

Supporting Information

Efficient Stereoselective Synthesis of a Key Chiral Aldehyde Intermediate in the Synthesis of Picolinamide Fungicides

Fangzheng Li ^{†}, Steffen Good [†], Michael L. Tulchinsky[‡], and Gregory T. Whiteker [†]*

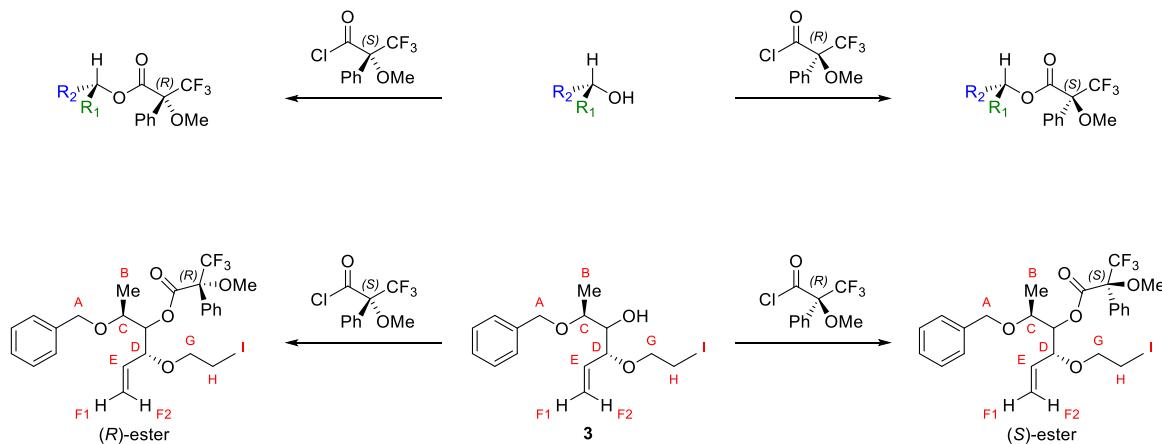
[†] Process Chemistry, Product Design & Process R&D, Corteva Agriscience, 9330 Zionsville Road, Indianapolis, Indiana 46268, United States

[‡] Core R&D, Dow Chemical, 1776 Building, Midland, Michigan USA 48674

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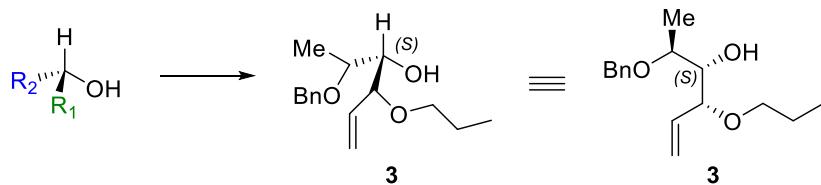
- 1) Mosher ester analysis of **3**
- 2) ¹H and ¹³CNMR spectra of compound **3**, **2** and **1**

