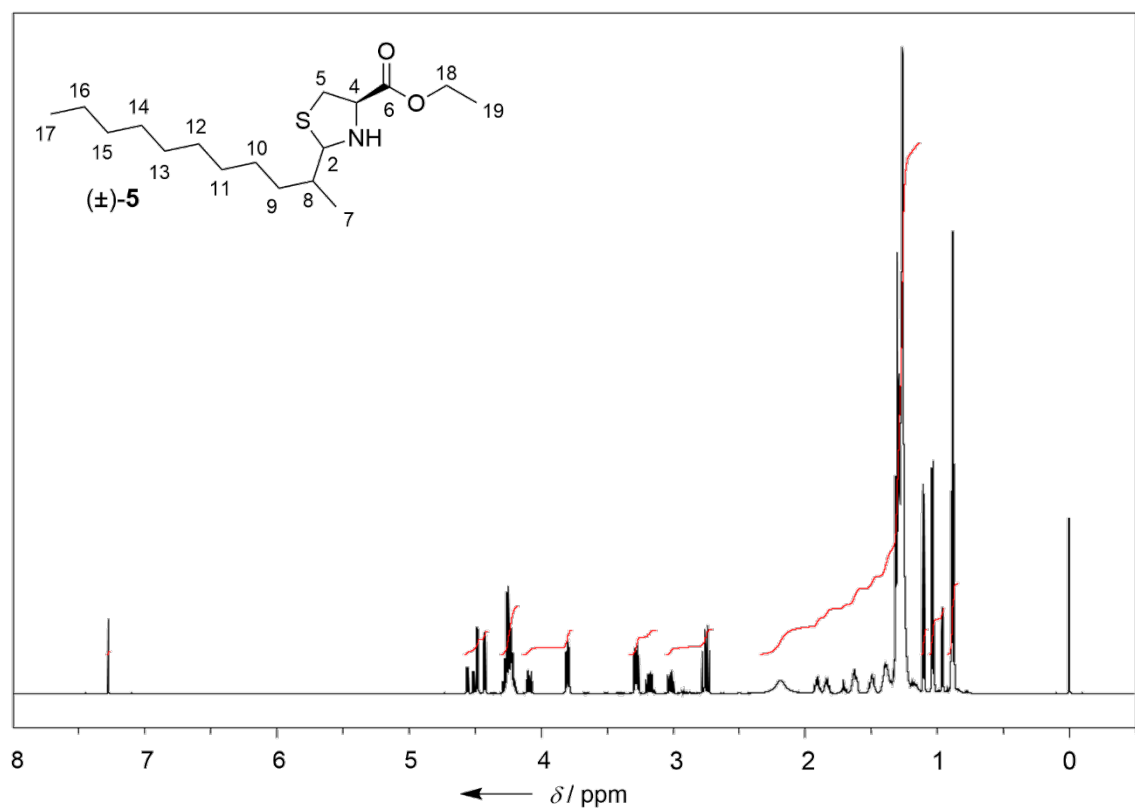


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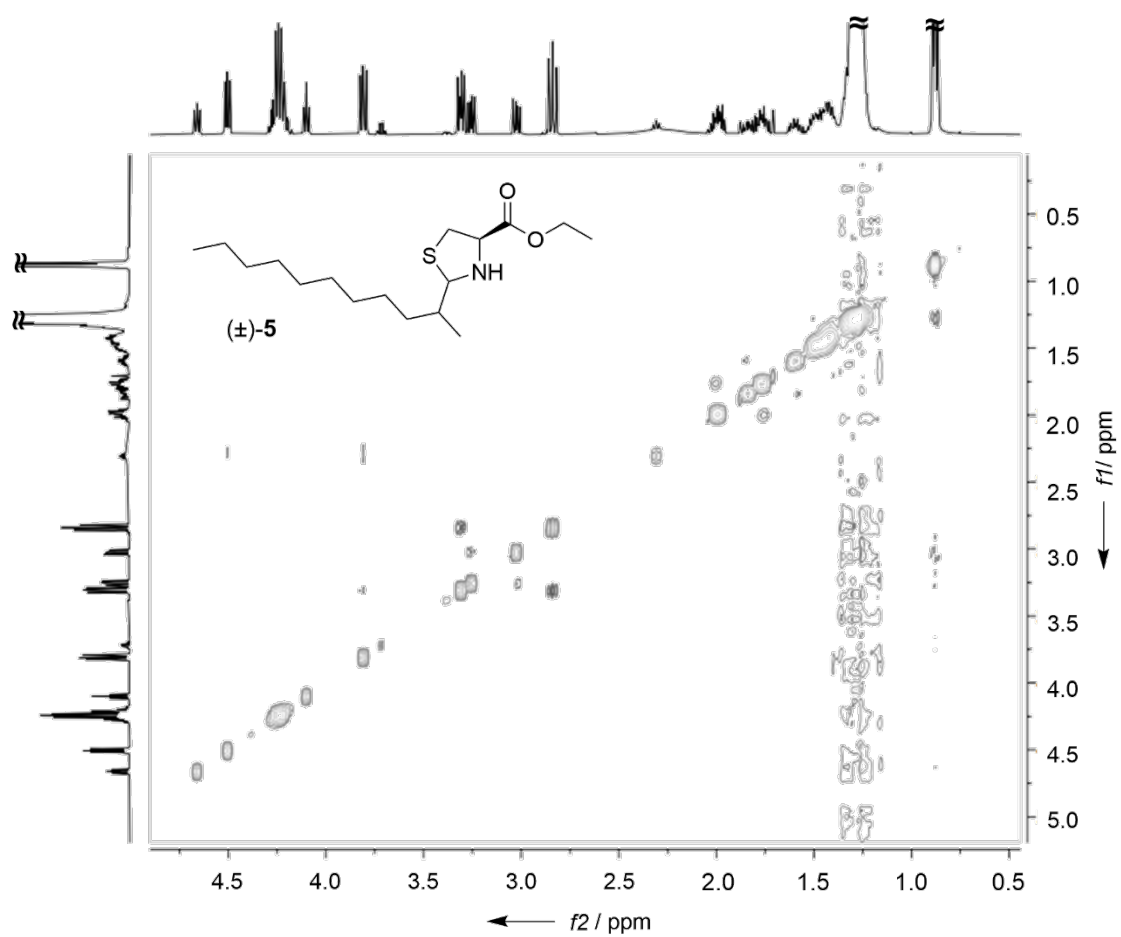


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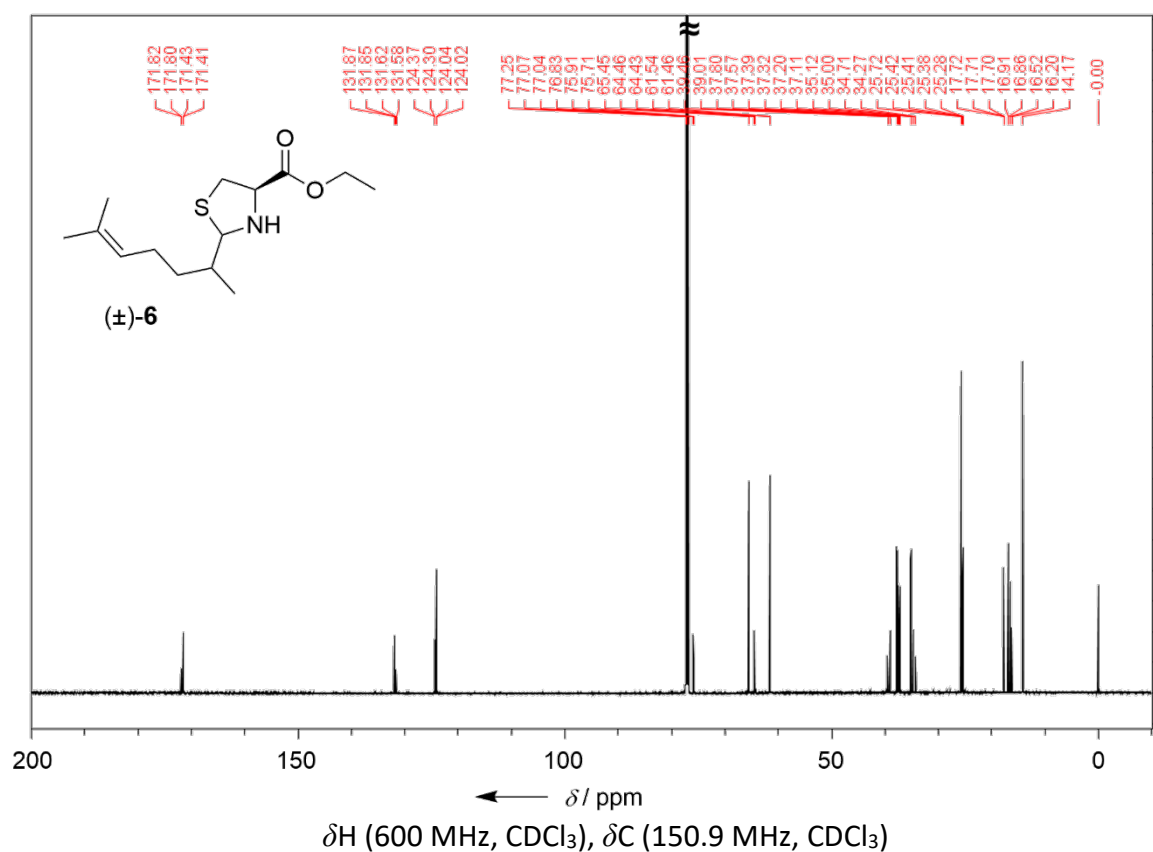
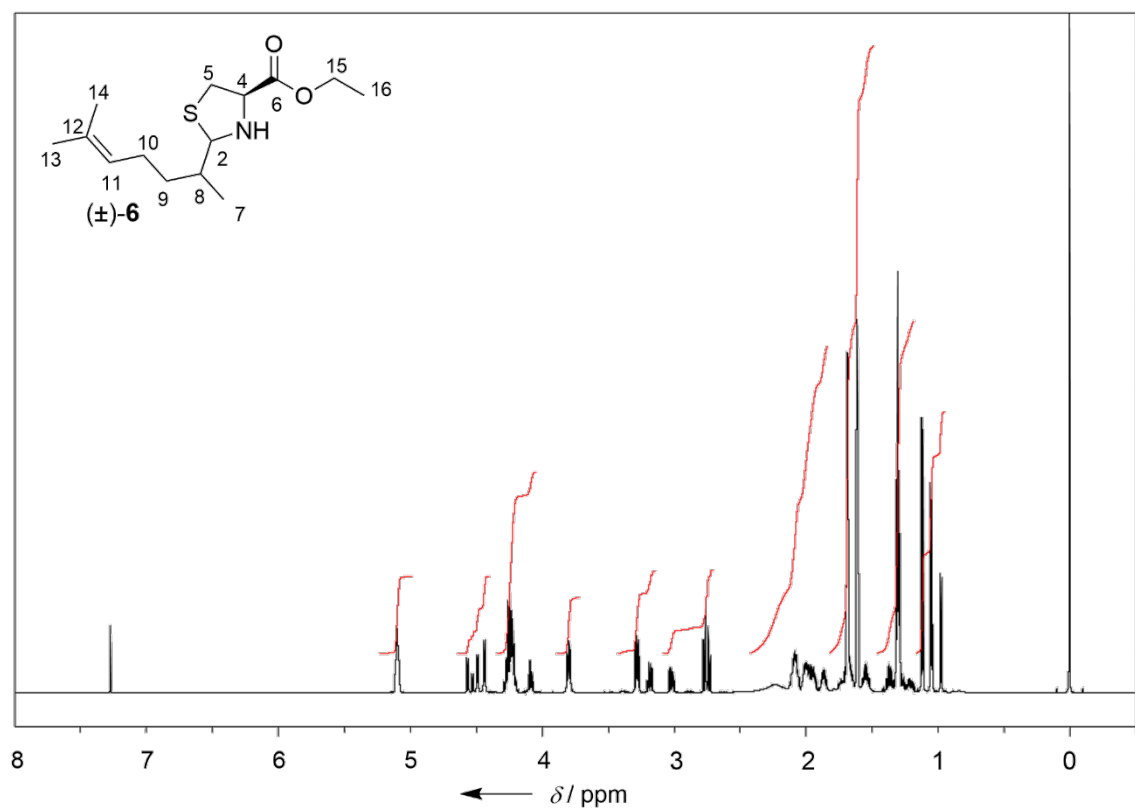




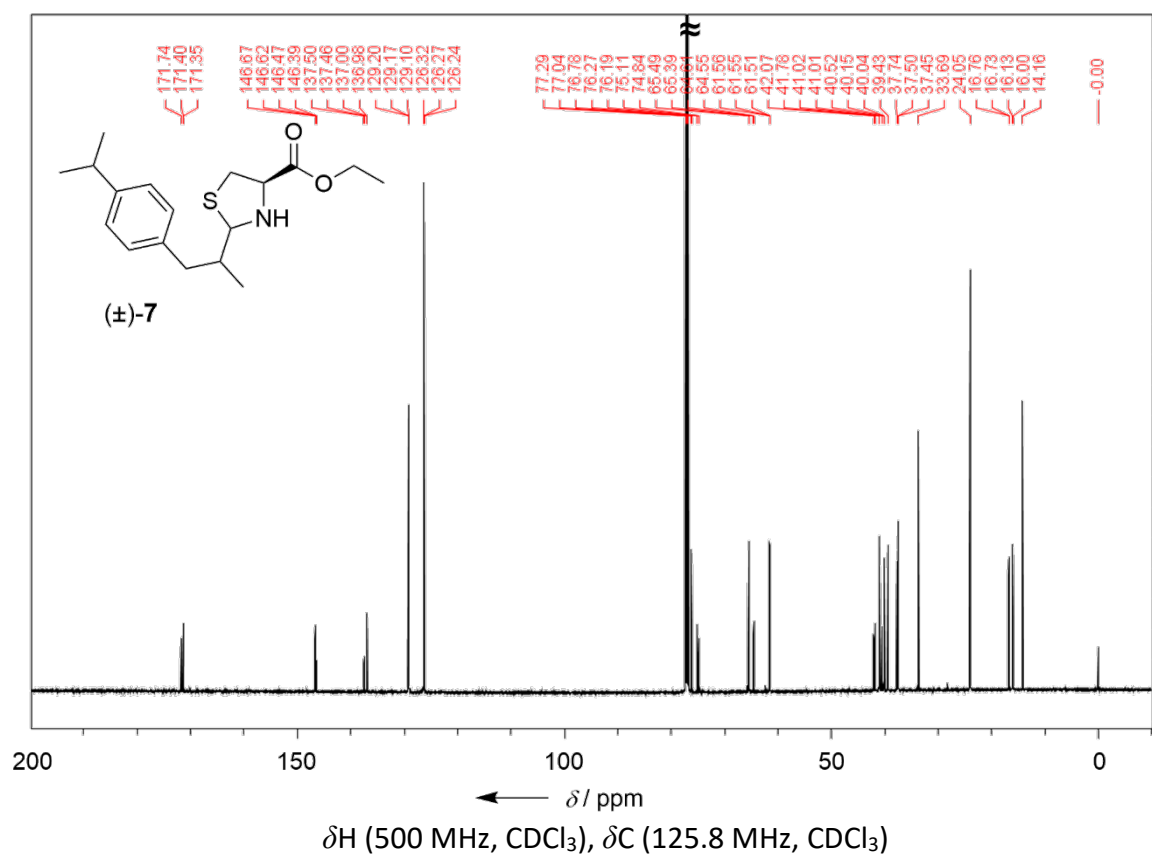
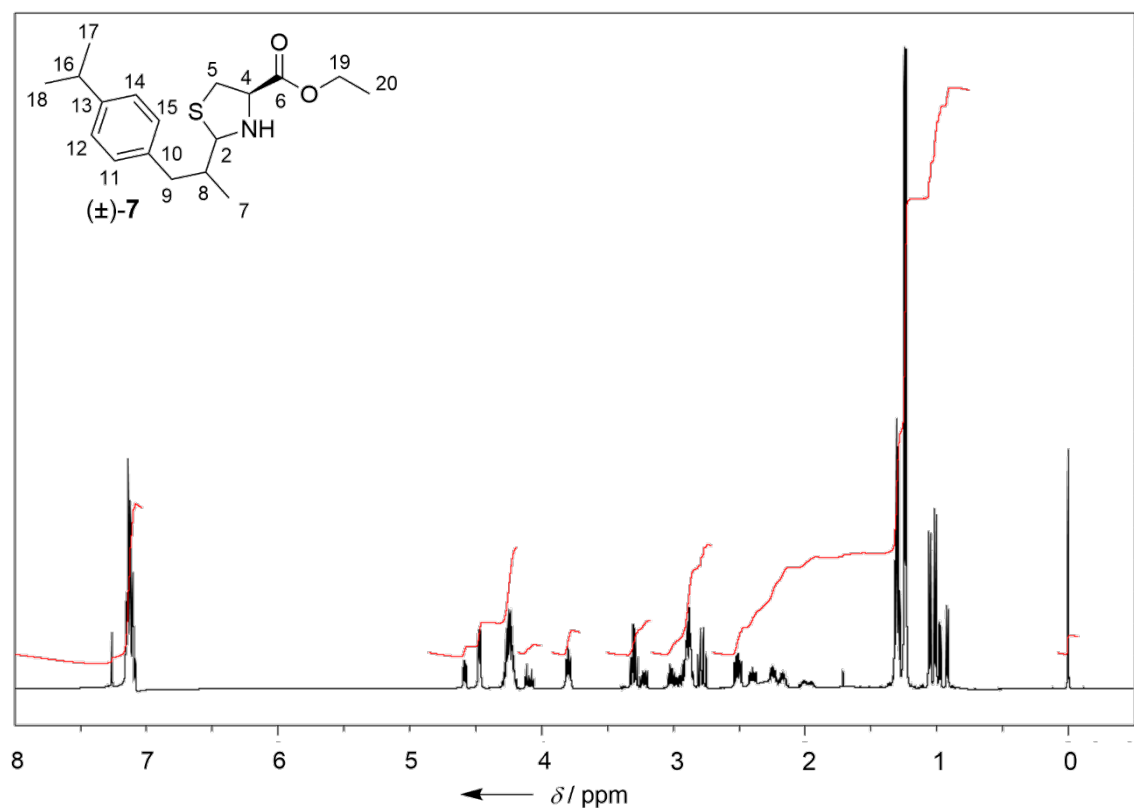
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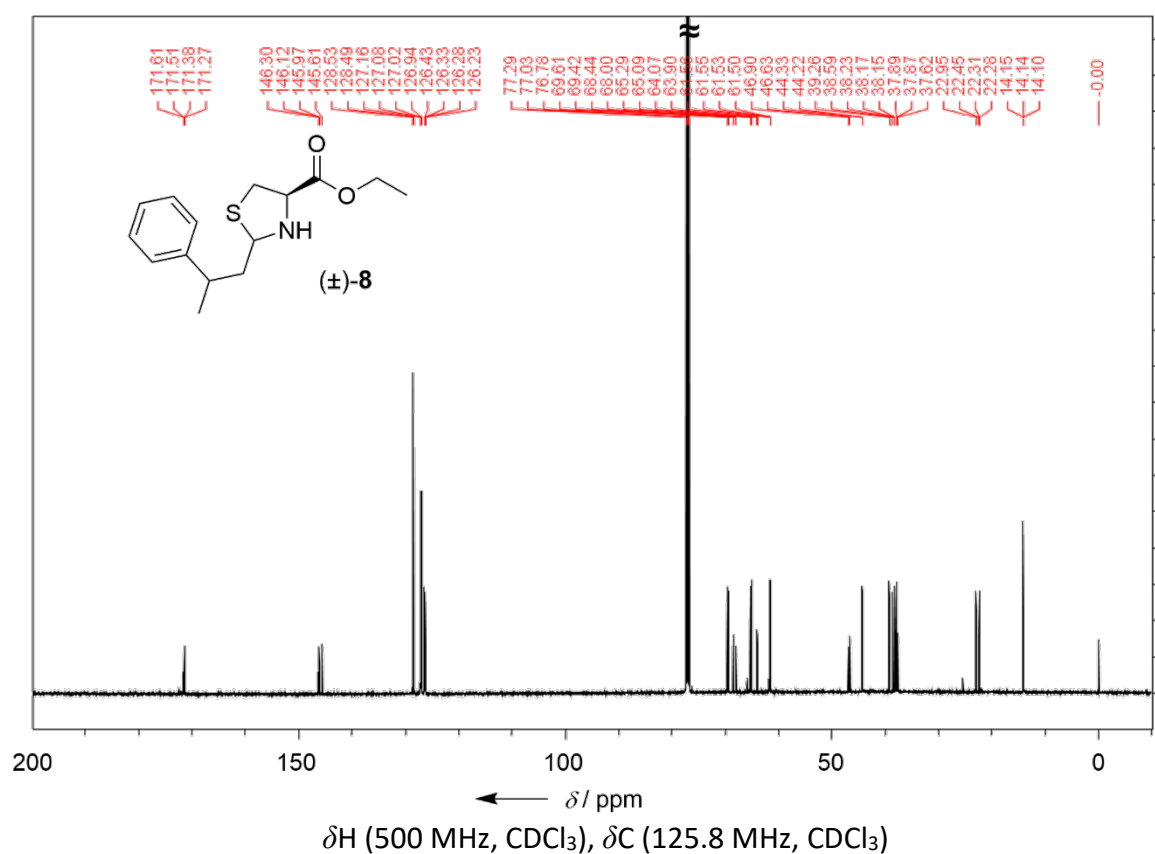
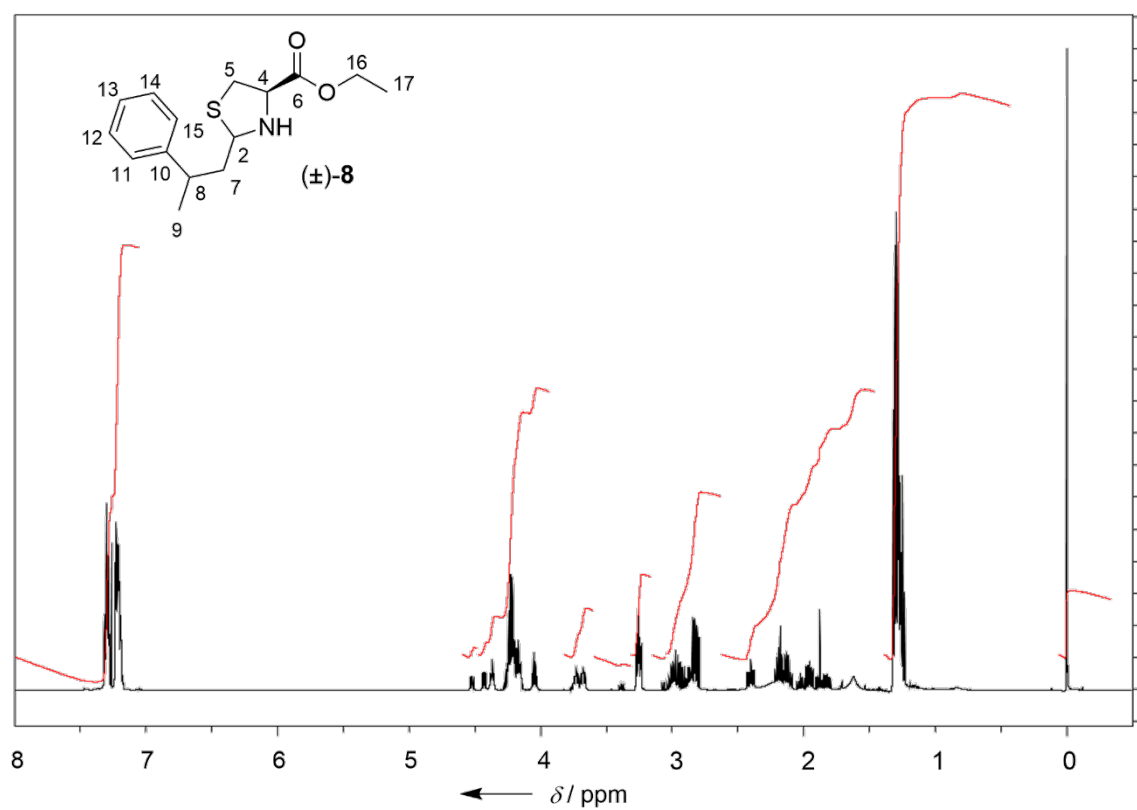
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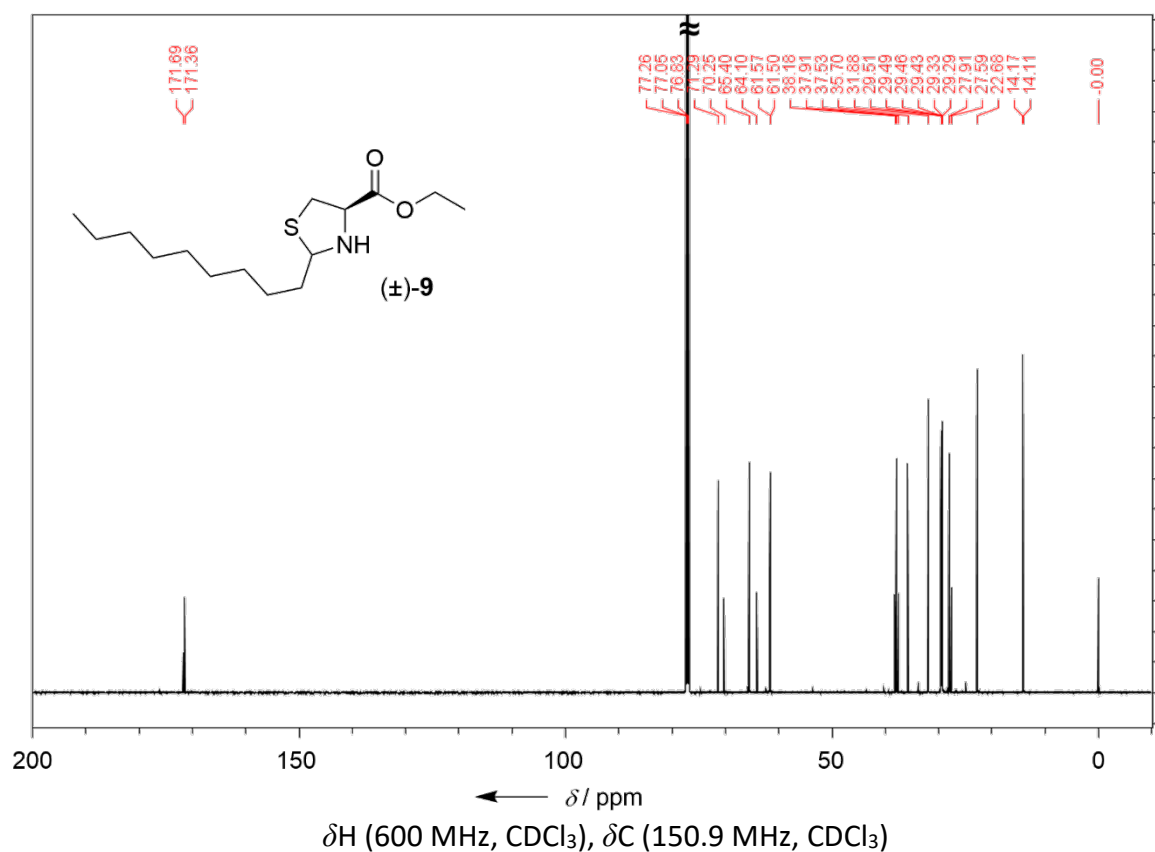
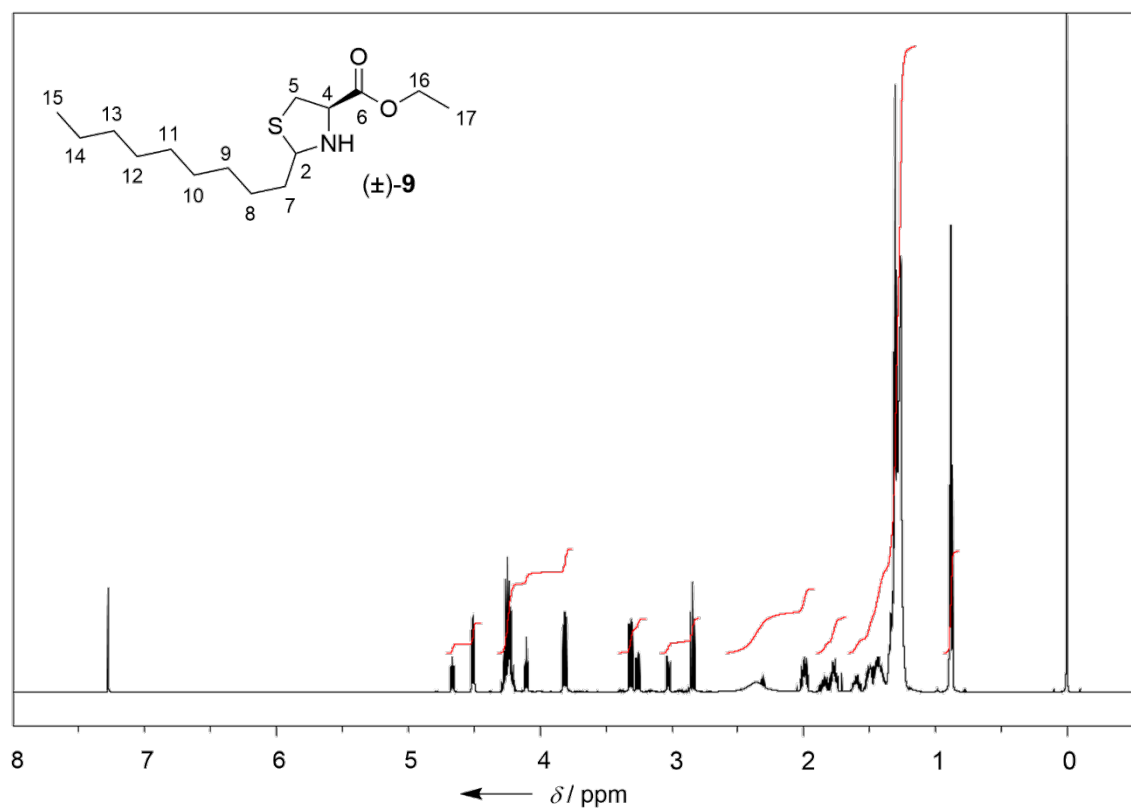
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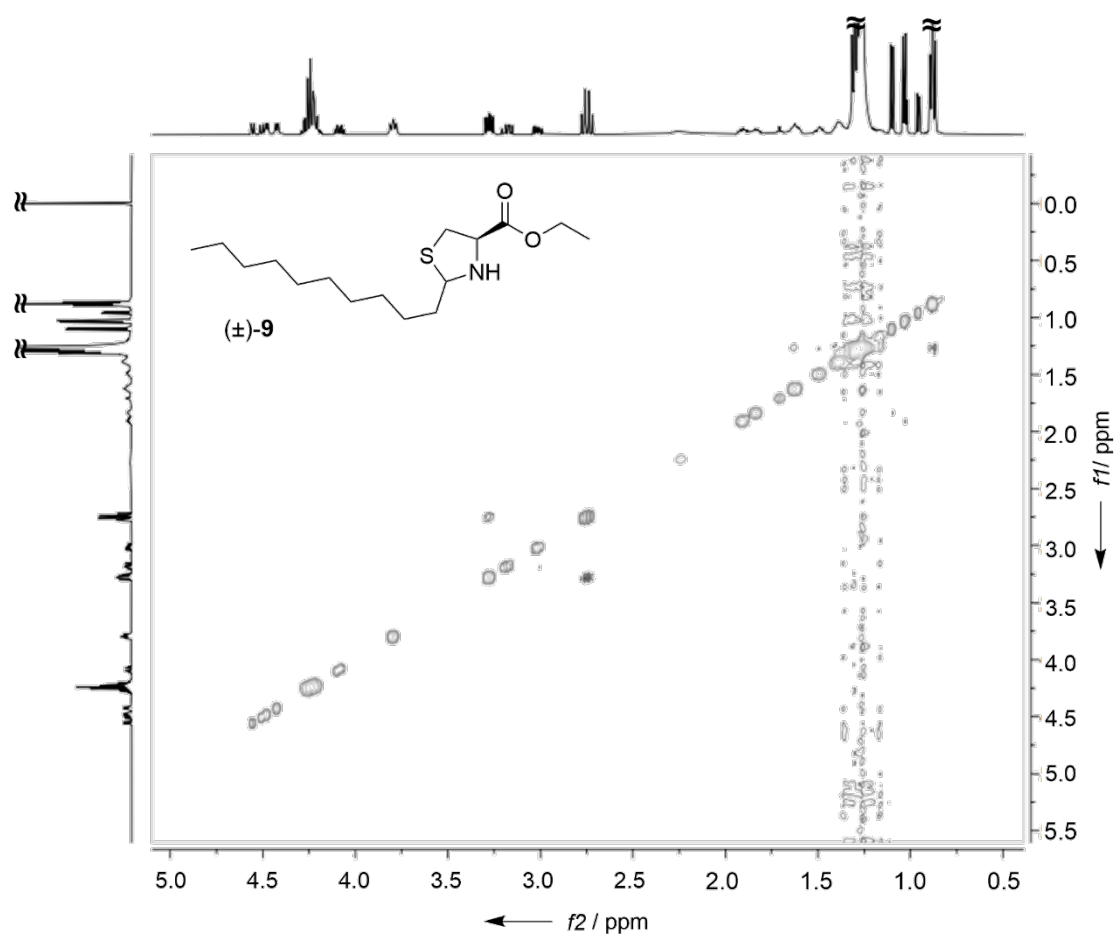
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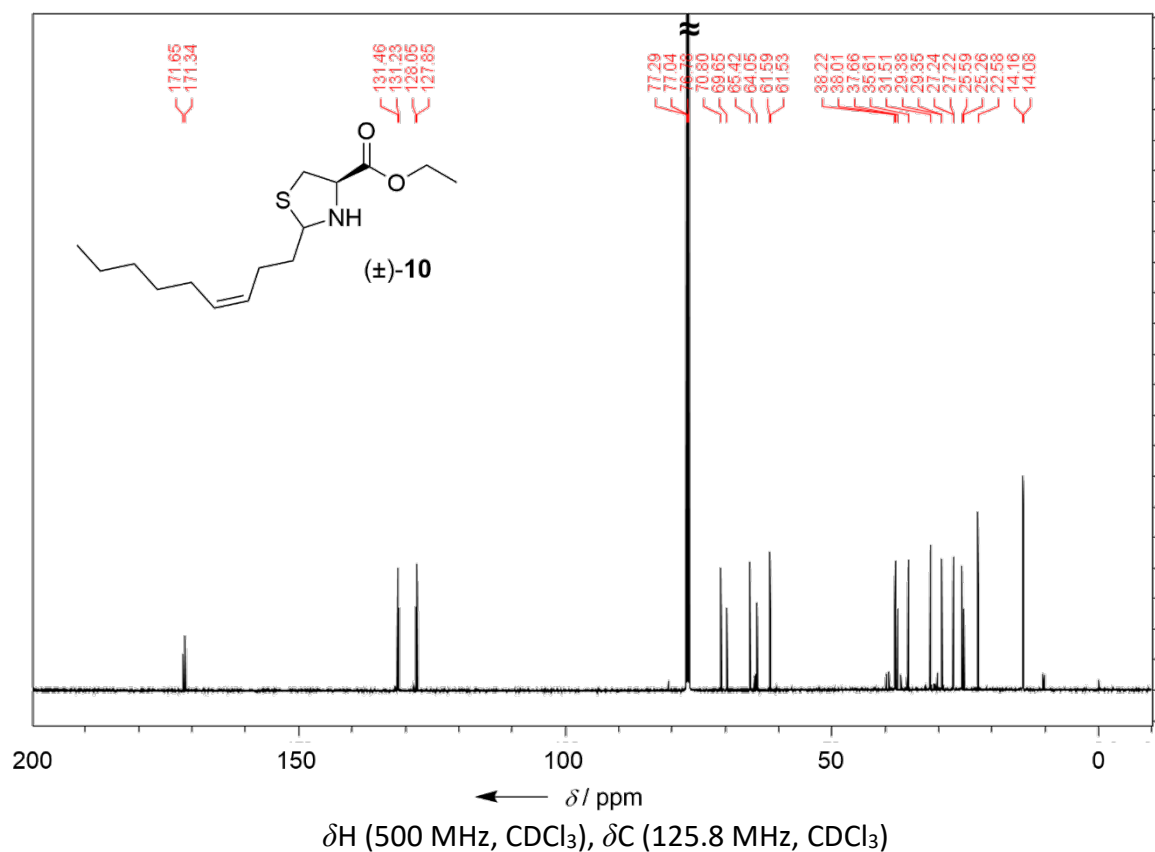
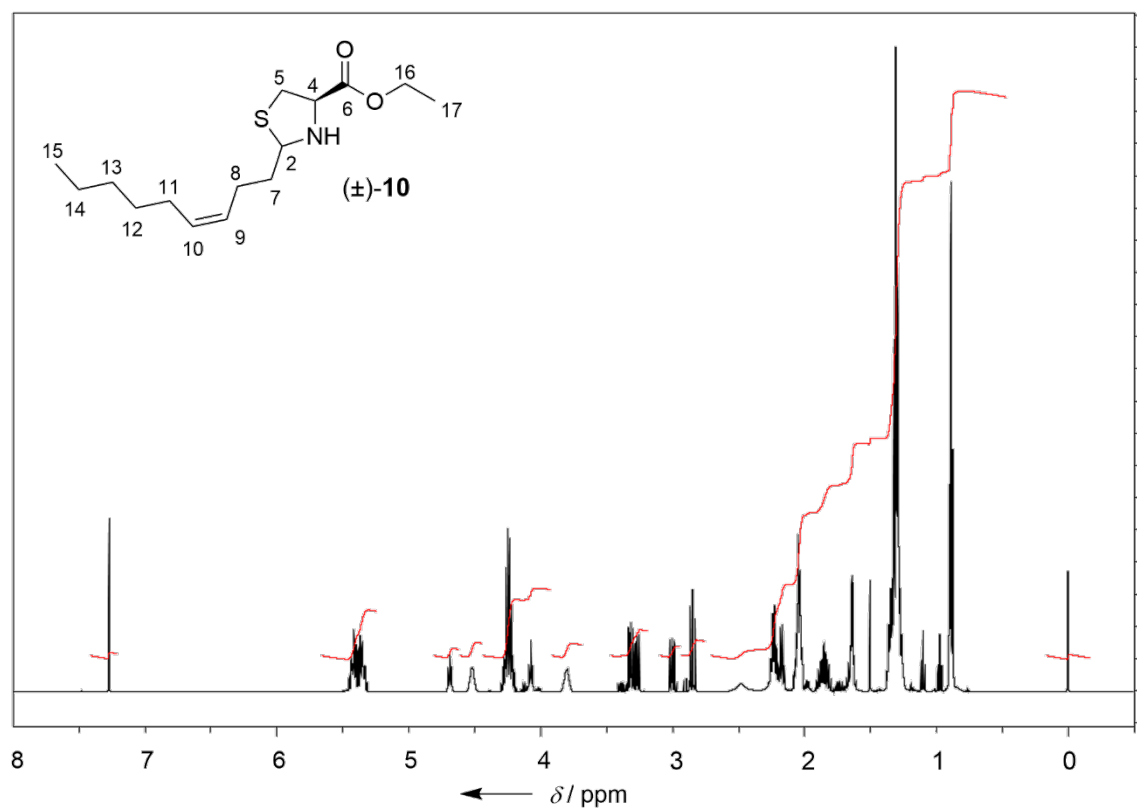


