

Supporting Information

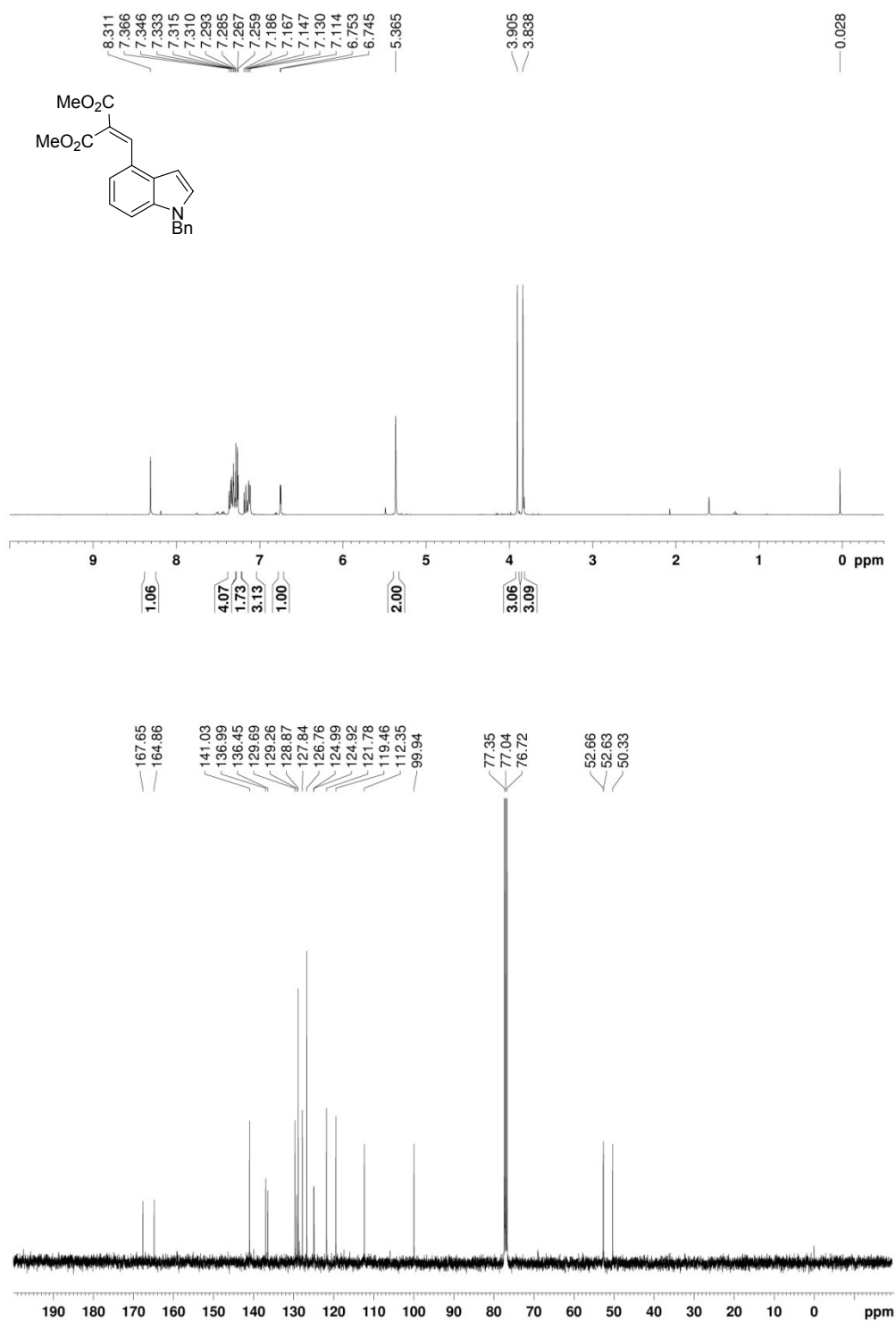
Construction of the tetracyclic core of (±)-cycloclavine

Jin-Quan Chen, Yang Mi, Zi-Fa Shi and Xiao-Ping Cao*[a]

