

## Supporting information

### Cascade reactions of glycine Schiff bases and chiral phase transfer catalysts in the synthesis of $\alpha$ -amino acids 3-substituted phthalides and isoindolinones

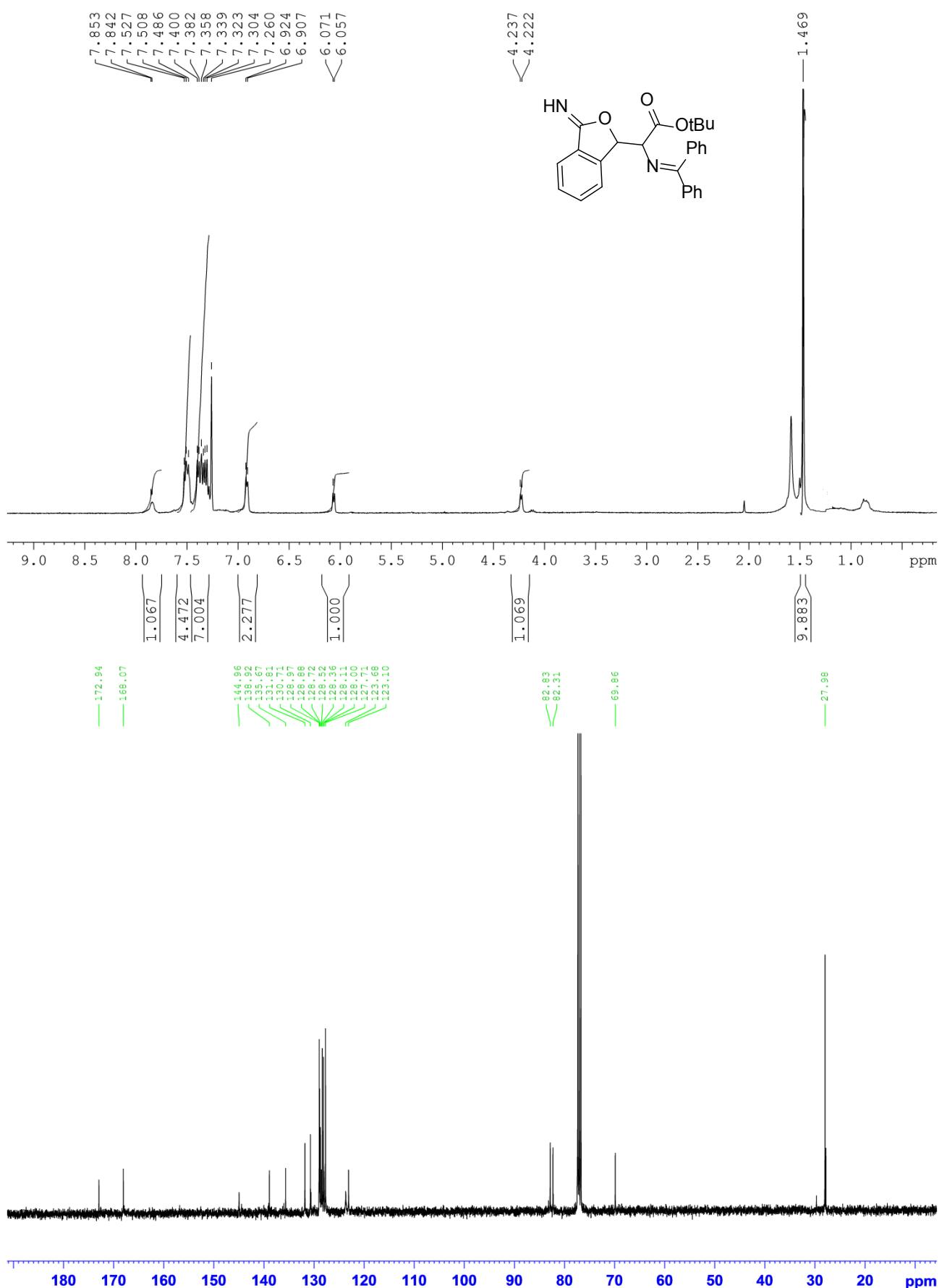
