

## Supporting Information

### Long range deuterium effects on $^{13}\text{C}$ NMR chemical shifts of 2-alkanones in $\text{CD}_3\text{OD}$ solutions of imidazolium acetate ionic liquids.

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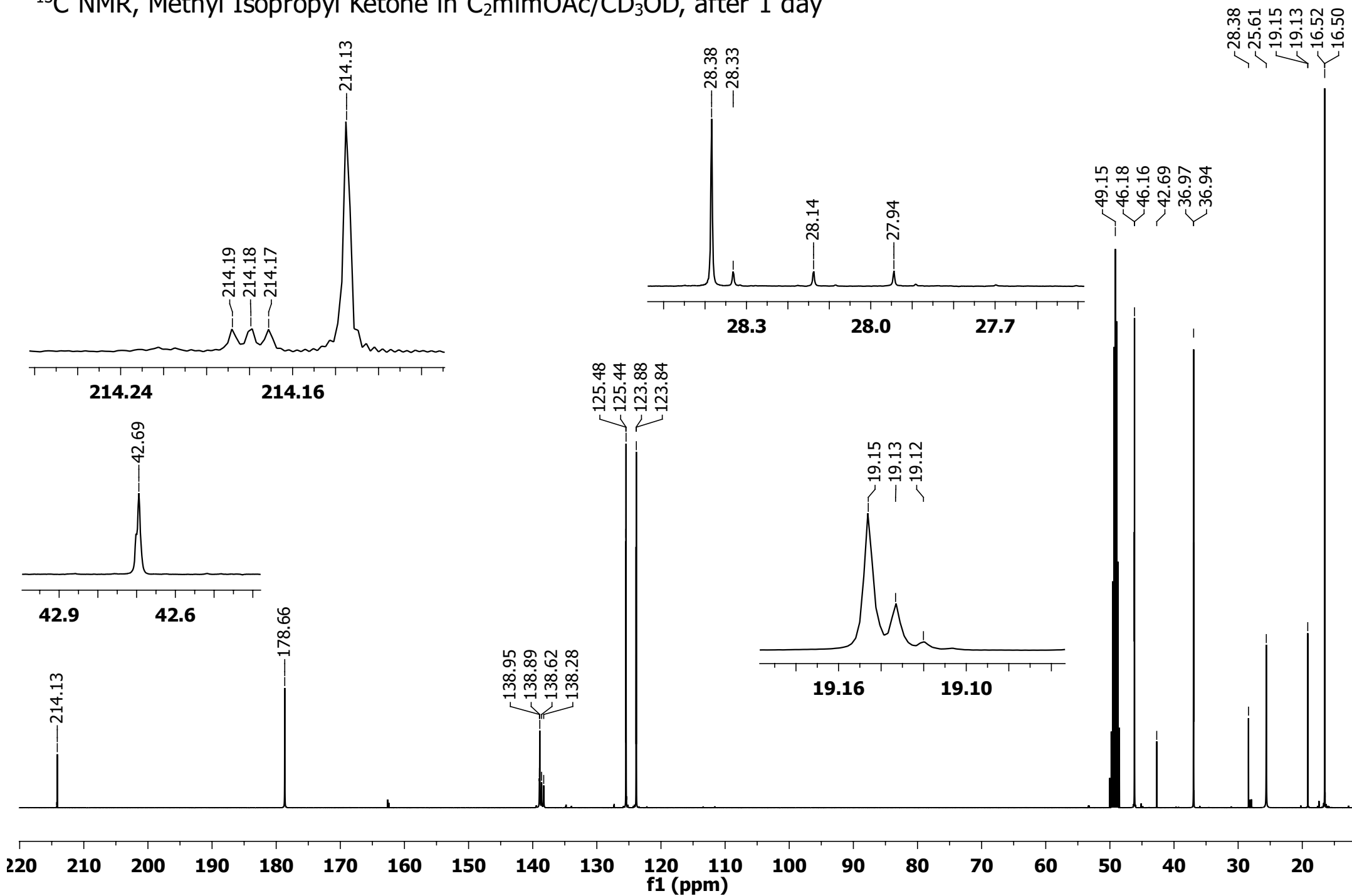
#### $^{13}\text{C}$ NMR spectra of ketones in $\text{C}_2\text{mimOAc}/\text{CD}_3\text{OD}$

1. Methyl Isopropyl Ketone
  - a. after 1 day
  - b. after 4 days
  - c. after 6 days
  - d. after 7 weeks
2. Methyl Ethyl Ketone
  - a. after 1 day
  - b. after 2 days
  - c. after 11 days
  - d. after 6 weeks
3. Methyl Propyl Ketone
4. Methyl Butyl Ketone
5. Methyl Hexyl Ketone
6. Methyl *Tert*-Butyl Ketone
7. Acetophenone
8. Acetone

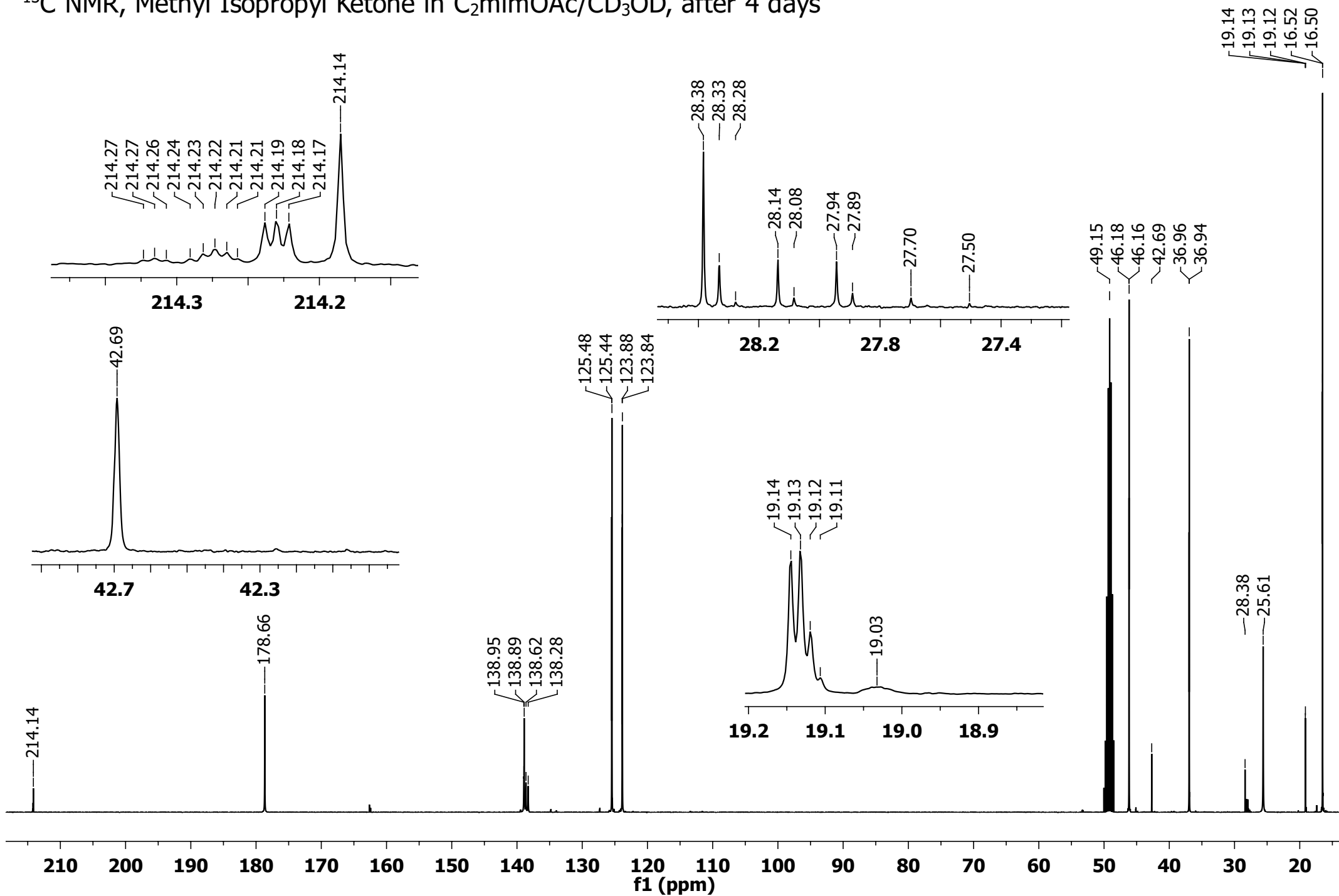
#### $^1\text{H}$ NMR spectra of ketones in $\text{C}_2\text{mimOAc}/\text{CD}_3\text{OD}$

1. Methyl Isopropyl Ketone in  $\text{C}_2\text{mimOAc}/\text{CD}_3\text{OD}$
2. Methyl Ethyl Ketone in  $\text{C}_2\text{mimOAc}/\text{CD}_3\text{OD}$
3. Methyl Propyl Ketone in  $\text{C}_2\text{mimOAc}/\text{CD}_3\text{OD}$
4. Methyl Butyl Ketone in  $\text{C}_2\text{mimOAc}/\text{CD}_3\text{OD}$
5. Methyl Hexyl Ketone in  $\text{C}_2\text{mimOAc}/\text{CD}_3\text{OD}$