Mosher ester analysis of 3

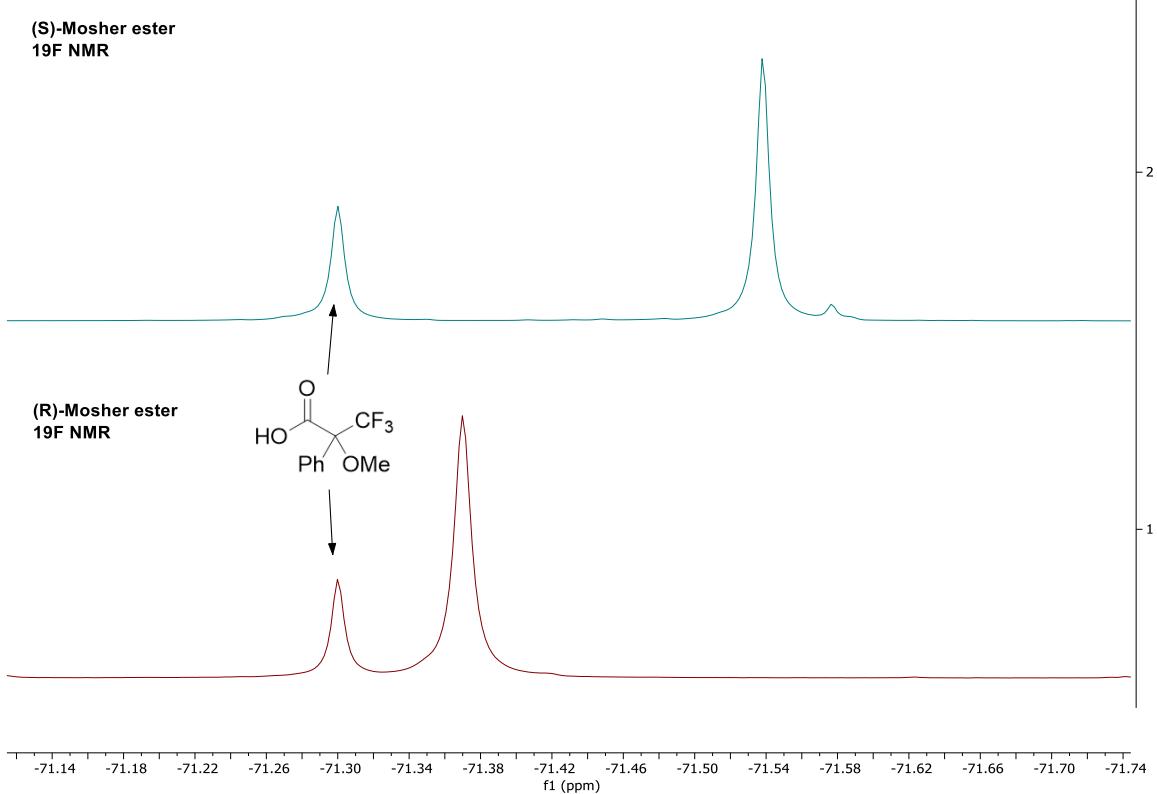
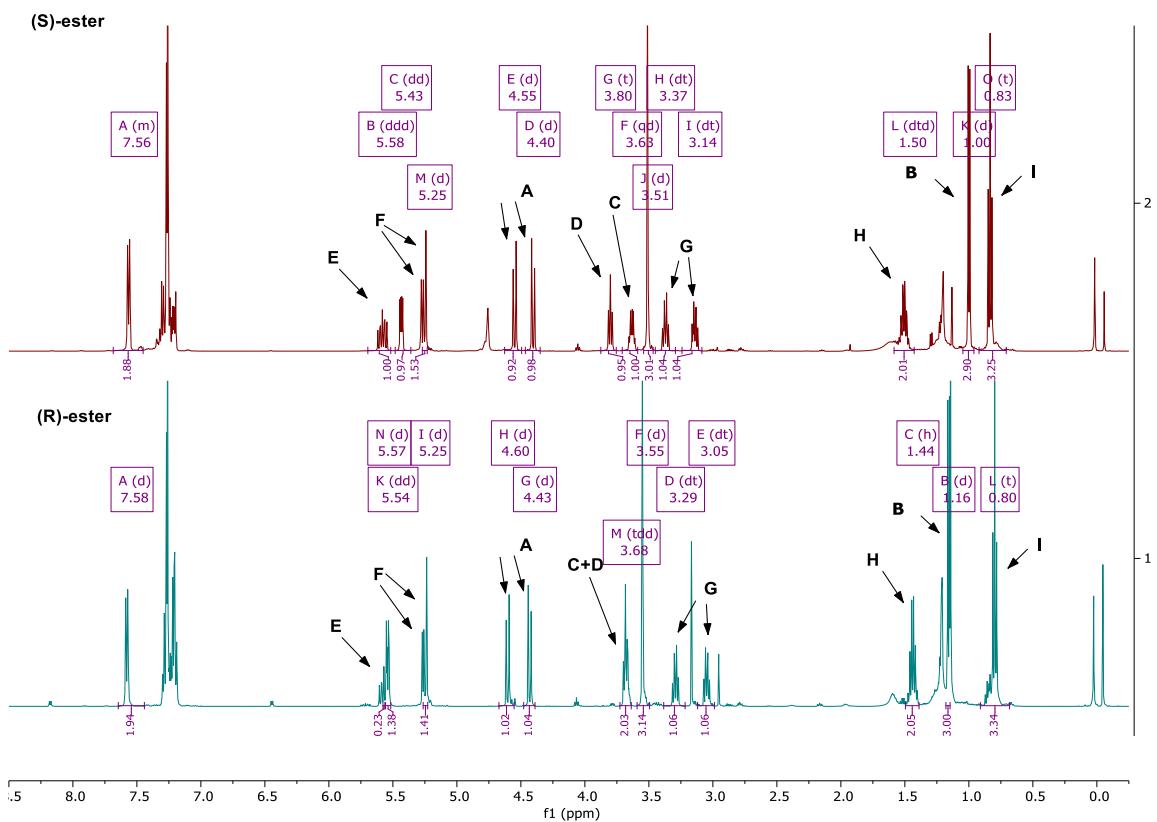