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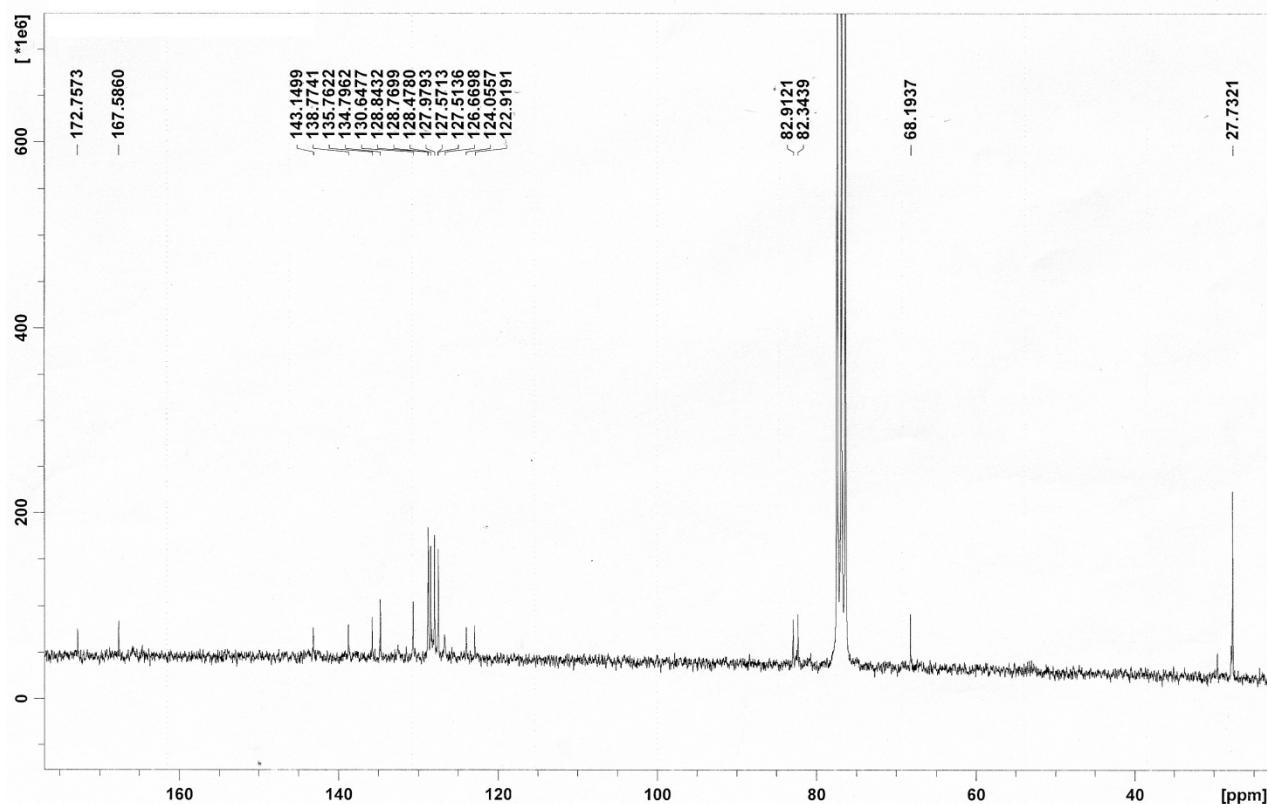
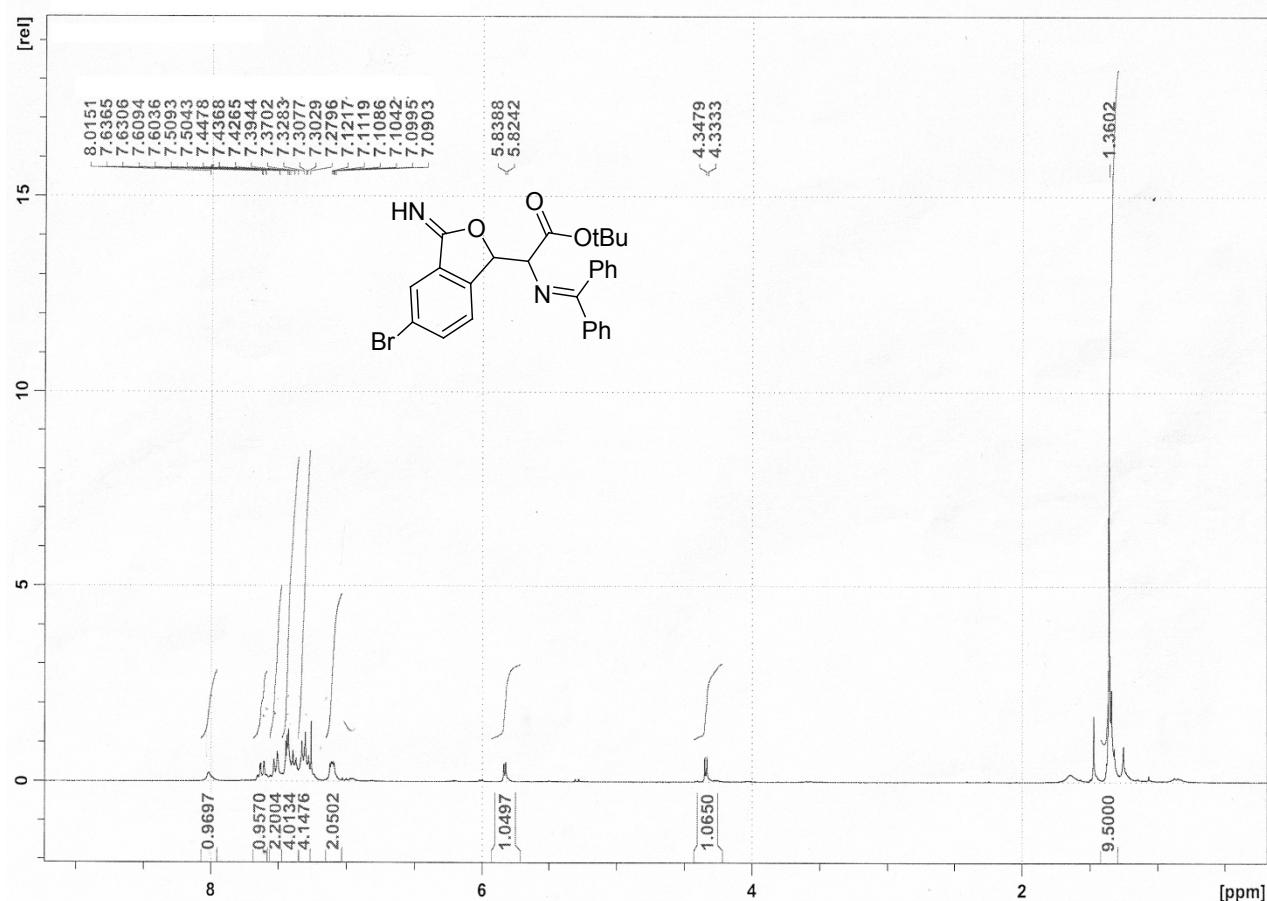
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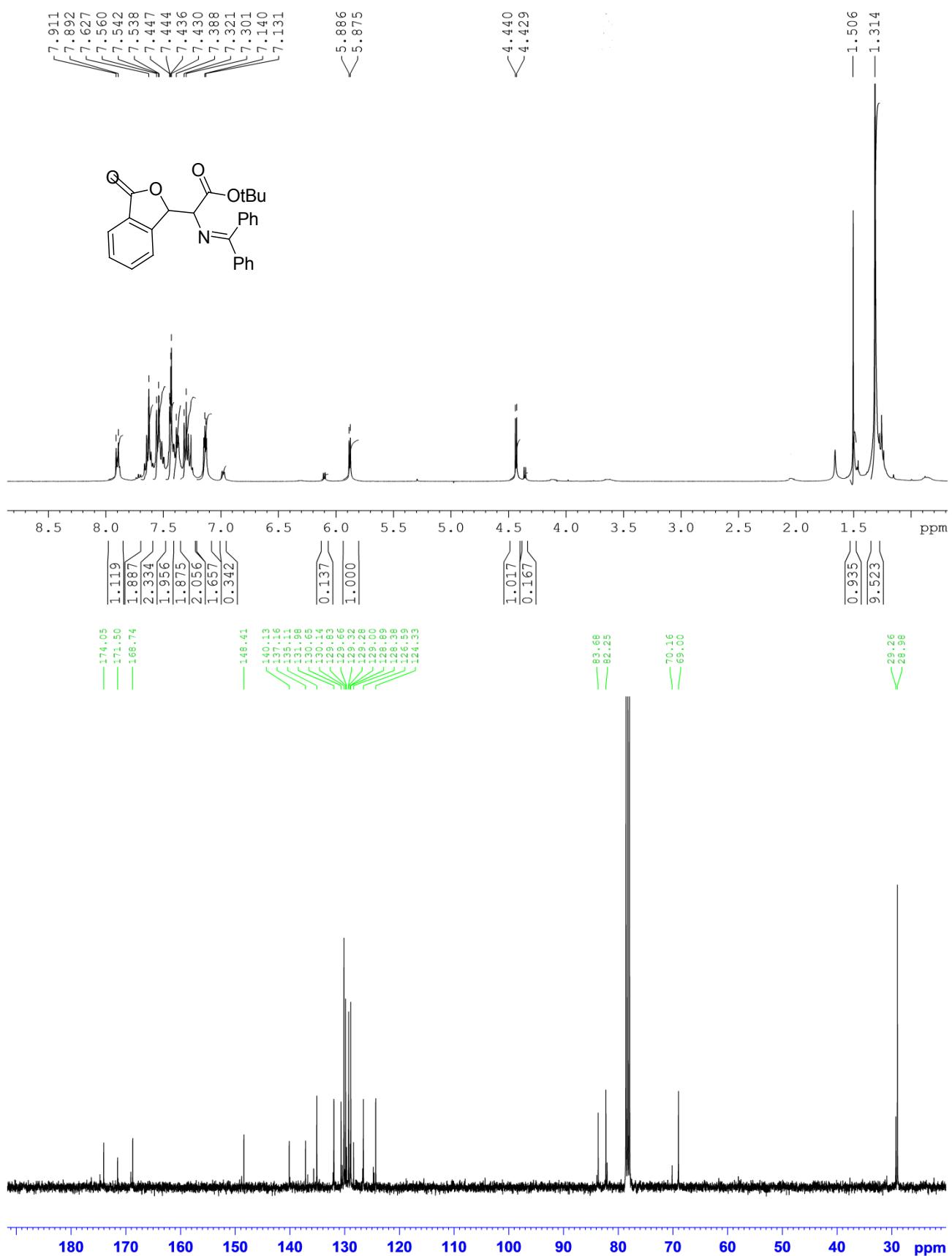
**Major diastereomer**