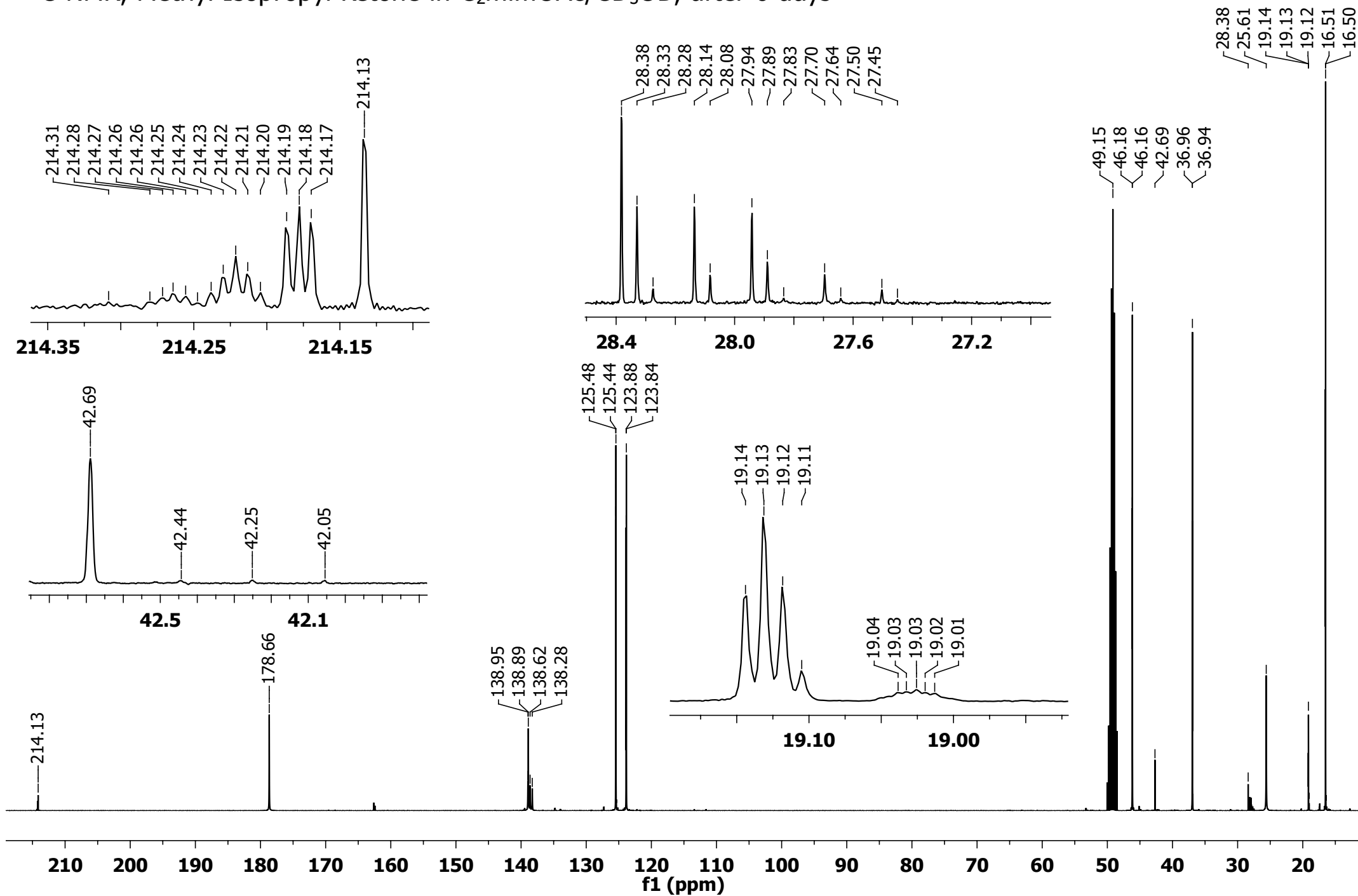
$^{13}\text{C}$  NMR, Methyl Isopropyl Ketone in  $\text{C}_2\text{mimOAc}/\text{CD}_3\text{OD}$ , after 1 day



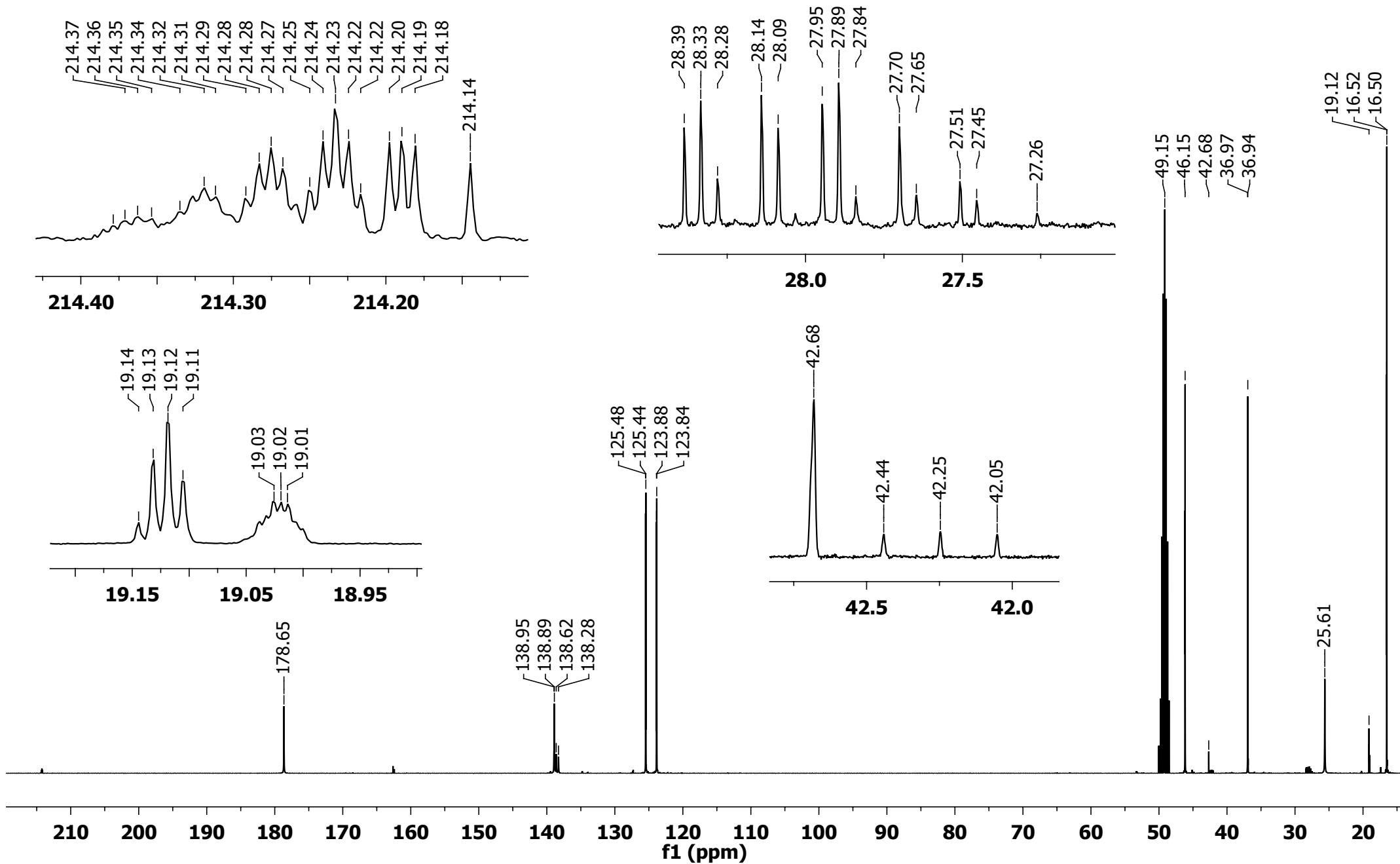
<sup>13</sup>C NMR, Methyl Isopropyl Ketone in C<sub>2</sub>mimOAc/CD<sub>3</sub>OD, after 4 days