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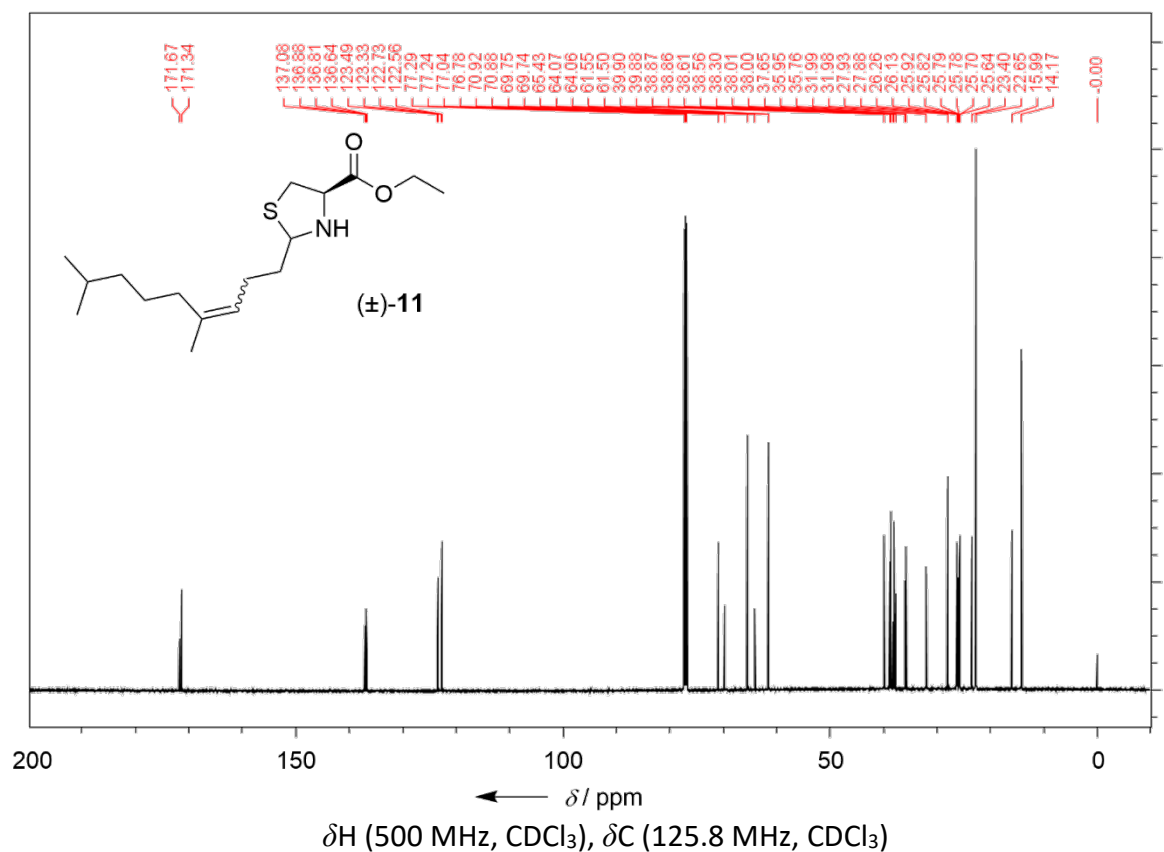
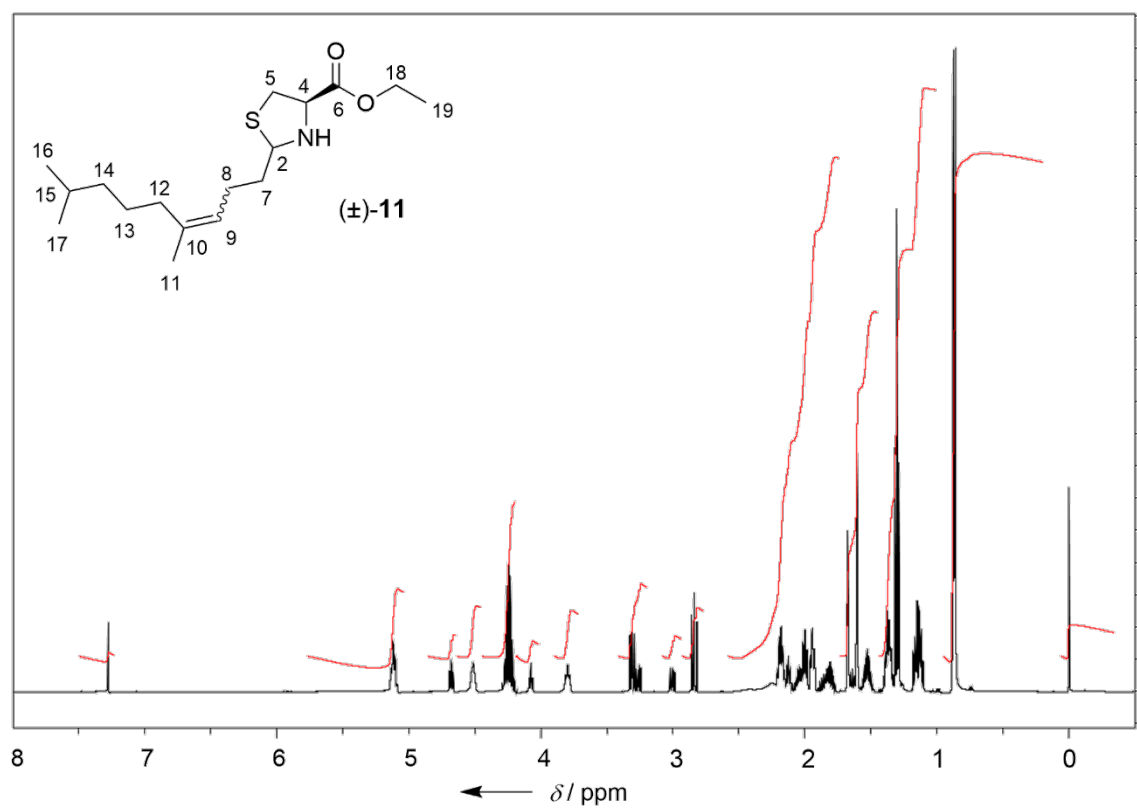


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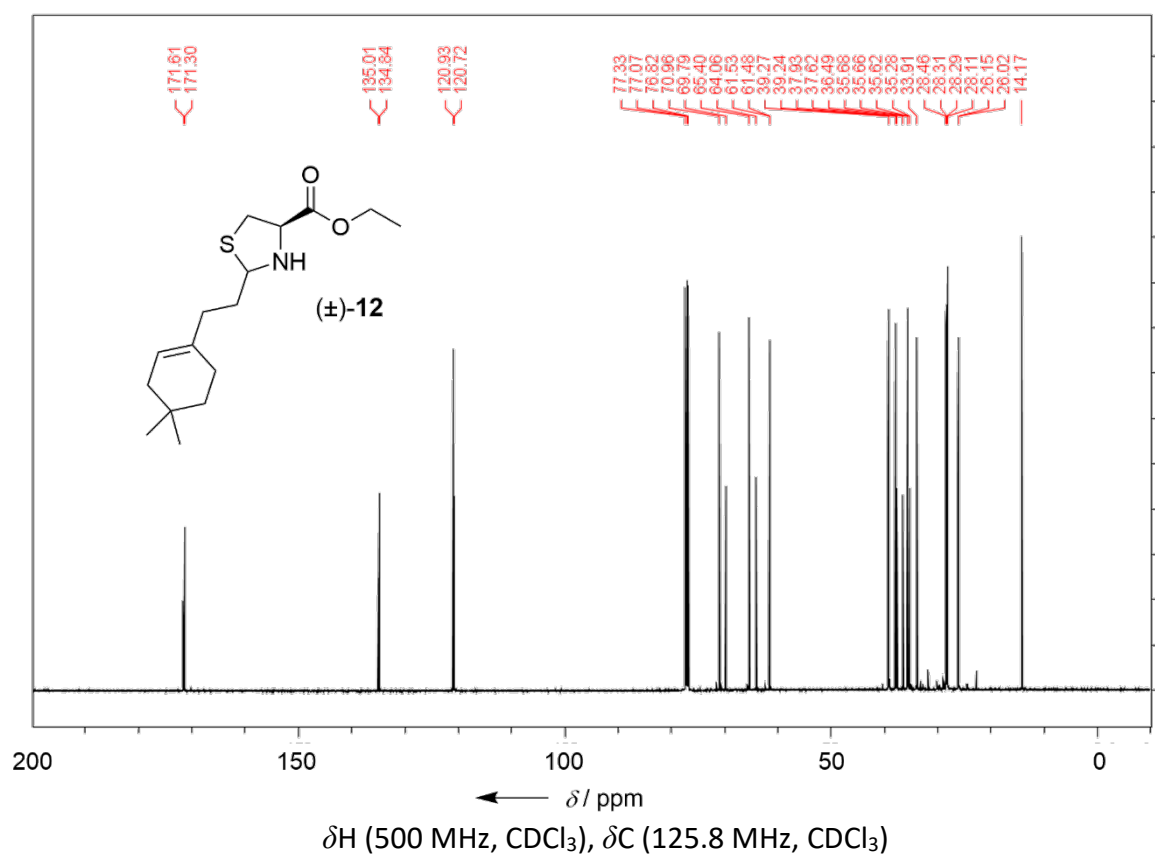
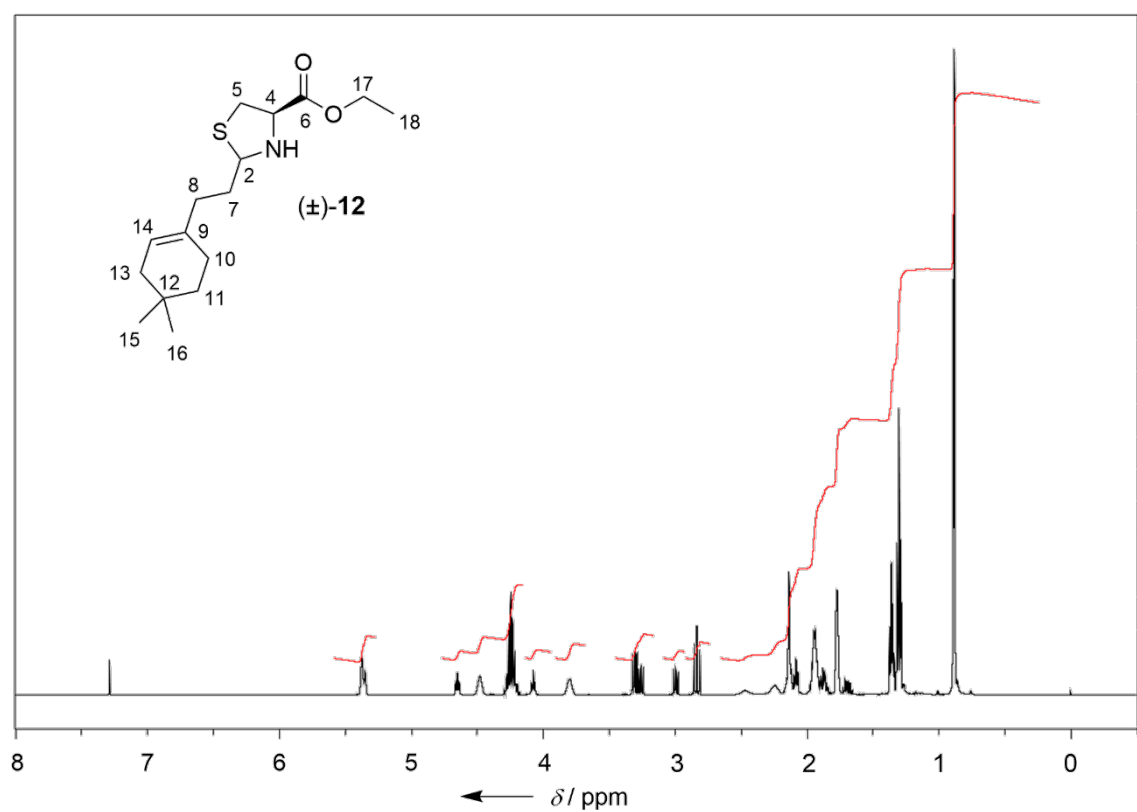