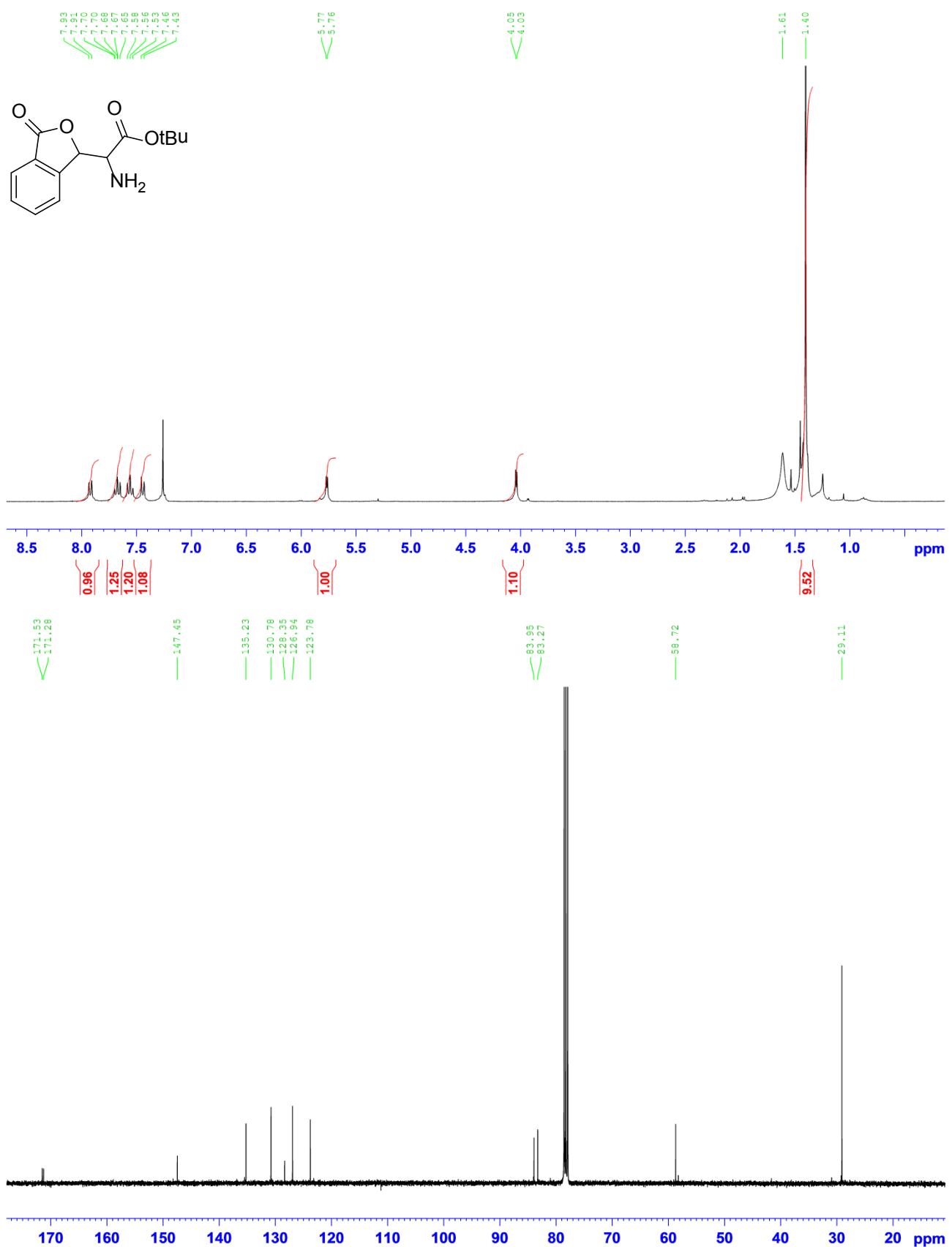
Major diastereomer



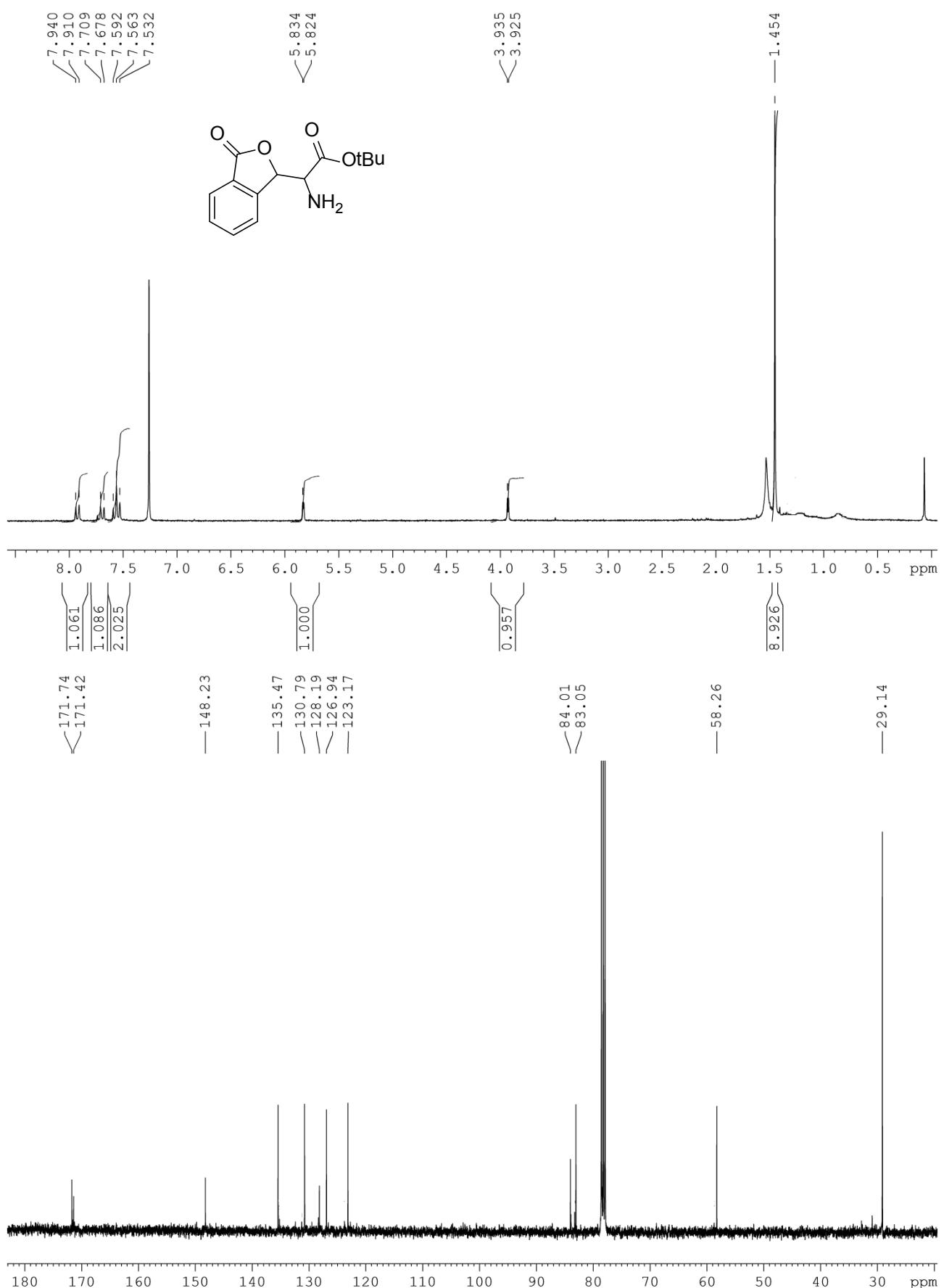
Mixture of diastereomers



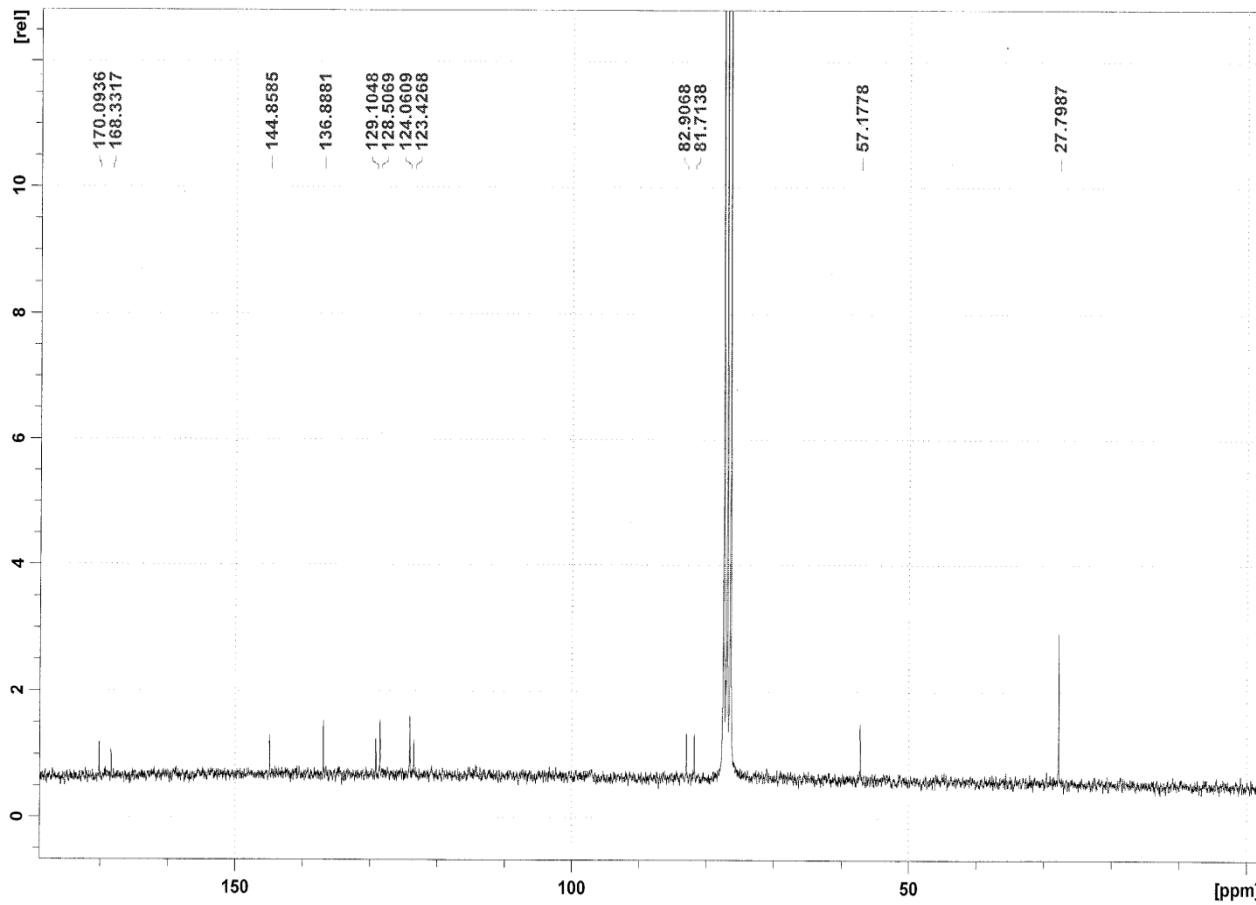
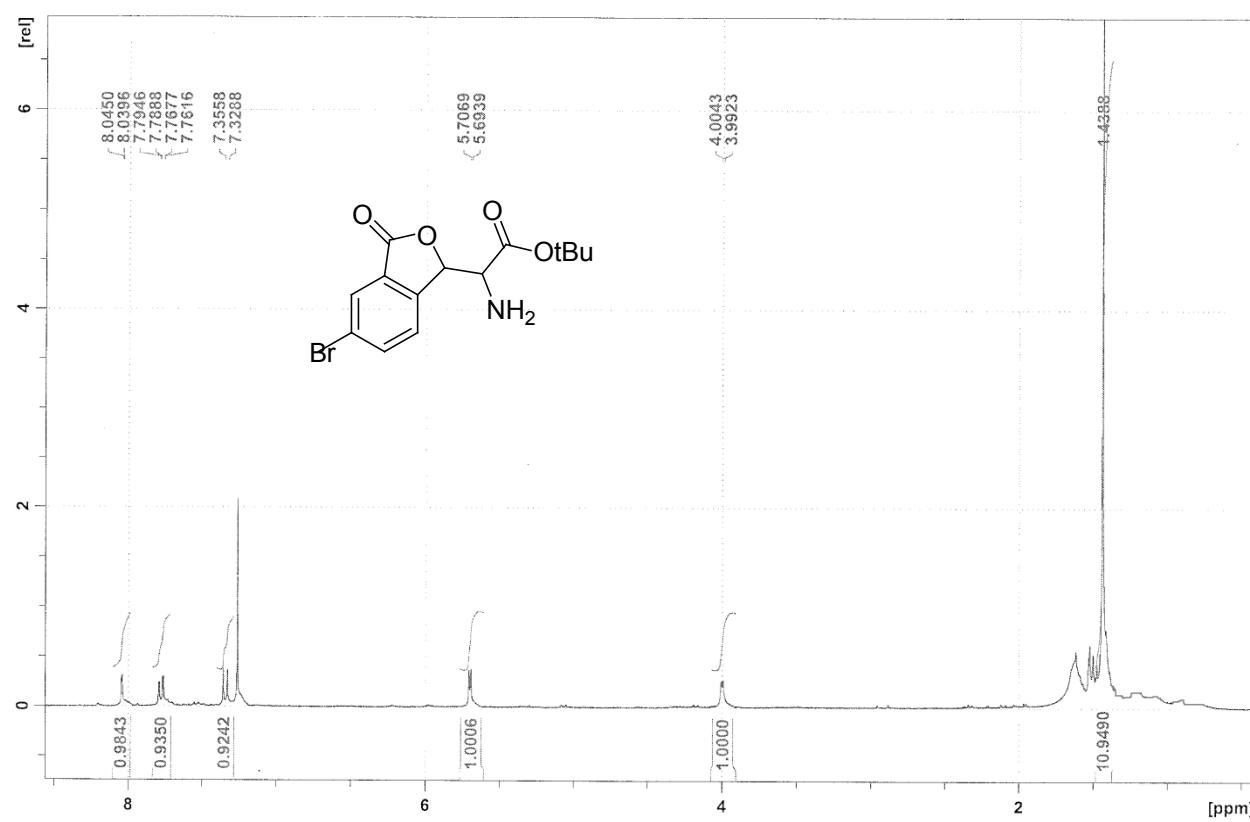
Single diastereomer