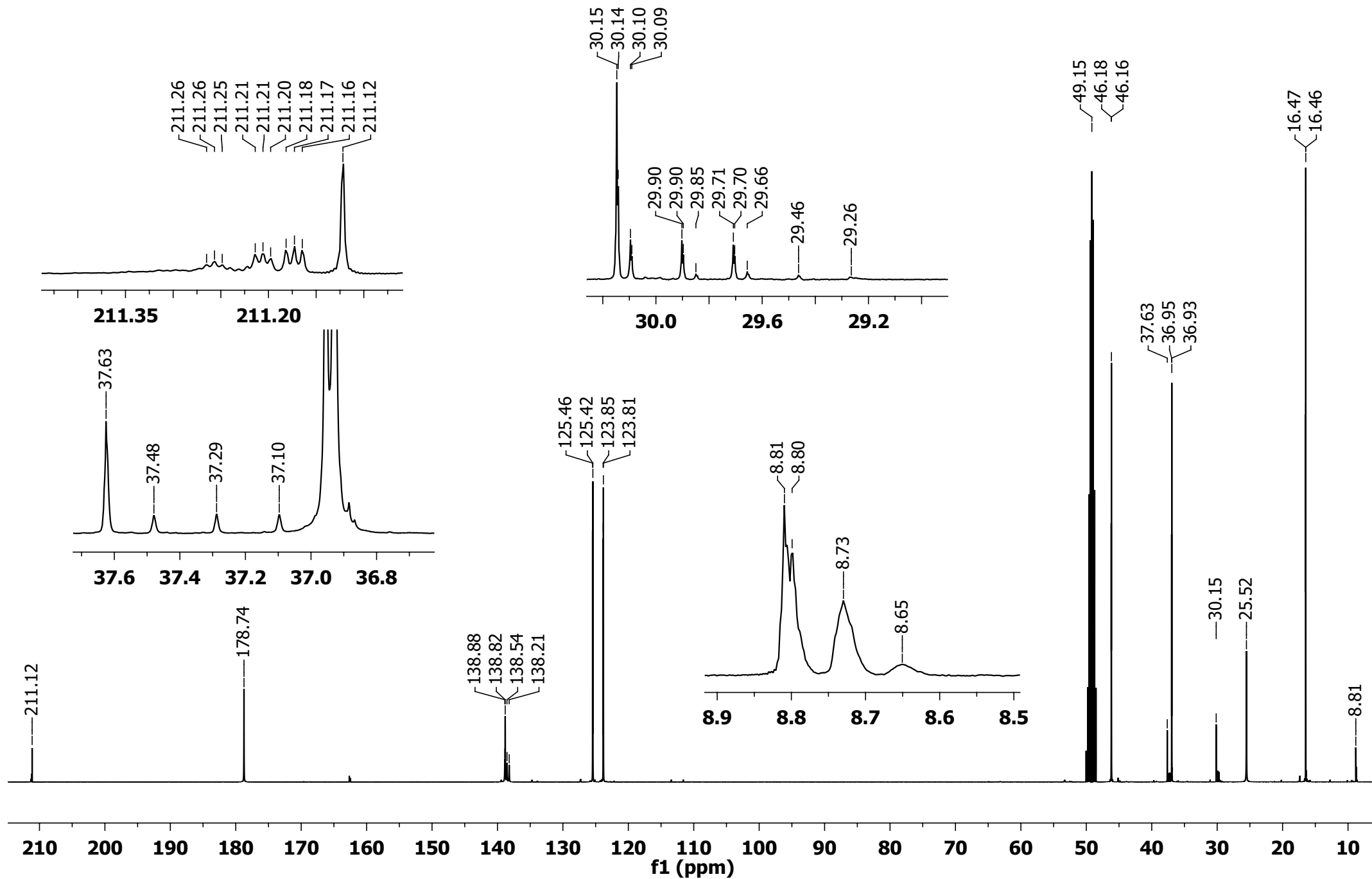
<sup>13</sup>C NMR, Methyl Isopropyl Ketone in C<sub>2</sub>mimOAc/CD<sub>3</sub>OD, after 6 days



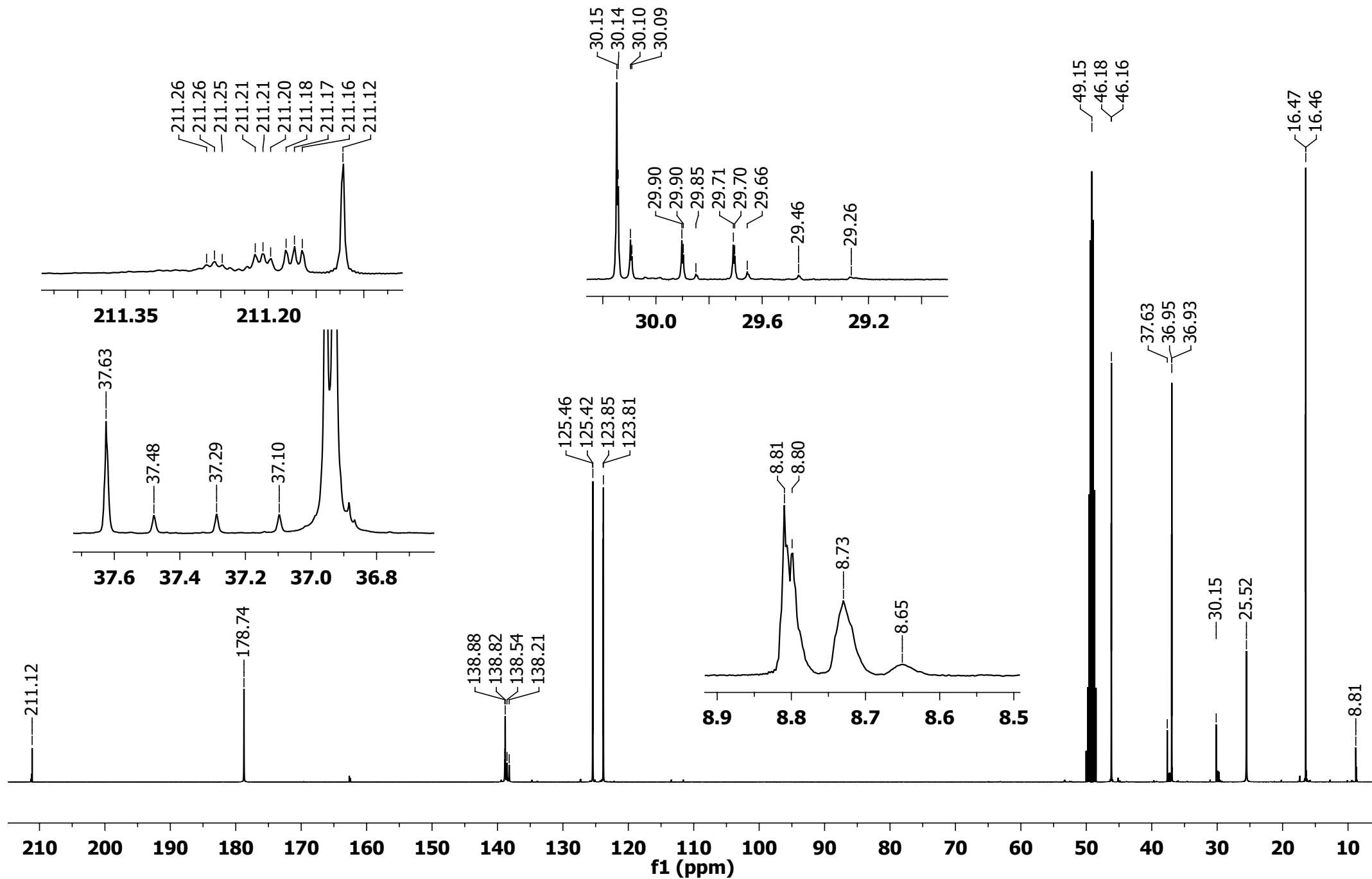
# Methyl isopropyl ketone in C2mimOAC/CD3OD, after 7 weeks



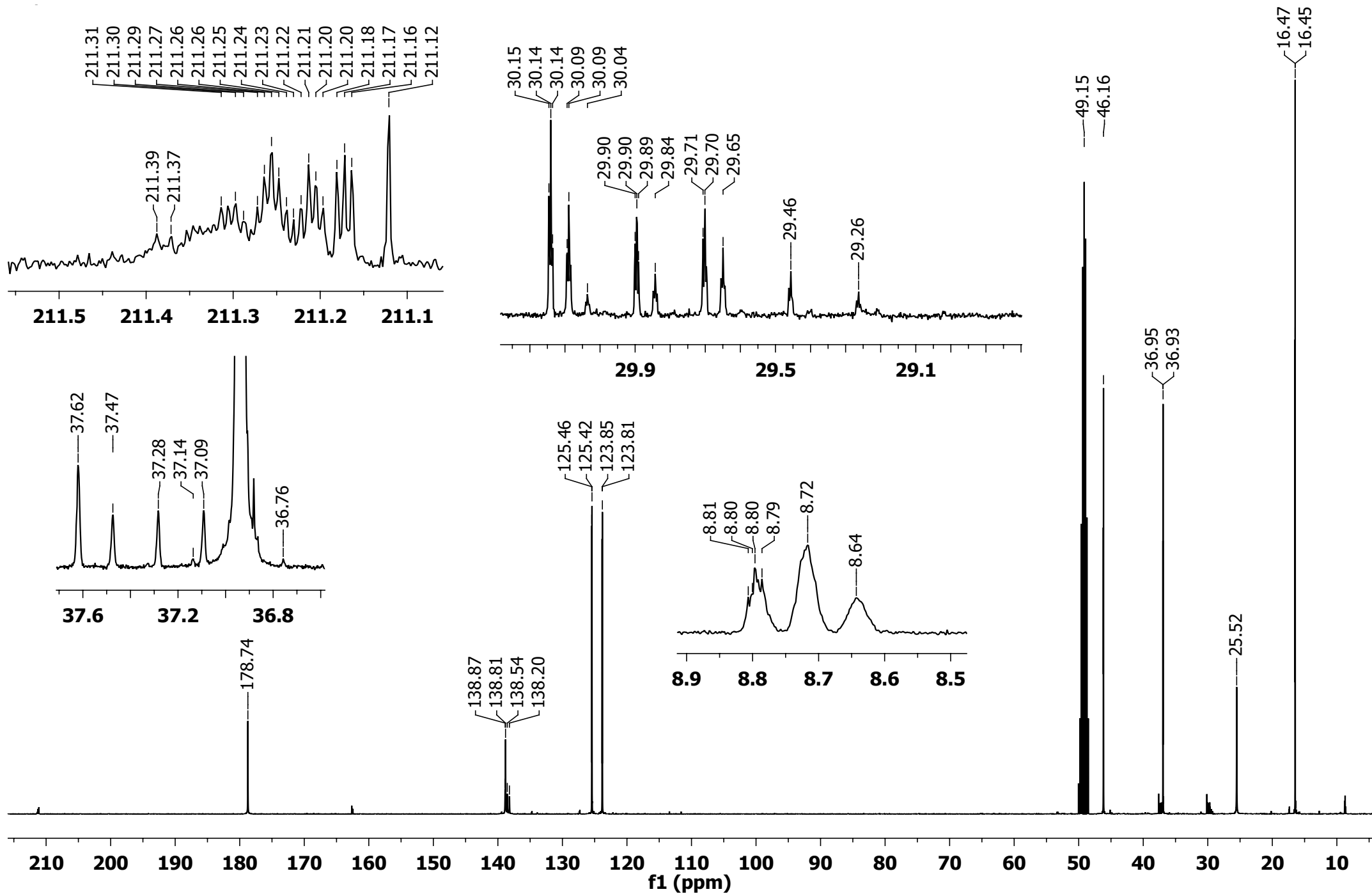
<sup>13</sup>C NMR, Methyl ethyl ketone in C<sub>2</sub>mimOAc/CD<sub>3</sub>OD, after 1 day