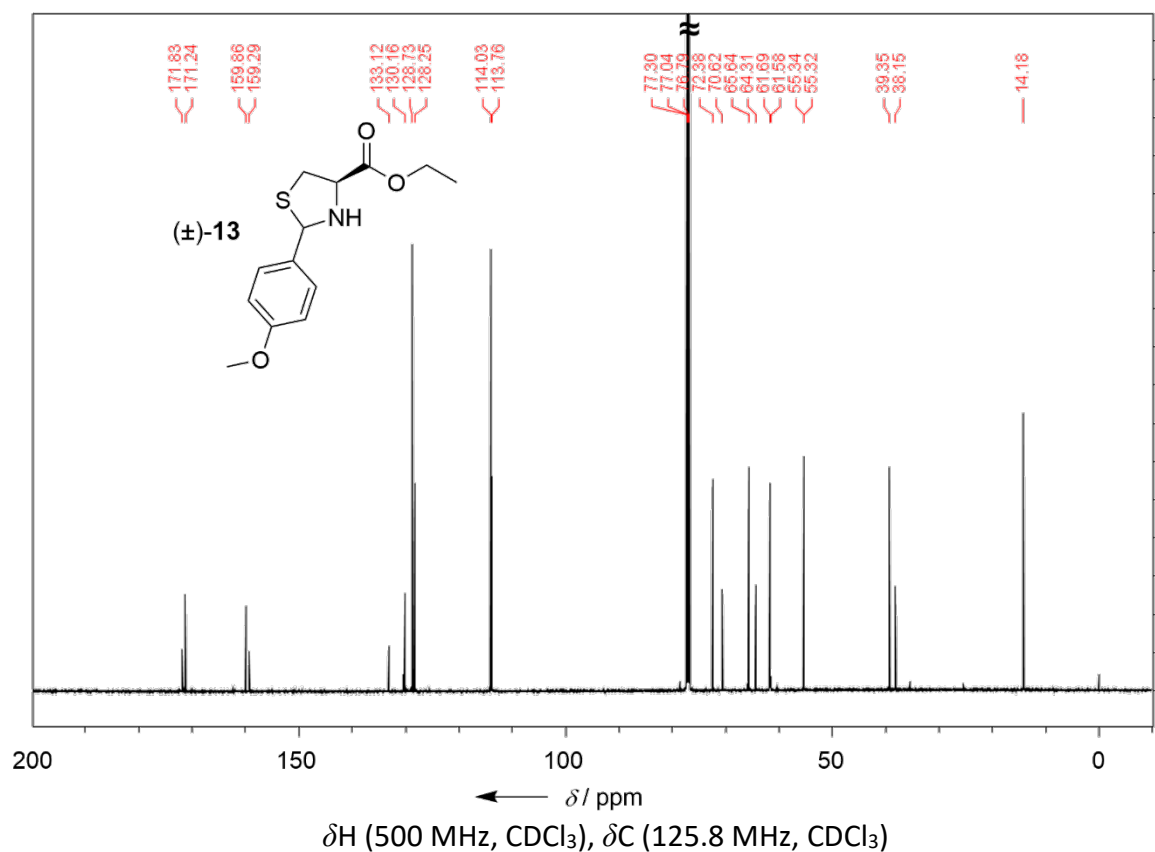
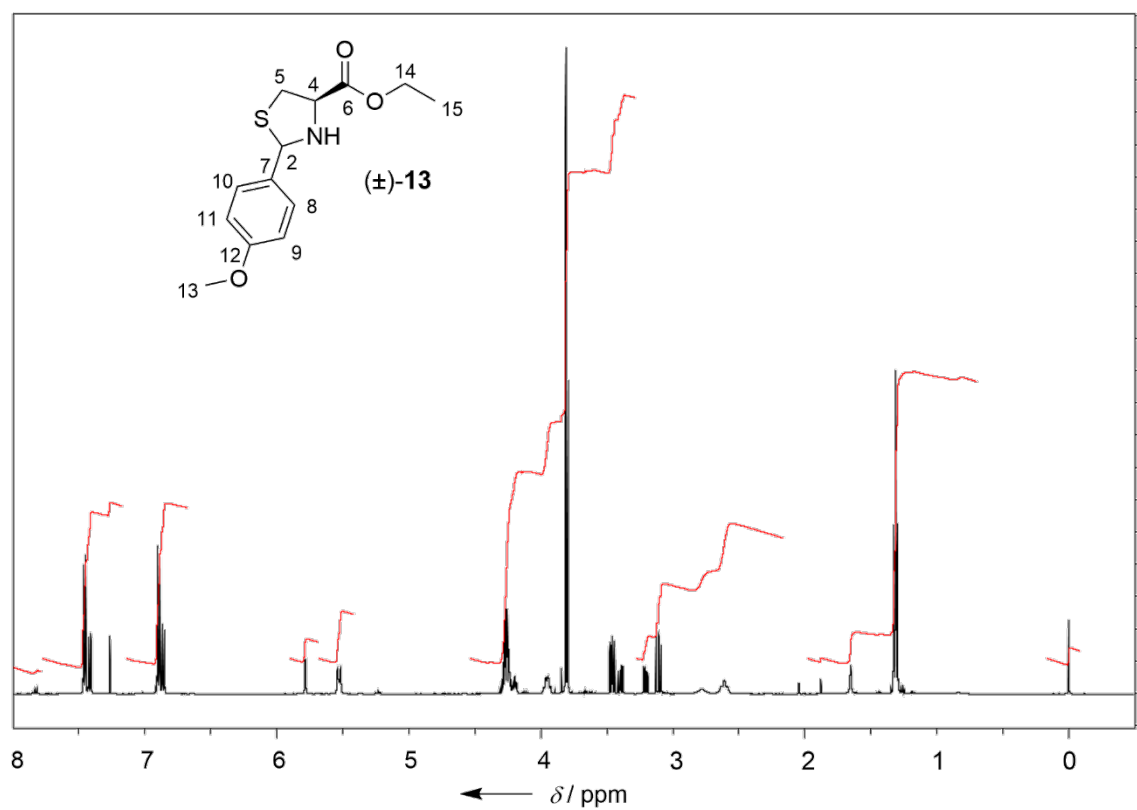
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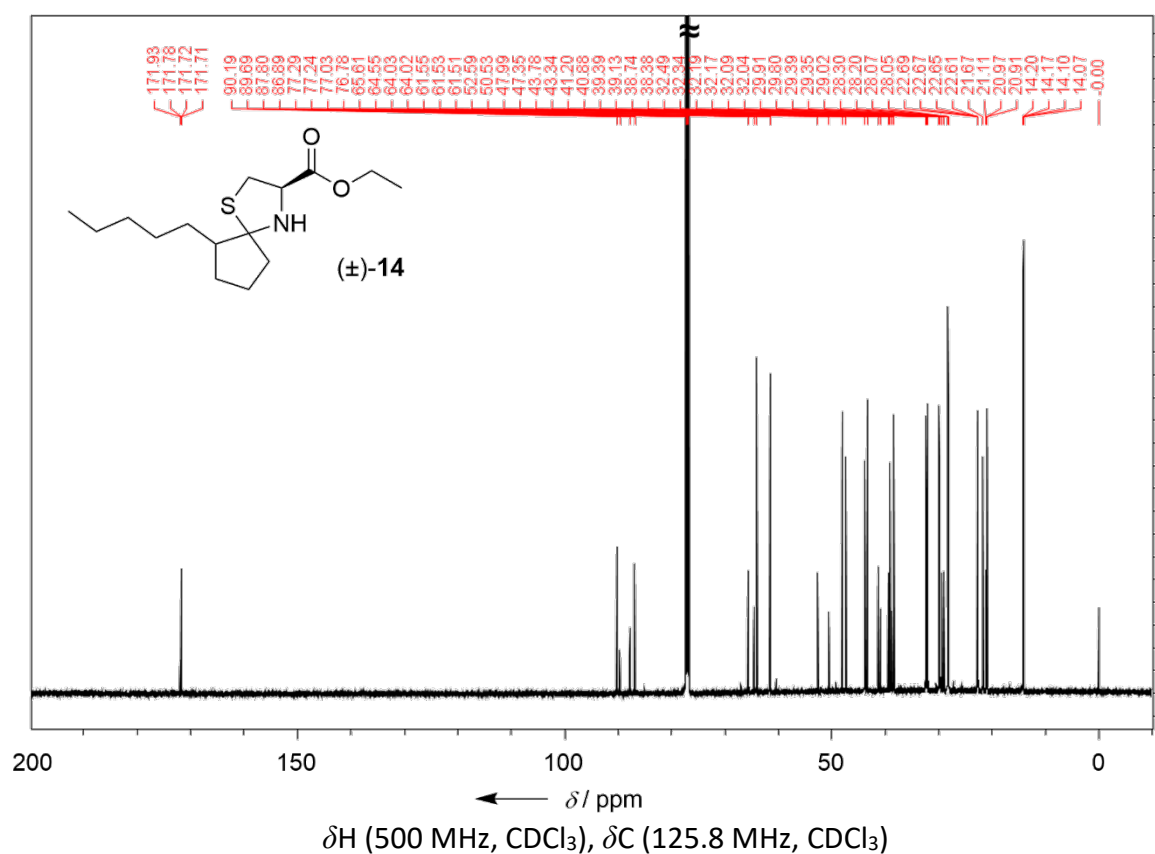
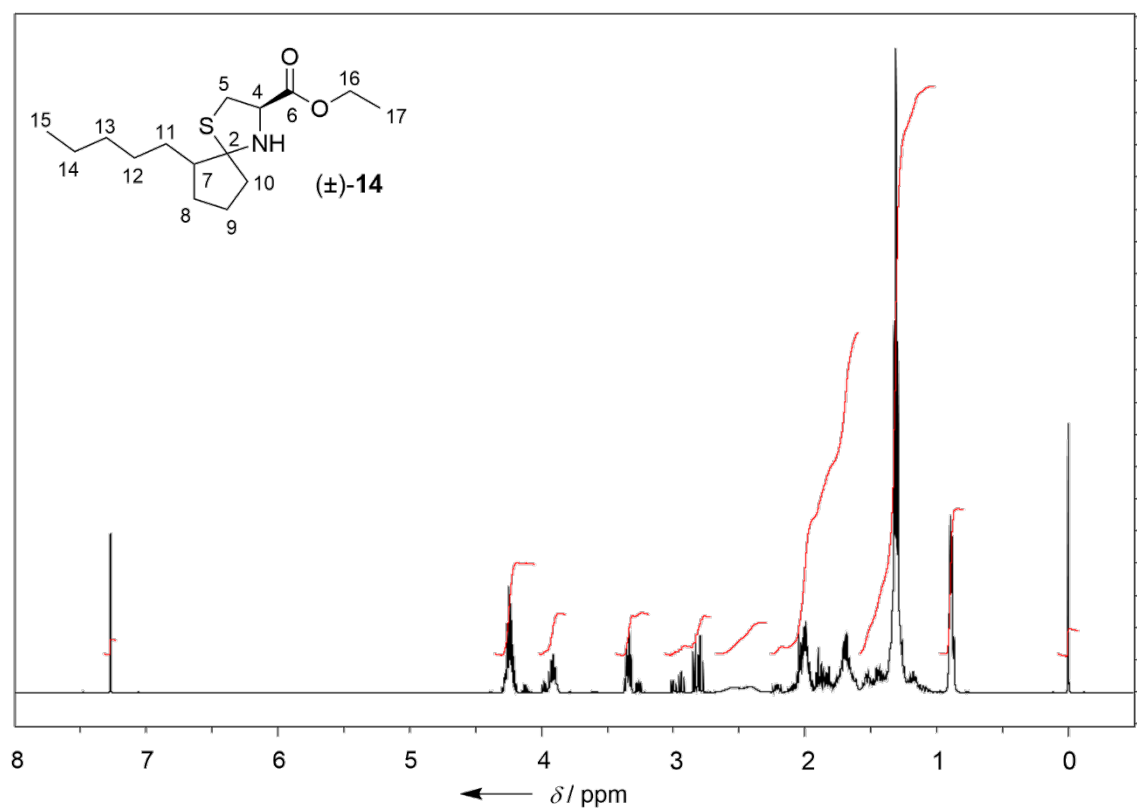
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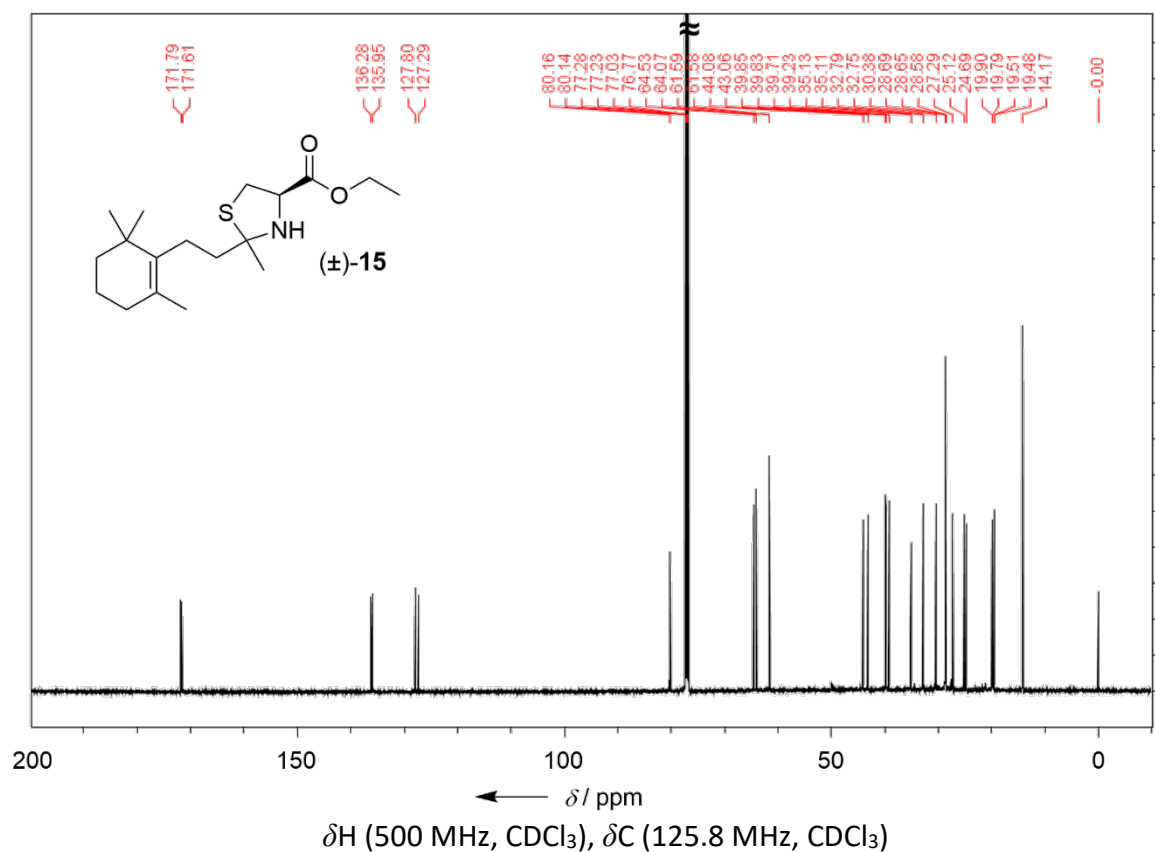
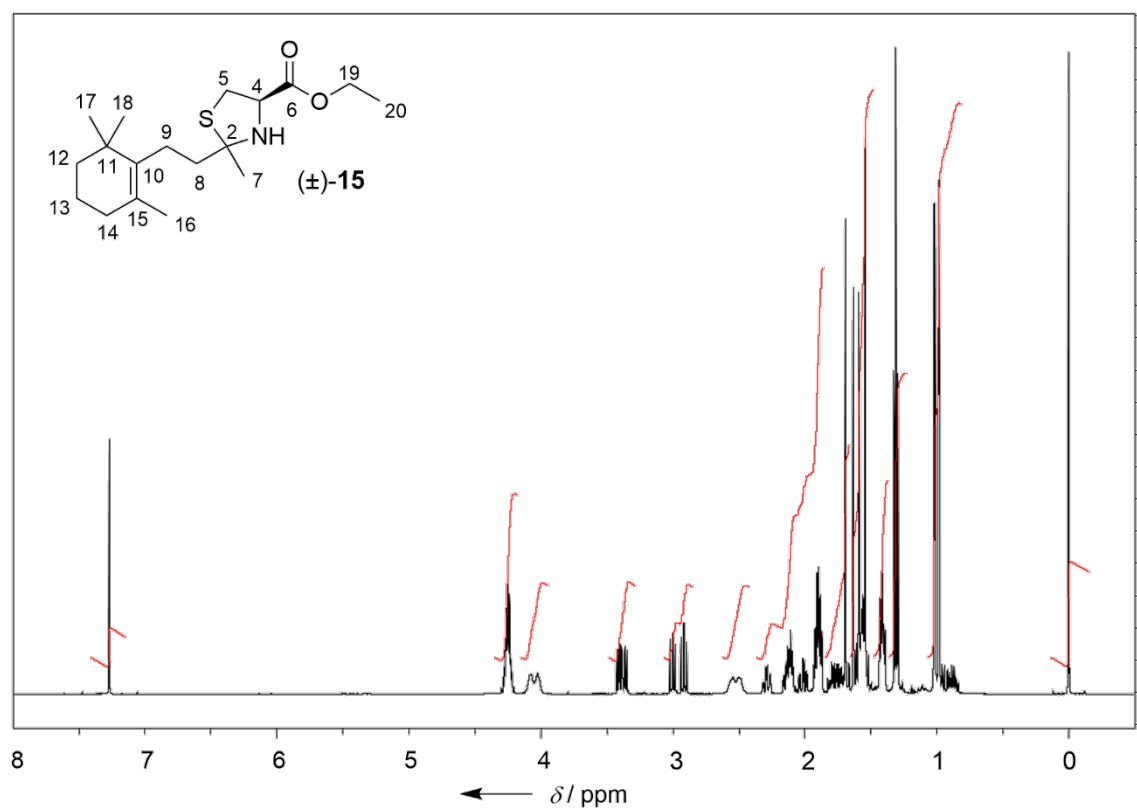
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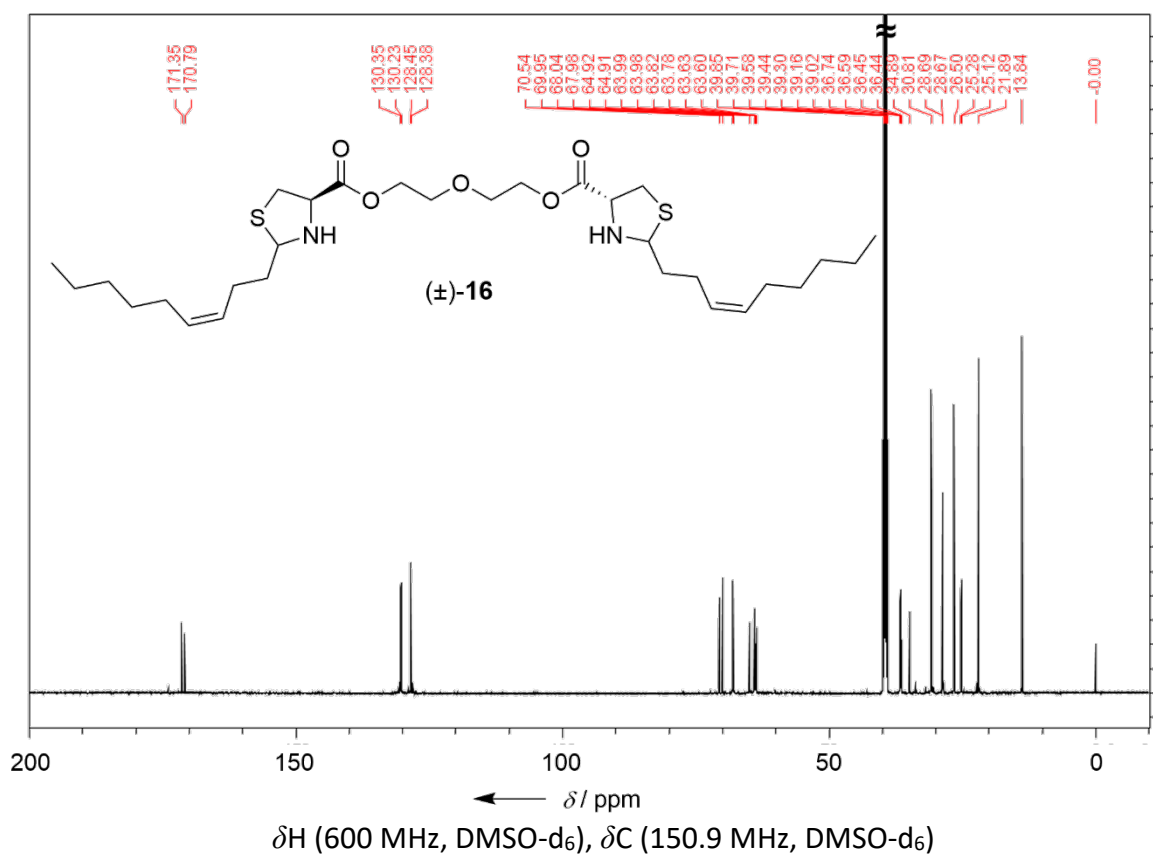
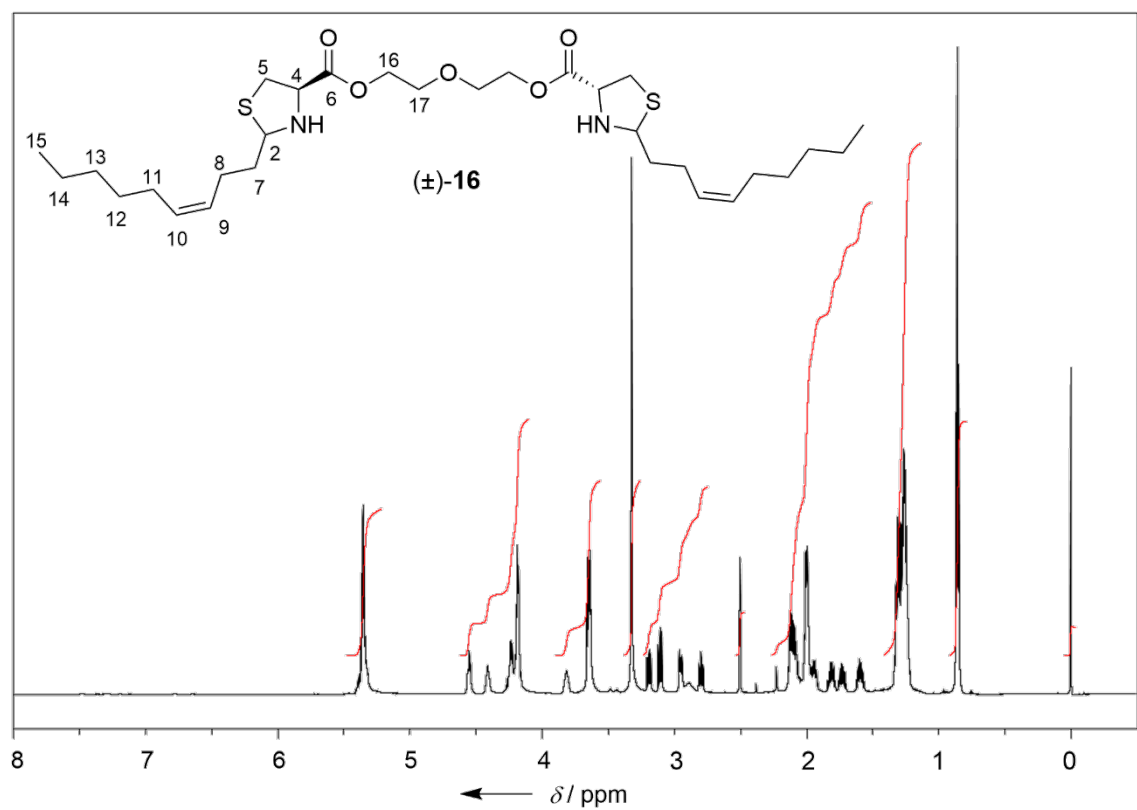
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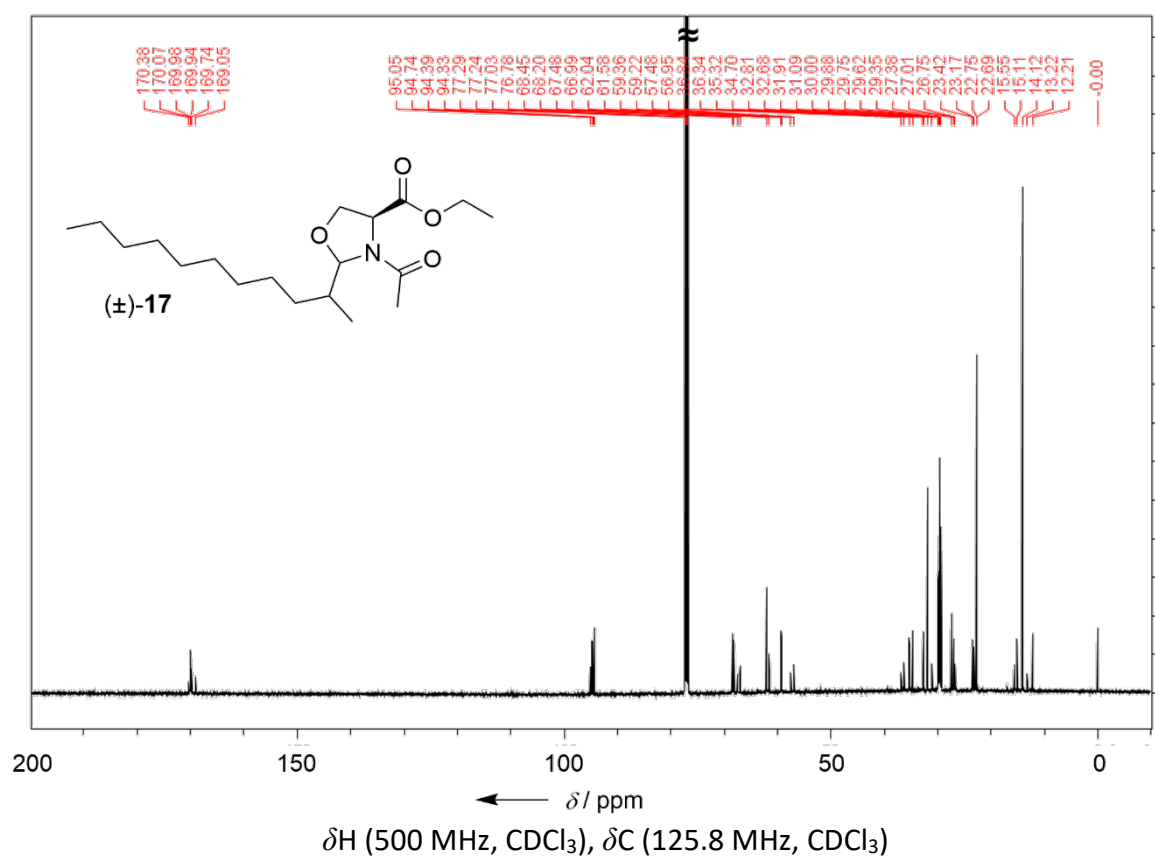
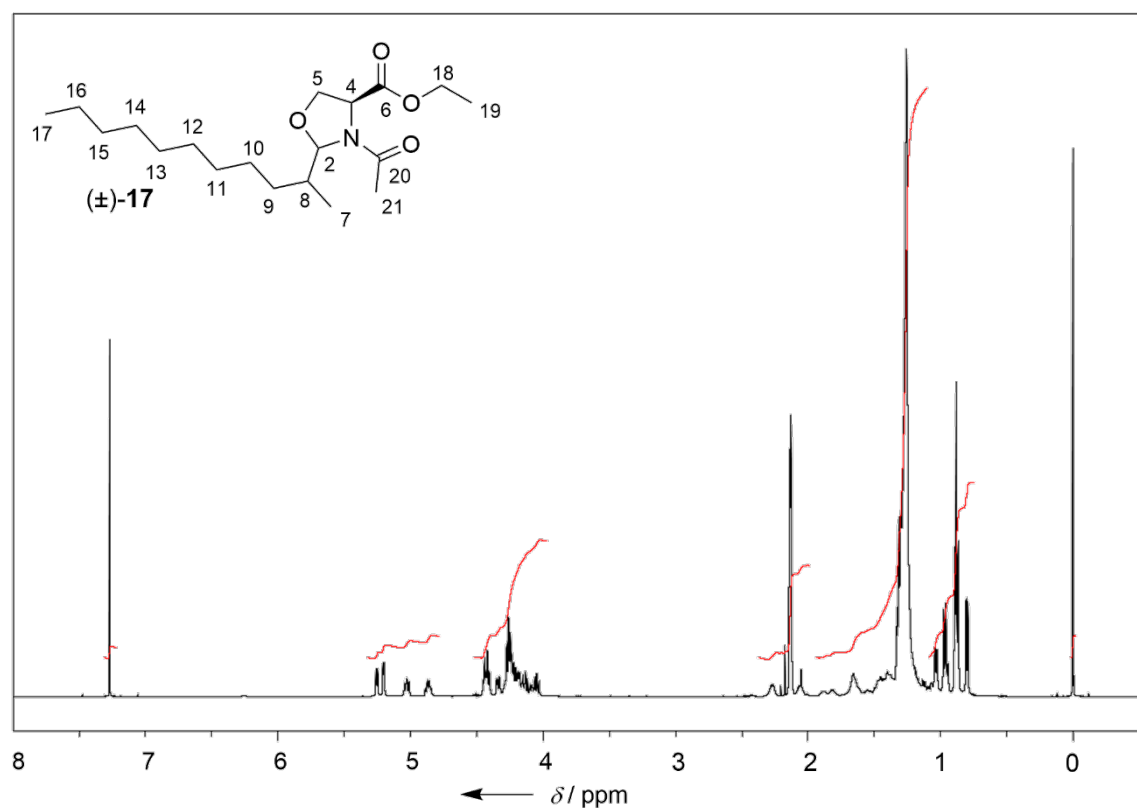
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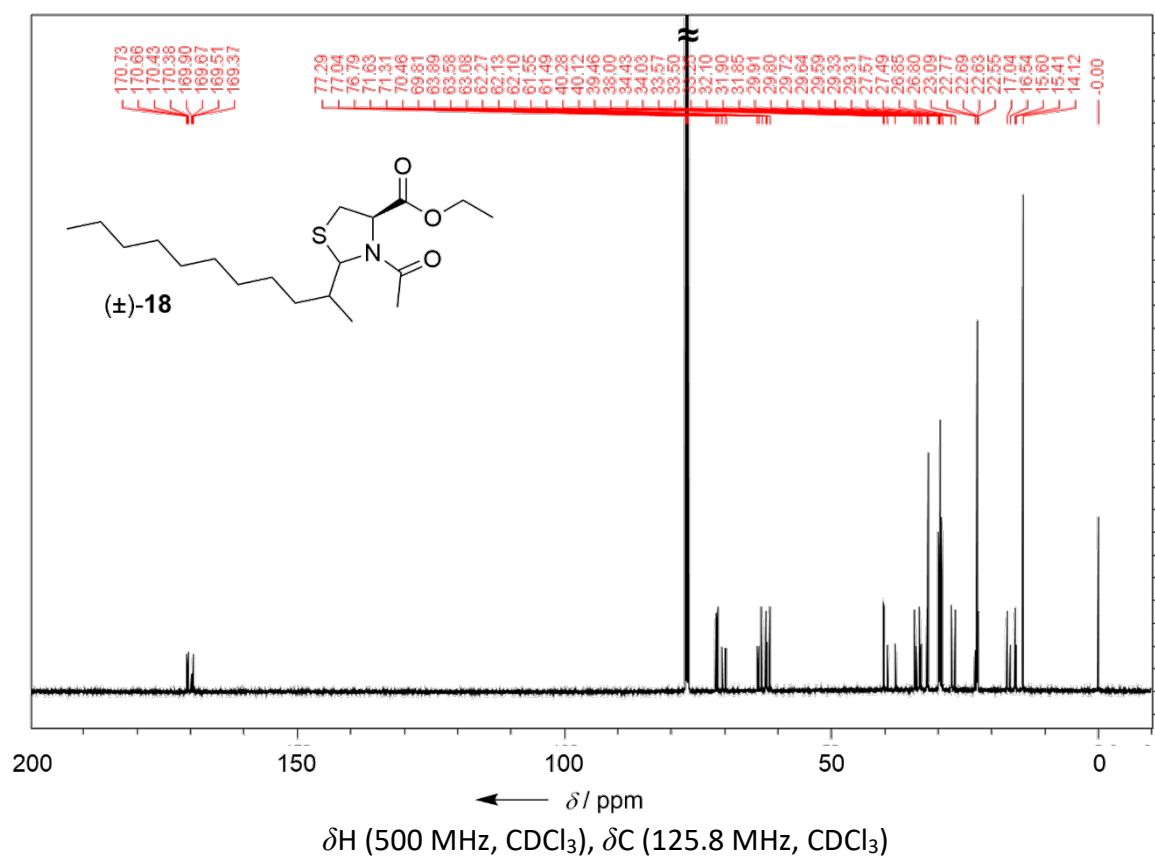
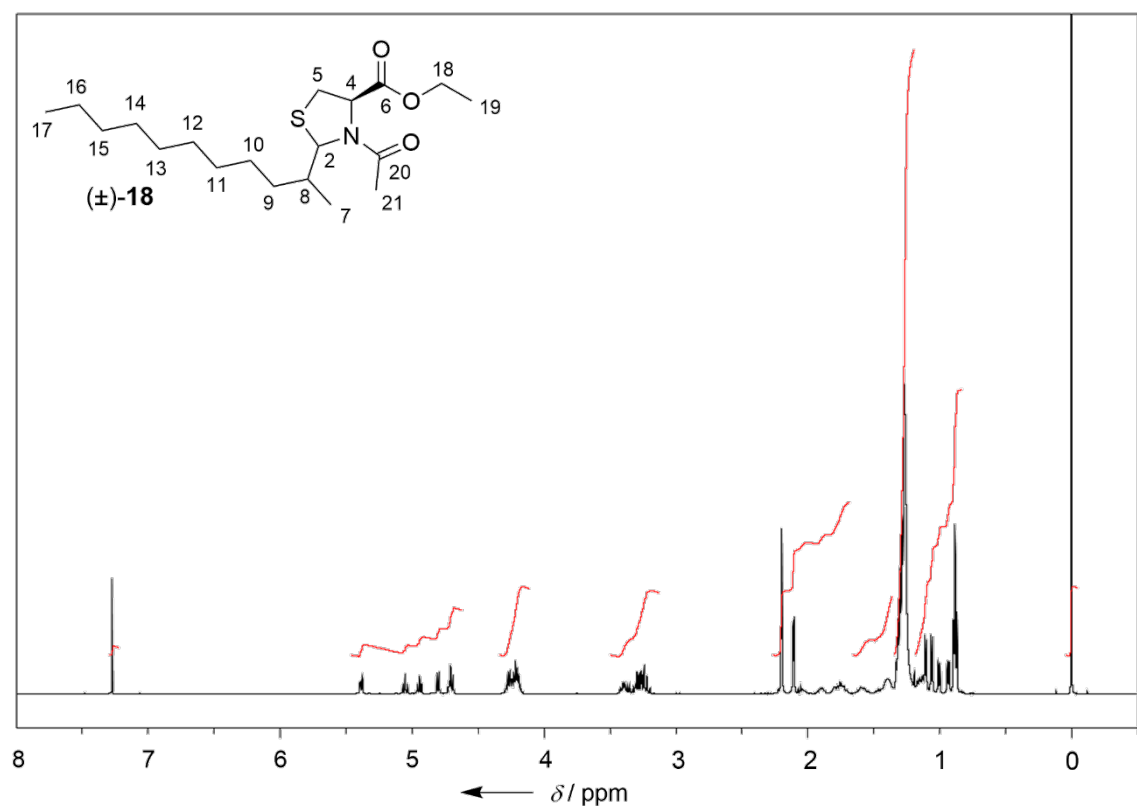
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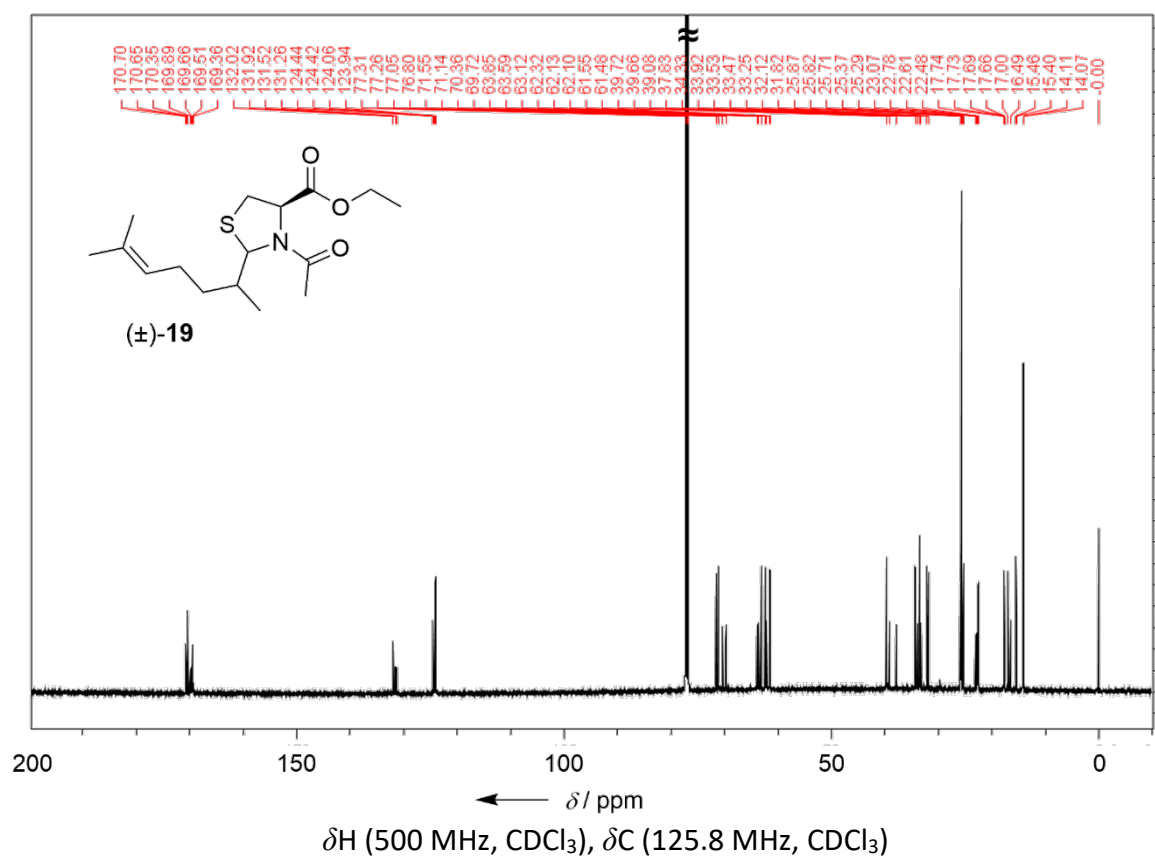
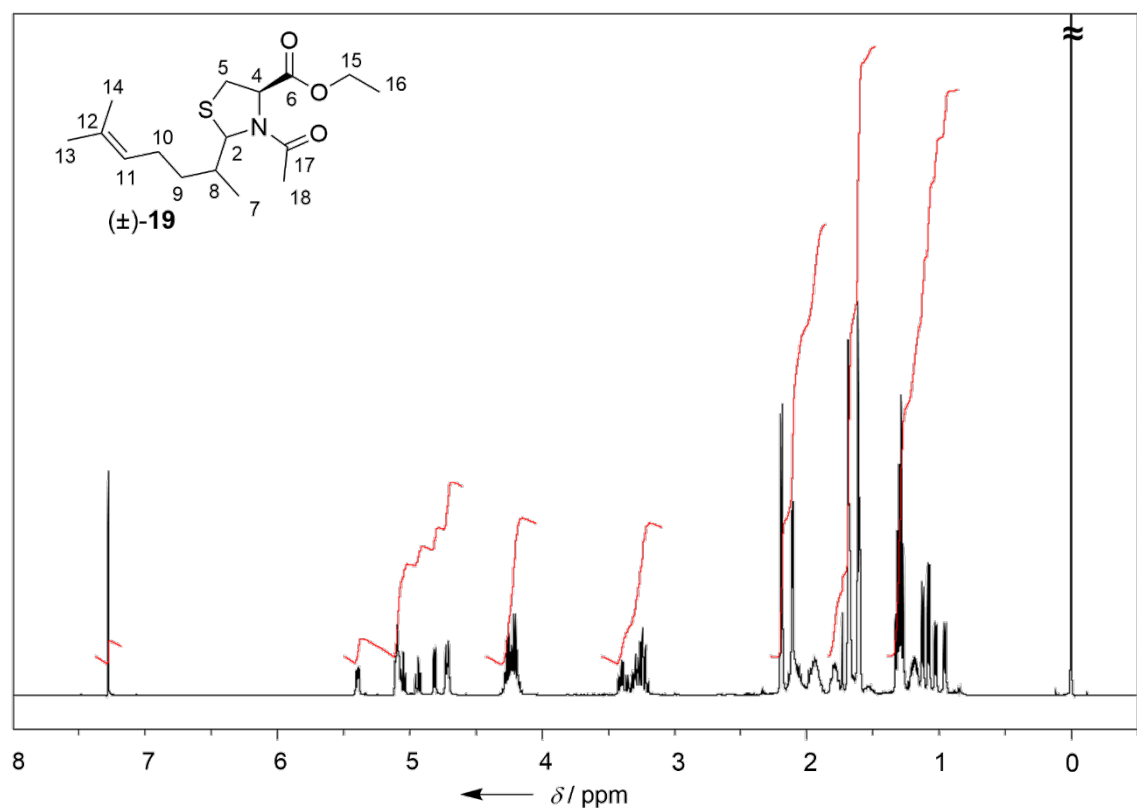
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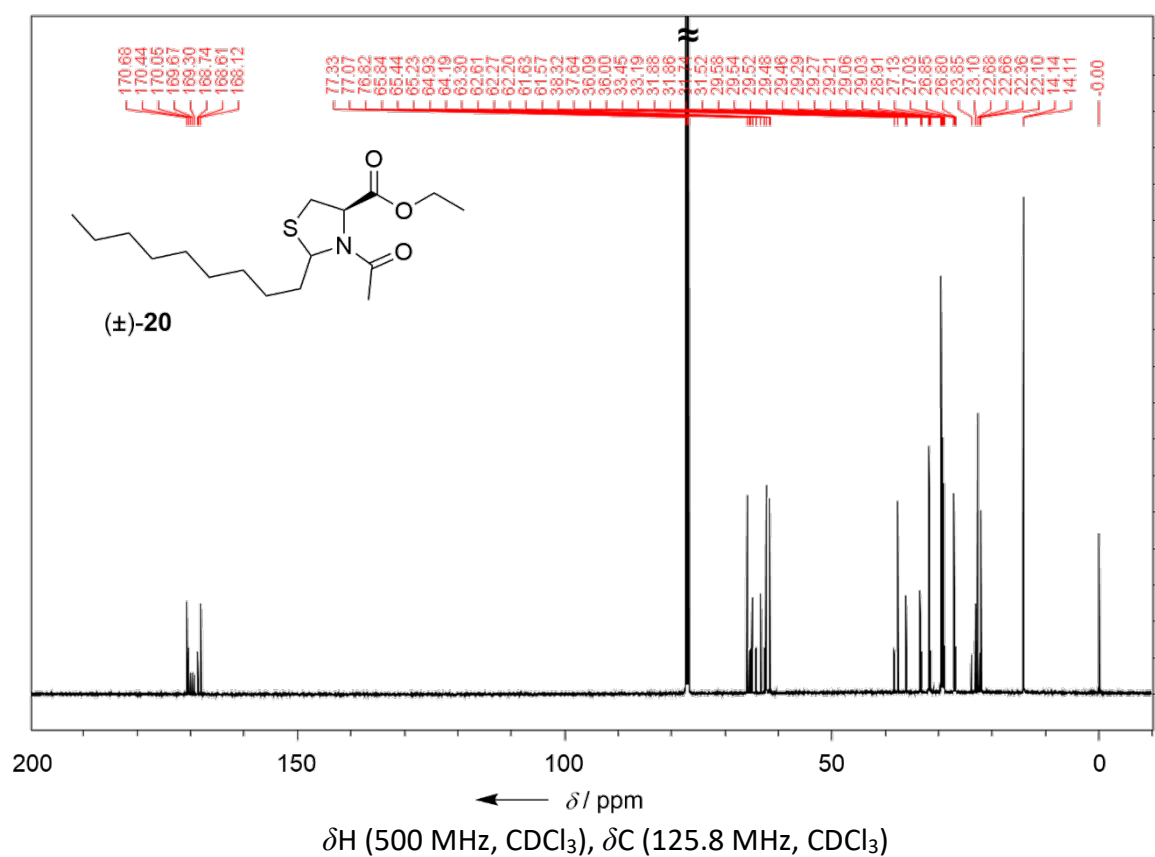
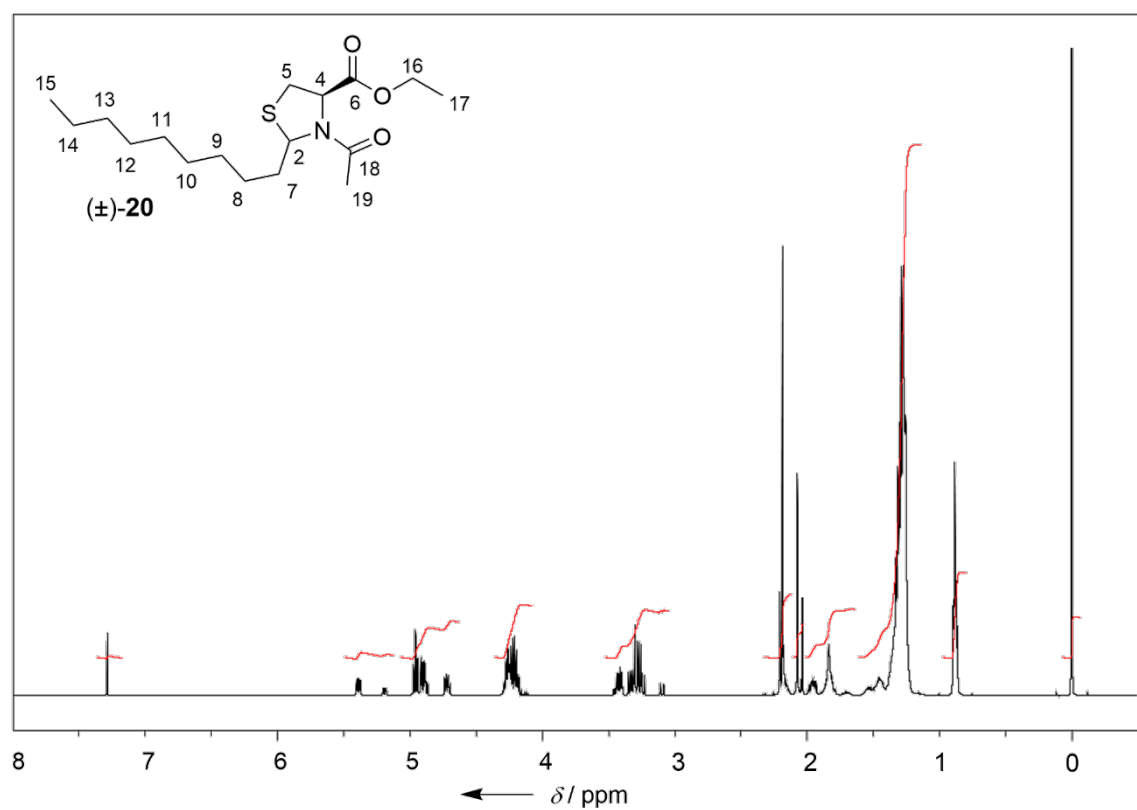
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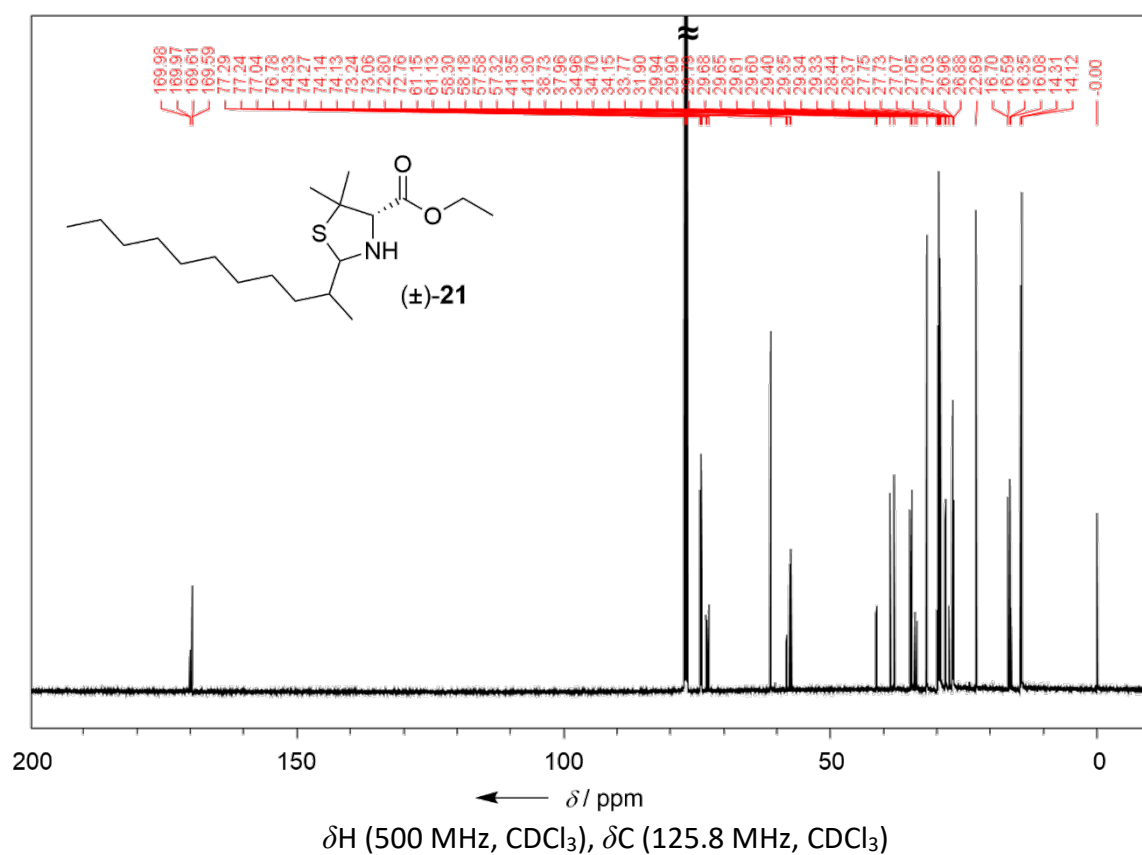
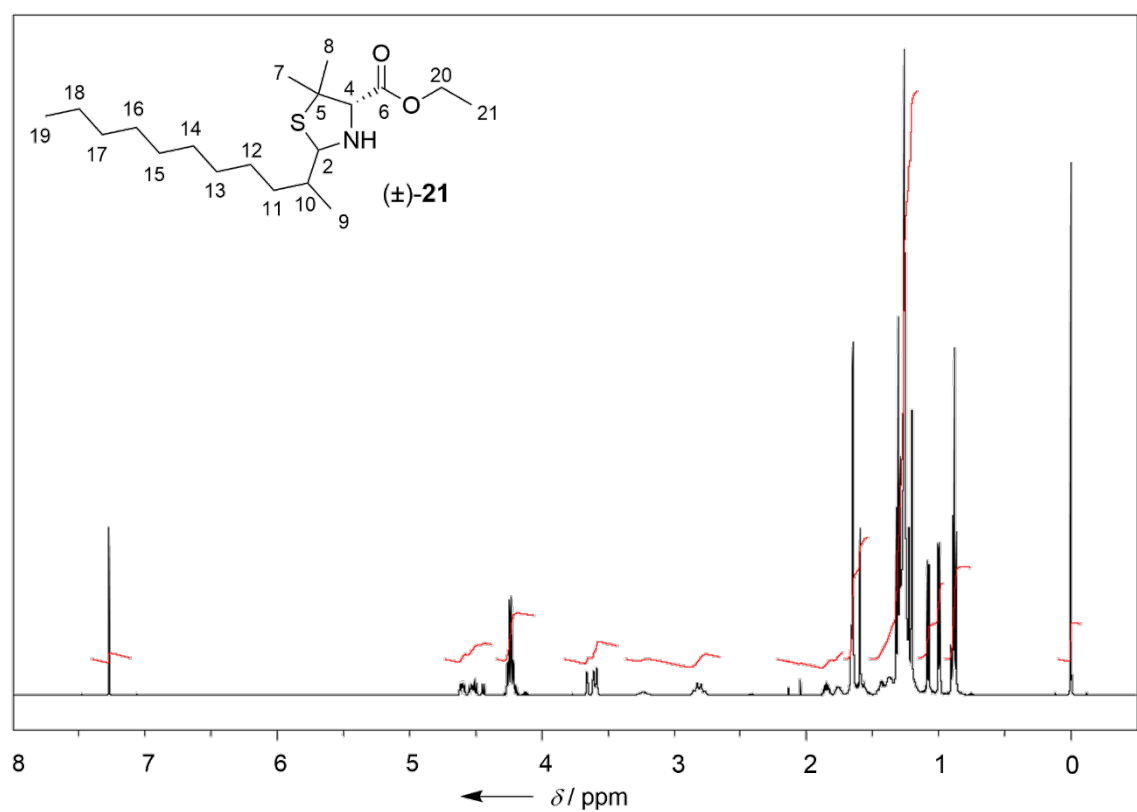
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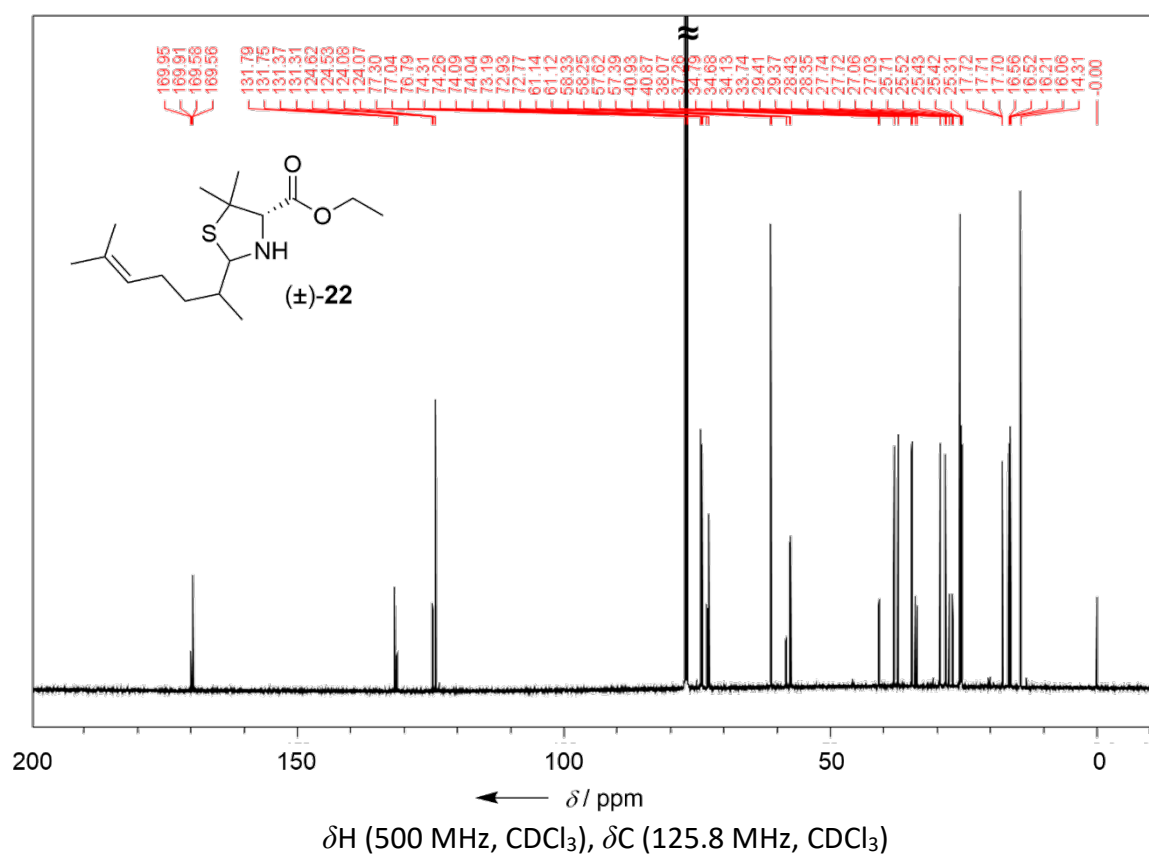
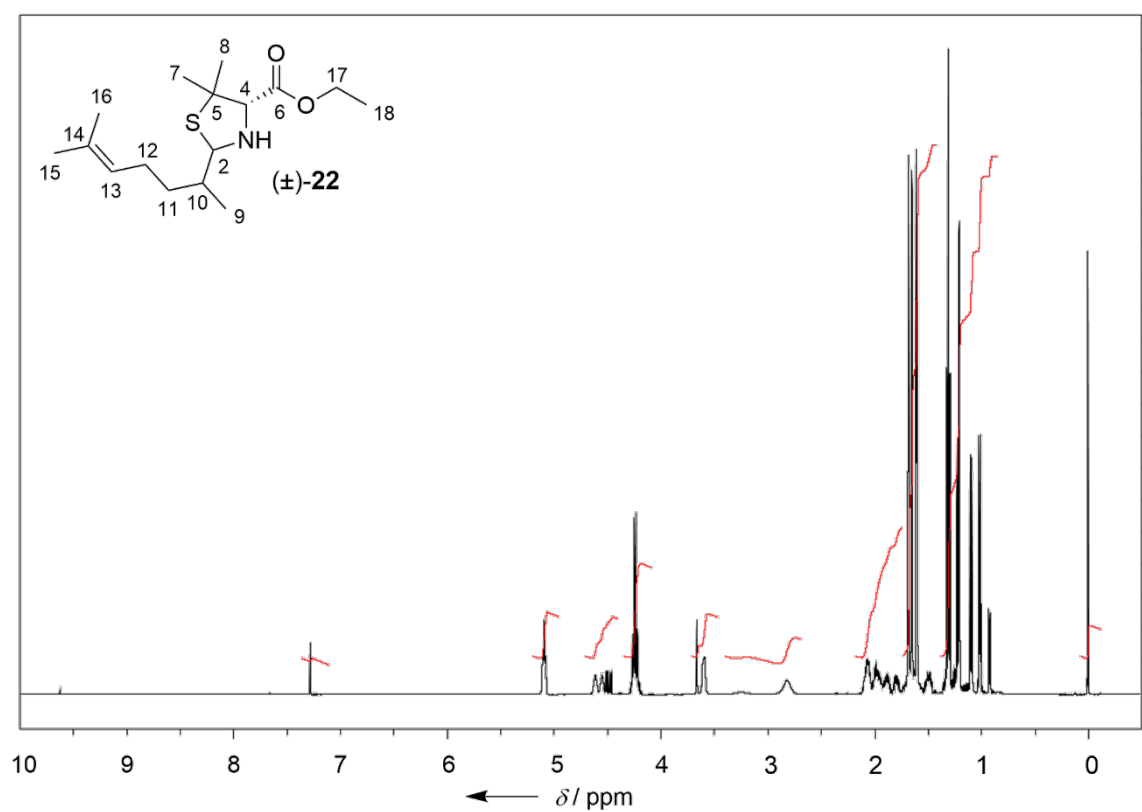
IR (neat):  $\tilde{\nu}_{\text{max}}$  3477w, 3289w, 2966m, 2927m, 2876w, 2856w, 2729w, 1747s, 1658s, 1444m, 1385s, 1339s, 1287m, 1260w, 1233w, 1180s, 1140w, 1113w, 1096w, 1057w, 1029s, 984w, 950m, 936m, 920w, 897w, 860m, 831w, 766m, 740w, 721w, 678w  $\text{cm}^{-1}$ .