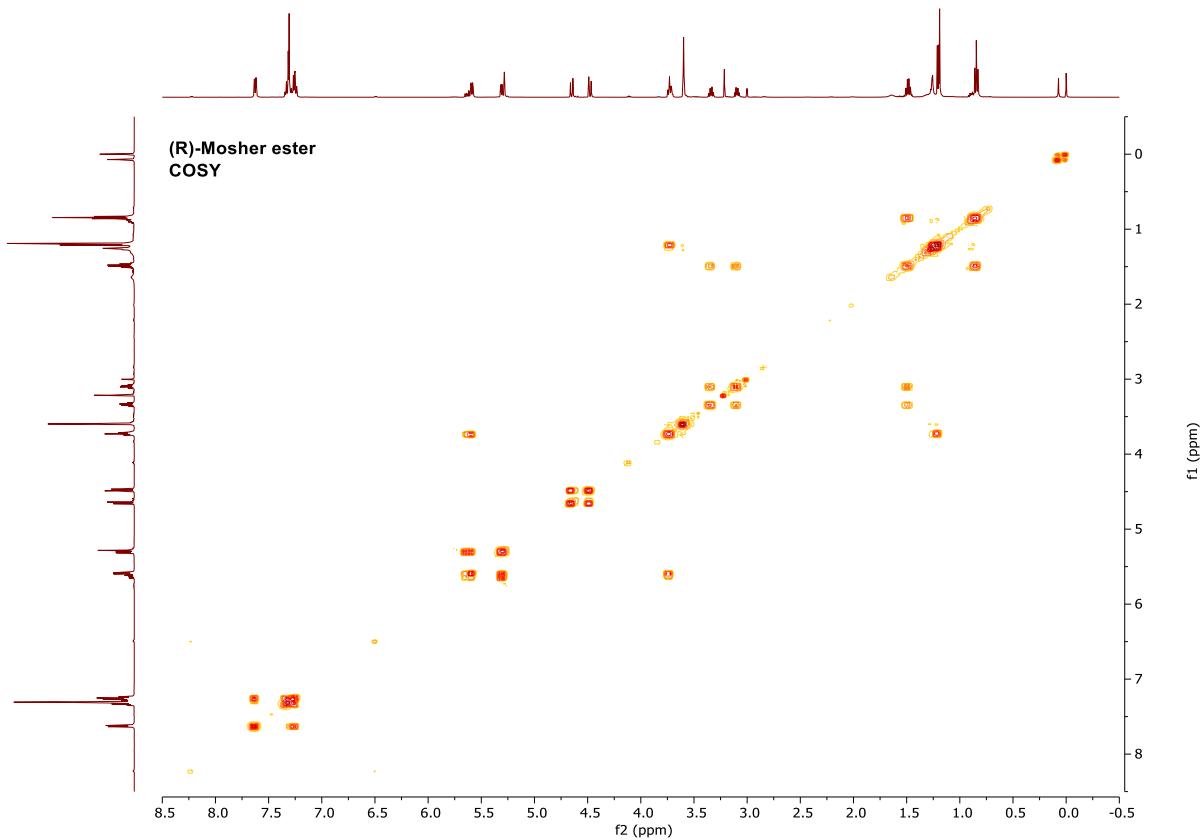
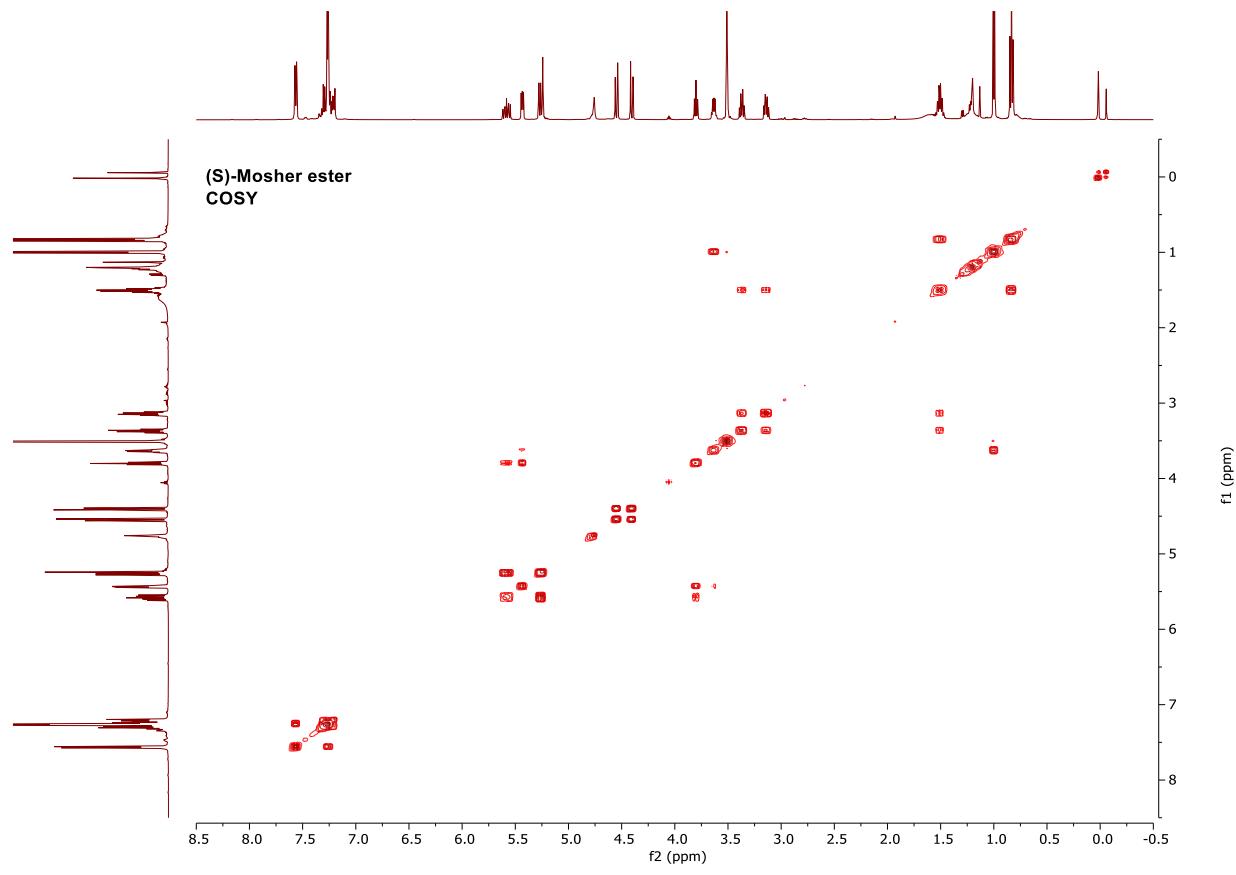
| ^1H position | $\delta S\text{-ester}$ (ppm) | $\delta R\text{-ester}$ (ppm) | $\Delta\delta_{SR} = \delta_S - \delta_R$ (ppm) | Generic model assignment |
|------------------------|-------------------------------|-------------------------------|---|--------------------------|
| A _{upfield} | 4.40 | 4.43 | -0.03 | R ₂ |
| A _{downfield} | 4.55 | 4.60 | -0.05 | R ₂ |
| B | 1.00 | 1.16 | -0.16 | R ₂ |
| C | 3.63 | 3.68 | -0.05 | R ₂ |
| D | 3.80 | 3.68 | +0.12 | R ₁ |
| E | 5.58 | 5.57 | +0.01 | R ₁ |
| F1 | 5.25 | 5.25 | +0.00 | R ₁ |
| F2 | 5.26 | 5.25 | +0.01 | R ₁ |
| G _{upfield} | 3.14 | 3.05 | +0.09 | R ₁ |
| G _{downfield} | 3.37 | 3.29 | +0.08 | R ₁ |
| H | 1.50 | 1.44 | +0.06 | R ₁ |
| I | 0.83 | 0.80 | +0.03 | R ₁ |