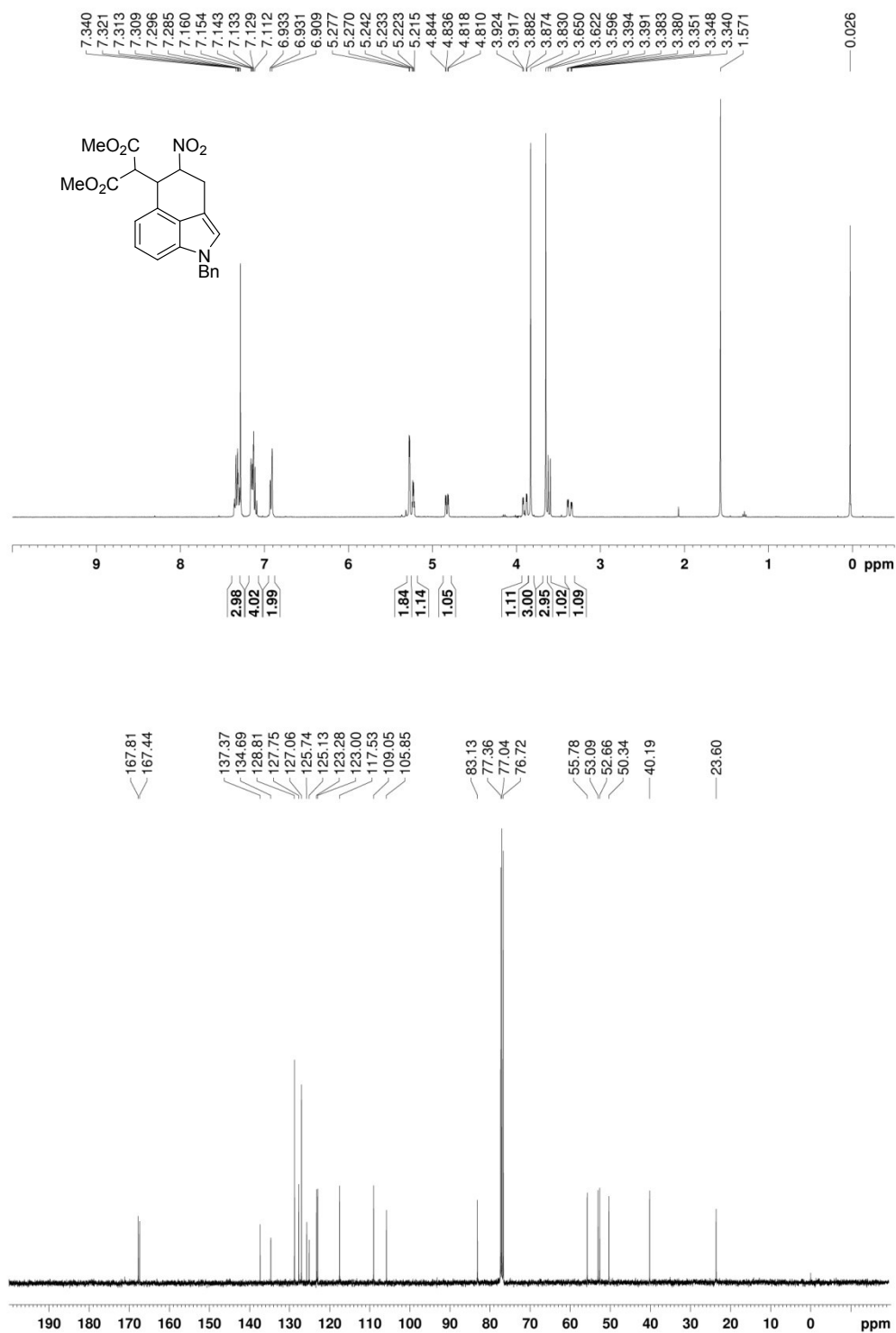
Table of Contents

1) ¹ H and ¹³ C NMR Spectra of Compounds 6 , (±)- 5 , (±)- 9 , (±)- 10 , (±)- 4 , (±)- 11 , (±)- 12 , (±)- 13 , (±)- 2 , (±)- 14 , (±)- 15 , (±)- 16 , and (±)- 3	S2
2) X-ray Data of (±)- 5	S15