IR (neat):  $\tilde{\nu}_{\text{max}}$  3478w, 3301w, 2954w, 2924s, 2854m, 1743s, 1655s, 1464w, 1456w, 1445m, 1391s, 1346s, 1268m, 1234m, 1181s, 1149m, 1114w, 1096m, 1028s, 965m, 952m, 888w, 859m, 774w, 722m, 701w, 630m, 603m, 568w cm<sup>-1</sup>.



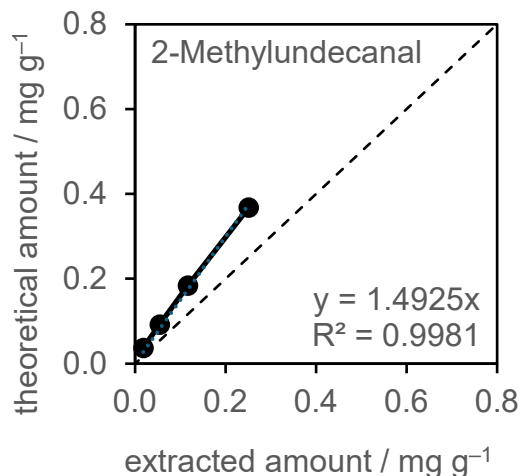
IR (neat):  $\tilde{\nu}_{\text{max}}$  3344w, 3306w, 2959m, 2924s, 2855m, 2731w, 1740s, 1456m, 1368m, 1303m, 1257m, 1197s, 1161m, 1133m, 1096w, 1026m, 951w, 849m, 777m, 763m, 772m, 693w, 618w, 606w, 578w, 559w  $\text{cm}^{-1}$ .



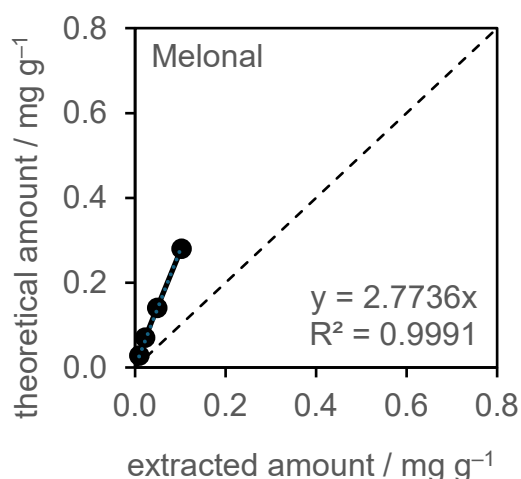
IR (neat):  $\tilde{\nu}_{\text{max}}$  3459w, 3341w, 3307w, 2965m, 2924m, 2877m, 2730w, 1738s, 1675w, 1455m, 1368m, 1305m, 1252m, 1198s, 1157m, 1127m, 1096m, 1025m, 985w, 951w, 915w, 850m, 777m, 763m, 692m  $\text{cm}^{-1}$ .

## Extraction efficiency of fragrances and profragrances at acidic pH

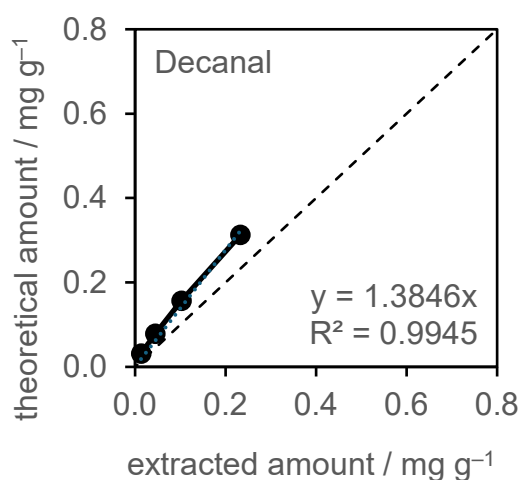
Average amounts of compounds (mg per g of buffer solution) obtained for the extraction of known concentrations from buffered solutions of water/acetonitrile 1:1 (w/w) (5 g, pH 4.95) with *n*-heptane (0.5 mL). Linear regressions of the data points were forced through the origin.