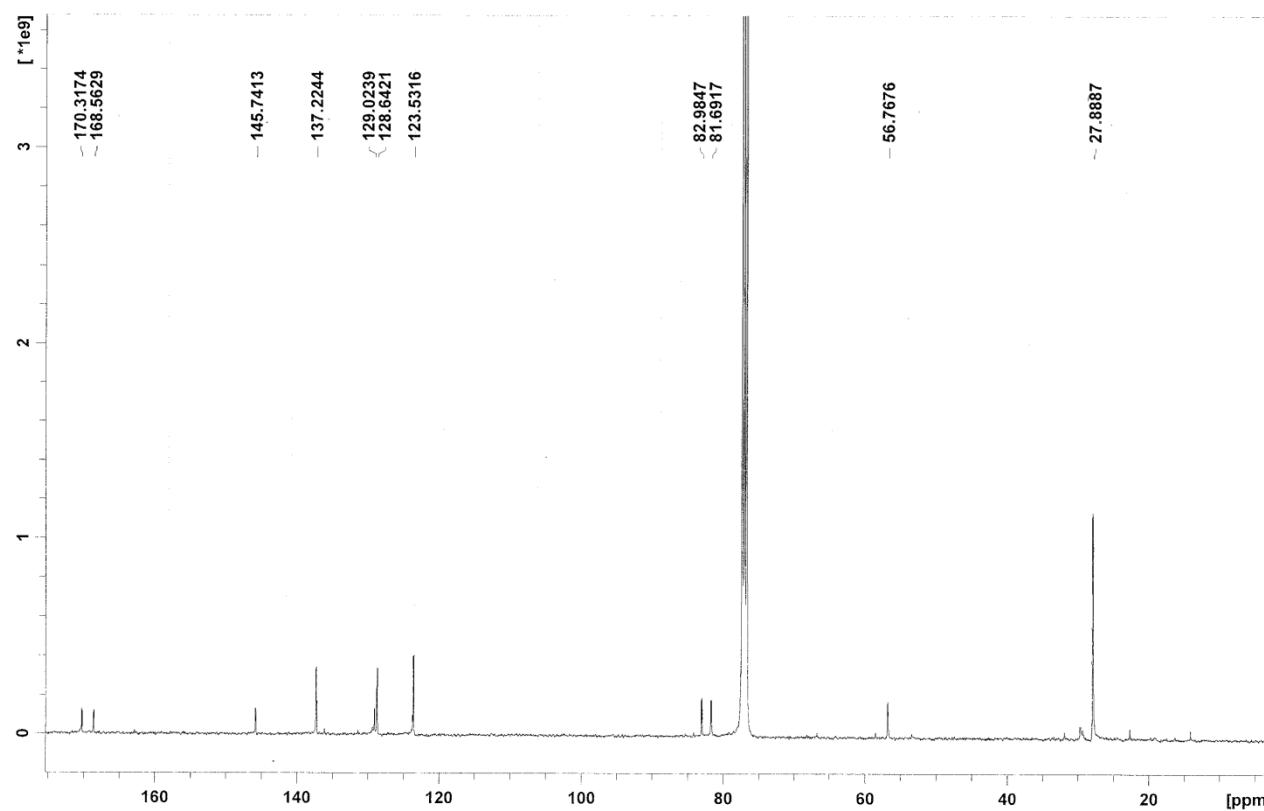
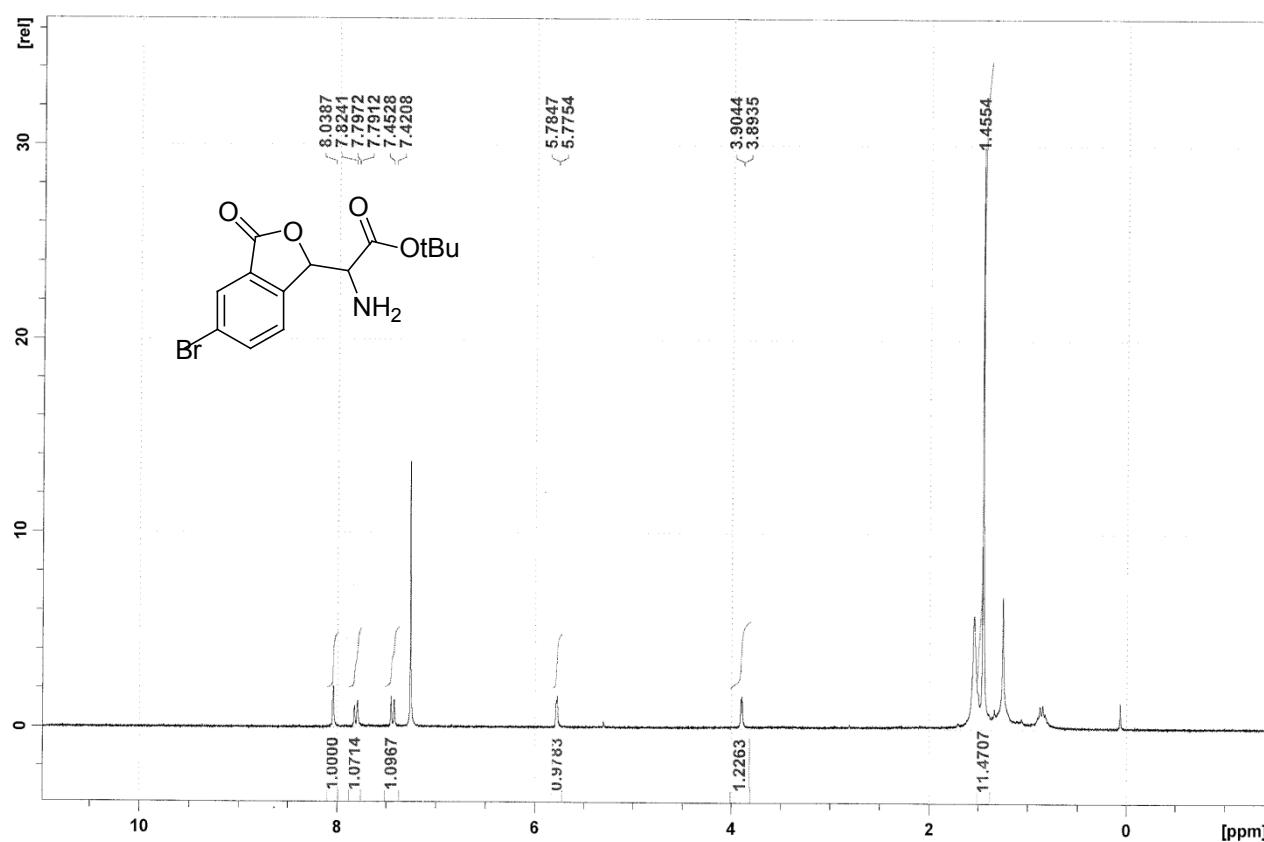
**Single diastereomer**