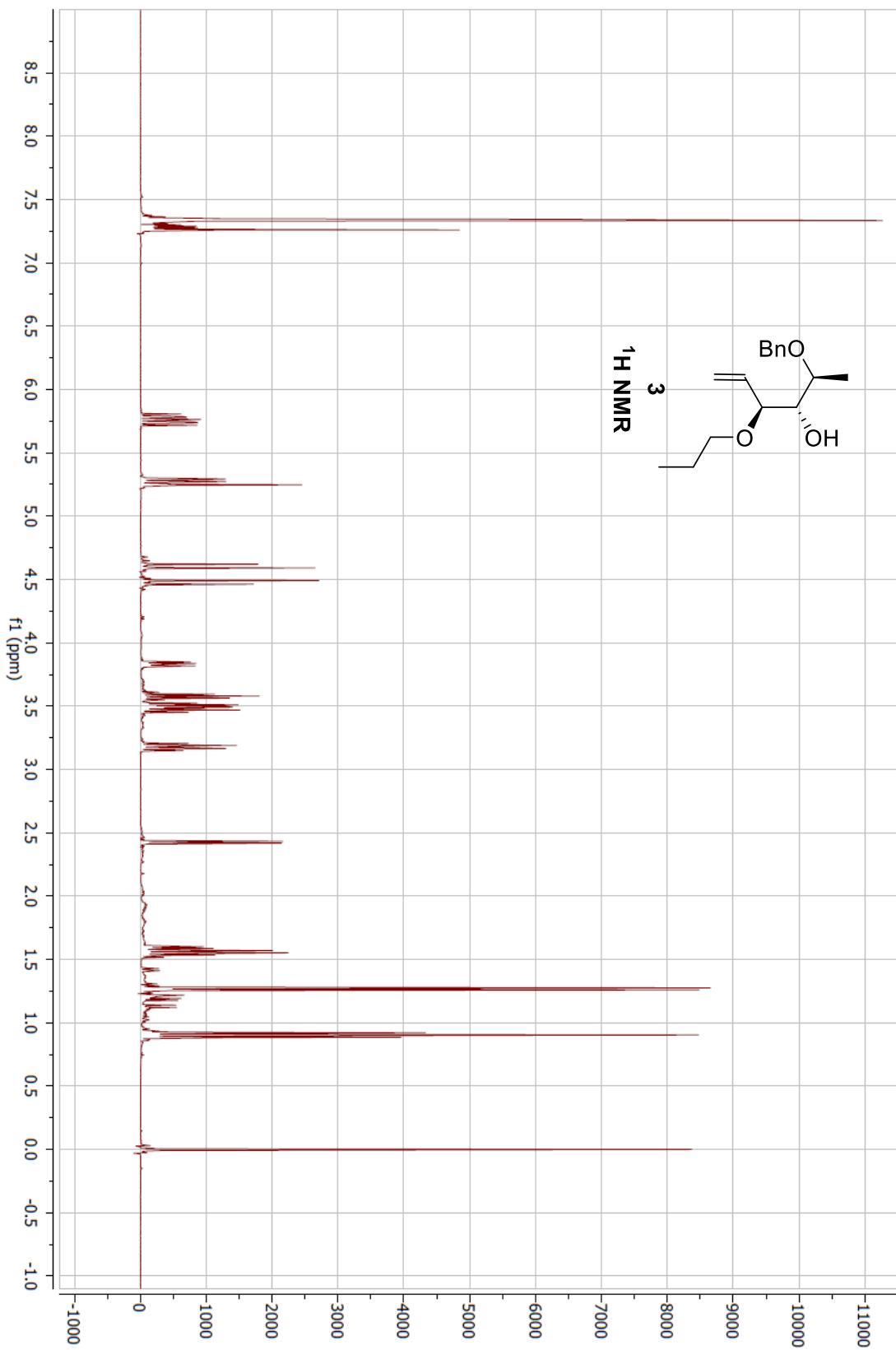
$\text{R}_1 > \text{R}_2$ according to Cahn Ingold Prelog convention therefore (S)-alcohol 3 was isolated.¹