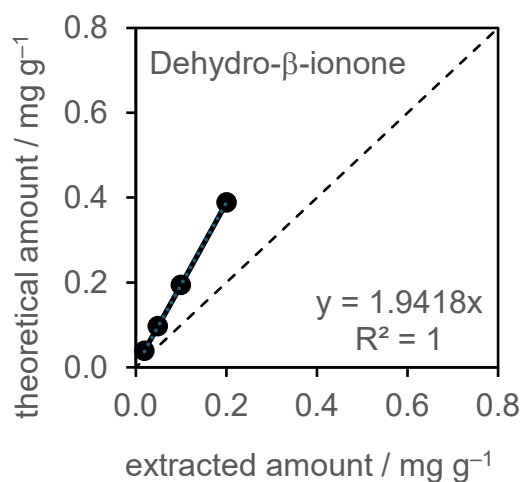
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.252 (±0.005)                                 | 0.368                                                    | 68          |
| 0.117 (±0.00)                                  | 0.184                                                    | 64          |
| 0.055 (±0.001)                                 | 0.092                                                    | 59          |
| 0.019 (±0.001)                                 | 0.037                                                    | 50          |



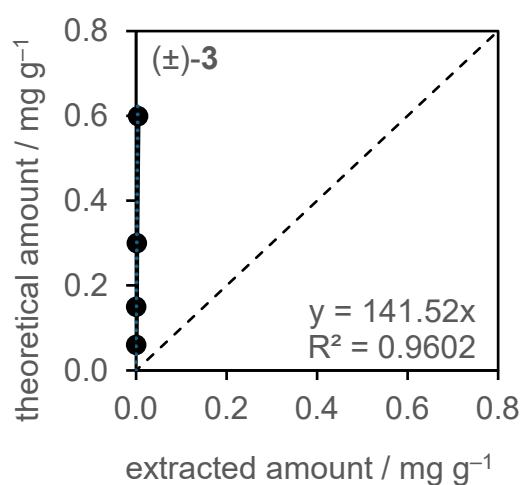
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.103 (±0.001)                                 | 0.280                                                    | 37          |
| 0.049 (±0.000)                                 | 0.140                                                    | 35          |
| 0.023 (±0.001)                                 | 0.070                                                    | 32          |
| 0.010 (±0.001)                                 | 0.028                                                    | 34          |



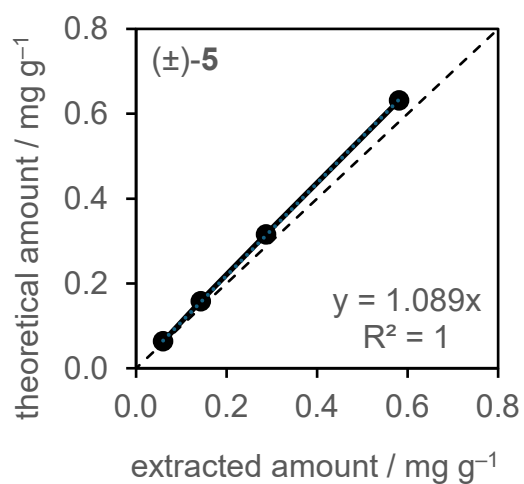
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.233 (±0.001)                                 | 0.312                                                    | 75          |
| 0.103 (±0.005)                                 | 0.156                                                    | 66          |
| 0.045 (±0.002)                                 | 0.078                                                    | 57          |
| 0.014 (±0.001)                                 | 0.031                                                    | 43          |



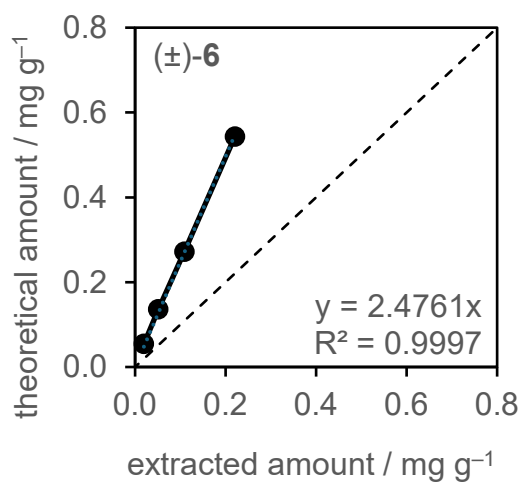
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.201 (±0.004)                                 | 0.389                                                    | 52          |
| 0.100 (±0.001)                                 | 0.194                                                    | 51          |
| 0.049 (±0.000)                                 | 0.097                                                    | 50          |
| 0.019 (±0.000)                                 | 0.039                                                    | 49          |



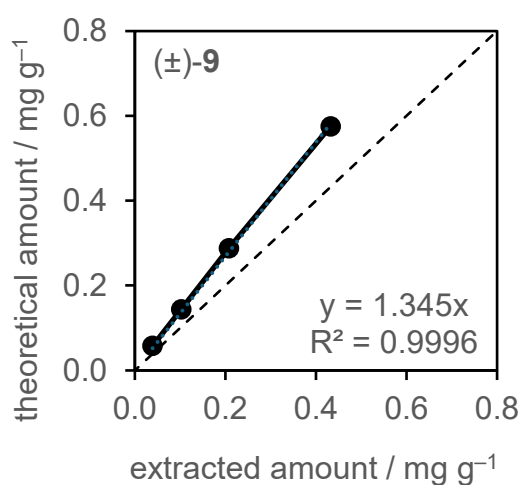
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.005 (±0.001)                                 | 0.599                                                    | 1           |
| 0.002 (±0.001)                                 | 0.300                                                    | 1           |
| 0.001 (±0.001)                                 | 0.150                                                    | 0           |
| 0.000 (±0.000)                                 | 0.060                                                    | 0           |



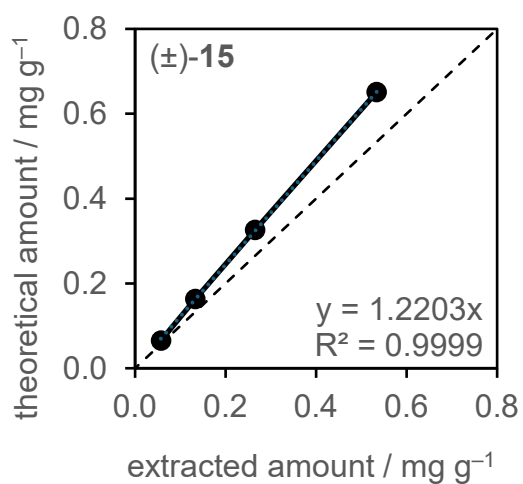
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.581 (±0.003)                                 | 0.631                                                    | 92          |
| 0.287 (±0.008)                                 | 0.316                                                    | 91          |
| 0.143 (±0.006)                                 | 0.158                                                    | 91          |
| 0.060 (±0.001)                                 | 0.063                                                    | 95          |



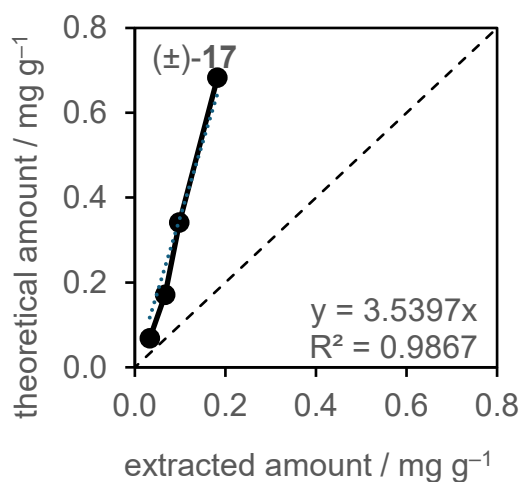
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.221 (±0.002)                                 | 0.543                                                    | 41          |
| 0.109 (±0.000)                                 | 0.271                                                    | 40          |
| 0.052 (±0.001)                                 | 0.136                                                    | 38          |
| 0.020 (±0.001)                                 | 0.054                                                    | 36          |



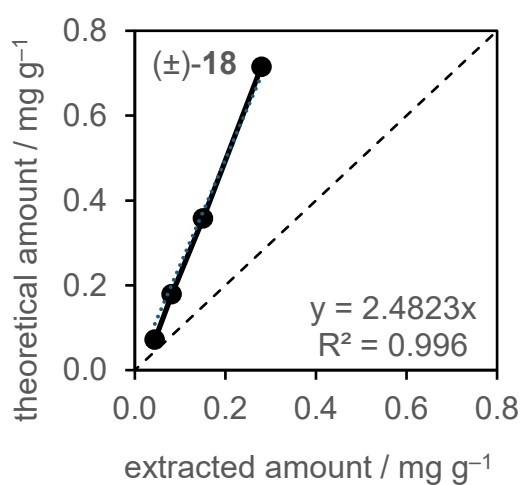
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.432 (±0.017)                                 | 0.575                                                    | 75          |
| 0.208 (±0.002)                                 | 0.288                                                    | 72          |
| 0.102 (±0.003)                                 | 0.144                                                    | 71          |
| 0.039 (±0.001)                                 | 0.058                                                    | 68          |



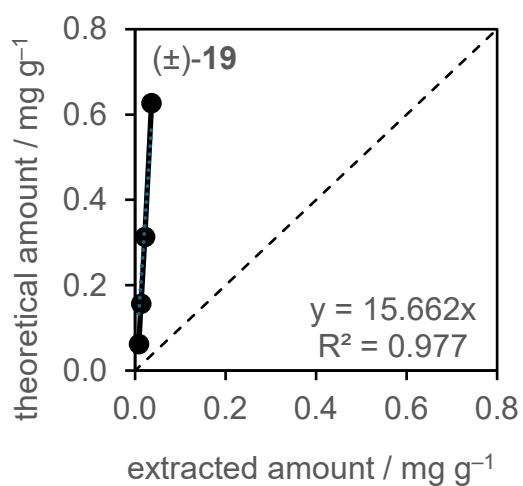
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.534 (±0.001)                                 | 0.651                                                    | 82          |
| 0.265 (±0.007)                                 | 0.326                                                    | 81          |
| 0.133 (±0.004)                                 | 0.163                                                    | 82          |
| 0.058 (±0.002)                                 | 0.065                                                    | 88          |



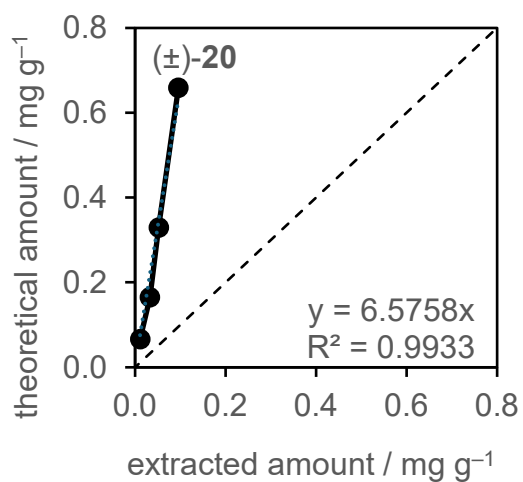
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.183 (±0.001)                                 | 0.683                                                    | 27          |
| 0.099 (±0.001)                                 | 0.342                                                    | 29          |
| 0.067 (±0.000)                                 | 0.171                                                    | 39          |
| 0.033 (±0.000)                                 | 0.068                                                    | 48          |



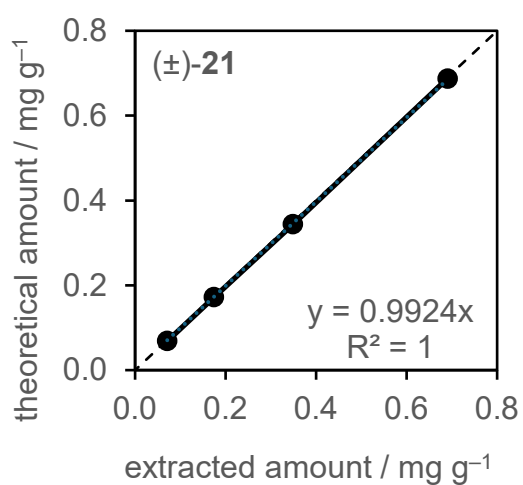
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.280 (±0.005)                                 | 0.715                                                    | 39          |
| 0.151 (±0.005)                                 | 0.358                                                    | 42          |
| 0.082 (±0.002)                                 | 0.179                                                    | 46          |
| 0.044 (±0.000)                                 | 0.072                                                    | 62          |



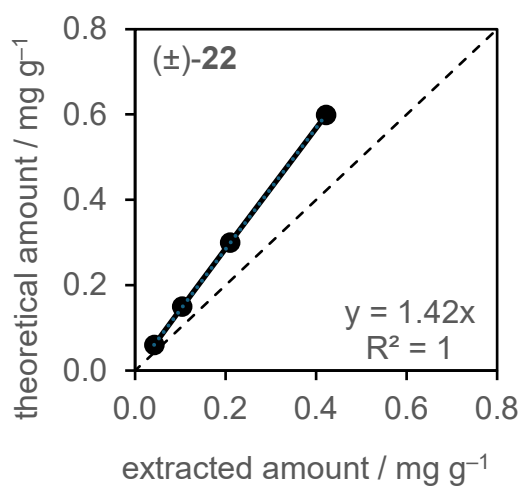
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.037 (±0.001)                                 | 0.627                                                    | 6           |
| 0.022 (±0.000)                                 | 0.314                                                    | 7           |
| 0.014 (±0.001)                                 | 0.157                                                    | 9           |
| 0.009 (±0.001)                                 | 0.063                                                    | 14          |



| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.096 (±0.001)                                 | 0.659                                                    | 15          |
| 0.053 (±0.001)                                 | 0.330                                                    | 16          |
| 0.033 (±0.000)                                 | 0.165                                                    | 20          |
| 0.012 (±0.011)                                 | 0.066                                                    | 17          |



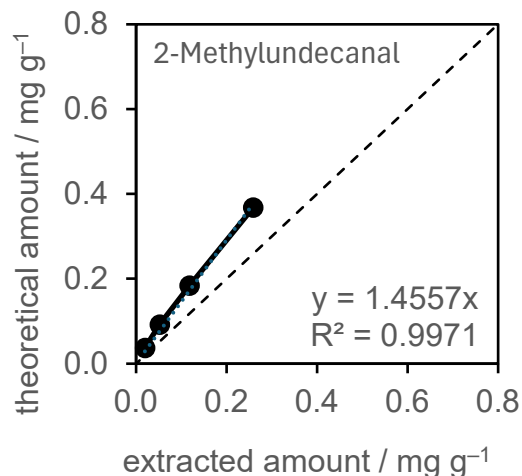
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.691 (±0.004)                                 | 0.687                                                    | 100         |
| 0.349 (±0.008)                                 | 0.344                                                    | 102         |
| 0.175 (±0.002)                                 | 0.172                                                    | 102         |
| 0.071 (±0.001)                                 | 0.069                                                    | 103         |



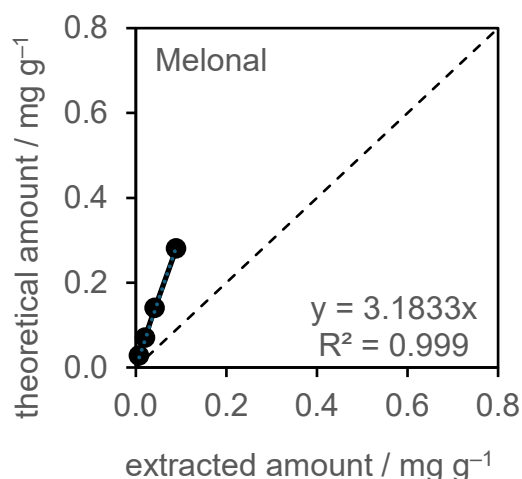
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.423 (±0.012)                                 | 0.599                                                    | 71          |
| 0.210 (±0.007)                                 | 0.300                                                    | 70          |
| 0.105 (±0.001)                                 | 0.150                                                    | 70          |
| 0.043 (±0.001)                                 | 0.060                                                    | 71          |

## Extraction efficiency of fragrances and profragrances at alkaline pH

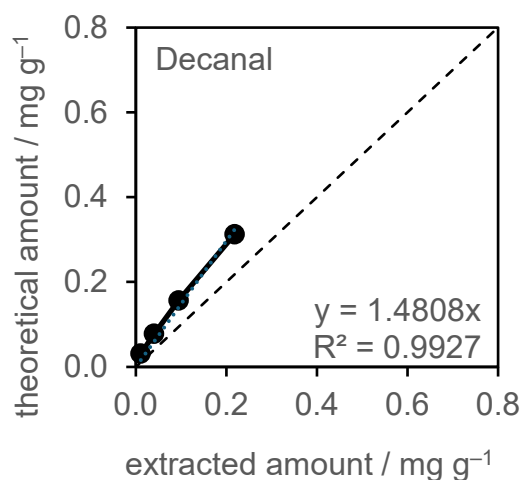
Average amounts of compounds (mg per g of buffer solution) obtained for the extraction of known concentrations from buffered solutions of water/acetonitrile 1:1 (w/w) (5 g, pH 11.15) with *n*-heptane (0.5 mL). Linear regressions of the data points were forced through the origin.



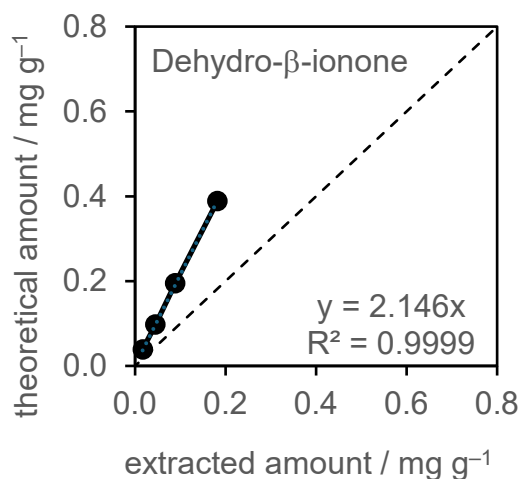
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.259 (±0.023)                                 | 0.368                                                    | 70          |
| 0.119 (±0.004)                                 | 0.184                                                    | 64          |
| 0.053 (±0.001)                                 | 0.092                                                    | 57          |
| 0.020 (±0.003)                                 | 0.037                                                    | 54          |



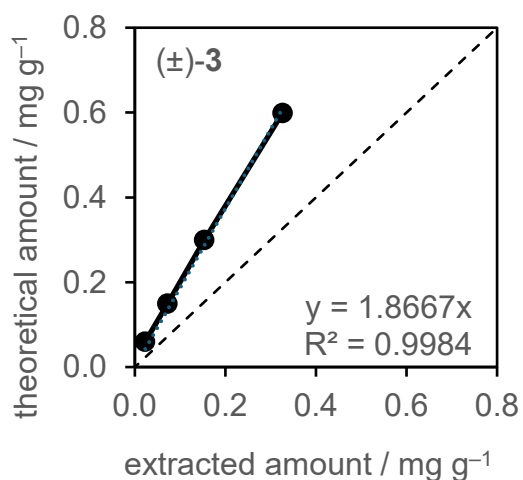
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.090 (±0.001)                                 | 0.280                                                    | 32          |
| 0.042 (±0.000)                                 | 0.140                                                    | 30          |
| 0.021 (±0.001)                                 | 0.070                                                    | 29          |
| 0.008 (±0.001)                                 | 0.028                                                    | 27          |



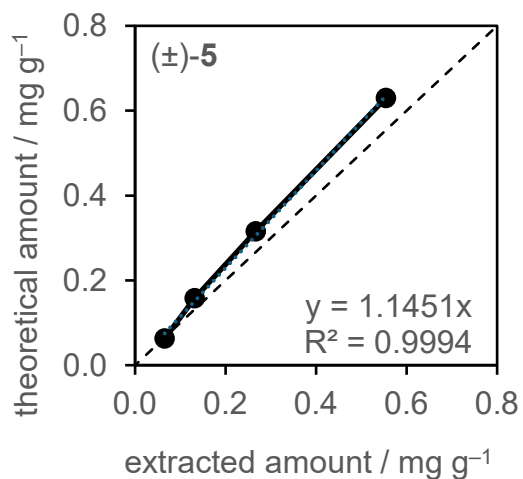
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.219 (±0.004)                                 | 0.312                                                    | 70          |
| 0.095 (±0.001)                                 | 0.156                                                    | 60          |
| 0.041 (±0.001)                                 | 0.078                                                    | 52          |
| 0.011 (±0.000)                                 | 0.031                                                    | 35          |



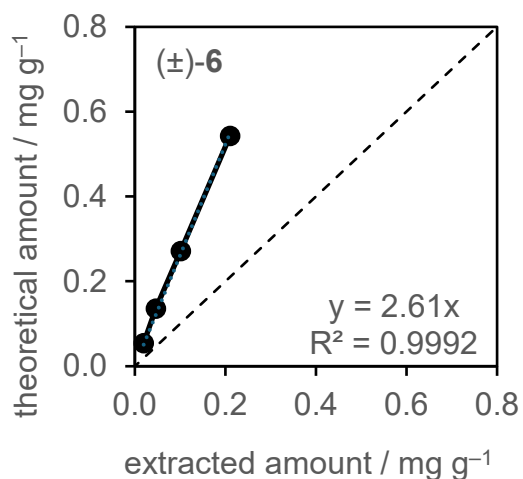
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.182 (±0.000)                                 | 0.389                                                    | 47          |
| 0.089 (±0.001)                                 | 0.194                                                    | 46          |
| 0.045 (±0.000)                                 | 0.097                                                    | 46          |
| 0.017 (±0.000)                                 | 0.039                                                    | 44          |



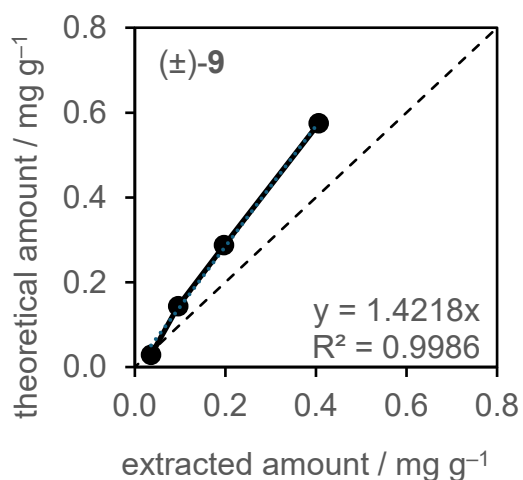
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.327 (±0.008)                                 | 0.599                                                    | 55          |
| 0.154 (±0.011)                                 | 0.300                                                    | 51          |
| 0.073 (±0.002)                                 | 0.150                                                    | 48          |
| 0.023 (±0.001)                                 | 0.060                                                    | 38          |



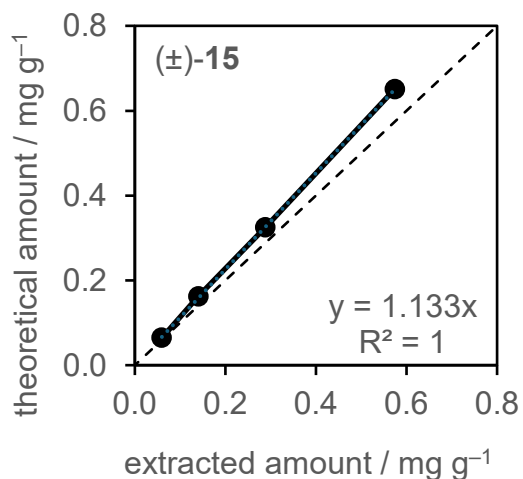
| Average amount extracted<br>mg g <sup>-1</sup> | Theoretical amount to be extracted<br>mg g <sup>-1</sup> | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.555 (±0.002)                                 | 0.630                                                    | 88          |
| 0.267 (±0.009)                                 | 0.315                                                    | 85          |
| 0.132 (±0.001)                                 | 0.158                                                    | 83          |
| 0.066 (±0.005)                                 | 0.063                                                    | 104         |



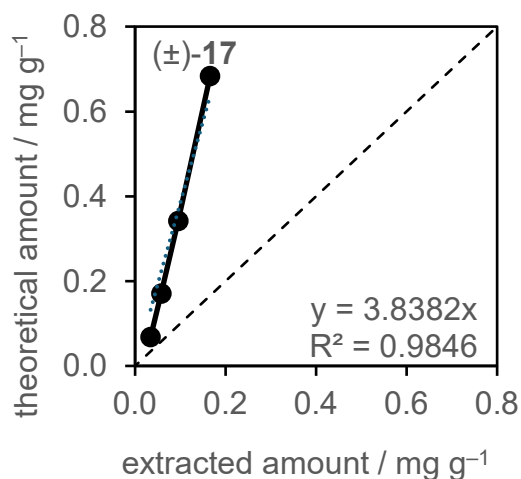
| Average amount extracted<br>$\text{mg g}^{-1}$ | Theoretical amount to be extracted<br>$\text{mg g}^{-1}$ | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.211 ( $\pm 0.001$ )                          | 0.543                                                    | 39          |
| 0.102 ( $\pm 0.002$ )                          | 0.271                                                    | 37          |
| 0.047 ( $\pm 0.001$ )                          | 0.136                                                    | 34          |
| 0.020 ( $\pm 0.001$ )                          | 0.054                                                    | 36          |



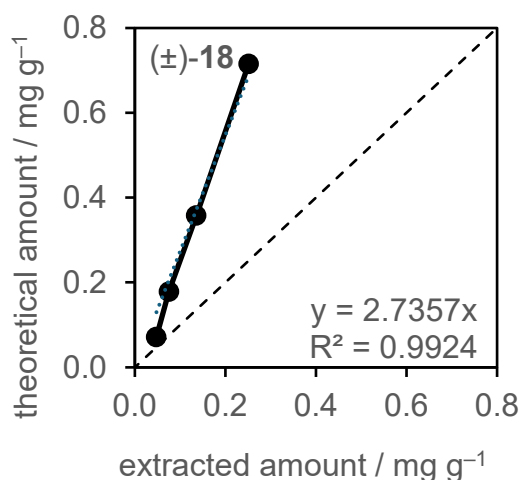
| Average amount extracted<br>$\text{mg g}^{-1}$ | Theoretical amount to be extracted<br>$\text{mg g}^{-1}$ | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.407 ( $\pm 0.002$ )                          | 0.575                                                    | 71          |
| 0.198 ( $\pm 0.005$ )                          | 0.288                                                    | 69          |
| 0.096 ( $\pm 0.001$ )                          | 0.144                                                    | 67          |
| 0.036 ( $\pm 0.000$ )                          | 0.029                                                    | 125         |



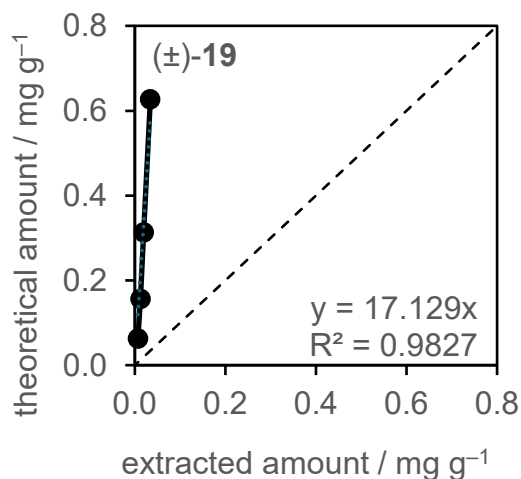
| Average amount extracted<br>$\text{mg g}^{-1}$ | Theoretical amount to be extracted<br>$\text{mg g}^{-1}$ | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.575 ( $\pm 0.005$ )                          | 0.651                                                    | 88          |
| 0.289 ( $\pm 0.002$ )                          | 0.326                                                    | 89          |
| 0.141 ( $\pm 0.001$ )                          | 0.163                                                    | 86          |
| 0.060 ( $\pm 0.001$ )                          | 0.065                                                    | 91          |



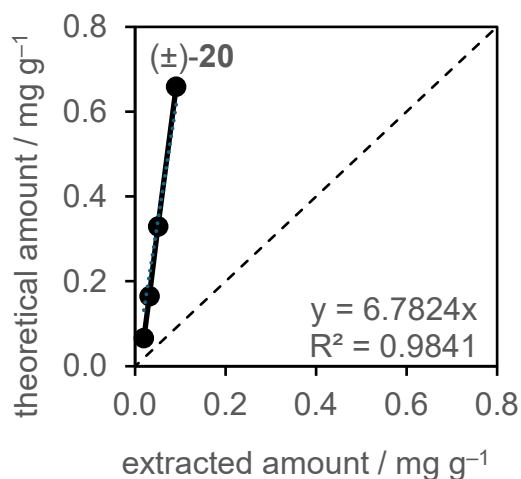
| Average amount extracted<br>$\text{mg g}^{-1}$ | Theoretical amount to be extracted<br>$\text{mg g}^{-1}$ | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.166 ( $\pm 0.004$ )                          | 0.683                                                    | 24          |
| 0.096 ( $\pm 0.002$ )                          | 0.342                                                    | 28          |
| 0.058 ( $\pm 0.001$ )                          | 0.171                                                    | 34          |
| 0.035 ( $\pm 0.004$ )                          | 0.068                                                    | 51          |



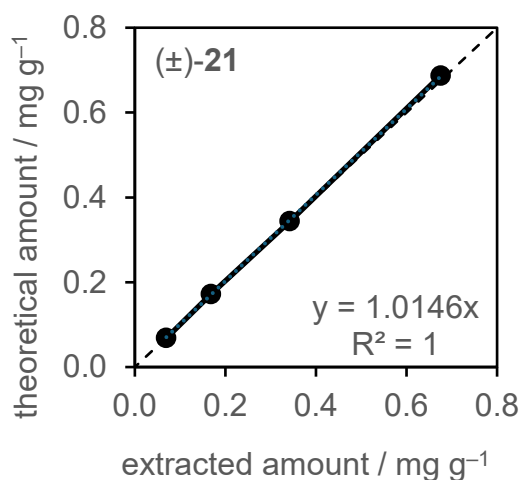
| Average amount extracted<br>$\text{mg g}^{-1}$ | Theoretical amount to be extracted<br>$\text{mg g}^{-1}$ | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.252 ( $\pm 0.001$ )                          | 0.715                                                    | 35          |
| 0.136 ( $\pm 0.003$ )                          | 0.358                                                    | 38          |
| 0.076 ( $\pm 0.001$ )                          | 0.179                                                    | 42          |
| 0.048 ( $\pm 0.002$ )                          | 0.072                                                    | 66          |



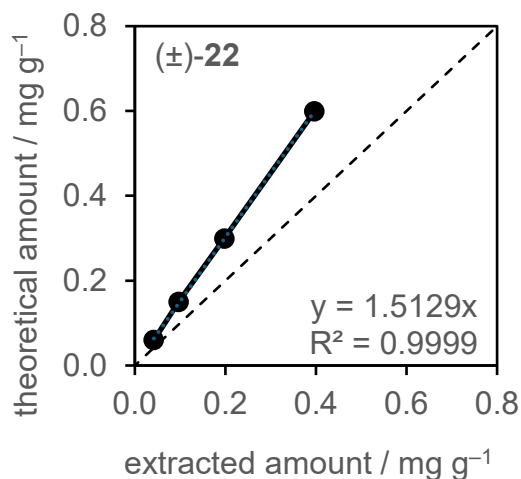
| Average amount extracted<br>$\text{mg g}^{-1}$ | Theoretical amount to be extracted<br>$\text{mg g}^{-1}$ | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.034 ( $\pm 0.001$ )                          | 0.627                                                    | 5           |
| 0.020 ( $\pm 0.001$ )                          | 0.314                                                    | 6           |
| 0.013 ( $\pm 0.001$ )                          | 0.157                                                    | 8           |
| 0.007 ( $\pm 0.000$ )                          | 0.063                                                    | 11          |



| Average amount extracted<br>$\text{mg g}^{-1}$ | Theoretical amount to be extracted<br>$\text{mg g}^{-1}$ | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.091 ( $\pm 0.003$ )                          | 0.659                                                    | 14          |
| 0.051 ( $\pm 0.000$ )                          | 0.330                                                    | 15          |
| 0.032 ( $\pm 0.001$ )                          | 0.165                                                    | 19          |
| 0.020 ( $\pm 0.002$ )                          | 0.066                                                    | 30          |



| Average amount extracted<br>$\text{mg g}^{-1}$ | Theoretical amount to be extracted<br>$\text{mg g}^{-1}$ | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.676 ( $\pm 0.006$ )                          | 0.687                                                    | 98          |
| 0.343 ( $\pm 0.005$ )                          | 0.344                                                    | 100         |
| 0.168 ( $\pm 0.001$ )                          | 0.172                                                    | 98          |
| 0.070 ( $\pm 0.001$ )                          | 0.069                                                    | 101         |



| Average amount extracted<br>$\text{mg g}^{-1}$ | Theoretical amount to be extracted<br>$\text{mg g}^{-1}$ | % extracted |
|------------------------------------------------|----------------------------------------------------------|-------------|
| 0.397 ( $\pm 0.025$ )                          | 0.599                                                    | 66          |
| 0.198 ( $\pm 0.012$ )                          | 0.300                                                    | 66          |
| 0.097 ( $\pm 0.004$ )                          | 0.150                                                    | 64          |
| 0.042 ( $\pm 0.000$ )                          | 0.060                                                    | 70          |

## Hydrolysis of profragrances at acidic pH

Average amounts of remaining profragrances and of fragrances released (mg per g of buffer solution) after extraction from buffered solutions of water/acetonitrile 1:1 (w/w) (5 g, pH 4.95) with *n*-heptane (0.5 mL) at different time points. Experimental values were corrected with the measured extraction efficiencies. Numerical data for Fig. 3.