<sup>13</sup>C NMR, Methyl ethyl ketone in C<sub>2</sub>mimOAc/CD<sub>3</sub>OD, after 2 days

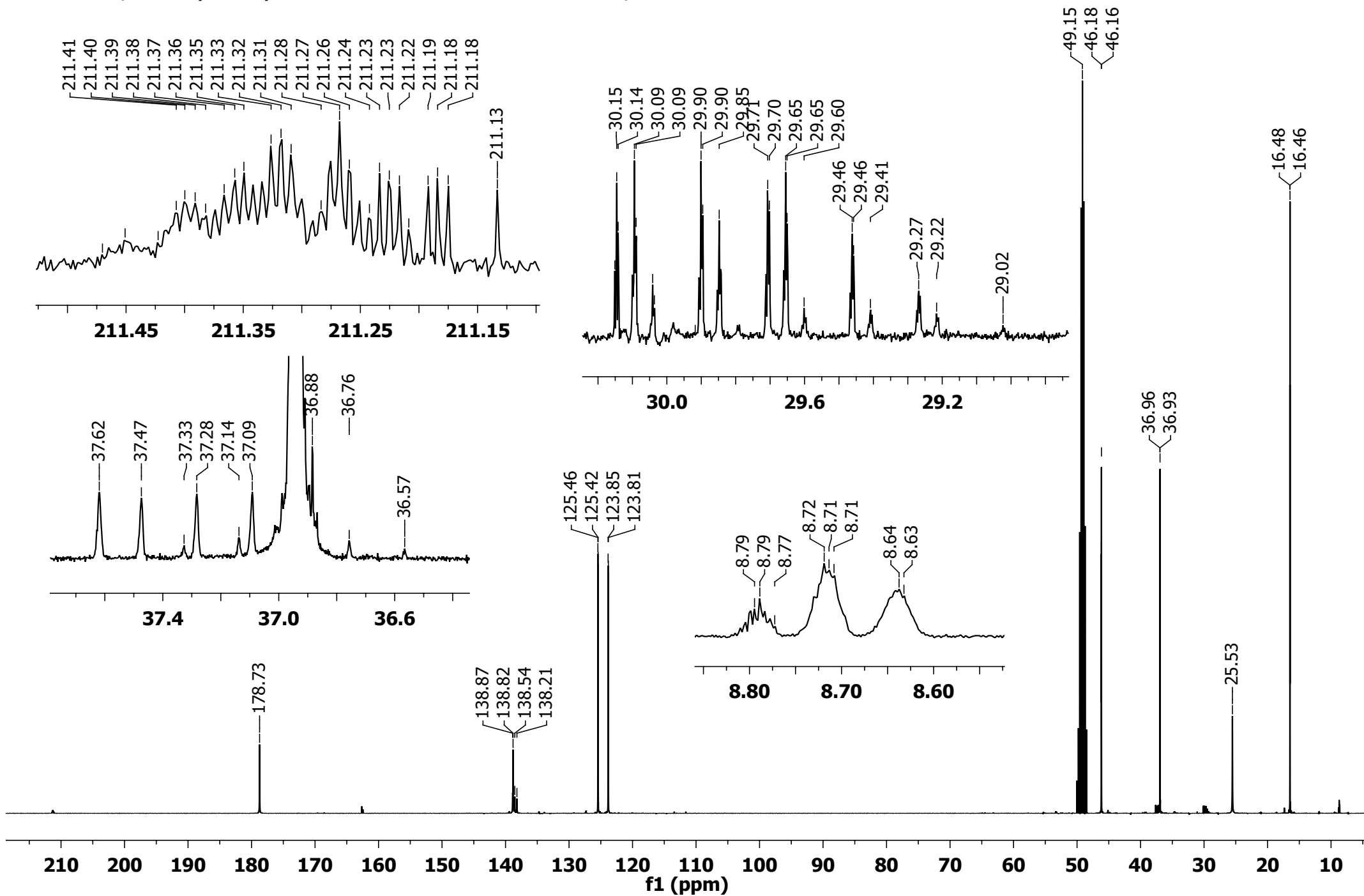


<sup>13</sup>C NMR, Methyl ethyl ketone in C<sub>2</sub>mimOAc/CD<sub>3</sub>OD, after 11