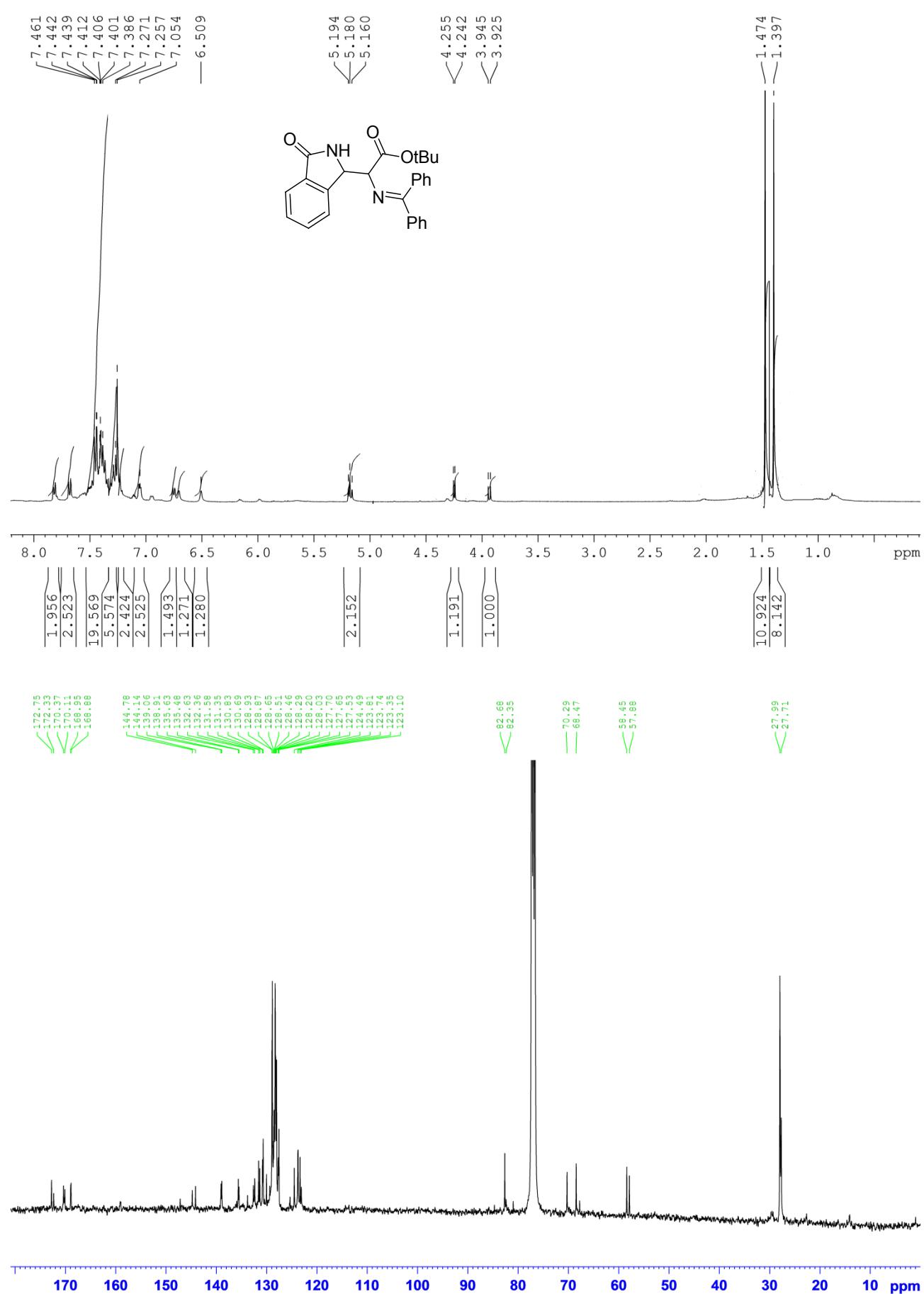
Single diastereomer



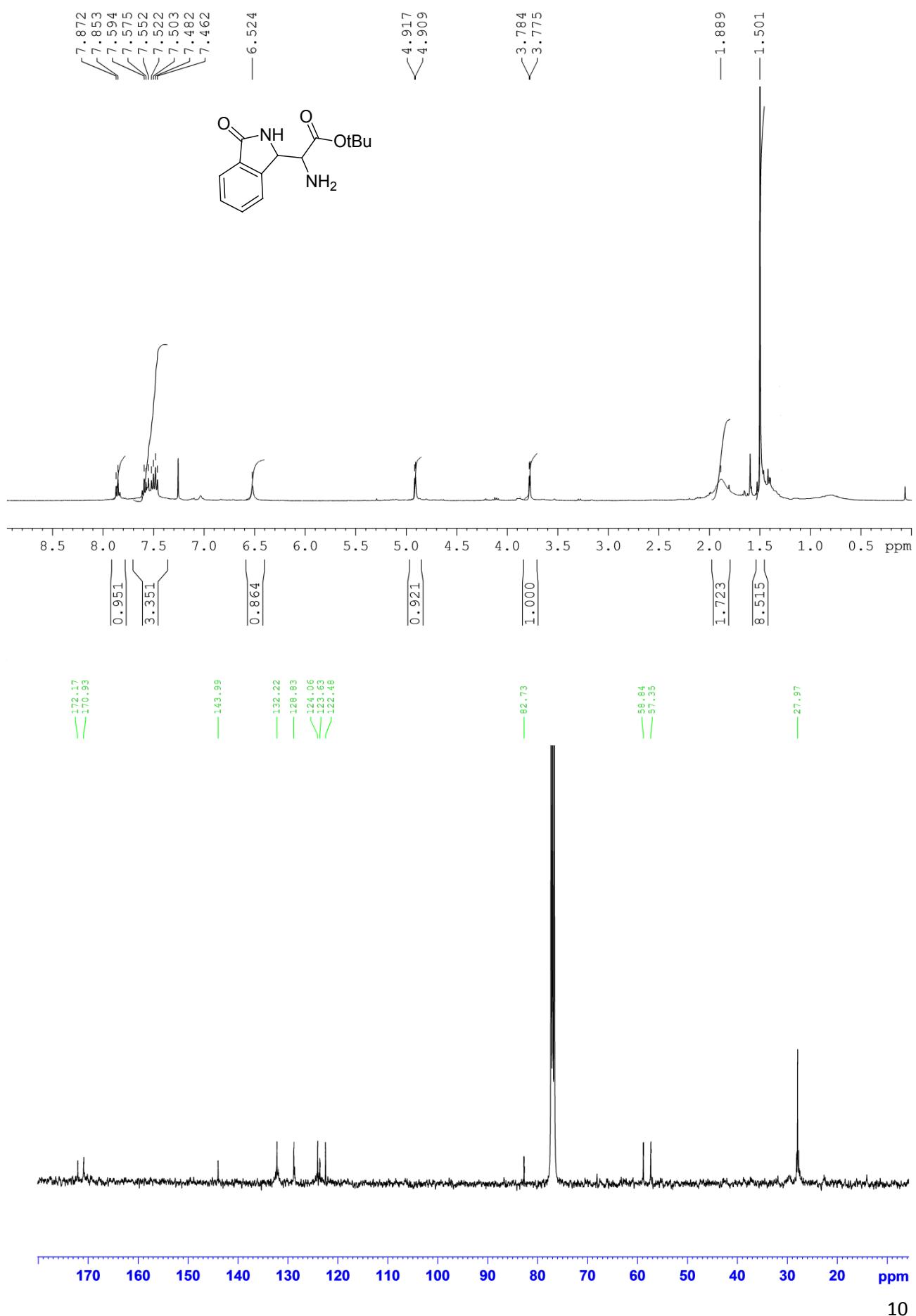
Single diastereomer



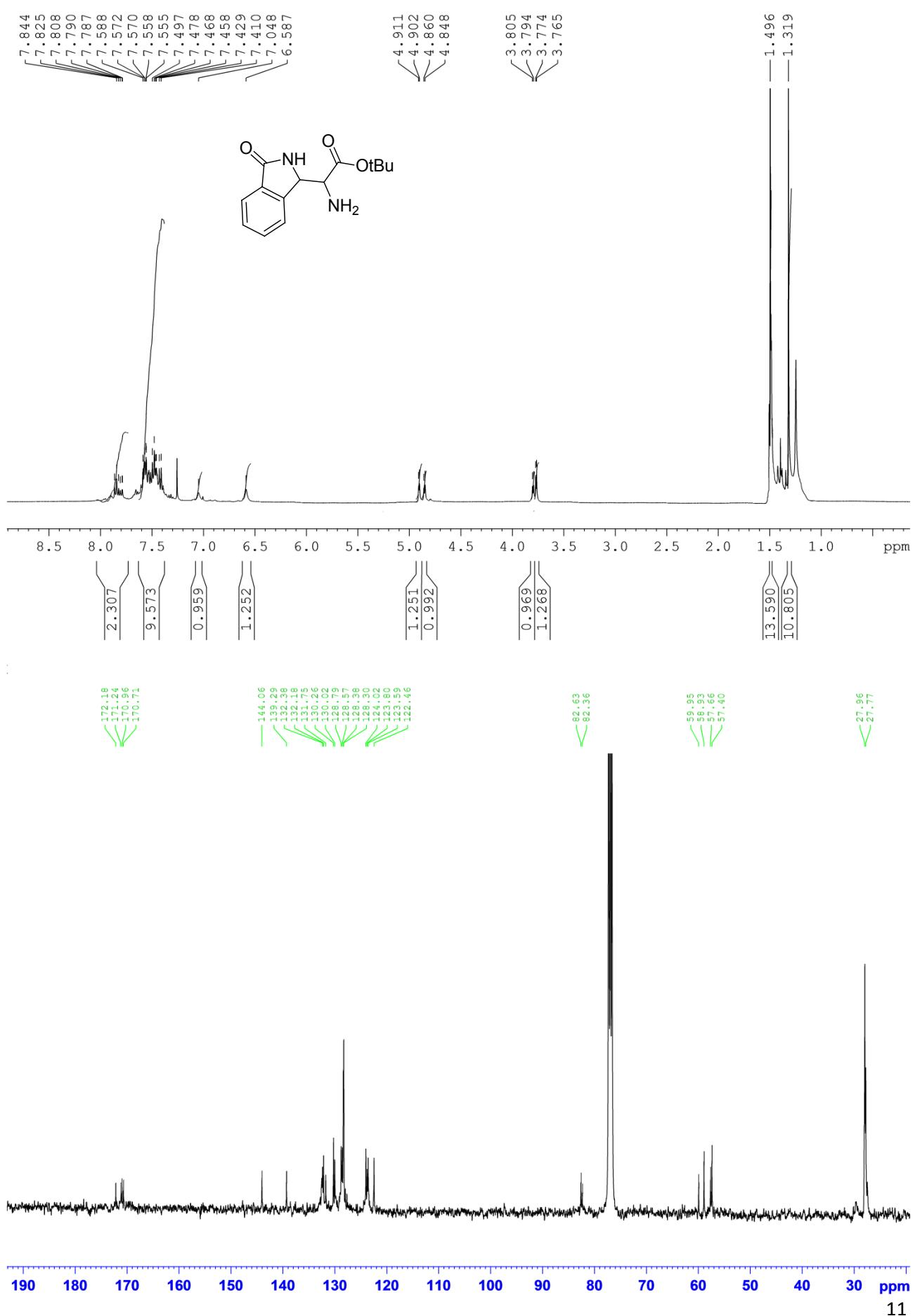
Mixture of diastereomers



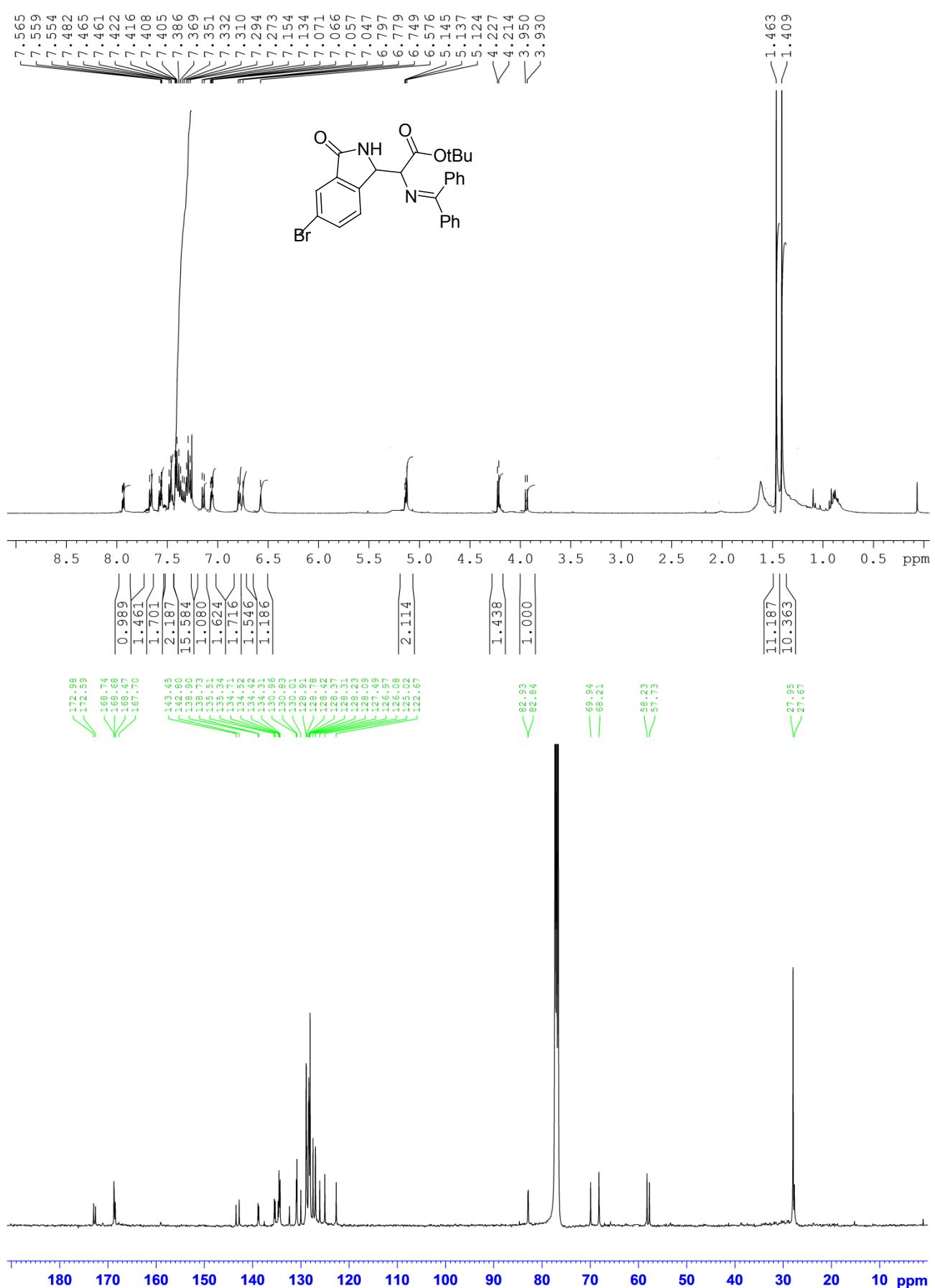
**Single diastereomer**



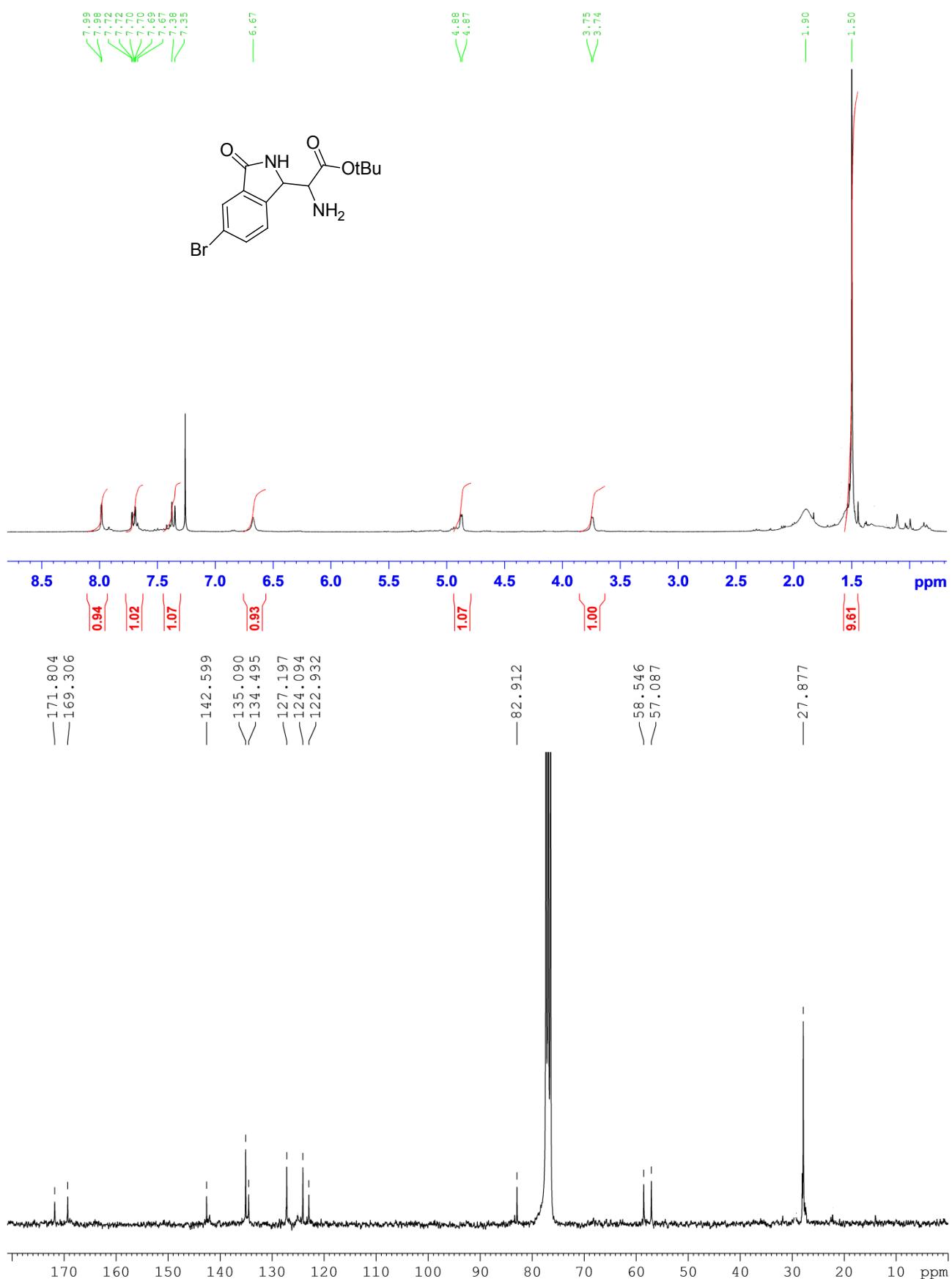
Mixture of diastereomers



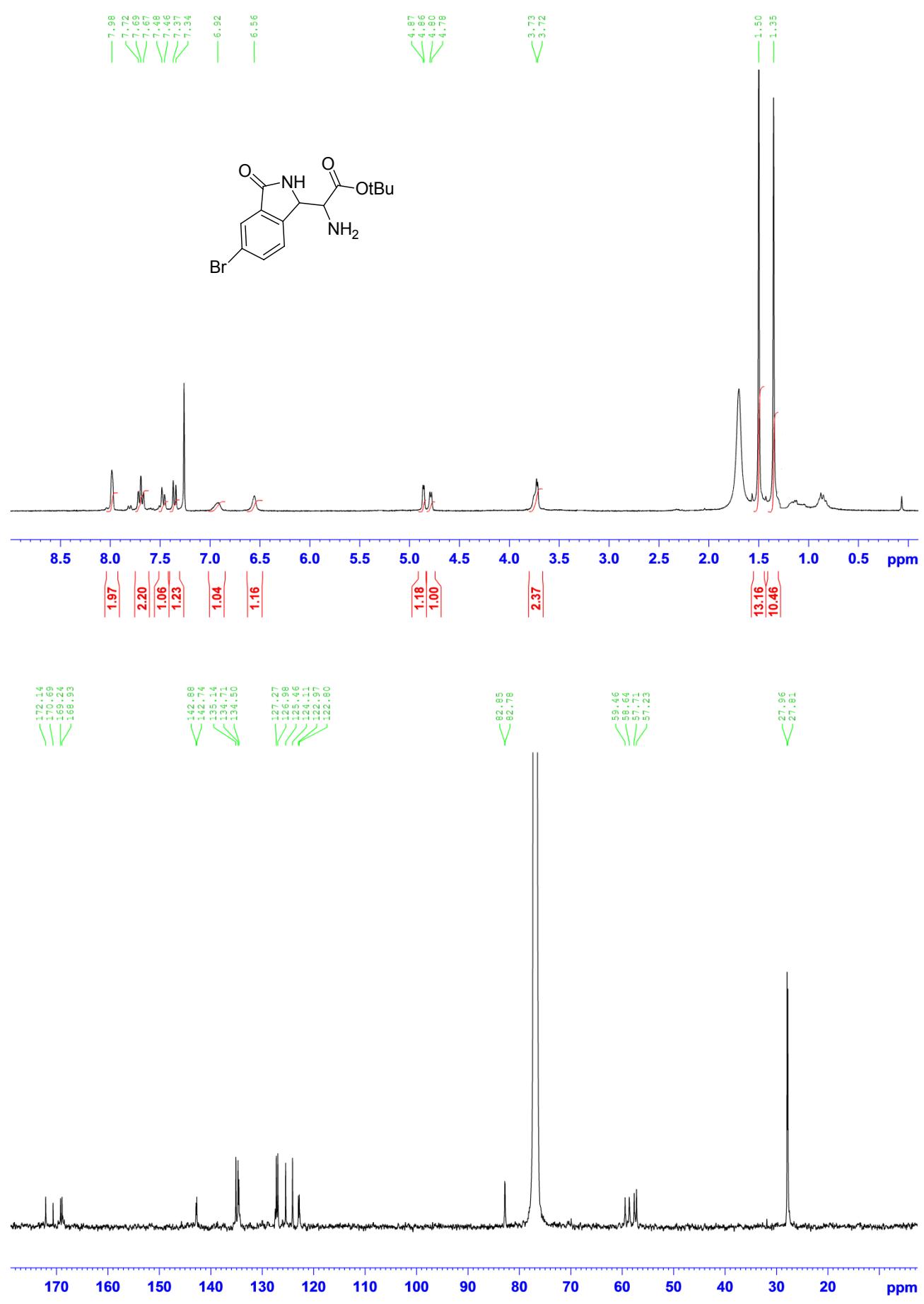
Mixture of diastereomers

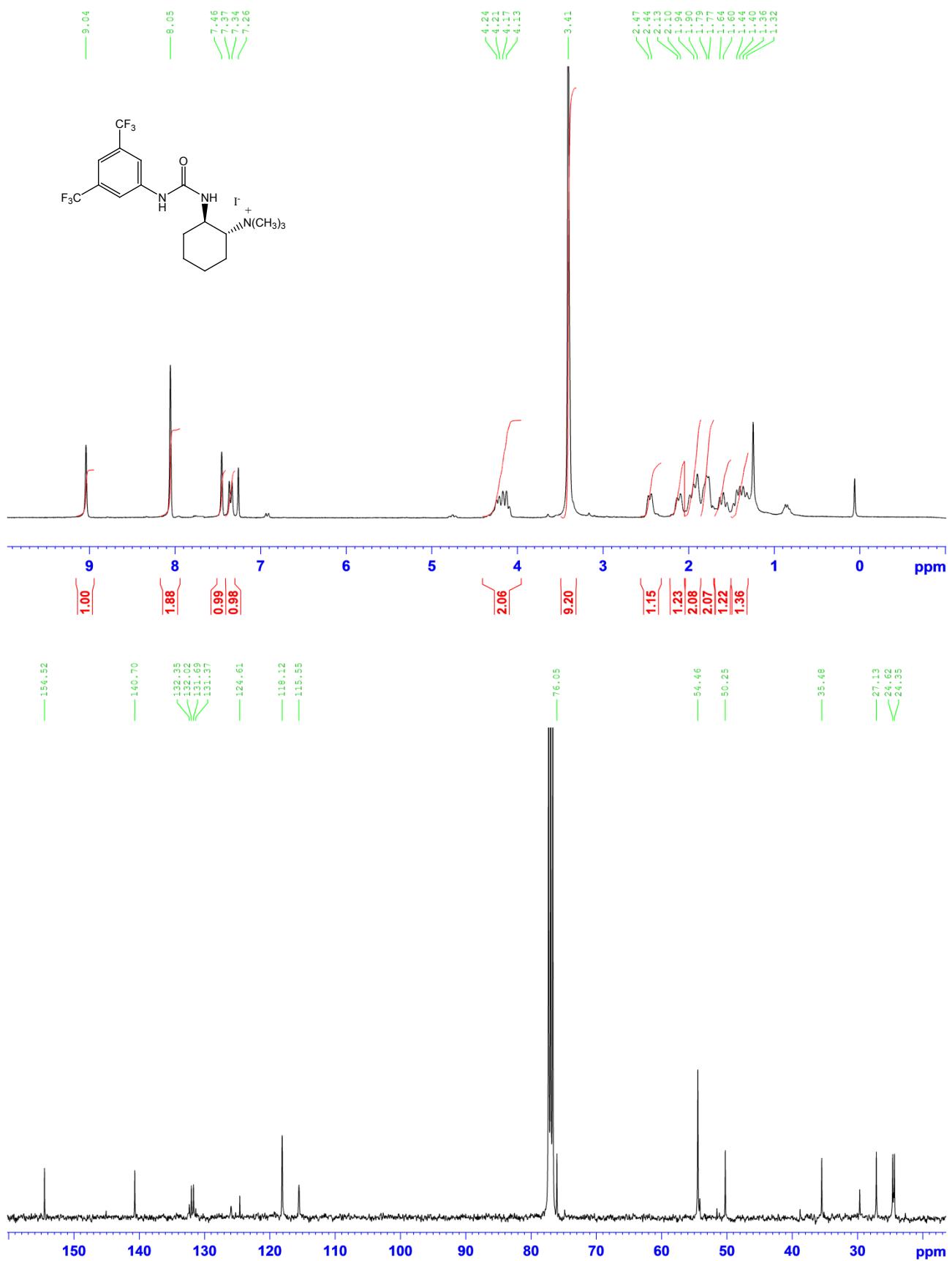


Single diastereomer

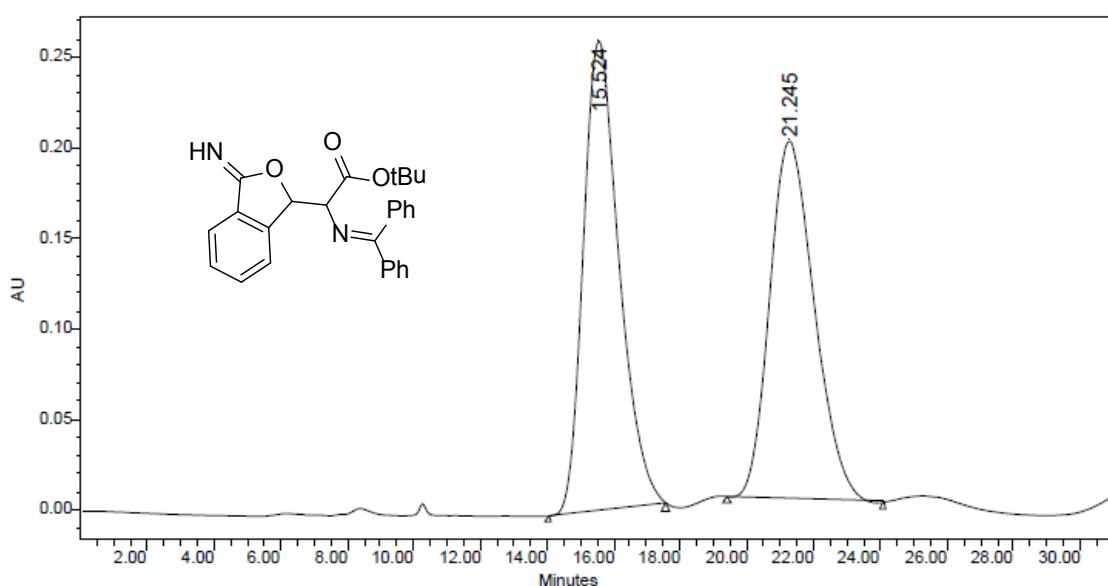


Mixture of diastereomers