### pH 4.95

| Time | (±)-3                           |                                              |   | 2-Methylundecanal               |                                 |     |
|------|---------------------------------|----------------------------------------------|---|---------------------------------|---------------------------------|-----|
| days | extracted<br>mg g <sup>-1</sup> | corrected <sup>a</sup><br>mg g <sup>-1</sup> | % | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | %   |
| 0    | 0.000                           | 0.000                                        | 0 | 0.234 (±0.007)                  | 0.349                           | 95  |
| 3    | 0.000                           | 0.000                                        | 0 | 0.255 (±0.002)                  | 0.380                           | 103 |
| 7    | 0.000                           | 0.000                                        | 0 | 0.251 (±0.003)                  | 0.375                           | 102 |
| 11   | 0.000                           | 0.000                                        | 0 | 0.245 (±0.008)                  | 0.366                           | 99  |
| 14   | 0.000                           | 0.000                                        | 0 | 0.249 (±0.001)                  | 0.372                           | 101 |
| 17   | 0.000                           | 0.000                                        | 0 | 0.256 (±0.006)                  | 0.381                           | 104 |
| 21   | 0.000                           | 0.000                                        | 0 | 0.260 (±0.001)                  | 0.387                           | 105 |
| 25   | 0.000                           | 0.000                                        | 0 | 0.247 (±0.007)                  | 0.369                           | 100 |
| 31   | 0.000                           | 0.000                                        | 0 | 0.251 (±0.004)                  | 0.375                           | 102 |

<sup>a</sup> Values not corrected with extraction efficiencies as no product was extracted

### pH 4.95

| Time | (±)-5                           |                                 |    | 2-Methylundecanal               |                                 |    |
|------|---------------------------------|---------------------------------|----|---------------------------------|---------------------------------|----|
| days | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | %  | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | %  |
| 0    | 0.550 (±0.018)                  | 0.599                           | 95 | 0.000 (±0.000)                  | 0.000                           | 0  |
| 3    | 0.554 (±0.001)                  | 0.603                           | 95 | 0.016 (±0.001)                  | 0.024                           | 6  |
| 7    | 0.543 (±0.004)                  | 0.591                           | 94 | 0.017 (±0.001)                  | 0.025                           | 7  |
| 11   | 0.541 (±0.031)                  | 0.589                           | 93 | 0.020 (±0.001)                  | 0.030                           | 8  |
| 14   | 0.543 (±0.020)                  | 0.591                           | 94 | 0.023 (±0.001)                  | 0.034                           | 9  |
| 17   | 0.541 (±0.001)                  | 0.589                           | 93 | 0.025 (±0.000)                  | 0.037                           | 10 |
| 21   | 0.533 (±0.010)                  | 0.580                           | 92 | 0.029 (±0.005)                  | 0.044                           | 12 |
| 25   | 0.510 (±0.002)                  | 0.555                           | 88 | 0.028 (±0.001)                  | 0.041                           | 11 |
| 31   | 0.521 (±0.012)                  | 0.567                           | 90 | 0.031 (±0.001)                  | 0.046                           | 12 |

## pH 4.95

| Time | (±)-6              |                    |     | Melonal            |                    |   |
|------|--------------------|--------------------|-----|--------------------|--------------------|---|
| days | extracted          | corrected          | %   | extracted          | corrected          | % |
|      | mg g <sup>-1</sup> | mg g <sup>-1</sup> |     | mg g <sup>-1</sup> | mg g <sup>-1</sup> |   |
| 0    | 0.200 (±0.007)     | 0.495              | 91  | 0.000 (±0.000)     | 0.000              | 0 |
| 3    | 0.220 (±0.001)     | 0.544              | 100 | 0.004 (±0.004)     | 0.010              | 3 |
| 7    | 0.191 (±0.032)     | 0.472              | 87  | 0.003 (±0.003)     | 0.008              | 3 |
| 11   | 0.201 (±0.006)     | 0.496              | 92  | 0.003 (±0.003)     | 0.008              | 3 |
| 14   | 0.207 (±0.001)     | 0.513              | 95  | 0.004 (±0.004)     | 0.011              | 4 |
| 17   | 0.207 (±0.003)     | 0.513              | 95  | 0.006 (±0.006)     | 0.015              | 5 |
| 21   | 0.206 (±0.002)     | 0.509              | 94  | 0.006 (±0.006)     | 0.017              | 6 |
| 25   | 0.192 (±0.004)     | 0.474              | 87  | 0.006 (±0.006)     | 0.017              | 6 |
| 31   | 0.178 (±0.021)     | 0.440              | 81  | 0.006 (±0.006)     | 0.015              | 5 |

## pH 4.95

| Time | (±)-9              |                    |     | Decanal            |                    |    |
|------|--------------------|--------------------|-----|--------------------|--------------------|----|
| days | extracted          | corrected          | %   | extracted          | corrected          | %  |
|      | mg g <sup>-1</sup> | mg g <sup>-1</sup> |     | mg g <sup>-1</sup> | mg g <sup>-1</sup> |    |
| 0    | 0.432 (±0.017)     | 0.581              | 101 | 0.000 (±0.000)     | 0.000              | 0  |
| 3    | 0.411 (±0.032)     | 0.552              | 96  | 0.005 (±0.006)     | 0.006              | 2  |
| 7    | 0.413 (±0.023)     | 0.555              | 97  | 0.006 (±0.008)     | 0.008              | 2  |
| 11   | 0.407 (±0.038)     | 0.547              | 95  | 0.015 (±0.002)     | 0.020              | 6  |
| 14   | 0.397 (±0.033)     | 0.534              | 93  | 0.016 (±0.000)     | 0.022              | 7  |
| 17   | 0.396 (±0.011)     | 0.533              | 93  | 0.020 (±0.001)     | 0.027              | 9  |
| 21   | 0.391 (±0.030)     | 0.525              | 92  | 0.021 (±0.002)     | 0.028              | 9  |
| 25   | 0.362 (±0.025)     | 0.487              | 85  | 0.021 (±0.001)     | 0.029              | 9  |
| 31   | 0.372 (±0.026)     | 0.500              | 87  | 0.025 (±0.001)     | 0.035              | 11 |

## pH 4.95

| Time | (±)-15             |                    |   | Dihydro-β-ionone   |                    |    |
|------|--------------------|--------------------|---|--------------------|--------------------|----|
| days | extracted          | corrected          | % | extracted          | corrected          | %  |
|      | mg g <sup>-1</sup> | mg g <sup>-1</sup> |   | mg g <sup>-1</sup> | mg g <sup>-1</sup> |    |
| 0    | 0.020 (±0.006)     | 0.024              | 4 | 0.005 (±0.001)     | 0.010              | 3  |
| 3    | 0.011 (±0.001)     | 0.013              | 2 | 0.177 (±0.028)     | 0.343              | 88 |
| 7    | 0.004 (±0.006)     | 0.005              | 1 | 0.173 (±0.017)     | 0.336              | 87 |
| 11   | 0.009 (±0.004)     | 0.010              | 2 | 0.191 (±0.001)     | 0.371              | 96 |
| 14   | 0.009 (±0.000)     | 0.011              | 2 | 0.193 (±0.004)     | 0.374              | 96 |
| 17   | 0.006 (±0.001)     | 0.007              | 1 | 0.197 (±0.005)     | 0.382              | 98 |
| 21   | 0.006 (±0.001)     | 0.007              | 1 | 0.194 (±0.003)     | 0.377              | 97 |
| 25   | 0.005 (±0.000)     | 0.006              | 1 | 0.184 (±0.001)     | 0.356              | 92 |
| 31   | 0.005 (±0.001)     | 0.005              | 1 | 0.190 (±0.004)     | 0.368              | 95 |

## pH 4.95

| Time | (±)- <b>17</b>                  |                                 |    |                                 | 2-Methylundecanal               |   |  |
|------|---------------------------------|---------------------------------|----|---------------------------------|---------------------------------|---|--|
| days | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | %  | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | % |  |
| 0    | 0.175 (±0.000)                  | 0.619                           | 91 | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 3    | 0.171 (±0.001)                  | 0.604                           | 88 | 0.001 (±0.000)                  | 0.001                           | 0 |  |
| 7    | 0.176 (±0.003)                  | 0.623                           | 91 | 0.003 (±0.001)                  | 0.004                           | 1 |  |
| 11   | 0.180 (±0.006)                  | 0.637                           | 93 | 0.004 (±0.001)                  | 0.006                           | 2 |  |
| 14   | 0.177 (±0.005)                  | 0.625                           | 92 | 0.004 (±0.000)                  | 0.006                           | 2 |  |
| 17   | 0.185 (±0.005)                  | 0.653                           | 96 | 0.005 (±0.001)                  | 0.007                           | 2 |  |
| 21   | 0.179 (±0.003)                  | 0.634                           | 93 | 0.005 (±0.000)                  | 0.007                           | 2 |  |
| 25   | 0.171 (±0.000)                  | 0.605                           | 89 | 0.005 (±0.000)                  | 0.007                           | 2 |  |
| 31   | 0.176 (±0.005)                  | 0.621                           | 91 | 0.005 (±0.001)                  | 0.007                           | 2 |  |

## pH 4.95

| Time | (±)- <b>18</b>                  |                                 |     |                                 | 2-Methylundecanal               |   |  |
|------|---------------------------------|---------------------------------|-----|---------------------------------|---------------------------------|---|--|
| days | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | %   | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | % |  |
| 0    | 0.294 (±0.003)                  | 0.730                           | 102 | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 3    | 0.296 (±0.002)                  | 0.734                           | 102 | 0.001 (±0.000)                  | 0.001                           | 0 |  |
| 7    | 0.293 (±0.001)                  | 0.727                           | 102 | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 11   | 0.288 (±0.008)                  | 0.715                           | 100 | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 14   | 0.287 (±0.004)                  | 0.712                           | 99  | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 17   | 0.301 (±0.010)                  | 0.747                           | 104 | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 21   | 0.293 (±0.006)                  | 0.727                           | 102 | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 25   | 0.279 (±0.010)                  | 0.693                           | 97  | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 31   | 0.293 (±0.004)                  | 0.727                           | 102 | 0.000 (±0.000)                  | 0.000                           | 0 |  |

## pH 4.95

| Time | (±)- <b>19</b>                  |                                 |    |                                 | Melonal                         |   |  |
|------|---------------------------------|---------------------------------|----|---------------------------------|---------------------------------|---|--|
| days | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | %  | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | % |  |
| 0    | 0.033 (±0.005)                  | 0.509                           | 81 | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 3    | 0.036 (±0.001)                  | 0.564                           | 90 | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 7    | 0.035 (±0.001)                  | 0.540                           | 86 | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 11   | 0.038 (±0.001)                  | 0.587                           | 94 | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 14   | 0.036 (±0.002)                  | 0.556                           | 89 | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 17   | 0.039 (±0.004)                  | 0.611                           | 98 | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 21   | 0.035 (±0.001)                  | 0.548                           | 88 | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 25   | 0.034 (±0.001)                  | 0.525                           | 84 | 0.000 (±0.000)                  | 0.000                           | 0 |  |
| 31   | 0.035 (±0.000)                  | 0.548                           | 88 | 0.000 (±0.000)                  | 0.000                           | 0 |  |

## pH 4.95

| Time | (±)- <b>20</b>                  |                                 |     | Decanal                         |                                 |   |
|------|---------------------------------|---------------------------------|-----|---------------------------------|---------------------------------|---|
| days | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | %   | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | % |
| 0    | 0.101 (±0.001)                  | 0.664                           | 101 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 3    | 0.099 (±0.002)                  | 0.648                           | 98  | 0.000 (±0.000)                  | 0.000                           | 0 |
| 7    | 0.102 (±0.002)                  | 0.667                           | 101 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 11   | 0.097 (±0.008)                  | 0.638                           | 97  | 0.004 (±0.001)                  | 0.005                           | 2 |
| 14   | 0.098 (±0.001)                  | 0.644                           | 98  | 0.004 (±0.001)                  | 0.005                           | 2 |
| 17   | 0.105 (±0.007)                  | 0.690                           | 105 | 0.004 (±0.001)                  | 0.005                           | 2 |
| 21   | 0.100 (±0.003)                  | 0.658                           | 100 | 0.004 (±0.001)                  | 0.006                           | 2 |
| 25   | 0.095 (±0.005)                  | 0.621                           | 94  | 0.003 (±0.001)                  | 0.003                           | 1 |
| 31   | 0.100 (±0.004)                  | 0.654                           | 99  | 0.003 (±0.000)                  | 0.004                           | 1 |

## pH 4.95

| Time | (±)- <b>21</b>                  |                                 |    | 2-Methylundecanal               |                                 |   |
|------|---------------------------------|---------------------------------|----|---------------------------------|---------------------------------|---|
| days | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | %  | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | % |
| 0    | 0.677 (±0.021)                  | 0.671                           | 98 | 0.001 (±0.001)                  | 0.001                           | 0 |
| 3    | 0.668 (±0.005)                  | 0.662                           | 96 | 0.001 (±0.001)                  | 0.001                           | 0 |
| 7    | 0.648 (±0.038)                  | 0.643                           | 93 | 0.003 (±0.001)                  | 0.004                           | 1 |
| 11   | 0.655 (±0.029)                  | 0.650                           | 94 | 0.002 (±0.000)                  | 0.003                           | 1 |
| 14   | 0.669 (±0.004)                  | 0.664                           | 97 | 0.003 (±0.001)                  | 0.004                           | 1 |
| 17   | 0.669 (±0.003)                  | 0.664                           | 97 | 0.003 (±0.000)                  | 0.004                           | 1 |
| 21   | 0.673 (±0.006)                  | 0.668                           | 97 | 0.004 (±0.001)                  | 0.005                           | 1 |
| 25   | 0.630 (±0.005)                  | 0.625                           | 91 | 0.003 (±0.000)                  | 0.004                           | 1 |
| 31   | 0.656 (±0.000)                  | 0.651                           | 95 | 0.004 (±0.000)                  | 0.006                           | 2 |

## pH 4.95

| Time | (±)- <b>22</b>                  |                                 |    | Melonal                         |                                 |   |
|------|---------------------------------|---------------------------------|----|---------------------------------|---------------------------------|---|
| days | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | %  | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | % |
| 0    | 0.377 (±0.080)                  | 0.535                           | 89 | 0.001 (±0.000)                  | 0.003                           | 1 |
| 3    | 0.398 (±0.038)                  | 0.565                           | 94 | 0.002 (±0.000)                  | 0.006                           | 2 |
| 7    | 0.390 (±0.022)                  | 0.554                           | 93 | 0.002 (±0.000)                  | 0.006                           | 2 |
| 11   | 0.375 (±0.022)                  | 0.533                           | 89 | 0.002 (±0.000)                  | 0.006                           | 2 |
| 14   | 0.380 (±0.021)                  | 0.540                           | 90 | 0.002 (±0.000)                  | 0.006                           | 2 |
| 17   | 0.384 (±0.040)                  | 0.545                           | 91 | 0.002 (±0.000)                  | 0.006                           | 2 |
| 21   | 0.384 (±0.016)                  | 0.545                           | 91 | 0.002 (±0.000)                  | 0.006                           | 2 |
| 25   | 0.367 (±0.051)                  | 0.521                           | 87 | 0.002 (±0.000)                  | 0.006                           | 2 |
| 31   | 0.393 (±0.015)                  | 0.558                           | 93 | 0.002 (±0.000)                  | 0.006                           | 2 |

## Hydrolysis of profragrances at alkaline pH

Average amounts of remaining profragrances and of fragrances released (mg per g of buffer solution) after extraction from buffered solutions of water/acetonitrile 1:1 (w/w) (5 g, pH 11.15) with *n*-heptane (0.5 mL) at different time points. Experimental values were corrected with the measured extraction efficiencies. Numerical data for Fig. 4.

### pH 11.15

| Time | (±)-3              |                    |     | 2-Methylundecanal  |                    |    |
|------|--------------------|--------------------|-----|--------------------|--------------------|----|
| days | extracted          | corrected          | %   | extracted          | corrected          | %  |
|      | mg g <sup>-1</sup> | mg g <sup>-1</sup> |     | mg g <sup>-1</sup> | mg g <sup>-1</sup> |    |
| 0    | 0.407 (±0.008)     | 0.760              | 127 | 0.028 (±0.001)     | 0.041              | 11 |
| 3    | 0.001 (±0.000)     | 0.003              | 0   | 0.197 (±0.000)     | 0.287              | 78 |
| 7    | 0.002 (±0.000)     | 0.003              | 1   | 0.196 (±0.001)     | 0.285              | 78 |
| 11   | 0.004 (±0.000)     | 0.007              | 1   | 0.194 (±0.000)     | 0.282              | 77 |
| 14   | 0.004 (±0.001)     | 0.007              | 1   | 0.192 (±0.001)     | 0.279              | 76 |
| 17   | 0.003 (±0.001)     | 0.006              | 1   | 0.194 (±0.006)     | 0.282              | 77 |
| 21   | 0.004 (±0.001)     | 0.007              | 1   | 0.185 (±0.002)     | 0.269              | 73 |
| 25   | 0.003 (±0.000)     | 0.006              | 1   | 0.187 (±0.000)     | 0.272              | 74 |
| 31   | 0.000 (±0.000)     | 0.000              | 0   | 0.189 (±0.004)     | 0.275              | 75 |

### pH 11.15

| Time | (±)-5              |                    |     | 2-Methylundecanal  |                    |   |
|------|--------------------|--------------------|-----|--------------------|--------------------|---|
| days | extracted          | corrected          | %   | extracted          | corrected          | % |
|      | mg g <sup>-1</sup> | mg g <sup>-1</sup> |     | mg g <sup>-1</sup> | mg g <sup>-1</sup> |   |
| 0    | 0.588 (±0.006)     | 0.673              | 107 | 0.000 (±0.000)     | 0.000              | 0 |
| 3    | 0.257 (±0.001)     | 0.294              | 47  | 0.002 (±0.000)     | 0.003              | 1 |
| 7    | 0.075 (±0.002)     | 0.085              | 13  | 0.004 (±0.000)     | 0.006              | 2 |
| 11   | 0.025 (±0.001)     | 0.028              | 4   | 0.007 (±0.001)     | 0.009              | 3 |
| 14   | 0.015 (±0.004)     | 0.017              | 3   | 0.009 (±0.000)     | 0.013              | 4 |
| 17   | 0.008 (±0.001)     | 0.009              | 1   | 0.010 (±0.000)     | 0.015              | 4 |
| 21   | 0.006 (±0.001)     | 0.006              | 1   | 0.013 (±0.000)     | 0.019              | 5 |
| 25   | 0.001 (±0.001)     | 0.001              | 0   | 0.016 (±0.000)     | 0.023              | 6 |
| 31   | 0.003 (±0.001)     | 0.003              | 0   | 0.021 (±0.001)     | 0.030              | 8 |

## pH 11.15

| Time | (±)-6              |                    |     | Melonal            |                    |   |
|------|--------------------|--------------------|-----|--------------------|--------------------|---|
| days | extracted          | corrected          | %   | extracted          | corrected          | % |
|      | mg g <sup>-1</sup> | mg g <sup>-1</sup> |     | mg g <sup>-1</sup> | mg g <sup>-1</sup> |   |
| 0    | 0.213 (±0.004)     | 0.555              | 102 | 0.001 (±0.001)     | 0.002              | 1 |
| 3    | 0.076 (±0.001)     | 0.198              | 37  | 0.001 (±0.000)     | 0.003              | 1 |
| 7    | 0.015 (±0.001)     | 0.038              | 7   | 0.002 (±0.000)     | 0.006              | 2 |
| 11   | 0.003 (±0.001)     | 0.007              | 1   | 0.003 (±0.000)     | 0.010              | 3 |
| 14   | 0.000 (±0.000)     | 0.000              | 0   | 0.003 (±0.000)     | 0.010              | 3 |
| 17   | 0.000 (±0.000)     | 0.000              | 0   | 0.004 (±0.000)     | 0.013              | 5 |
| 21   | 0.000 (±0.000)     | 0.000              | 0   | 0.005 (±0.000)     | 0.016              | 6 |
| 25   | 0.000 (±0.000)     | 0.000              | 0   | 0.006 (±0.000)     | 0.019              | 7 |
| 31   | 0.000 (±0.000)     | 0.000              | 0   | 0.008 (±0.000)     | 0.025              | 9 |

## pH 11.15

| Time | (±)-9              |                    |    | Decanal            |                    |    |
|------|--------------------|--------------------|----|--------------------|--------------------|----|
| days | extracted          | corrected          | %  | extracted          | corrected          | %  |
|      | mg g <sup>-1</sup> | mg g <sup>-1</sup> |    | mg g <sup>-1</sup> | mg g <sup>-1</sup> |    |
| 0    | 0.389 (±0.001)     | 0.552              | 96 | 0.003 (±0.000)     | 0.004              | 1  |
| 3    | 0.128 (±0.001)     | 0.182              | 32 | 0.003 (±0.001)     | 0.004              | 1  |
| 7    | 0.021 (±0.001)     | 0.029              | 5  | 0.005 (±0.001)     | 0.007              | 2  |
| 11   | 0.005 (±0.000)     | 0.007              | 1  | 0.007 (±0.000)     | 0.010              | 3  |
| 14   | 0.002 (±0.001)     | 0.002              | 0  | 0.010 (±0.000)     | 0.015              | 5  |
| 17   | 0.008 (±0.009)     | 0.011              | 2  | 0.013 (±0.001)     | 0.019              | 6  |
| 21   | 0.001 (±0.000)     | 0.001              | 0  | 0.014 (±0.000)     | 0.021              | 7  |
| 25   | 0.001 (±0.001)     | 0.001              | 0  | 0.018 (±0.001)     | 0.027              | 9  |
| 31   | 0.001 (±0.000)     | 0.001              | 0  | 0.024 (±0.001)     | 0.036              | 11 |

## pH 11.15

| Time | (±)-15             |                    |    | Dihydro-β-ionone   |                    |    |
|------|--------------------|--------------------|----|--------------------|--------------------|----|
| days | extracted          | corrected          | %  | extracted          | corrected          | %  |
|      | mg g <sup>-1</sup> | mg g <sup>-1</sup> |    | mg g <sup>-1</sup> | mg g <sup>-1</sup> |    |
| 0    | 0.566 (±0.011)     | 0.641              | 98 | 0.016 (±0.002)     | 0.033              | 9  |
| 3    | 0.213 (±0.002)     | 0.241              | 37 | 0.030 (±0.004)     | 0.063              | 16 |
| 7    | 0.055 (±0.000)     | 0.062              | 10 | 0.046 (±0.002)     | 0.098              | 25 |
| 11   | 0.016 (±0.000)     | 0.018              | 3  | 0.060 (±0.001)     | 0.128              | 33 |
| 14   | 0.009 (±0.000)     | 0.010              | 2  | 0.073 (±0.001)     | 0.156              | 40 |
| 17   | 0.005 (±0.001)     | 0.005              | 1  | 0.085 (±0.001)     | 0.182              | 47 |
| 21   | 0.005 (±0.001)     | 0.005              | 1  | 0.098 (±0.001)     | 0.209              | 54 |
| 25   | 0.003 (±0.000)     | 0.003              | 1  | 0.112 (±0.001)     | 0.240              | 62 |
| 31   | 0.004 (±0.001)     | 0.004              | 1  | 0.130 (±0.001)     | 0.278              | 72 |

pH 11.15

| Time | (±)- <b>17</b>                  |                                 |    | 2-Methylundecanal               |                                 |   |
|------|---------------------------------|---------------------------------|----|---------------------------------|---------------------------------|---|
| days | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | %  | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | % |
| 0    | 0.163 (±0.004)                  | 0.624                           | 91 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 3    | 0.120 (±0.010)                  | 0.461                           | 68 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 7    | 0.073 (±0.001)                  | 0.278                           | 41 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 11   | 0.047 (±0.000)                  | 0.180                           | 26 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 14   | 0.037 (±0.004)                  | 0.140                           | 21 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 17   | 0.031 (±0.000)                  | 0.119                           | 17 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 21   | 0.022 (±0.001)                  | 0.084                           | 12 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 25   | 0.022 (±0.006)                  | 0.084                           | 12 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 31   | 0.016 (±0.000)                  | 0.061                           | 9  | 0.000 (±0.000)                  | 0.000                           | 0 |

pH 11.15

| Time | (±)- <b>18</b>                  |                                 |     | 2-Methylundecanal               |                                 |   |
|------|---------------------------------|---------------------------------|-----|---------------------------------|---------------------------------|---|
| days | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | %   | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | % |
| 0    | 0.273 (±0.000)                  | 0.747                           | 104 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 3    | 0.246 (±0.010)                  | 0.673                           | 94  | 0.000 (±0.000)                  | 0.000                           | 0 |
| 7    | 0.217 (±0.002)                  | 0.592                           | 83  | 0.000 (±0.000)                  | 0.000                           | 0 |
| 11   | 0.177 (±0.000)                  | 0.484                           | 68  | 0.001 (±0.001)                  | 0.001                           | 0 |
| 14   | 0.167 (±0.001)                  | 0.455                           | 64  | 0.000 (±0.000)                  | 0.000                           | 0 |
| 17   | 0.149 (±0.001)                  | 0.408                           | 57  | 0.000 (±0.000)                  | 0.000                           | 0 |
| 21   | 0.129 (±0.001)                  | 0.353                           | 49  | 0.000 (±0.000)                  | 0.000                           | 0 |
| 25   | 0.112 (±0.003)                  | 0.306                           | 43  | 0.000 (±0.000)                  | 0.000                           | 0 |
| 31   | 0.087 (±0.014)                  | 0.238                           | 33  | 0.001 (±0.001)                  | 0.001                           | 0 |

pH 11.15

| Time | (±)- <b>19</b>                  |                                 |    | Melonal                         |                                 |   |
|------|---------------------------------|---------------------------------|----|---------------------------------|---------------------------------|---|
| days | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | %  | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | % |
| 0    | 0.034 (±0.000)                  | 0.582                           | 93 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 3    | 0.034 (±0.000)                  | 0.582                           | 93 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 7    | 0.027 (±0.000)                  | 0.462                           | 74 | 0.001 (±0.001)                  | 0.002                           | 1 |
| 11   | 0.024 (±0.001)                  | 0.403                           | 64 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 14   | 0.023 (±0.001)                  | 0.393                           | 63 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 17   | 0.021 (±0.001)                  | 0.351                           | 56 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 21   | 0.017 (±0.001)                  | 0.283                           | 45 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 25   | 0.016 (±0.001)                  | 0.265                           | 42 | 0.001 (±0.001)                  | 0.002                           | 1 |
| 31   | 0.013 (±0.000)                  | 0.223                           | 36 | 0.001 (±0.001)                  | 0.002                           | 1 |

## pH 11.15

| Time | (±)- <b>20</b>                  |                                 |    | Decanal                         |                                 |   |
|------|---------------------------------|---------------------------------|----|---------------------------------|---------------------------------|---|
| days | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | %  | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | % |
| 0    | 0.096 (±0.001)                  | 0.648                           | 98 | 0.004 (±0.000)                  | 0.006                           | 2 |
| 3    | 0.093 (±0.006)                  | 0.627                           | 95 | 0.004 (±0.001)                  | 0.005                           | 2 |
| 7    | 0.075 (±0.002)                  | 0.505                           | 77 | 0.004 (±0.001)                  | 0.005                           | 2 |
| 11   | 0.062 (±0.001)                  | 0.421                           | 64 | 0.004 (±0.001)                  | 0.005                           | 2 |
| 14   | 0.056 (±0.006)                  | 0.380                           | 58 | 0.003 (±0.000)                  | 0.004                           | 1 |
| 17   | 0.057 (±0.004)                  | 0.383                           | 58 | 0.003 (±0.000)                  | 0.004                           | 1 |
| 21   | 0.042 (±0.005)                  | 0.281                           | 43 | 0.003 (±0.000)                  | 0.004                           | 1 |
| 25   | 0.038 (±0.002)                  | 0.254                           | 39 | 0.003 (±0.000)                  | 0.004                           | 1 |
| 31   | 0.032 (±0.001)                  | 0.214                           | 32 | 0.004 (±0.001)                  | 0.005                           | 2 |

## pH 11.15

| Time | (±)- <b>21</b>                  |                                 |     | 2-Methylundecanal               |                                 |   |
|------|---------------------------------|---------------------------------|-----|---------------------------------|---------------------------------|---|
| days | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | %   | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | % |
| 0    | 0.689 (±0.025)                  | 0.699                           | 102 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 3    | 0.691 (±0.004)                  | 0.701                           | 102 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 7    | 0.682 (±0.004)                  | 0.691                           | 101 | 0.000 (±0.000)                  | 0.000                           | 0 |
| 11   | 0.656 (±0.008)                  | 0.665                           | 97  | 0.000 (±0.000)                  | 0.000                           | 0 |
| 14   | 0.657 (±0.008)                  | 0.666                           | 97  | 0.000 (±0.000)                  | 0.000                           | 0 |
| 17   | 0.652 (±0.002)                  | 0.661                           | 96  | 0.000 (±0.000)                  | 0.000                           | 0 |
| 21   | 0.612 (±0.016)                  | 0.621                           | 90  | 0.000 (±0.000)                  | 0.000                           | 0 |
| 25   | 0.610 (±0.001)                  | 0.619                           | 90  | 0.000 (±0.000)                  | 0.000                           | 0 |
| 31   | 0.622 (±0.001)                  | 0.631                           | 92  | 0.000 (±0.000)                  | 0.000                           | 0 |