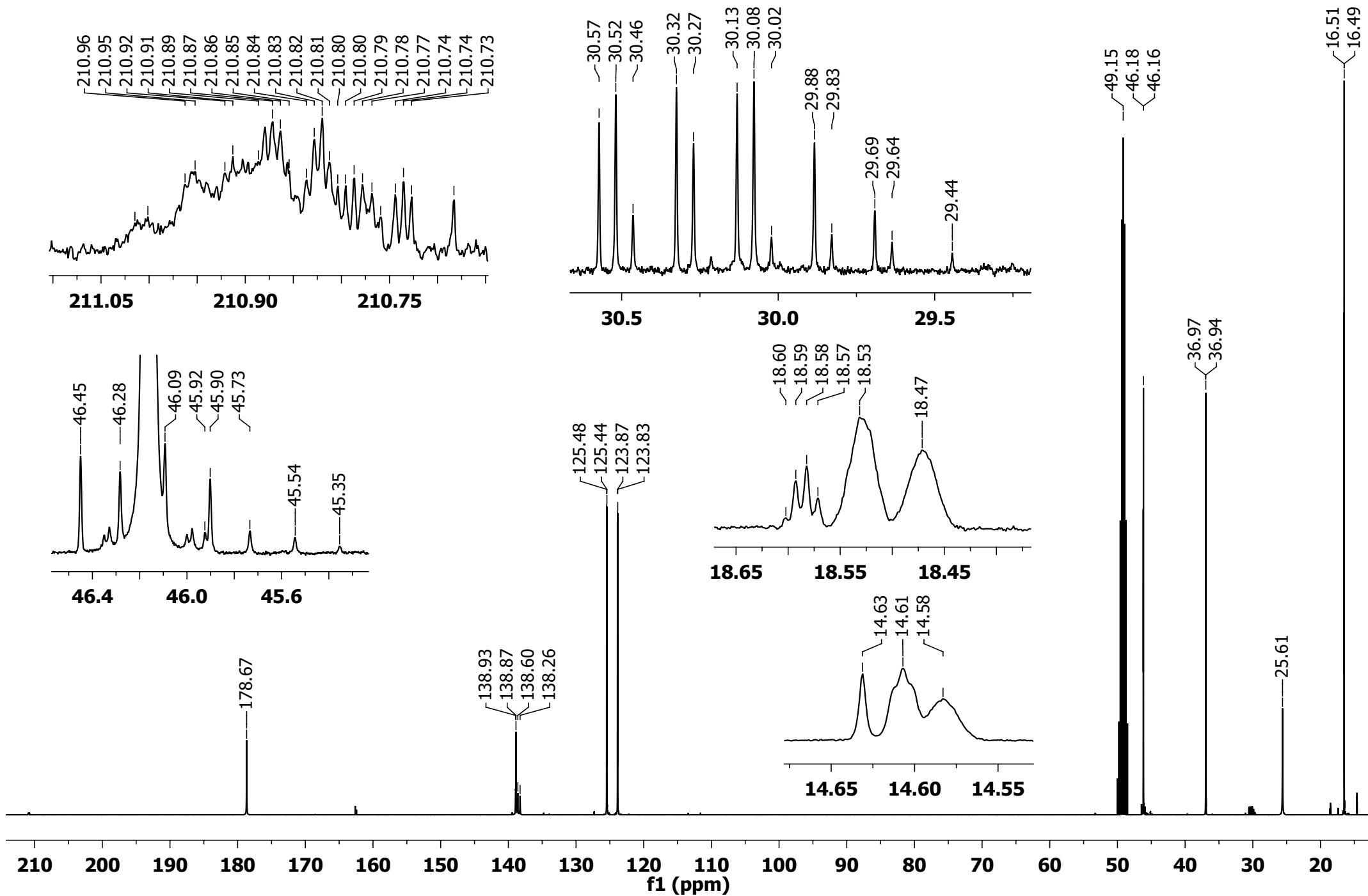




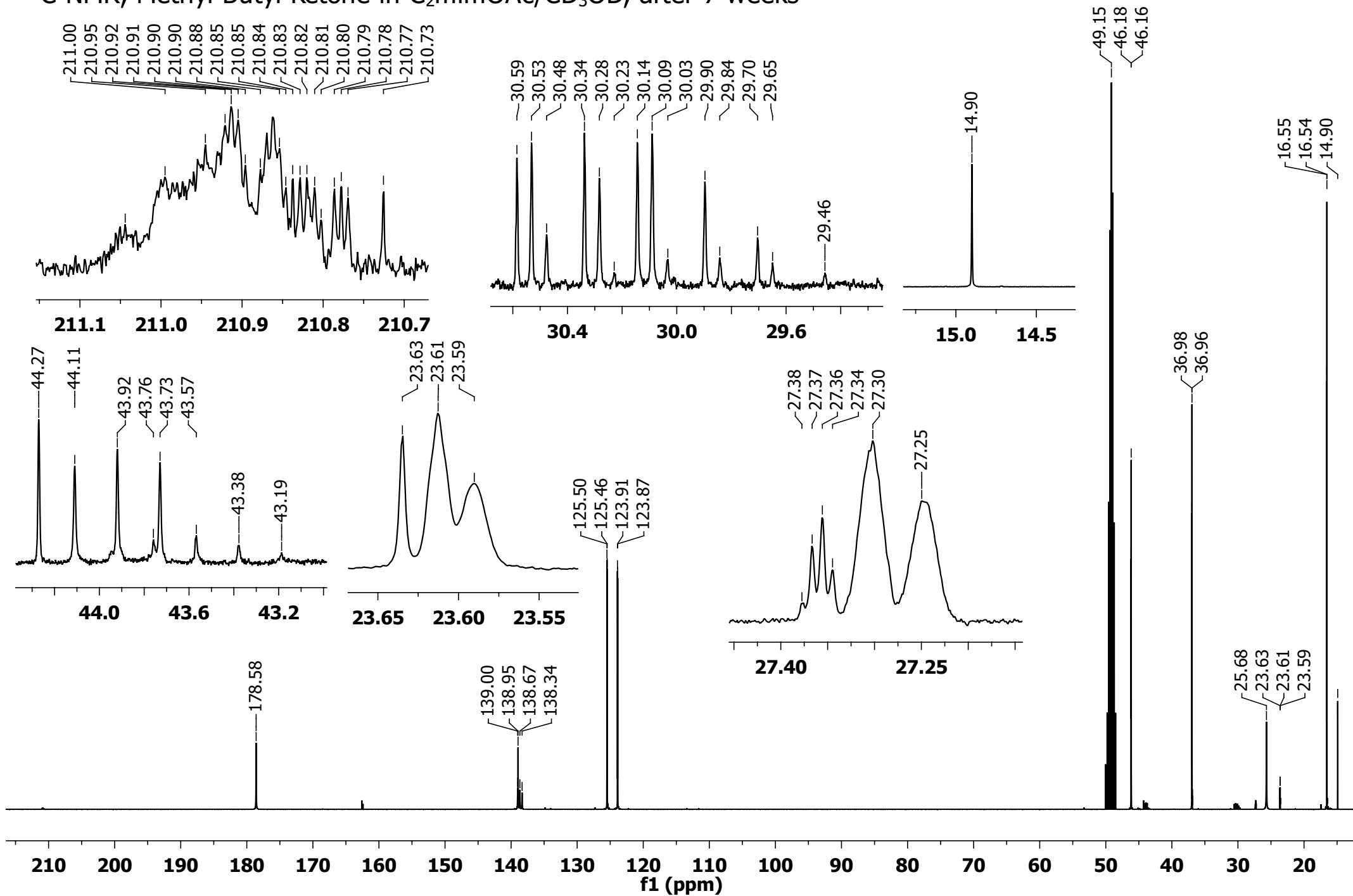
$^{13}\text{C}$  NMR, Methyl ethyl ketone in  $\text{C}_2\text{mimOAc}/\text{CD}_3\text{OD}$ , after 6 weeks



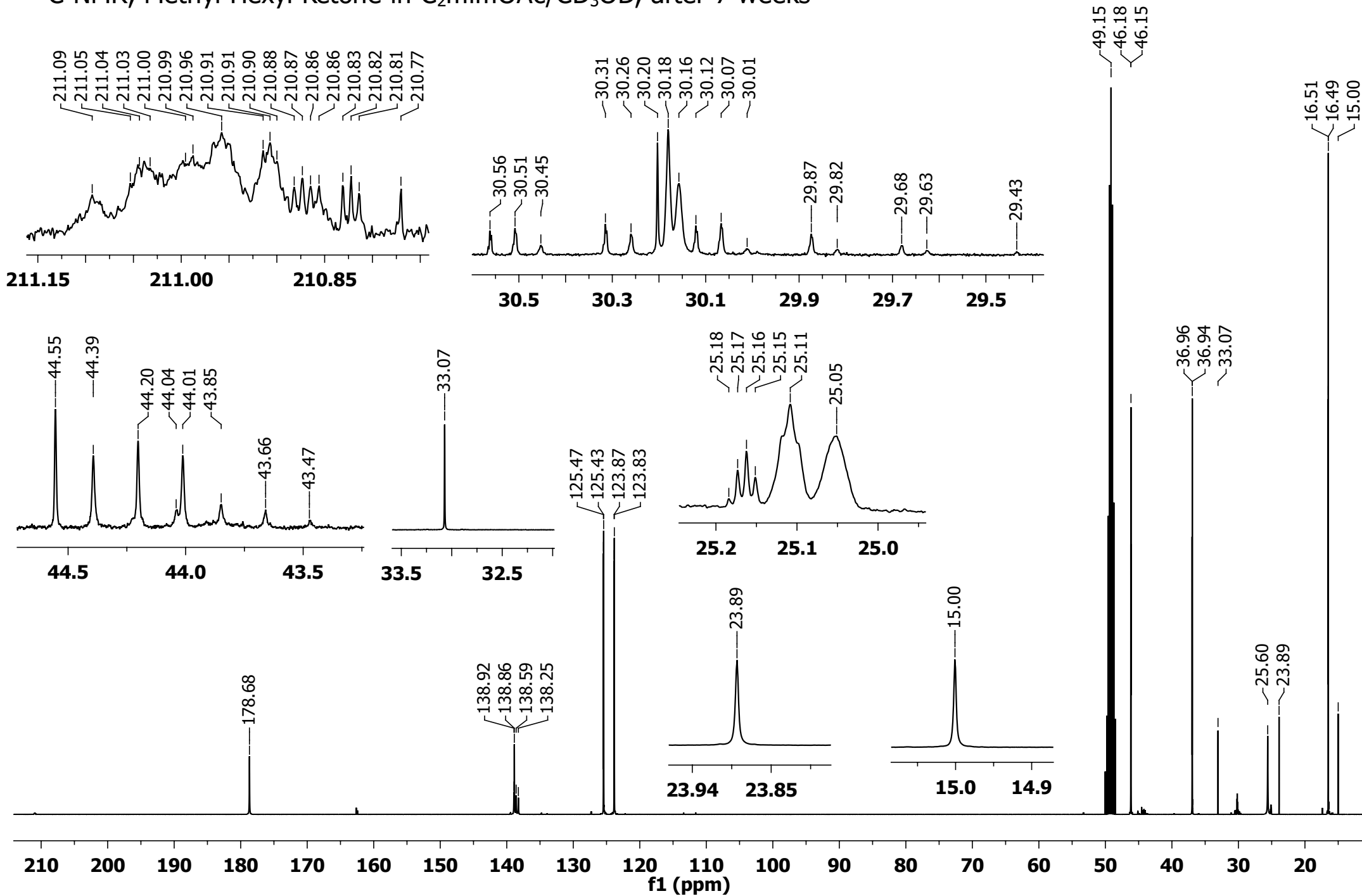
<sup>13</sup>C NMR, Methyl Propyl Ketone in C<sub>2</sub>mimOAc/CD<sub>3</sub>OD, after 7 weeks