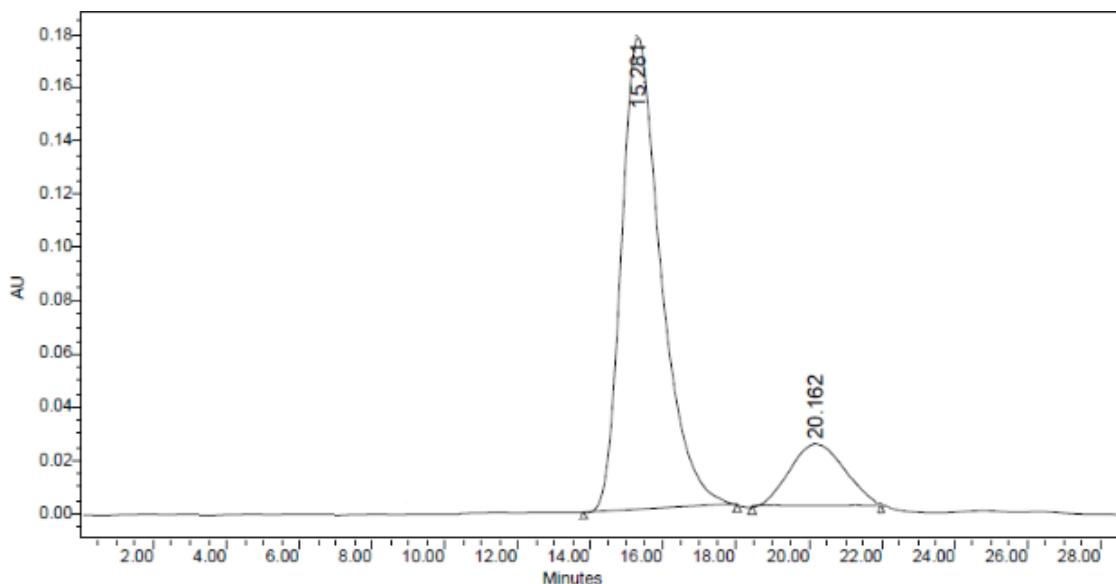




HPLC traces of the major diastereomer

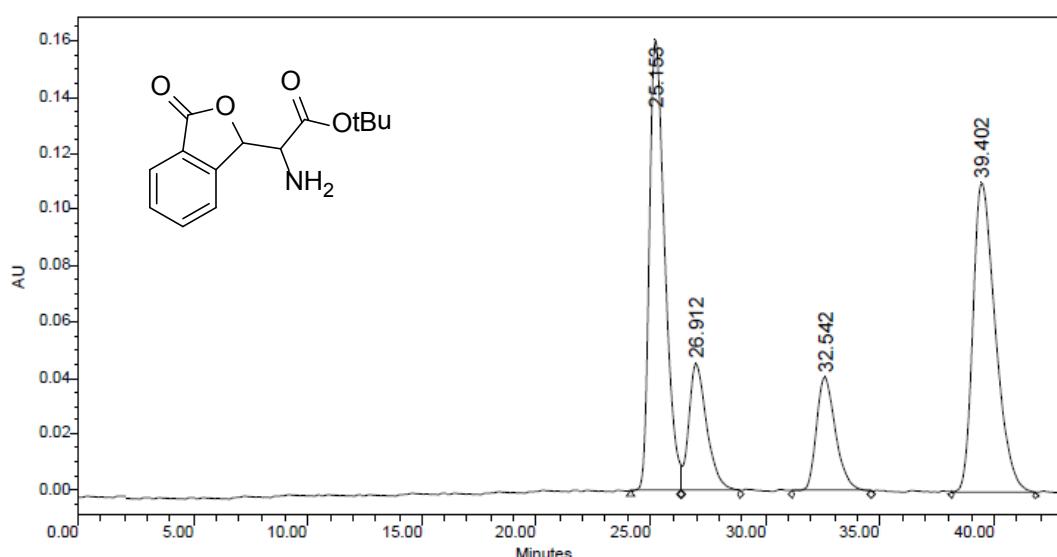


|   | RT (min) | Area (V*sec) | % Area | Height (V) | % Height |
|---|----------|--------------|--------|------------|----------|
| 1 | 15.524   | 19358486     | 51.30  | 259039     | 56.76    |
| 2 | 21.245   | 18378969     | 48.70  | 197318     | 43.24    |



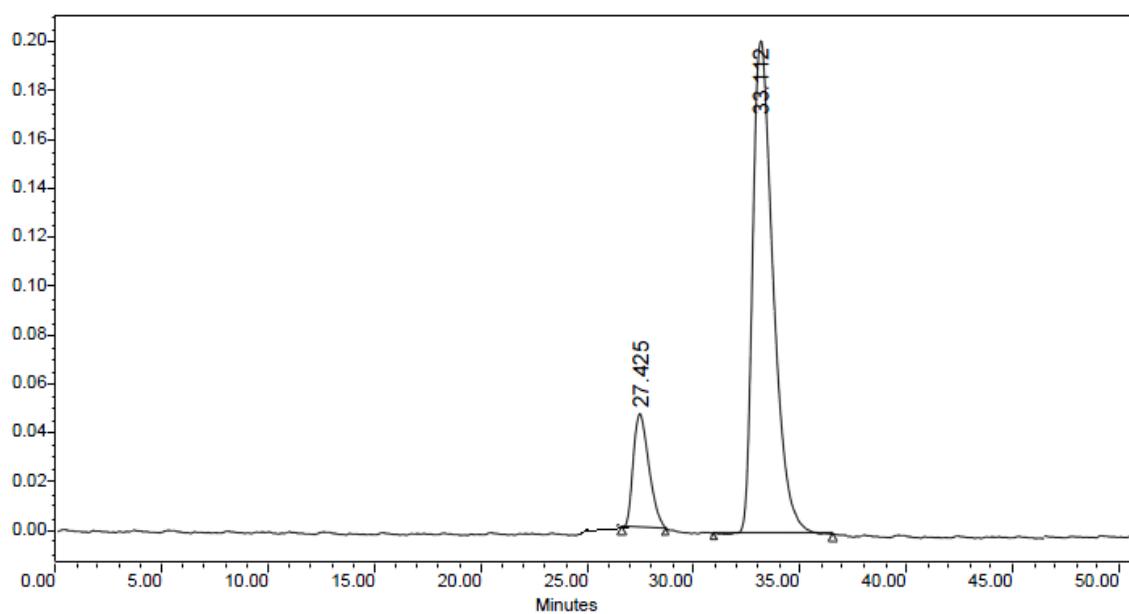
|   | RT (min) | Area (V*sec) | % Area | Height (V) | % Height |
|---|----------|--------------|--------|------------|----------|