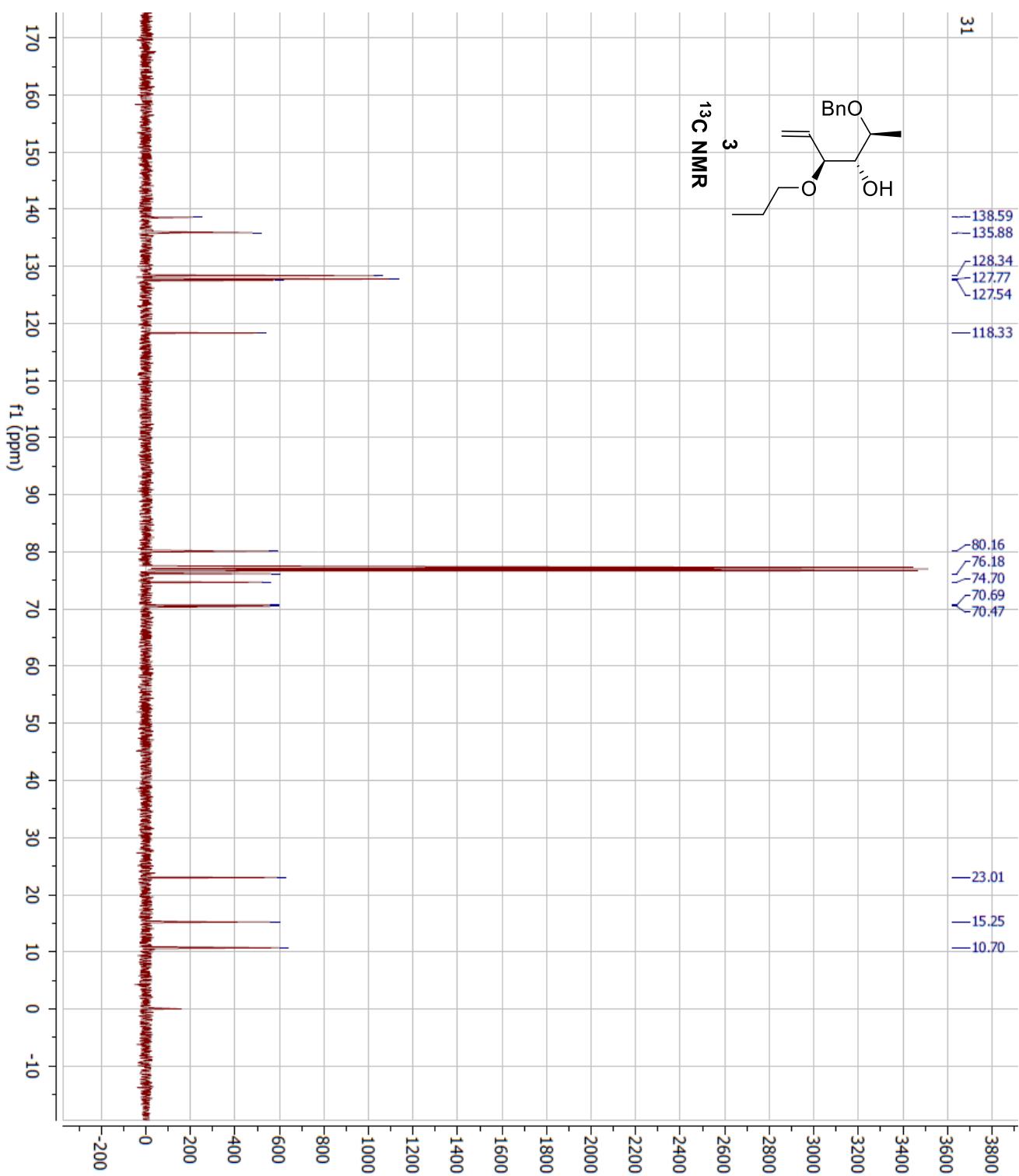


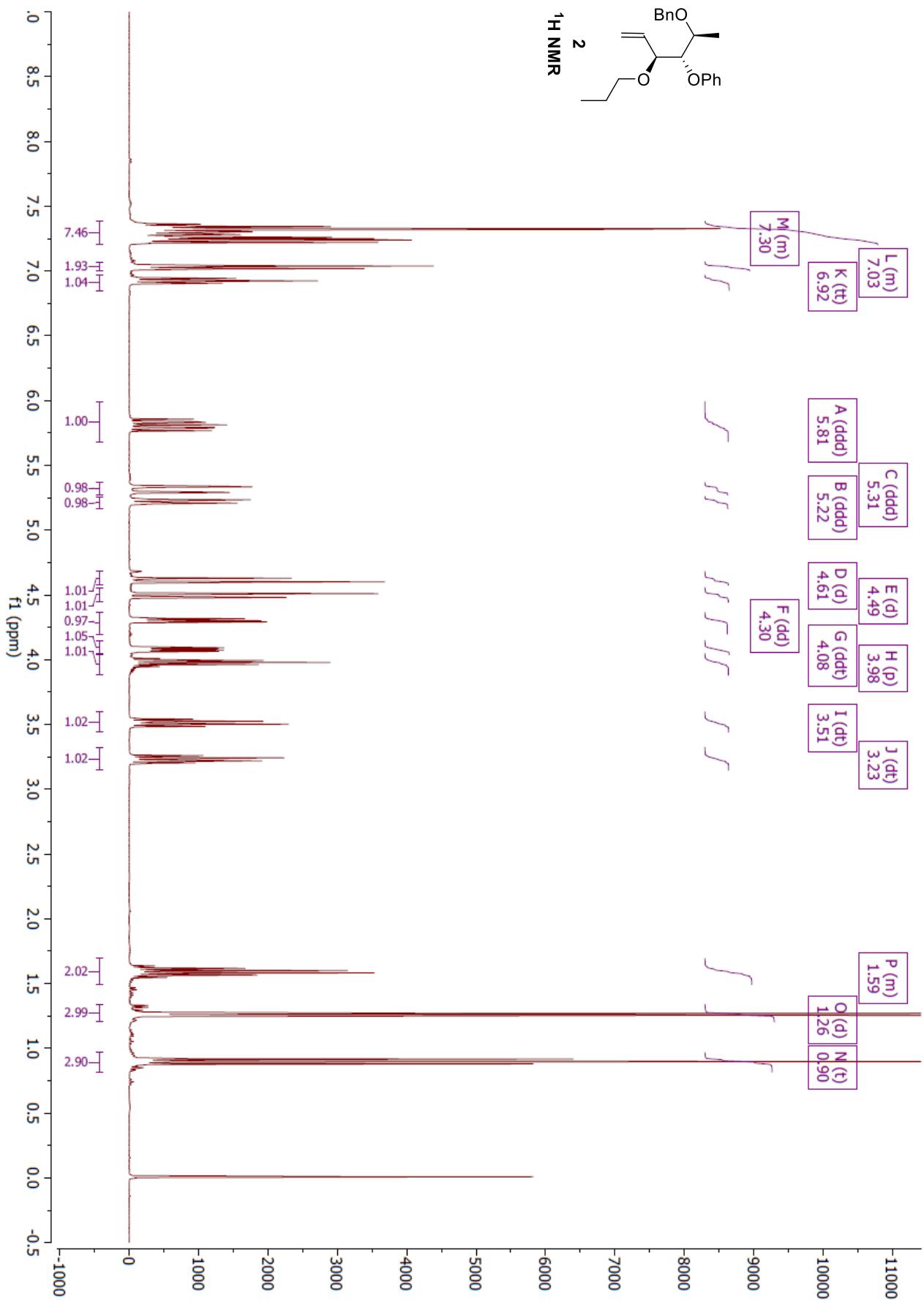
¹ Hoye, T. R.; Jeffrey, C. S.; Shao, J. Mosher ester analysis for the determination of absolute configuration of sterogenic (chiral) carbinol carbons. *Nature Protocols*, **2007**, 2, 2451-2458











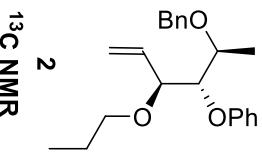
143273-031
C13CPD CDCl₃ /opt/kopsin/Borromeo_49

—160.14

✓—138.70
✓—136.32
✓—129.39
✓—128.49
✓—127.85
✓—127.68
✓—121.10
✓—118.40
✓—116.76
✓—114.72

—83.67
—80.90
✓—74.41
✓—71.11
✓—71.09

—23.12
—16.17
—10.88



¹³C NMR