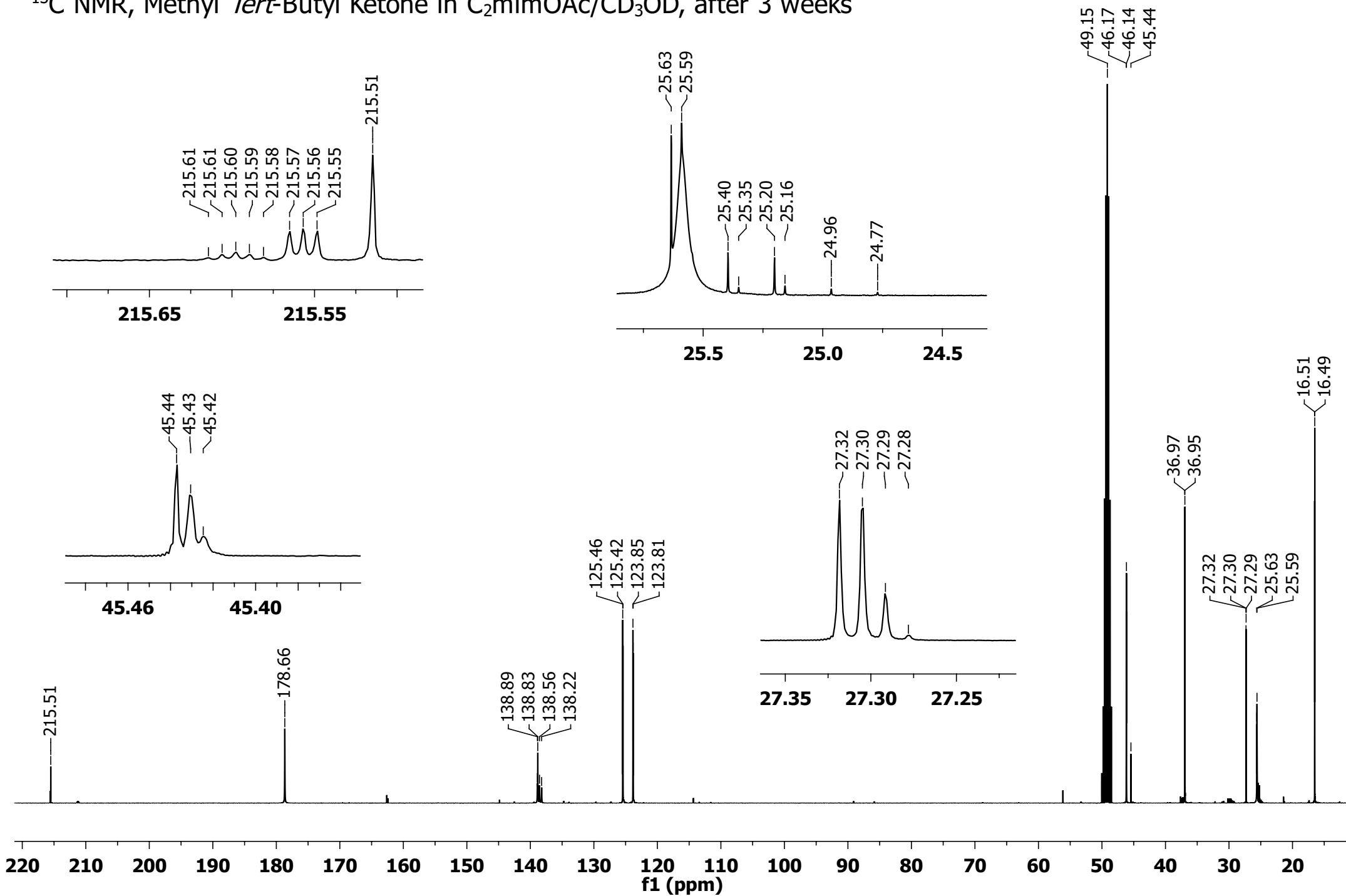
<sup>13</sup>C NMR, Methyl Butyl Ketone in C<sub>2</sub>mimOAc/CD<sub>3</sub>OD, after 7 weeks



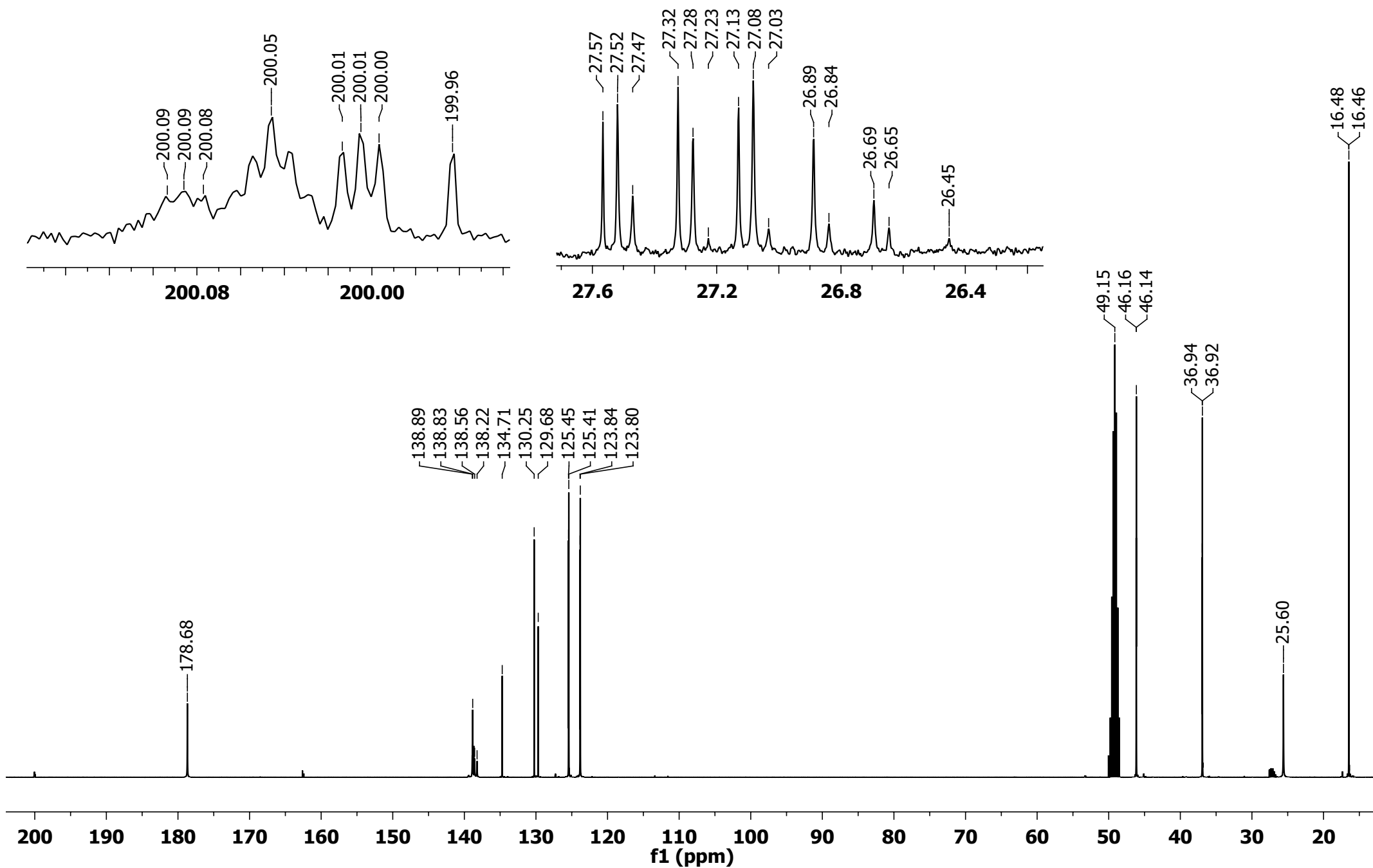
<sup>13</sup>C NMR, Methyl Hexyl Ketone in C<sub>2</sub>mimOAc/CD<sub>3</sub>OD, after 7 weeks



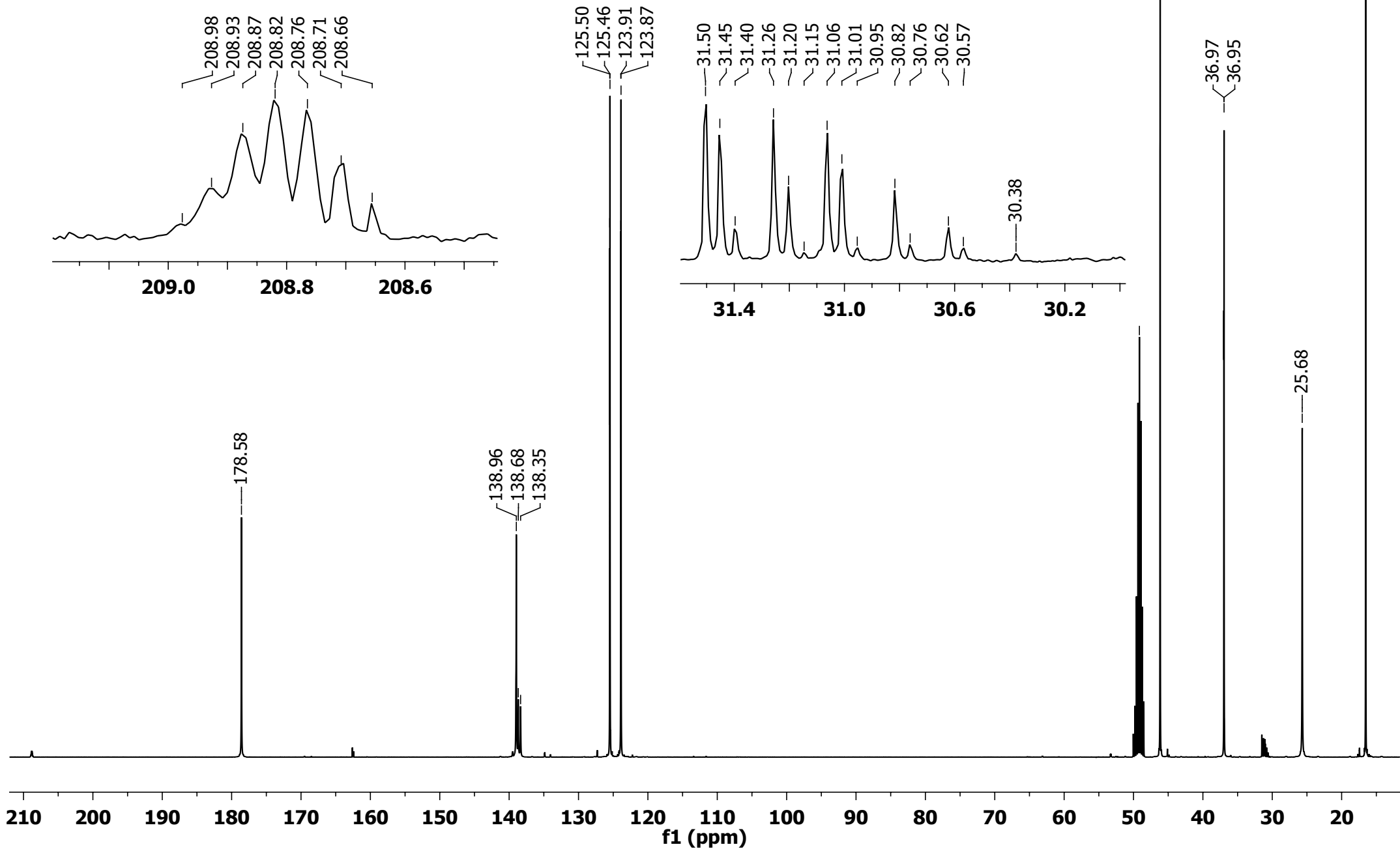
<sup>13</sup>C NMR, Methyl *Tert*-Butyl Ketone in C<sub>2</sub>mimOAc/CD<sub>3</sub>OD, after 3 weeks