## pH 11.15

| Time | (±)- <b>22</b>                  |                                 |     | Melonal                         |                                 |   |
|------|---------------------------------|---------------------------------|-----|---------------------------------|---------------------------------|---|
| days | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | %   | extracted<br>mg g <sup>-1</sup> | corrected<br>mg g <sup>-1</sup> | % |
| 0    | 0.422 (±0.028)                  | 0.64                            | 107 | 0.001 (±0.000)                  | 0.003                           | 1 |
| 3    | 0.417 (±0.001)                  | 0.63                            | 105 | 0.001 (±0.000)                  | 0.003                           | 1 |
| 7    | 0.415 (±0.008)                  | 0.63                            | 105 | 0.002 (±0.001)                  | 0.005                           | 2 |
| 11   | 0.376 (±0.015)                  | 0.57                            | 95  | 0.002 (±0.000)                  | 0.006                           | 2 |
| 14   | 0.377 (±0.000)                  | 0.57                            | 95  | 0.002 (±0.000)                  | 0.006                           | 2 |
| 17   | 0.387 (±0.012)                  | 0.59                            | 98  | 0.002 (±0.000)                  | 0.006                           | 2 |
| 21   | 0.368 (±0.006)                  | 0.56                            | 93  | 0.002 (±0.000)                  | 0.006                           | 2 |
| 25   | 0.357 (±0.013)                  | 0.54                            | 90  | 0.002 (±0.000)                  | 0.006                           | 2 |
| 31   | 0.355 (±0.023)                  | 0.54                            | 90  | 0.003 (±0.001)                  | 0.008                           | 3 |

### Hydrolysis of profragrances at alkaline pH: $^1\text{H}$ NMR measurements

Formation of ethanol (peak at 3.6 ppm) and of 2-methylundecanal (peak at 9.6 ppm) determined by quantitative  $^1\text{H}$  NMR spectroscopy in an alkaline-buffered solution of  $\text{D}_2\text{O}/\text{CD}_3\text{CN}$  1:1 (w/w) at room temperature. NMR integrals were normalised at 1 in the first spectra of the series. Numerical data for Fig. 5.

| Hydrolysis of ( $\pm$ )- <b>3</b> |    |                   |                   | Hydrolysis of ( $\pm$ )- <b>17</b> |    |                   |  |
|-----------------------------------|----|-------------------|-------------------|------------------------------------|----|-------------------|--|
| Time                              |    | NMR peak integral | NMR peak integral | Time                               |    | NMR peak integral |  |
|                                   |    | Ethanol           | 2-Methylundecanal |                                    |    | Ethanol           |  |
| h                                 | d  | (3.6 ppm)         | (9.6 ppm)         | h                                  | d  | (3.6 ppm)         |  |
| 0                                 | 0  | 0.00              | 0.00              | 0                                  | 0  | 0.00              |  |
| 5                                 | 0  | 1.00 <sup>a</sup> | 1.00 <sup>a</sup> | 4                                  | 0  | 1.00 <sup>a</sup> |  |
| 24                                | 1  | 1.20              | 1.14              | 24                                 | 1  | 2.03              |  |
| 49                                | 2  | 1.31              | 1.09              | 49                                 | 2  | 2.72              |  |
| 94                                | 4  | 1.42              | 1.04              | 80                                 | 3  | 3.50              |  |
| 113                               | 5  | 1.47              | 1.07              | 113                                | 5  | 4.07              |  |
| 170                               | 7  | 1.57              | 0.99              | 169                                | 7  | 4.33              |  |
| 201                               | 8  | 1.96              | 1.07              | 201                                | 8  | 4.82              |  |
| 271                               | 11 | 2.20              | 1.06              | 270                                | 11 | 5.18              |  |
| 411                               | 17 | 2.45              | 1.07              | 411                                | 17 | 6.22              |  |

<sup>a</sup> Value normalised at 1.00.

| Hydrolysis of ( $\pm$ )- <b>5</b> |    |                   |                   | Hydrolysis of ( $\pm$ )- <b>18</b> |    |                   |  |
|-----------------------------------|----|-------------------|-------------------|------------------------------------|----|-------------------|--|
| Time                              |    | NMR peak integral | NMR peak integral | Time                               |    | NMR peak integral |  |
|                                   |    | Ethanol           | 2-Methylundecanal |                                    |    | Ethanol           |  |
| h                                 | d  | (3.6 ppm)         | (9.6 ppm)         | h                                  | d  | (3.6 ppm)         |  |
| 0                                 | 0  | 0.00              | 0.00              | 0                                  | 0  | 0.00              |  |
| 2                                 | 0  | 1.00 <sup>a</sup> | 1.00 <sup>a</sup> | 4                                  | 0  | 1.00 <sup>a</sup> |  |
| 22                                | 1  | 2.12              | 1.15              | 23                                 | 1  | 2.25              |  |
| 46                                | 2  | 3.24              | 1.52              | 48                                 | 2  | 2.98              |  |
| 70                                | 3  | 3.66              | 1.90              | 79                                 | 3  | 3.66              |  |
| 94                                | 4  | 4.33              | 2.44              | 102                                | 4  | 3.83              |  |
| 166                               | 7  | 5.65              | 4.51              | 167                                | 7  | 5.07              |  |
| 189                               | 8  | 5.84              | 4.92              | 201                                | 8  | 5.67              |  |
| 214                               | 9  | 6.11              | 5.44              | 270                                | 11 | 6.53              |  |
| 238                               | 10 | 6.37              | 6.17              | 411                                | 17 | 8.25              |  |

<sup>a</sup> Value normalised at 1.00.

## Dynamic headspace analysis in a fabric softener application

Average dynamic headspace concentrations (with standard deviations) measured above cotton for fragrances released from profragrances (±)-**1**–(±)-**22** compared with the corresponding unmodified fragrance (reference) in a fabric softening application after line drying for 1 day and 3 days. Numerical data for Figs. 6, 7 and 8.

| 2-Methyl-undecanal released from | Average headspace concentrations and standard deviations (in parentheses) of 2-methylundecanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day |              |                |                |               |               |               |                  |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|----------------|---------------|---------------|---------------|------------------|
|                                  | 30 min                                                                                                                                                                       | 90 min       | 150 min        | 210 min        | 270 min       | 330 min       | 390 min       | 450 min          |
| (±)- <b>1</b>                    | 19.3 (±18.5)                                                                                                                                                                 | 64.5 (±73.5) | 101.0 (±110.6) | 112.9 (±117.0) | 98.4 (±97.2)  | 90.7 (±90.7)  | 84.3 (±83.7)  | 80.7 (±79.7)     |
| (±)- <b>3</b>                    | 2.3 (±0.4)                                                                                                                                                                   | 6.8 (±9.5)   | 16.0 (±15.7)   | 21.5 (±10.1)   | 28.3 (±8.7)   | 22.6 (±1.2)   | 25.0 (±1.5)   | 24.8 (±2.9)      |
| (±)- <b>5</b>                    | 30.9 (±11.6)                                                                                                                                                                 | 69.5 (±38.2) | 103.3 (±58.9)  | 127.0 (±77.1)  | 130.9 (±63.6) | 131.5 (±58.9) | 124.7 (±53.3) | 124.2 (±54.1)    |
| (±)- <b>17</b>                   | 3.6 (±0.2)                                                                                                                                                                   | 4.4 (±0.4)   | 3.3 (±0.3)     | 3.6 (±0.6)     | 2.7 (±0.1)    | 2.5 (±0.2)    | 2.2 (±0.5)    | 2.5 (±0.2)       |
| (±)- <b>18</b>                   | 4.6 (±0.1)                                                                                                                                                                   | 4.4 (±0.9)   | 4.7 (±1.3)     | 3.8 (±0.8)     | 2.7 (±0.6)    | 2.8 (±0.4)    | 2.3 (±0.2)    | 3.6 <sup>a</sup> |
| (±)- <b>21</b>                   | 12.6 (±1.9)                                                                                                                                                                  | 37.5 (±2.4)  | 61.7 (±7.1)    | 74.7 (±5.7)    | 81.8 (±3.7)   | 84.9 (±0.8)   | 88.6 (±2.9)   | 88.3 (±1.5)      |
| Reference                        | 9.1 (±7.3)                                                                                                                                                                   | 11.9 (±5.2)  | 15.1 (±6.3)    | 15.8 (±8.7)    | 15.7 (±7.8)   | 14.6 (±7.4)   | 15.0 (±7.2)   | 13.8 (±7.7)      |

| Melonal released from | Average headspace concentrations and standard deviations (in parentheses) of Melonal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day |              |               |               |               |             |             |             |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------|---------------|---------------|-------------|-------------|-------------|
|                       | 30 min                                                                                                                                                             | 90 min       | 150 min       | 210 min       | 270 min       | 330 min     | 390 min     | 450 min     |
| (±)- <b>2</b>         | 54.8 (±7.3)                                                                                                                                                        | 51.1 (±4.4)  | 47.3 (±6.3)   | 45.3 (±6.3)   | 39.2 (±5.3)   | 44.8 (±0.0) | 33.9 (±4.6) | 27.8 (±4.5) |
| (±)- <b>4</b>         | 16.2 (±1.0)                                                                                                                                                        | 15.6 (±0.9)  | 8.2 (±11.1)   | 13.7 (±1.9)   | 12.3 (±1.8)   | 13.8 (±5.6) | 11.3 (±1.6) | 9.0 (±1.3)  |
| (±)- <b>6</b>         | 95.2 (±9.9)                                                                                                                                                        | 99.5 (±12.4) | 106.9 (±16.1) | 111.0 (±19.6) | 100.9 (±15.4) | 97.1 (±6.4) | 90.7 (±5.9) | 80.0 (±1.4) |
| (±)- <b>19</b>        | 2.6 (±0.1)                                                                                                                                                         | 2.6 (±0.2)   | 2.6 (±0.3)    | 2.6 (±0.3)    | 2.3 (±0.3)    | 2.2 (±0.1)  | 2.1 (±0.1)  | 1.9 (±0.2)  |
| (±)- <b>22</b>        | 37.0 (±0.1)                                                                                                                                                        | 35.4 (±0.3)  | 36.9 (±0.3)   | 39.0 (±0.7)   | 36.7 (±0.5)   | 39.1 (±0.3) | 38.1 (±0.2) | 37.2 (±0.1) |
| Reference             | 3.8 (±2.2)                                                                                                                                                         | 4.8 (±3.6)   | 4.3 (±2.9)    | 3.6 (±2.2)    | 3.1 (±1.8)    | 2.6 (±1.3)  | 2.4 (±1.1)  | 2.2 (±0.9)  |

|                                 |                                                                                                                                                                              |             |             |              |              |              |              |              |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|
| Decanal released from           | Average headspace concentrations and standard deviations (in parentheses) of decanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day           |             |             |              |              |              |              |              |
|                                 | 30 min                                                                                                                                                                       | 90 min      | 150 min     | 210 min      | 270 min      | 330 min      | 390 min      | 450 min      |
| (±)- <b>9</b>                   | 33.5 (±3.3)                                                                                                                                                                  | 69.5 (±3.8) | 96.2 (±0.4) | 107.6 (±6.4) | 101.3 (±6.1) | 109.1 (±6.5) | 106.1 (±6.4) | 105.7 (±5.4) |
| (±)- <b>20</b>                  | 4.5 (±0.3)                                                                                                                                                                   | 5.1 (±0.8)  | 4.8 (±0.2)  | 4.6 (±0.1)   | 4.6 (±0.2)   | 4.0 (±0.1)   | 4.1 (±0.2)   | 3.7 (±0.3)   |
| Reference                       | 7.0 (±1.9)                                                                                                                                                                   | 6.6 (±1.1)  | 7.0 (±1.1)  | 7.3 (±1.5)   | 6.5 (±0.8)   | 6.2 (±0.8)   | 6.6 (±1.4)   | 6.3 (±1.0)   |
| (Z)-4-Decenal released from     | Average headspace concentrations and standard deviations (in parentheses) of (Z)-4-decenal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day     |             |             |              |              |              |              |              |
|                                 | 30 min                                                                                                                                                                       | 90 min      | 150 min     | 210 min      | 270 min      | 330 min      | 390 min      | 450 min      |
| (±)- <b>10</b>                  | 27.5 (±2.2)                                                                                                                                                                  | 49.7 (±1.7) | 64.5 (±1.4) | 71.0 (±2.2)  | 73.5 (±1.7)  | 76.7 (±2.2)  | 79.3 (±3.0)  | 81.5 (±6.6)  |
| (±)- <b>16</b>                  | 3.8 (±0.7)                                                                                                                                                                   | 4.9 (±0.2)  | 4.8 (±0.5)  | 5.5 (±0.5)   | 5.2 (±0.3)   | 4.7 (±0.3)   | 4.7 (±0.9)   | 4.8 (±0.1)   |
| Reference                       | 2.3 (±1.5)                                                                                                                                                                   | 2.8 (±1.7)  | 2.6 (±1.2)  | 2.6 (±1.1)   | 2.4 (±0.9)   | 2.3 (±0.8)   | 2.2 (±0.8)   | 2.1 (±0.7)   |
| Cyclamen aldehyde released from | Average headspace concentrations and standard deviations (in parentheses) of Cyclamen aldehyde (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day |             |             |              |              |              |              |              |
|                                 | 30 min                                                                                                                                                                       | 90 min      | 150 min     | 210 min      | 270 min      | 330 min      | 390 min      | 450 min      |
| (±)- <b>7</b>                   | 7.0 (±6.1)                                                                                                                                                                   | 12.6 (±0.8) | 33.2 (±4.1) | 42.0 (±9.6)  | 55.9 (±26.3) | 60.5 (±7.6)  | 58.1 (±1.3)  | 78.1 (±33.5) |
| Reference                       | 4.0 (±0.1)                                                                                                                                                                   | 8.5 (±0.6)  | 10.3 (±3.5) | 8.6 (±6.6)   | 18.9 (±1.1)  | 14.1 (±1.2)  | 20.2 (±0.3)  | 17.2 (±5.1)  |
| 3-Phenylbutanal released from   | Average headspace concentrations and standard deviations (in parentheses) of 3-phenylbutanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day   |             |             |              |              |              |              |              |
|                                 | 30 min                                                                                                                                                                       | 90 min      | 150 min     | 210 min      | 270 min      | 330 min      | 390 min      | 450 min      |
| (±)- <b>8</b>                   | 29.9 (±2.2)                                                                                                                                                                  | 48.8 (±0.7) | 63.1 (±7.0) | 70.3 (±8.0)  | 84.1 (±9.1)  | 107.9 (±2.8) | 135.4 (±2.1) | 153.0 (±2.1) |
| Reference                       | 4.6 (±0.8)                                                                                                                                                                   | 5.3 (±0.0)  | 4.6 (±0.3)  | 4.4 (±0.0)   | 3.8 (±1.2)   | 4.0 (±0.1)   | 3.6 (±0.3)   | 3.7 (±0.4)   |

|                                                     |                                                                                                                                                                                                  |              |              |               |               |               |              |              |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|---------------|---------------|---------------|--------------|--------------|
| 5,9-Dimethyl-4-decenal released from                | Average headspace concentrations and standard deviations (in parentheses) of 5,9-dimethyl-4-decenal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day                |              |              |               |               |               |              |              |
|                                                     | 30 min                                                                                                                                                                                           | 90 min       | 150 min      | 210 min       | 270 min       | 330 min       | 390 min      | 450 min      |
| (±)-11                                              | 12.0 (±0.8)                                                                                                                                                                                      | 24.5 (±3.1)  | 36.9 (±5.7)  | 47.1 (±8.6)   | 53.1 (±7.8)   | 61.0 (±7.3)   | 63.9 (±5.3)  | 68.2 (±5.4)  |
| Reference                                           | 4.3 (±3.4)                                                                                                                                                                                       | 4.9 (±3.8)   | 4.8 (±3.7)   | 5.0 (±3.9)    | 4.8 (±3.8)    | 4.5 (±3.7)    | 4.4 (±3.4)   | 4.3 (±3.7)   |
| 3-(4,4-Dimethylcyclohexen-yl)propanal released from | Average headspace concentrations and standard deviations (in parentheses) of 3-(4,4-dimethylcyclohexen-yl)propanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day |              |              |               |               |               |              |              |
|                                                     | 30 min                                                                                                                                                                                           | 90 min       | 150 min      | 210 min       | 270 min       | 330 min       | 390 min      | 450 min      |
| (±)-12                                              | 23.9 (±5.9)                                                                                                                                                                                      | 68.7 (±25.5) | 94.3 (±33.3) | 108.0 (±30.2) | 114.6 (±23.8) | 117.8 (±15.5) | 118.5 (±8.3) | 118.4 (±5.0) |
| Reference                                           | 8.2 (±4.6)                                                                                                                                                                                       | 5.6 (±3.6)   | 5.6 (±2.5)   | 4.9 (±2.0)    | 4.4 (±1.7)    | 4.1 (±1.7)    | 3.8 (±1.6)   | 3.6 (±1.6)   |
| Anisaldehyde released from                          | Average headspace concentrations and standard deviations (in parentheses) of Anisaldehyde (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day                          |              |              |               |               |               |              |              |
|                                                     | 30 min                                                                                                                                                                                           | 90 min       | 150 min      | 210 min       | 270 min       | 330 min       | 390 min      | 450 min      |
| (±)-13                                              | 0.1 (±0.0)                                                                                                                                                                                       | 6.2 (±0.4)   | 13.1 (±2.7)  | 18.8 (±4.5)   | 24.2 (±5.4)   | 30.4 (±9.5)   | 32.3 (±14.4) | 35.5 (±12.1) |
| Reference                                           | 0.9 (±0.0)                                                                                                                                                                                       | 0.8 (±0.1)   | 0.5 (±0.2)   | 0.5 (±0.0)    | 0.4 (±0.0)    | 1.4 (±1.6)    | 1.8 (±0.0)   | 2.5 (±0.3)   |
| Delphone released from                              | Average headspace concentrations and standard deviations (in parentheses) of Delphone (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day                              |              |              |               |               |               |              |              |
|                                                     | 30 min                                                                                                                                                                                           | 90 min       | 150 min      | 210 min       | 270 min       | 330 min       | 390 min      | 450 min      |
| (±)-14                                              | 7.0 (±2.2)                                                                                                                                                                                       | 5.2 (±0.7)   | 4.2 (±1.1)   | 2.6 (±0.7)    | 3.2 (±1.0)    | 3.0 (±0.7)    | 2.8 (±0.6)   | 2.7 (±0.7)   |
| Reference                                           | 2.4 (±0.0)                                                                                                                                                                                       | 0.7 (±0.1)   | 0.4 (±0.1)   | 0.2 (±0.0)    | 0.2 (±0.1)    | 0.2 (±0.1)    | 0.1 (±0.0)   | 0.1 (±0.0)   |

| Dihydro- $\beta$ -ionone<br>released from | Average headspace concentrations and standard deviations (in parentheses) of Dihydro- $\beta$ -ionone (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day |                    |                    |                     |                     |                     |                     |                     |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                           | 30 min                                                                                                                                                                              | 90 min             | 150 min            | 210 min             | 270 min             | 330 min             | 390 min             | 450 min             |
| ( $\pm$ )- <b>15</b>                      | 38.7 ( $\pm$ 1.3)                                                                                                                                                                   | 68.0 ( $\pm$ 3.7)  | 84.7 ( $\pm$ 10.1) | 86.9 ( $\pm$ 14.2)  | 86.0 ( $\pm$ 16.3)  | 79.9 ( $\pm$ 14.3)  | 78.1 ( $\pm$ 17.7)  | 82.5 ( $\pm$ 17.2)  |
| Reference                                 | 13.8 ( $\pm$ 0.2)                                                                                                                                                                   | 13.4 ( $\pm$ 0.4)  | 12.5 ( $\pm$ 0.7)  | 10.7 ( $\pm$ 0.2)   | 9.0 ( $\pm$ 0.2)    | 7.7 ( $\pm$ 0.6)    | 7.1 ( $\pm$ 0.6)    | 7.1 ( $\pm$ 0.6)    |
|                                           |                                                                                                                                                                                     |                    |                    |                     |                     |                     |                     |                     |
| 2-Methyl-undecanal<br>released from       | Average headspace concentrations and standard deviations (in parentheses) of 2-methylundecanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days       |                    |                    |                     |                     |                     |                     |                     |
|                                           | 30 min                                                                                                                                                                              | 90 min             | 150 min            | 210 min             | 270 min             | 330 min             | 390 min             | 450 min             |
| ( $\pm$ )- <b>1</b>                       | 4.8 ( $\pm$ 5.2)                                                                                                                                                                    | 20.1 ( $\pm$ 22.6) | 35.6 ( $\pm$ 40.9) | 38.8 ( $\pm$ 43.6)  | 41.4 ( $\pm$ 45.9)  | 40.6 ( $\pm$ 44.2)  | 40.3 ( $\pm$ 43.4)  | 37.5 ( $\pm$ 39.3)  |
| ( $\pm$ )- <b>3</b>                       | 4.2 ( $\pm$ 2.1)                                                                                                                                                                    | 5.6 ( $\pm$ 1.3)   | 7.4 ( $\pm$ 1.1)   | 12.7 ( $\pm$ 0.9)   | 14.2 ( $\pm$ 3.1)   | 13.7 ( $\pm$ 2.2)   | 13.0 ( $\pm$ 1.6)   | 13.2 ( $\pm$ 3.3)   |
| ( $\pm$ )- <b>5</b>                       | 21.6 ( $\pm$ 7.7)                                                                                                                                                                   | 53.6 ( $\pm$ 23.1) | 96.9 ( $\pm$ 34.3) | 118.5 ( $\pm$ 42.6) | 122.1 ( $\pm$ 44.0) | 119.0 ( $\pm$ 43.8) | 119.1 ( $\pm$ 41.9) | 103.2 ( $\pm$ 35.4) |
| ( $\pm$ )- <b>17</b>                      | 0.8 ( $\pm$ 0.0)                                                                                                                                                                    | 1.1 ( $\pm$ 0.0)   | 1.4 ( $\pm$ 0.2)   | 1.8 ( $\pm$ 0.6)    | 1.7 ( $\pm$ 0.2)    | 1.7 ( $\pm$ 0.0)    | 1.7 ( $\pm$ 0.0)    | 1.4 ( $\pm$ 0.1)    |
| ( $\pm$ )- <b>18</b>                      | 0.8 ( $\pm$ 0.1)                                                                                                                                                                    | 1.4 ( $\pm$ 0.5)   | 1.6 ( $\pm$ 0.5)   | 1.5 ( $\pm$ 0.6)    | 1.7 ( $\pm$ 0.5)    | 2.0 ( $\pm$ 0.6)    | 1.6 ( $\pm$ 0.2)    | 1.8 ( $\pm$ 0.5)    |
| ( $\pm$ )- <b>21</b>                      | 21.8 ( $\pm$ 3.0)                                                                                                                                                                   | 41.3 ( $\pm$ 5.5)  | 54.4 ( $\pm$ 6.1)  | 65.4 ( $\pm$ 6.9)   | 69.7 ( $\pm$ 7.4)   | 71.3 ( $\pm$ 7.5)   | 70.8 ( $\pm$ 7.3)   | 69.2 ( $\pm$ 3.4)   |
| Reference                                 | 4.0 ( $\pm$ 3.1)                                                                                                                                                                    | 6.8 ( $\pm$ 5.5)   | 8.9 ( $\pm$ 7.0)   | 10.4 ( $\pm$ 7.2)   | 11.4 ( $\pm$ 7.4)   | 11.5 ( $\pm$ 7.1)   | 11.4 ( $\pm$ 7.9)   | 11.5 ( $\pm$ 8.9)   |
|                                           |                                                                                                                                                                                     |                    |                    |                     |                     |                     |                     |                     |
| Melonal<br>released from                  | Average headspace concentrations and standard deviations (in parentheses) of Melonal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days                 |                    |                    |                     |                     |                     |                     |                     |
|                                           | 30 min                                                                                                                                                                              | 90 min             | 150 min            | 210 min             | 270 min             | 330 min             | 390 min             | 450 min             |
| ( $\pm$ )- <b>2</b>                       | 27.0 ( $\pm$ 1.2)                                                                                                                                                                   | 35.0 <sup>b</sup>  | 32.0 ( $\pm$ 2.1)  | 27.9 ( $\pm$ 3.6)   | 25.2 ( $\pm$ 0.8)   | 23.5 ( $\pm$ 2.4)   | 21.6 ( $\pm$ 0.6)   | 20.1 ( $\pm$ 1.5)   |
| ( $\pm$ )- <b>4</b>                       | 19.1 ( $\pm$ 1.5)                                                                                                                                                                   | 11.7 ( $\pm$ 1.8)  | 8.2 ( $\pm$ 0.7)   | 9.3 ( $\pm$ 6.7)    | 5.2 ( $\pm$ 2.2)    | 13.3 ( $\pm$ 0.1)   | 6.4 ( $\pm$ 5.2)    | 9.8 ( $\pm$ 0.1)    |
| ( $\pm$ )- <b>6</b>                       | 46.5 ( $\pm$ 23.8)                                                                                                                                                                  | 79.1 ( $\pm$ 39.3) | 88.2 ( $\pm$ 43.4) | 83.3 ( $\pm$ 36.8)  | 75.7 ( $\pm$ 29.3)  | 69.6 ( $\pm$ 22.8)  | 64.7 ( $\pm$ 20.0)  | 59.7 ( $\pm$ 13.5)  |
| ( $\pm$ )- <b>19</b>                      | 1.8 ( $\pm$ 0.1)                                                                                                                                                                    | 2.0 ( $\pm$ 0.2)   | 2.0 ( $\pm$ 0.3)   | 2.0 ( $\pm$ 0.0)    | 2.0 ( $\pm$ 0.0)    | 1.7 ( $\pm$ 0.1)    | 1.7 ( $\pm$ 0.1)    | 1.7 ( $\pm$ 0.1)    |
| ( $\pm$ )- <b>22</b>                      | 25.9 ( $\pm$ 3.3)                                                                                                                                                                   | 34.8 ( $\pm$ 7.0)  | 38.6 ( $\pm$ 9.2)  | 39.7 ( $\pm$ 8.9)   | 36.9 ( $\pm$ 7.6)   | 36.4 ( $\pm$ 6.9)   | 36.6 ( $\pm$ 6.6)   | 34.7 ( $\pm$ 7.7)   |
| Reference                                 | 5.1 ( $\pm$ 4.0)                                                                                                                                                                    | 4.6 ( $\pm$ 3.5)   | 4.2 ( $\pm$ 3.0)   | 2.9 ( $\pm$ 2.0)    | 3.1 ( $\pm$ 2.0)    | 2.6 ( $\pm$ 1.4)    | 2.5 ( $\pm$ 1.5)    | 3.1 ( $\pm$ 2.5)    |

| Decanal released from           | Average headspace concentrations and standard deviations (in parentheses) of decanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days           |              |              |               |               |               |               |               |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
|                                 | 30 min                                                                                                                                                                        | 90 min       | 150 min      | 210 min       | 270 min       | 330 min       | 390 min       | 450 min       |
| (±)- <b>9</b>                   | 23.2 (±2.0)                                                                                                                                                                   | 91.5 (±10.4) | 144.7 (±4.4) | 150.4 (±26.3) | 138.8 (±29.7) | 126.4 (±32.5) | 119.6 (±24.7) | 118.4 (±22.2) |
| (±)- <b>20</b>                  | 6.4 (±0.0)                                                                                                                                                                    | 6.8 (±0.2)   | 6.5 (±0.4)   | 5.9 (±0.5)    | 6.1 (±1.1)    | 5.3 (±0.8)    | 5.1 (±0.9)    | 4.8 (±0.4)    |
| Reference                       | 5.3 (±1.7)                                                                                                                                                                    | 7.4 (±0.8)   | 7.7 (±1.0)   | 7.2 (±1.4)    | 6.4 (±0.8)    | 6.1 (±0.4)    | 5.7 (±0.5)    | 5.8 (±0.5)    |
| (Z)-4-Decenal released from     | Average headspace concentrations and standard deviations (in parentheses) of (Z)-4-decenal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days     |              |              |               |               |               |               |               |
|                                 | 30 min                                                                                                                                                                        | 90 min       | 150 min      | 210 min       | 270 min       | 330 min       | 390 min       | 450 min       |
| (±)- <b>10</b>                  | 23.1 (±3.9)                                                                                                                                                                   | 58.4 (±8.7)  | 79.4 (±11.5) | 91.7 (±7.8)   | 89.9 (±8.2)   | 88.3 (±5.6)   | 93.0 (±5.9)   | 87.4 (±4.4)   |
| (±)- <b>16</b>                  | 7.2 (±0.4)                                                                                                                                                                    | 7.7 (±0.4)   | 9.5 (±0.3)   | 9.8 (±0.0)    | 9.3 (±1.0)    | 9.6 (±0.8)    | 9.6 (±0.6)    | 9.6 (±1.5)    |
| Reference                       | 3.3 (±3.3)                                                                                                                                                                    | 3.8 (±3.4)   | 3.5 (±3.0)   | 3.1 (±2.7)    | 2.9 (±2.5)    | 2.8 (±2.5)    | 2.7 (±2.3)    | 2.5 (±2.0)    |
| Cyclamen aldehyde released from | Average headspace concentrations and standard deviations (in parentheses) of Cyclamen aldehyde (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days |              |              |               |               |               |               |               |
|                                 | 30 min                                                                                                                                                                        | 90 min       | 150 min      | 210 min       | 270 min       | 330 min       | 390 min       | 450 min       |
| (±)- <b>7</b>                   | 8.3 (±0.9)                                                                                                                                                                    | 14.3 (±1.0)  | 37.2 (±3.5)  | 67.0 (±9.9)   | 64.0 (±25.2)  | 61.7 (±5.1)   | 56.5 (±8.2)   | 108.5 (±13.1) |
| Reference                       | 1.9 (±0.0)                                                                                                                                                                    | 4.3 (±0.8)   | 7.2 (±4.1)   | 8.2 (±6.4)    | 11.4 (±1.0)   | 9.5 (±1.0)    | 7.7 (±6.7)    | 8.7 (±5.6)    |
| 3-Phenyl-butanal released from  | Average headspace concentrations and standard deviations (in parentheses) of 3-phenylbutanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days   |              |              |               |               |               |               |               |
|                                 | 30 min                                                                                                                                                                        | 90 min       | 150 min      | 210 min       | 270 min       | 330 min       | 390 min       | 450 min       |
| (±)- <b>8</b>                   | 1.9 (±0.1)                                                                                                                                                                    | 32.4 (±1.3)  | 47.9 (±0.3)  | 77.9 (±0.9)   | 91.7 (±6.5)   | 118.1 (±14.4) | 135.3 (±13.3) | 135.8 (±0.5)  |
| Reference                       | 12.4 (±1.6)                                                                                                                                                                   | 15.3 (±5.0)  | 8.8 (±1.2)   | 7.1 (±0.4)    | 7.1 (±1.0)    | 5.1 (±0.0)    | 5.6 (±1.0)    | 5.3 (±0.7)    |