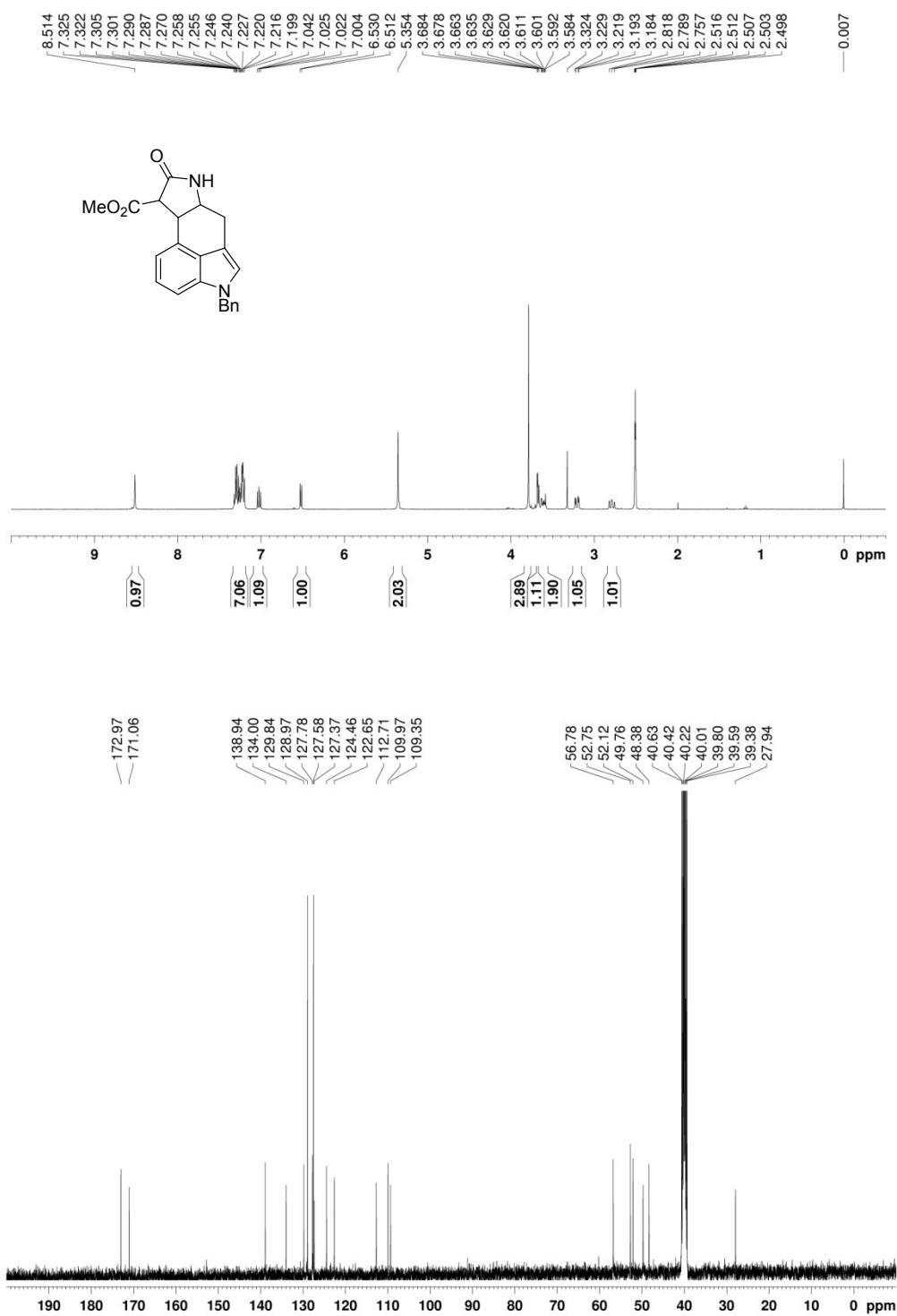
^1H NMR (400 MHz, CDCl_3) and ^{13}C NMR (100 MHz, CDCl_3) spectra of **6**