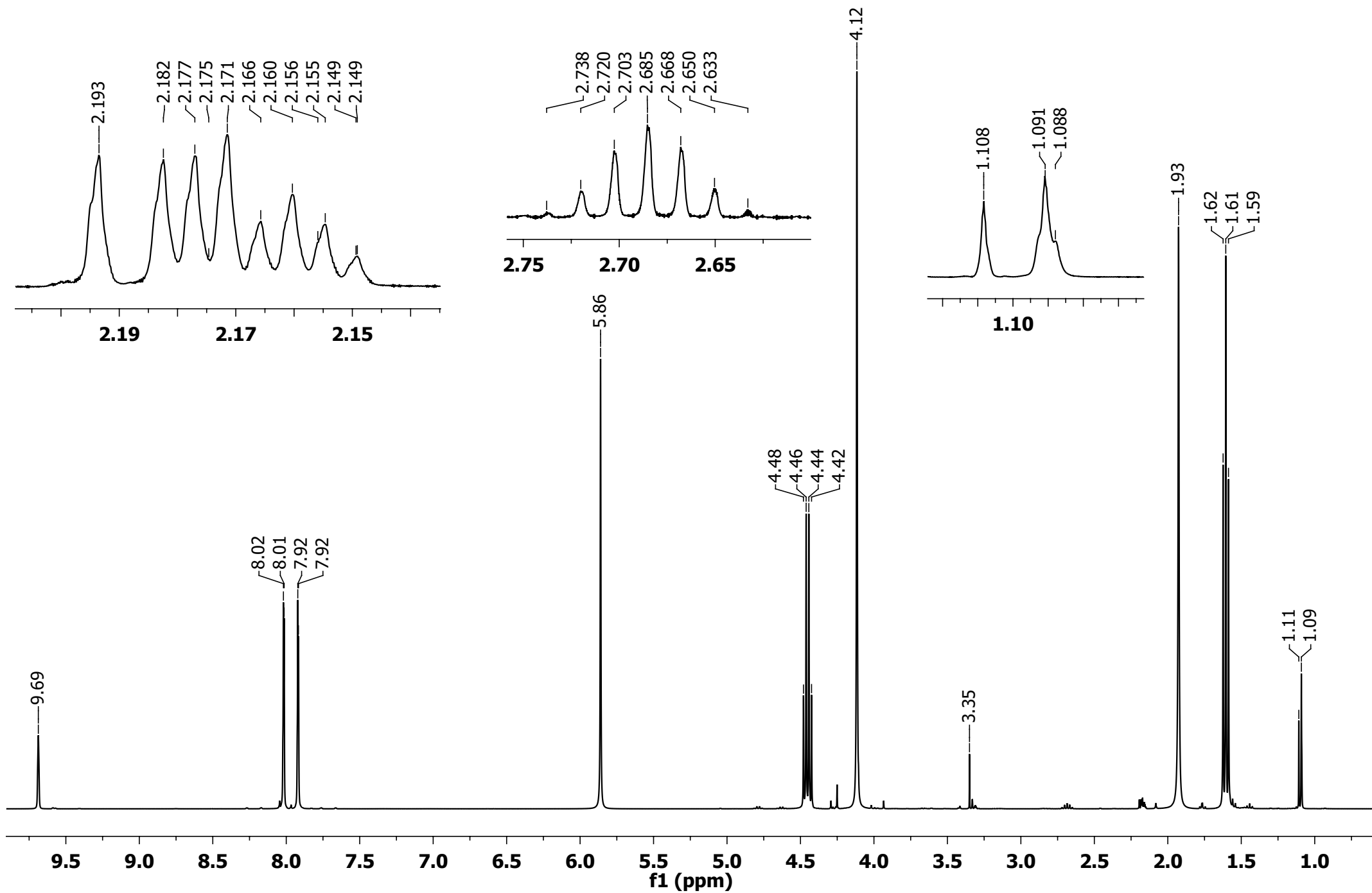
<sup>13</sup>C NMR, Acetophenone in C<sub>2</sub>mimOAc/CD<sub>3</sub>OD, after 3 weeks



$^{13}\text{C}$  NMR, Acetone in  $\text{C}_2\text{mimOAc}/\text{CD}_3\text{OD}$ , after 5 days

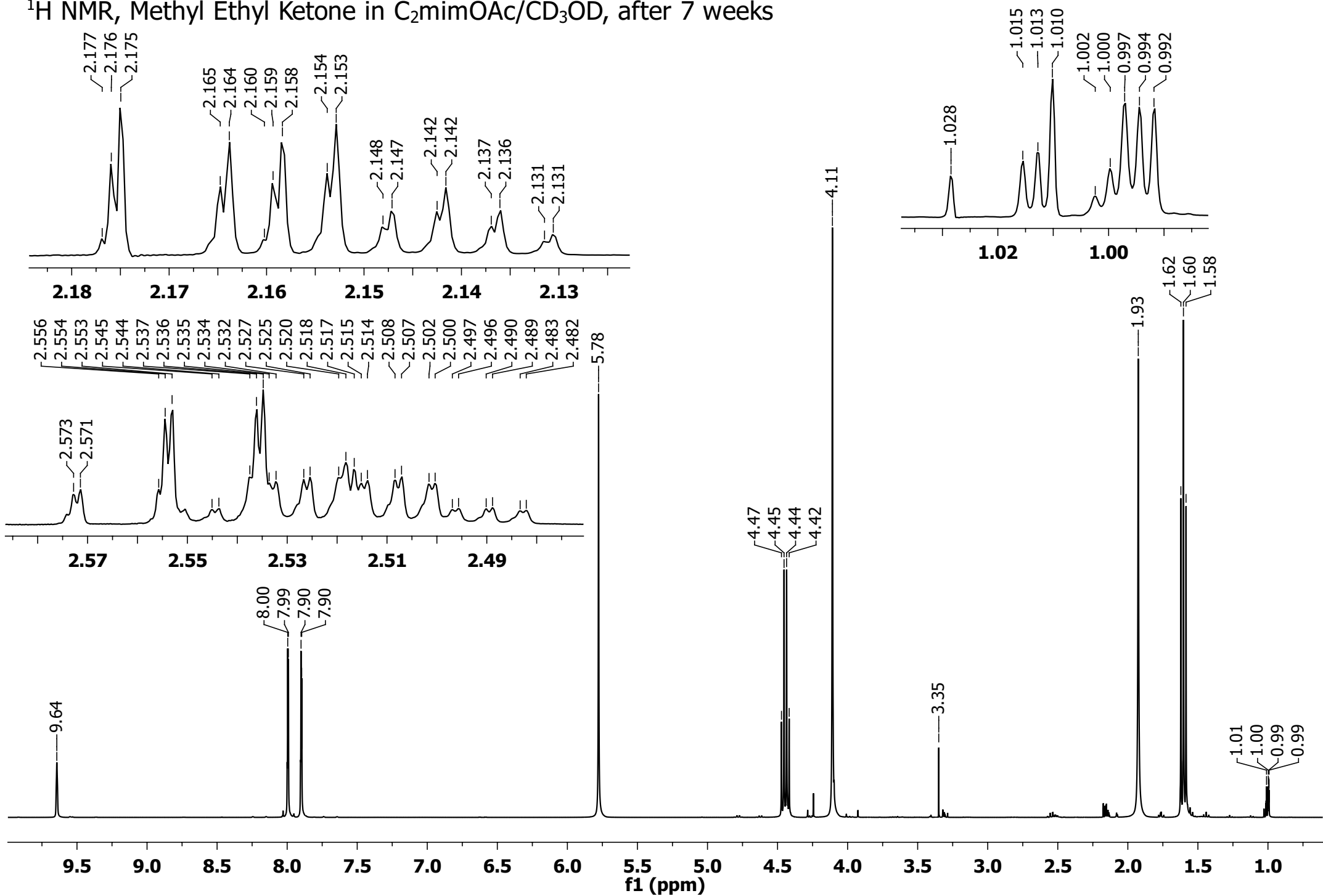


$^1\text{H}$  NMR, Methyl Isopropyl Ketone in  $\text{C}_2\text{mimOAc}/\text{CD}_3\text{OD}$ , after 7 weeks