|                                                     |                                                                                                                                                                                                   |              |              |              |              |              |              |              |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 5,9-Dimethyl-4-decenal released from                | Average headspace concentrations and standard deviations (in parentheses) of 5,9-dimethyl-4-decenal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days                |              |              |              |              |              |              |              |
|                                                     | 30 min                                                                                                                                                                                            | 90 min       | 150 min      | 210 min      | 270 min      | 330 min      | 390 min      | 450 min      |
| (±)- <b>11</b>                                      | 6.0 (±8.4)                                                                                                                                                                                        | 17.1 (±24.0) | 39.7 (±17.0) | 49.1 (±13.4) | 56.6 (±10.1) | 63.0 (±2.0)  | 64.2 (±1.1)  | 65.6 (±3.8)  |
| Reference                                           | 2.2 (±1.9)                                                                                                                                                                                        | 3.4 (±2.4)   | 3.8 (±2.3)   | 3.7 (±2.1)   | 3.4 (±2.0)   | 3.4 (±2.2)   | 3.1 (±1.5)   | 2.9 (±1.4)   |
| 3-(4,4-Dimethylcyclohexen-yl)propanal released from | Average headspace concentrations and standard deviations (in parentheses) of 3-(4,4-dimethylcyclohexen-yl)propanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days |              |              |              |              |              |              |              |
|                                                     | 30 min                                                                                                                                                                                            | 90 min       | 150 min      | 210 min      | 270 min      | 330 min      | 390 min      | 450 min      |
| (±)- <b>12</b>                                      | 28.8 (±2.2)                                                                                                                                                                                       | 55.4 (±3.9)  | 68.6 (±6.9)  | 72.0 (±12.0) | 71.9 (±15.1) | 69.9 (±16.6) | 67.9 (±16.5) | 65.0 (±17.2) |
| Reference                                           | 3.2 (±0.7)                                                                                                                                                                                        | 4.0 (±1.2)   | 3.8 (±1.3)   | 3.7 (±1.6)   | 2.9 (±0.9)   | 3.3 (±1.7)   | 3.0 (±1.1)   | 2.6 (±1.1)   |
| Anisaldehyde released from                          | Average headspace concentrations and standard deviations (in parentheses) of Anisaldehyde (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days                          |              |              |              |              |              |              |              |
|                                                     | 30 min                                                                                                                                                                                            | 90 min       | 150 min      | 210 min      | 270 min      | 330 min      | 390 min      | 450 min      |
| (±)- <b>13</b>                                      | 0.1 (±0.1)                                                                                                                                                                                        | 2.6 (±1.7)   | 6.1 (±4.6)   | 8.9 (±7.4)   | 10.8 (±9.1)  | 12.4 (±10.6) | 13.4 (±11.3) | 16.3 (±7.4)  |
| Reference                                           | 0.3 (±0.1)                                                                                                                                                                                        | 0.6 (±0.1)   | 0.7 (±0.1)   | 0.6 (±0.1)   | 0.5 (±0.0)   | 0.4 (±0.0)   | 0.4 (±0.0)   | 0.5 (±0.1)   |
| Delphone released from                              | Average headspace concentrations and standard deviations (in parentheses) of Delphone (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days                              |              |              |              |              |              |              |              |
|                                                     | 30 min                                                                                                                                                                                            | 90 min       | 150 min      | 210 min      | 270 min      | 330 min      | 390 min      | 450 min      |
| (±)- <b>14</b>                                      | 0.4 (±0.1)                                                                                                                                                                                        | 1.3 (±0.9)   | 1.6 (±1.3)   | 1.7 (±1.7)   | 2.0 (±2.1)   | 1.4 (±1.6)   | 1.3 (±1.5)   | 1.2 (±1.3)   |
| Reference                                           | 0.2 (±0.0)                                                                                                                                                                                        | 0.7 (±0.0)   | 0.6 (±0.0)   | 0.5 (±0.1)   | 0.4 (±0.0)   | 0.3 (±0.1)   | 0.2 (±0.1)   | 0.2 (±0.1)   |

| Dihydro- $\beta$ -ionone<br>released from | Average headspace concentrations and standard deviations (in parentheses) of Dihydro- $\beta$ -ionone (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days |                   |                   |                   |                   |                   |                   |                   |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                                           | 30 min                                                                                                                                                                               | 90 min            | 150 min           | 210 min           | 270 min           | 330 min           | 390 min           | 450 min           |
| ( $\pm$ )- <b>15</b>                      | 4.2 ( $\pm$ 1.0)                                                                                                                                                                     | 12.0 ( $\pm$ 3.8) | 15.5 ( $\pm$ 3.2) | 18.0 ( $\pm$ 0.1) | 17.5 ( $\pm$ 1.8) | 16.6 ( $\pm$ 1.5) | 15.9 ( $\pm$ 1.6) | 16.2 ( $\pm$ 1.4) |
| Reference                                 | 1.4 ( $\pm$ 0.1)                                                                                                                                                                     | 1.7 ( $\pm$ 0.3)  | 2.2 ( $\pm$ 0.6)  | 2.4 ( $\pm$ 0.5)  | 3.9 ( $\pm$ 1.5)  | 2.4 ( $\pm$ 0.1)  | 2.7 ( $\pm$ 0.3)  | 2.1 ( $\pm$ 0.2)  |

<sup>a</sup> Only seven data points were acquired; the eighth data point was extrapolated (average of previous data points) to be reported in Table 3.

<sup>b</sup> Single data point.

## Dynamic headspace analysis in a liquid detergent application

Average dynamic headspace concentrations (with standard deviations) measured above cotton for fragrances released from profragrances (±)-1–(±)-6, (±)-8–(±)-12 and (±)-15–(±)-22 compared with the corresponding unmodified fragrance (reference) in a liquid detergent application after line drying for 1 day and 3 days. Numerical data for Figs. 9, 11 and 12.

| 2-Methyl-undecanal released from | Average headspace concentrations and standard deviations (in parentheses) of 2-methylundecanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day |               |               |               |               |               |               |               |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                                  | 30 min                                                                                                                                                                       | 90 min        | 150 min       | 210 min       | 270 min       | 330 min       | 390 min       | 450 min       |
| (±)-1                            | 4.0 (±1.1)                                                                                                                                                                   | 6.8 (±2.1)    | 9.0 (±1.6)    | 9.3 (±1.8)    | 10.0 (±2.7)   | 9.4 (±2.3)    | 9.7 (±2.5)    | 10.0 (±2.8)   |
| (±)-3                            | 5.0 (±3.6)                                                                                                                                                                   | 7.7 (±4.2)    | 10.6 (±4.9)   | 10.8 (±3.0)   | 11.0 (±1.9)   | 10.6 (±1.5)   | 10.4 (±0.9)   | 10.1 (±0.8)   |
| (±)-5                            | 76.7 (±54.6)                                                                                                                                                                 | 115.1 (±43.4) | 152.7 (±44.8) | 176.8 (±49.3) | 182.2 (±48.3) | 187.3 (±49.5) | 179.8 (±46.9) | 170.7 (±44.4) |
| (±)-17                           | 0.8 (±0.1)                                                                                                                                                                   | 0.9 (±0.1)    | 1.4 (±0.1)    | 1.5 (±0.1)    | 1.5 (±0.5)    | 1.4 (±0.1)    | 1.0 (±0.1)    | 1.4 (±0.4)    |
| (±)-18                           | 0.8 (±0.3)                                                                                                                                                                   | 1.0 (±0.5)    | 0.8 (±0.2)    | 1.0 (±0.3)    | 0.7 (±0.1)    | 0.7 (±0.1)    | 0.8 (±0.1)    | 0.7 (±0.1)    |
| (±)-21                           | 42.1 (±0.6)                                                                                                                                                                  | 51.0 (±6.8)   | 50.3 (±8.1)   | 53.8 (±15.9)  | 57.6 (±17.4)  | 57.9 (±16.2)  | 57.7 (±16.8)  | 55.4 (±14.2)  |
| Reference                        | 19.8 (±26.4)                                                                                                                                                                 | 17.7 (±21.0)  | 15.0 (±15.3)  | 13.2 (±12.3)  | 12.0 (±10.4)  | 10.1 (±9.0)   | 8.5 (±6.5)    | 7.2 (±5.5)    |

| Melonal released from | Average headspace concentrations and standard deviations (in parentheses) of Melonal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day |             |             |             |             |             |             |             |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                       | 30 min                                                                                                                                                             | 90 min      | 150 min     | 210 min     | 270 min     | 330 min     | 390 min     | 450 min     |
| (±)-2                 | 1.5 (±0.4)                                                                                                                                                         | 3.1 (±1.2)  | 3.3 (±1.1)  | 3.1 (±1.1)  | 2.7 (±0.7)  | 2.3 (±0.6)  | 2.2 (±0.4)  | 2.1 (±0.3)  |
| (±)-4                 | 0.5 (±0.1)                                                                                                                                                         | 0.9 (±0.1)  | 1.0 (±0.3)  | 1.0 (±0.2)  | 1.0 (±0.1)  | 0.9 (±0.2)  | 0.9 (±0.1)  | 0.9 (±0.1)  |
| (±)-6                 | 67.1 (±1.9)                                                                                                                                                        | 56.1 (±2.9) | 55.4 (±2.2) | 50.8 (±1.8) | 48.0 (±0.4) | 48.0 (±2.7) | 46.2 (±1.8) | 43.0 (±0.0) |
| (±)-19                | 0.8 (±0.0)                                                                                                                                                         | 0.8 (±0.0)  | 0.8 (±0.1)  | 0.7 (±0.1)  | 0.7 (±0.1)  | 0.6 (±0.1)  | 0.6 (±0.1)  | 0.5 (±0.1)  |
| (±)-22                | 63.2 (±2.6)                                                                                                                                                        | 82.2 (±3.5) | 83.1 (±3.1) | 77.6 (±2.6) | 69.3 (±3.0) | 62.0 (±3.2) | 54.3 (±1.5) | 49.7 (±2.1) |
| Reference             | 3.2 (±3.0)                                                                                                                                                         | 2.6 (±2.0)  | 2.7 (±1.9)  | 2.4 (±1.6)  | 2.1 (±1.3)  | 2.1 (±1.4)  | 2.0 (±1.4)  | 1.9 (±1.3)  |

| Decanal<br>released from                    | Average headspace concentrations and standard deviations (in parentheses) of decanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day                |              |               |               |              |              |              |               |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------|---------------|--------------|--------------|--------------|---------------|
|                                             | 30 min                                                                                                                                                                            | 90 min       | 150 min       | 210 min       | 270 min      | 330 min      | 390 min      | 450 min       |
| (±)- <b>9</b>                               | 49.5 (±10.2)                                                                                                                                                                      | 59.1 (±10.8) | 60.2 (±9.5)   | 58.3 (±5.9)   | 55.5 (±5.2)  | 52.7 (±3.6)  | 49.6 (±2.0)  | 47.2 (±4.1)   |
| (±)- <b>20</b>                              | 4.2 (±0.2)                                                                                                                                                                        | 6.9 (±1.1)   | 6.1 (±0.2)    | 6.2 (±1.4)    | 5.6 (±2.0)   | 5.2 (±1.6)   | 4.0 (±0.7)   | 3.6 (±0.2)    |
| Reference                                   | 4.5 (±1.2)                                                                                                                                                                        | 5.7 (±1.6)   | 6.3 (±1.9)    | 6.5 (±1.8)    | 5.9 (±1.3)   | 6.1 (±0.7)   | 6.1 (±0.9)   | 5.1 (±0.5)    |
| (Z)-4-Decenal<br>released from              | Average headspace concentrations and standard deviations (in parentheses) of (Z)-4-decenal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day          |              |               |               |              |              |              |               |
|                                             | 30 min                                                                                                                                                                            | 90 min       | 150 min       | 210 min       | 270 min      | 330 min      | 390 min      | 450 min       |
| (±)- <b>10</b>                              | 76.1 (±2.3)                                                                                                                                                                       | 145.1 (±8.6) | 210.1 (±21.0) | 246.4 (±17.4) | 252.8 (±9.5) | 256.2 (±8.1) | 242.2 (±5.5) | 222.6 (±12.2) |
| (±)- <b>16</b>                              | 30.6 (±3.9)                                                                                                                                                                       | 36.0 (±1.8)  | 40.8 (±3.8)   | 42.5 (±1.6)   | 41.8 (±1.3)  | 39.7 (±0.1)  | 38.5 (±2.2)  | 34.5 (±0.2)   |
| Reference                                   | 9.1 (±0.3)                                                                                                                                                                        | 7.2 (±0.5)   | 6.0 (±1.0)    | 6.1 (±0.1)    | 5.7 (±0.4)   | 5.4 (±0.8)   | 4.9 (±1.3)   | 4.5 (±1.3)    |
| 3-Phenyl-<br>butanal<br>released from       | Average headspace concentrations and standard deviations (in parentheses) of 3-phenylbutanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day        |              |               |               |              |              |              |               |
|                                             | 30 min                                                                                                                                                                            | 90 min       | 150 min       | 210 min       | 270 min      | 330 min      | 390 min      | 450 min       |
| (±)- <b>8</b>                               | 2.8 (±1.9)                                                                                                                                                                        | 11.4 (±1.7)  | 15.7 (±2.2)   | 17.3 (±2.1)   | 17.3 (±1.0)  | 16.0 (±0.4)  | 15.6 (±0.4)  | 14.6 (±0.6)   |
| Reference                                   | 1.2 (±0.3)                                                                                                                                                                        | 1.6 (±0.3)   | 2.0 (±0.5)    | 2.2 (±0.3)    | 2.0 (±0.6)   | 2.1 (±0.7)   | 2.3 (±0.7)   | 2.0 (±0.5)    |
| 5,9-Dimethyl-4-<br>decenal<br>released from | Average headspace concentrations and standard deviations (in parentheses) of 5,9-dimethyl-4-decenal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day |              |               |               |              |              |              |               |
|                                             | 30 min                                                                                                                                                                            | 90 min       | 150 min       | 210 min       | 270 min      | 330 min      | 390 min      | 450 min       |
| (±)- <b>11</b>                              | 18.1 (±4.4)                                                                                                                                                                       | 25.5 (±4.6)  | 31.3 (±3.3)   | 35.1 (±2.2)   | 37.2 (±2.6)  | 36.9 (±4.4)  | 34.6 (±4.1)  | 33.6 (±4.8)   |
| Reference                                   | 1.2 (±0.2)                                                                                                                                                                        | 2.1 (±0.2)   | 2.8 (±0.4)    | 3.3 (±0.5)    | 3.8 (±0.5)   | 4.3 (±0.6)   | 4.7 (±0.6)   | 4.2 (±0.5)    |

| 3-(4,4-Dimethylcyclohexenyl)propanal released from | Average headspace concentrations and standard deviations (in parentheses) of 3-(4,4-dimethylcyclohexen-yl)propanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day |               |              |              |               |               |               |               |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|--------------|---------------|---------------|---------------|---------------|
|                                                    | 30 min                                                                                                                                                                                           | 90 min        | 150 min      | 210 min      | 270 min       | 330 min       | 390 min       | 450 min       |
| (±)- <b>12</b>                                     | 71.6 (±36.8)                                                                                                                                                                                     | 135.6 (±25.3) | 164.4 (±5.5) | 162.6 (±8.5) | 173.7 (±17.5) | 158.7 (±23.8) | 146.5 (±10.3) | 141.6 (±12.7) |
| Reference                                          | 12.4 (±2.0)                                                                                                                                                                                      | 8.9 (±1.3)    | 7.1 (±0.8)   | 6.0 (±0.4)   | 5.4 (±0.2)    | 4.4 (±0.2)    | 3.9 (±0.3)    | 3.6 (±0.4)    |
| Dihydro-β-ionone released from                     | Average headspace concentrations and standard deviations (in parentheses) of Dihydro-β-ionone (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day                      |               |              |              |               |               |               |               |
|                                                    | 30 min                                                                                                                                                                                           | 90 min        | 150 min      | 210 min      | 270 min       | 330 min       | 390 min       | 450 min       |
| (±)- <b>15</b>                                     | 71.8 (±54.4)                                                                                                                                                                                     | 85.9 (±53.4)  | 70.1 (±33.1) | 59.6 (±19.8) | 50.6 (±11.5)  | 43.9 (±8.6)   | 41.5 (±3.5)   | 40.5 (±42.7)  |
| Reference                                          | 7.0 (±2.3)                                                                                                                                                                                       | 4.9 (±1.2)    | 4.2 (±0.5)   | 3.2 (±0.3)   | 2.9 (±0.1)    | 2.6 (±0.6)    | 2.4 (±0.6)    | 4.0 (±5.6)    |
| 2-Methylundecanal released from                    | Average headspace concentrations and standard deviations (in parentheses) of 2-methylundecanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days                    |               |              |              |               |               |               |               |
|                                                    | 30 min                                                                                                                                                                                           | 90 min        | 150 min      | 210 min      | 270 min       | 330 min       | 390 min       | 450 min       |
| (±)- <b>1</b>                                      | 1.0 (±0.3)                                                                                                                                                                                       | 2.0 (±0.2)    | 2.5 (±0.6)   | 4.0 (±1.2)   | 4.8 (±1.2)    | 5.4 (±1.2)    | 5.4 (±1.2)    | 6.0 (±1.9)    |
| (±)- <b>3</b>                                      | 1.6 (±0.5)                                                                                                                                                                                       | 3.2 (±0.9)    | 5.0 (±2.0)   | 6.1 (±2.9)   | 7.3 (±4.6)    | 7.6 (±4.6)    | 8.3 (±5.3)    | 7.5 (±3.8)    |
| (±)- <b>5</b>                                      | 20.0 (±1.9)                                                                                                                                                                                      | 45.8 (±3.7)   | 69.0 (±11.2) | 84.7 (±22.9) | 85.5 (±24.3)  | 87.8 (±22.0)  | 85.9 (±17.6)  | 83.9 (±15.6)  |
| (±)- <b>17</b>                                     | 0.9 (±0.5)                                                                                                                                                                                       | 1.1 (±0.0)    | 1.1 (±0.6)   | 0.8 (±0.2)   | 1.2 (±0.7)    | 1.3 (±0.5)    | 1.7 (±0.0)    | 0.7 (±0.0)    |
| (±)- <b>18</b>                                     | 0.9 (±0.3)                                                                                                                                                                                       | 0.6 (±0.1)    | 0.3 (±0.0)   | 1.1 (±1.1)   | 0.3 (±0.0)    | 0.4 (±0.0)    | 0.4 (±0.0)    | 0.4 (±0.0)    |
| (±)- <b>21</b>                                     | 10.3 (±0.1)                                                                                                                                                                                      | 24.4 (±1.2)   | 39.0 (±2.8)  | 51.0 (±8.4)  | 57.9 (±14.9)  | 64.0 (±17.3)  | 65.2 (±17.9)  | 65.2 (±15.2)  |
| Reference                                          | 2.4 (±1.2)                                                                                                                                                                                       | 3.1 (±1.3)    | 3.8 (±1.4)   | 4.2 (±1.2)   | 4.5 (±0.8)    | 4.6 (±0.6)    | 4.4 (±0.7)    | 4.2 (±0.5)    |

| Melonal released from       | Average headspace concentrations and standard deviations (in parentheses) of Melonal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days       |               |               |               |               |               |               |              |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|
|                             | 30 min                                                                                                                                                                    | 90 min        | 150 min       | 210 min       | 270 min       | 330 min       | 390 min       | 450 min      |
| (±)- <b>2</b>               | 1.4 (±0.0)                                                                                                                                                                | 4.5 (±0.8)    | 6.0 (±1.6)    | 5.8 (±1.5)    | 5.4 (±1.3)    | 4.9 (±0.7)    | 4.3 (±0.3)    | 4.2 (±0.1)   |
| (±)- <b>4</b>               | 0.5 (±0.0)                                                                                                                                                                | 1.5 (±0.1)    | 1.5 (±0.1)    | 1.4 (±0.2)    | 1.2 (±0.2)    | 1.2 (±0.0)    | 1.1 (±0.1)    | 1.0 (±0.1)   |
| (±)- <b>6</b>               | 12.5 (±0.7)                                                                                                                                                               | 36.7 (±0.2)   | 49.2 (±0.3)   | 53.0 (±0.1)   | 54.2 (±0.5)   | 54.9 (±1.5)   | 55.1 (±1.0)   | 55.6 (±0.9)  |
| (±)- <b>19</b>              | 0.2 (±0.0)                                                                                                                                                                | 0.3 (±0.1)    | 0.3 (±0.0)    | 0.3 (±0.0)    | 0.3 (±0.0)    | 0.3 (±0.0)    | 0.3 (±0.0)    | 0.2 (±0.0)   |
| (±)- <b>22</b>              | 8.5 (±0.6)                                                                                                                                                                | 19.7 (±3.4)   | 25.8 (±4.1)   | 28.0 (±4.0)   | 28.0 (±3.3)   | 27.8 (±2.6)   | 27.8 (±2.7)   | 27.4 (±1.6)  |
| Reference                   | 0.9 (±0.8)                                                                                                                                                                | 1.5 (±1.4)    | 1.8 (±1.7)    | 1.6 (±1.6)    | 1.6 (±1.6)    | 1.6 (±1.6)    | 1.5 (±1.4)    | 1.6 (±1.7)   |
| Decanal released from       | Average headspace concentrations and standard deviations (in parentheses) of decanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days       |               |               |               |               |               |               |              |
|                             | 30 min                                                                                                                                                                    | 90 min        | 150 min       | 210 min       | 270 min       | 330 min       | 390 min       | 450 min      |
| (±)- <b>9</b>               | 7.0 (±0.6)                                                                                                                                                                | 23.2 (±5.0)   | 22.4 (±6.1)   | 25.5 (±9.1)   | 25.0 (±7.5)   | 24.1 (±6.3)   | 24.3 (±4.1)   | 22.8 (±3.3)  |
| (±)- <b>20</b>              | 2.6 (±0.3)                                                                                                                                                                | 3.3 (±0.6)    | 4.0 (±0.8)    | 3.9 (±0.5)    | 3.7 (±0.2)    | 3.6 (±0.4)    | 3.5 (±0.1)    | 3.3 (±0.0)   |
| Reference                   | 2.7 (±0.0)                                                                                                                                                                | 4.5 (±0.5)    | 5.2 (±1.2)    | 5.4 (±1.7)    | 4.8 (±0.5)    | 4.8 (±0.2)    | 4.6 (±0.0)    | 4.5 (±0.2)   |
| (Z)-4-Decenal released from | Average headspace concentrations and standard deviations (in parentheses) of (Z)-4-decenal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days |               |               |               |               |               |               |              |
|                             | 30 min                                                                                                                                                                    | 90 min        | 150 min       | 210 min       | 270 min       | 330 min       | 390 min       | 450 min      |
| (±)- <b>10</b>              | 40.6 (±16.0)                                                                                                                                                              | 112.4 (±21.1) | 188.5 (±15.8) | 212.0 (±34.1) | 221.3 (±31.6) | 224.2 (±25.6) | 201.5 (±18.5) | 192.6 (±6.9) |
| (±)- <b>16</b>              | 6.7 (±2.2)                                                                                                                                                                | 13.9 (±3.0)   | 23.9 (±3.2)   | 29.0 (±0.6)   | 30.5 (±1.0)   | 29.4 (±1.6)   | 26.8 (±2.8)   | 25.7 (±2.8)  |
| Reference                   | 3.0 (±0.4)                                                                                                                                                                | 3.2 (±0.3)    | 4.1 (±0.4)    | 3.7 (±4.0)    | 3.0 (±3.0)    | 2.7 (±3.0)    | 2.8 (±3.4)    | 3.6 (±3.9)   |

|                                                                 |                                                                                                                                                                                                   |             |              |              |              |              |               |               |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|--------------|--------------|--------------|---------------|---------------|
| 3-Phenyl-<br>butanal<br>released from                           | Average headspace concentrations and standard deviations (in parentheses) of 3-phenylbutanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days                       |             |              |              |              |              |               |               |
|                                                                 | 30 min                                                                                                                                                                                            | 90 min      | 150 min      | 210 min      | 270 min      | 330 min      | 390 min       | 450 min       |
| (±)- <b>8</b>                                                   | 2.2 (±0.6)                                                                                                                                                                                        | 14.1 (±0.7) | 20.4 (±6.8)  | 20.9 (±6.6)  | 19.3 (±4.7)  | 17.5 (±2.4)  | 15.7 (±1.8)   | 14.2 (±0.5)   |
| Reference                                                       | 0.5 (±0.0)                                                                                                                                                                                        | 0.7 (±0.0)  | 1.0 (±0.4)   | 1.3 (±0.0)   | 1.3 (±0.2)   | 1.0 (±0.3)   | 1.0 (±0.2)    | 1.1 (±0.0)    |
| 5,9-Dimethyl-4-<br>decenal<br>released from                     | Average headspace concentrations and standard deviations (in parentheses) of 5,9-dimethyl-4-decenal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days                |             |              |              |              |              |               |               |
|                                                                 | 30 min                                                                                                                                                                                            | 90 min      | 150 min      | 210 min      | 270 min      | 330 min      | 390 min       | 450 min       |
| (±)- <b>11</b>                                                  | 0.9 (±0.1)                                                                                                                                                                                        | 3.7 (±0.1)  | 6.4 (±0.6)   | 9.7 (±2.6)   | 12.6 (±1.9)  | 13.5 (±0.7)  | 14.4 (±0.3)   | 14.5 (±0.8)   |
| Reference                                                       | 0.5 (±0.0)                                                                                                                                                                                        | 0.6 (±0.0)  | 1.2 (±0.1)   | 1.5 (±0.1)   | 1.7 (±0.0)   | 1.8 (±0.1)   | 2.0 (±0.4)    | 2.1 (±0.0)    |
| 3-(4,4-Dime-<br>thylcyclohexen-<br>yl)propanal<br>released from | Average headspace concentrations and standard deviations (in parentheses) of 3-(4,4-dimethylcyclohexen-yl)propanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days |             |              |              |              |              |               |               |
|                                                                 | 30 min                                                                                                                                                                                            | 90 min      | 150 min      | 210 min      | 270 min      | 330 min      | 390 min       | 450 min       |
| (±)- <b>12</b>                                                  | 32.6 (±4.3)                                                                                                                                                                                       | 85.5 (±1.9) | 128.6 (±3.1) | 139.7 (±1.1) | 149.8 (±5.2) | 163.1 (±0.6) | 134.2 (±15.9) | 114.3 (±10.2) |
| Reference                                                       | 5.4 (±1.4)                                                                                                                                                                                        | 4.1 (±0.4)  | 3.0 (±0.1)   | 4.3 (±0.6)   | 0.4 (±0.2)   | 0.4 (±0.1)   | 2.0 (±0.5)    | 1.7 (±0.5)    |
| Dihydro-β-<br>ionone<br>released from                           | Average headspace concentrations and standard deviations (in parentheses) of Dihydro-β-ionone (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days                      |             |              |              |              |              |               |               |
|                                                                 | 30 min                                                                                                                                                                                            | 90 min      | 150 min      | 210 min      | 270 min      | 330 min      | 390 min       | 450 min       |
| (±)- <b>15</b>                                                  | 2.4 (±0.2)                                                                                                                                                                                        | 3.4 (±0.0)  | 5.8 (±0.5)   | 7.5 (±0.4)   | 8.9 (±0.2)   | 9.8 (±1.1)   | 10.0 (±2.2)   | 10.2 (±2.3)   |
| Reference                                                       | 1.5 (±0.0)                                                                                                                                                                                        | 1.8 (±0.1)  | 2.2 (±0.2)   | 1.8 (±0.2)   | 1.8 (±0.0)   | 1.7 (±0.2)   | 2.2 (±0.5)    | 3.0 (±1.9)    |

### Dynamic headspace analysis in a liquid detergent application after direct surface deposition of the profragrance

Average dynamic headspace concentrations (with standard deviations) measured above cotton for 2-methylundecanal released from profragrances (±)-1 and (±)-5 in a liquid detergent application after pipetting the profragrance solution directly onto the wet cotton surface and line drying for 1 day and 3 days. Numerical data for Fig. 10.

| 2-Methyl-undecanal released from | Average headspace concentrations and standard deviations (in parentheses) of 2-methylundecanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 1 day |               |               |               |               |               |               |               |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                                  | 30 min                                                                                                                                                                       | 90 min        | 150 min       | 210 min       | 270 min       | 330 min       | 390 min       | 450 min       |
| (±)-1                            | 80.1 (±27.9)                                                                                                                                                                 | 120.5 (±43.8) | 159.8 (±47.9) | 177.4 (±67.0) | 189.1 (±71.3) | 198.2 (±70.6) | 187.5 (±63.8) | 178.8 (±57.7) |
| (±)-5                            | 87.7 (±24.0)                                                                                                                                                                 | 120.0 (±39.9) | 154.9 (±47.4) | 169.8 (±60.4) | 172.3 (±59.0) | 182.8 (±61.6) | 172.7 (±60.6) | 173.3 (±56.8) |

| 2-Methyl-undecanal released from | Average headspace concentrations and standard deviations (in parentheses) of 2-methylundecanal (ng L <sup>-1</sup> of air) recorded above cotton after line drying for 3 days |             |             |             |             |             |             |             |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                                  | 30 min                                                                                                                                                                        | 90 min      | 150 min     | 210 min     | 270 min     | 330 min     | 390 min     | 450 min     |
| (±)-1                            | 8.2 (±1.5)                                                                                                                                                                    | 15.1 (±2.7) | 24.2 (±4.2) | 33.2 (±5.5) | 37.0 (±5.6) | 39.5 (±4.7) | 42.2 (±5.0) | 43.2 (±5.3) |
| (±)-5                            | 12.9 (±1.0)                                                                                                                                                                   | 23.0 (±5.6) | 32.6 (±6.5) | 39.1 (±6.2) | 42.5 (±4.8) | 46.0 (±3.6) | 46.5 (±3.2) | 46.8 (±1.2) |