| 1 | 15.281   | 13495876     | 85.09  | 177729     | 88.57    |
| 2 | 20.162   | 2365073      | 14.91  | 22925      | 11.43    |

HPLC traces of *rac* mixture of two diastereomers in dr = 1.6/1



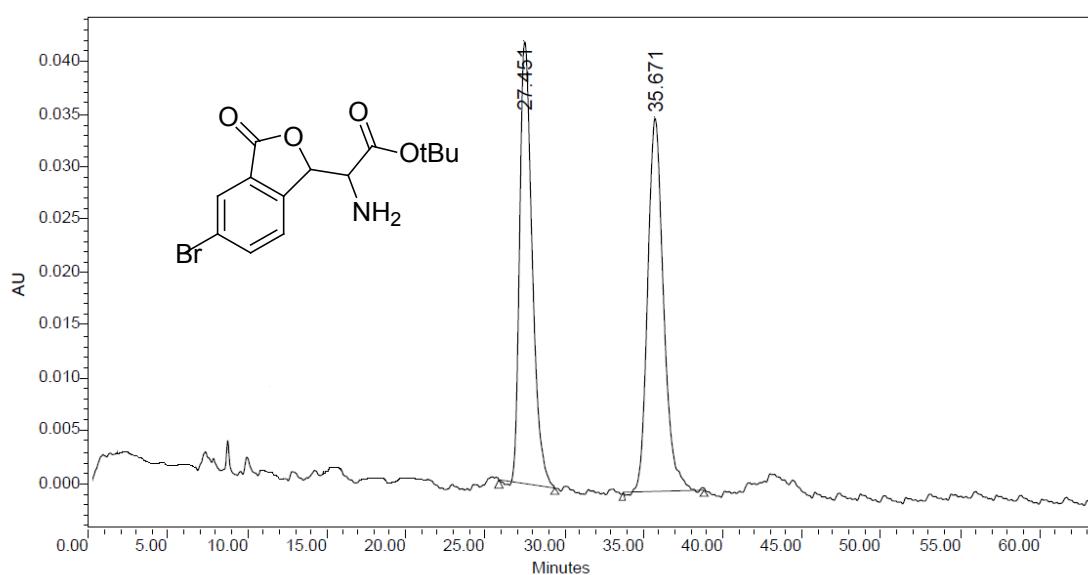
|   | RT (min) | Area (V*sec) | % Area | Height (V) | % Height |
|---|----------|--------------|--------|------------|----------|
| 1 | 25.153   | 7562309      | 37.75  | 160393     | 44.99    |
| 2 | 26.912   | 2501911      | 12.49  | 45354      | 12.72    |
| 3 | 32.542   | 2432791      | 12.14  | 40788      | 11.44    |
| 4 | 39.402   | 7535374      | 37.62  | 109982     | 30.85    |

HPLC trace of enantioenriched major diastereomer.



|   | RT (min) | Area (V*sec) | % Area | Height (V) | % Height |
|---|----------|--------------|--------|------------|----------|
| 1 | 27.425   | 2383510      | 14.98  | 46558      | 18.76    |
| 2 | 33.112   | 13527927     | 85.02  | 201680     | 81.24    |

**HPLC trace of *rac*- major diastereomer**



**HPLC trace of enantioenriched major diastereomer**