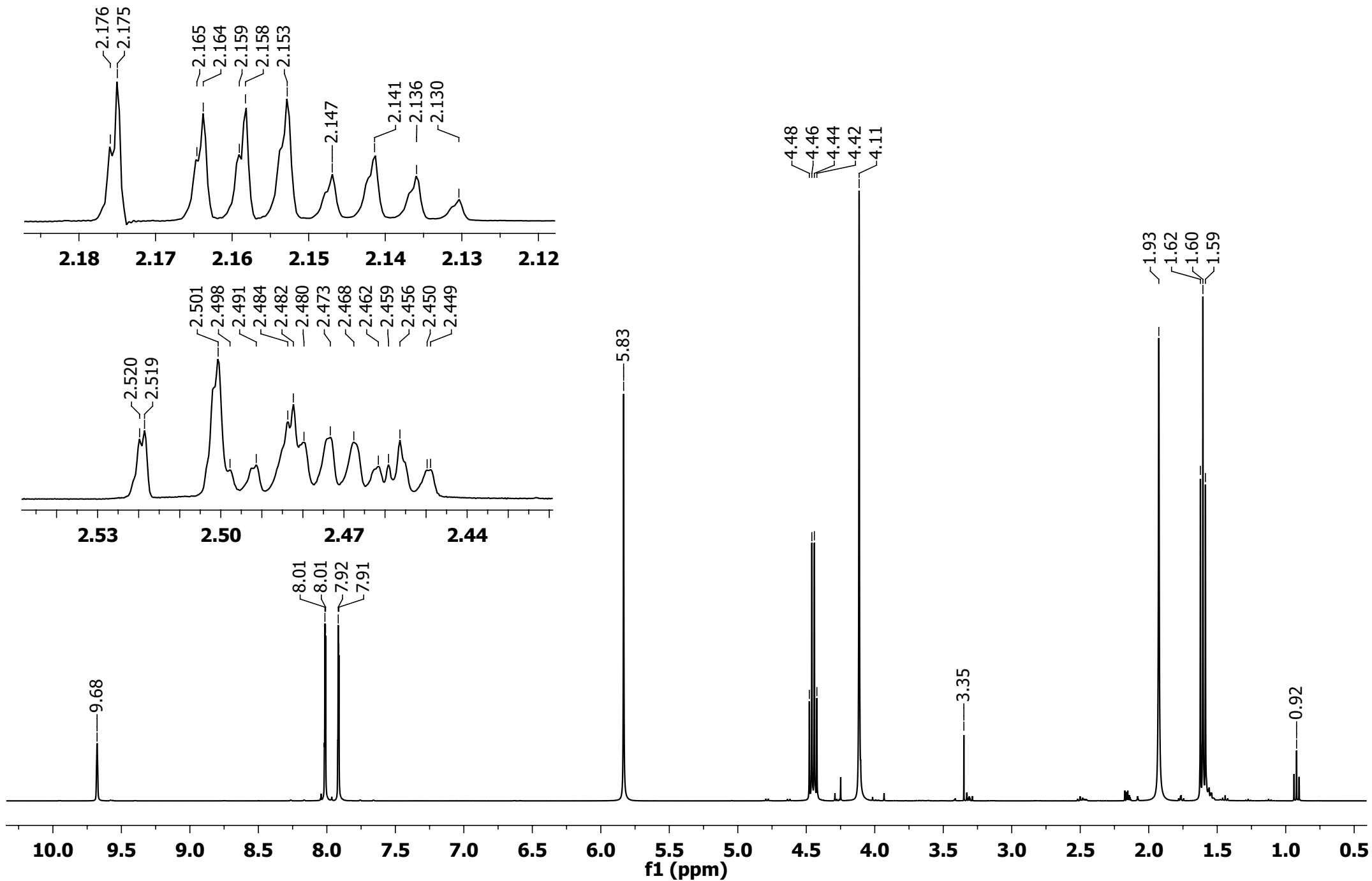




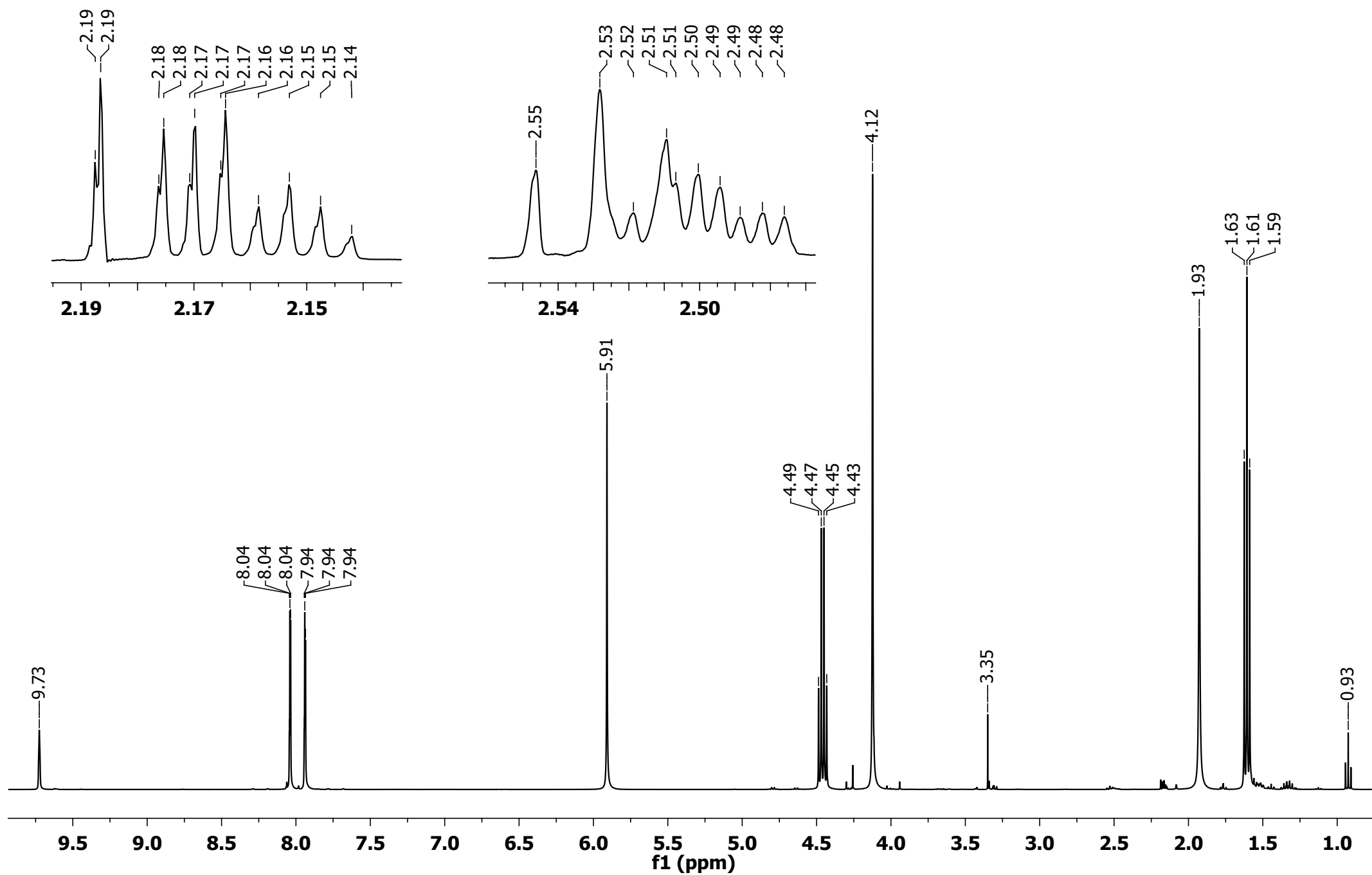
$^1\text{H}$  NMR, Methyl Ethyl Ketone in  $\text{C}_2\text{mimOAc}/\text{CD}_3\text{OD}$ , after 7 weeks



$^1\text{H}$  NMR, Methyl Propyl Ketone in  $\text{C}_2\text{mimOAc}/\text{CD}_3\text{OD}$ , after 7 weeks



$^1\text{H}$  NMR, Methyl Butyl Ketone in  $\text{C}_2\text{mimOAc}/\text{CD}_3\text{OD}$ , after 7 weeks



$^1\text{H}$  NMR, Methyl Hexyl Ketone in  $\text{C}_2\text{mimOAc}/\text{CD}_3\text{OD}$ , after 7 weeks