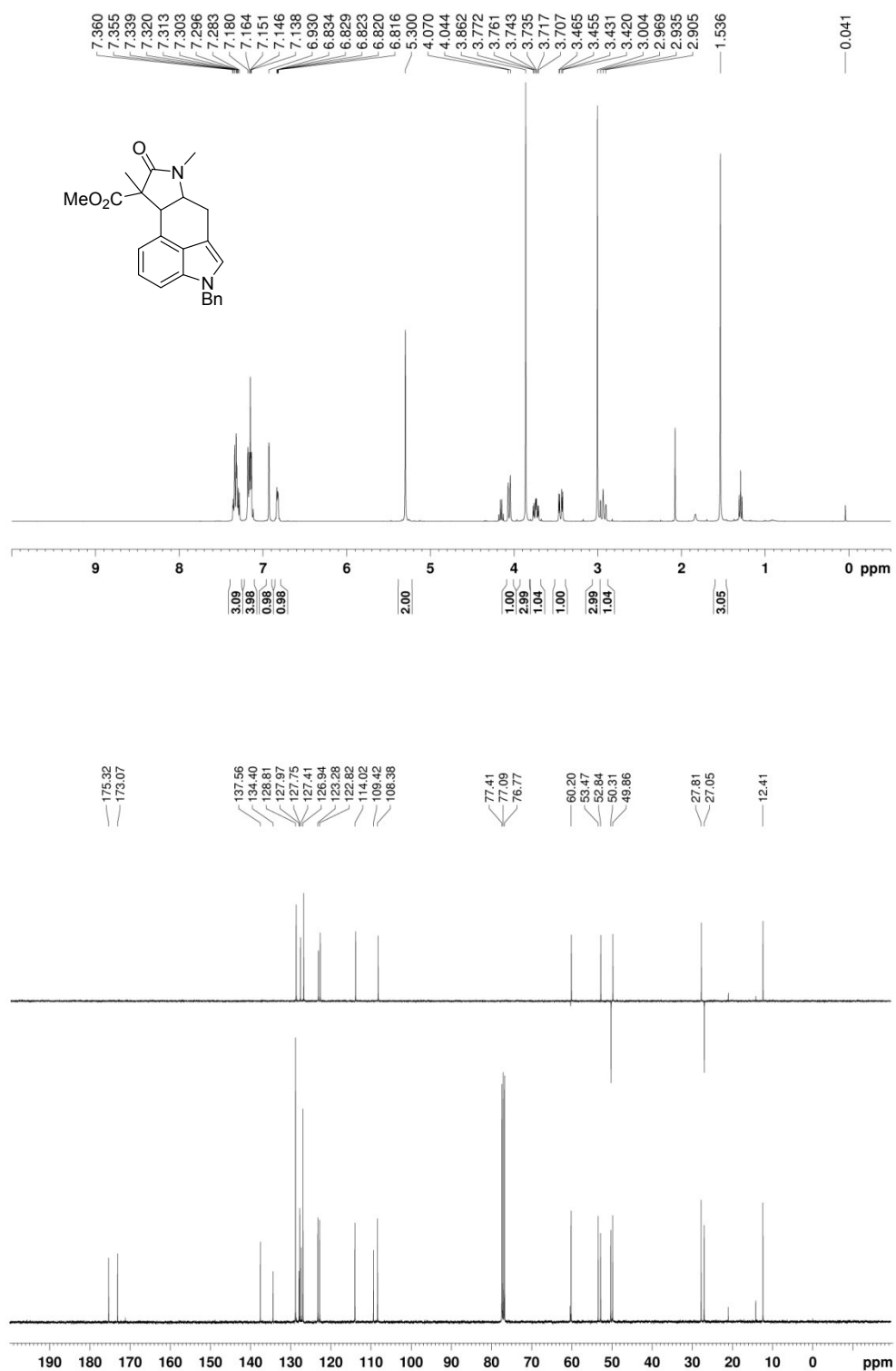
^1H NMR (400 MHz, CDCl_3) and ^{13}C NMR (100 MHz, CDCl_3) spectra of ($\pm$)-**5**



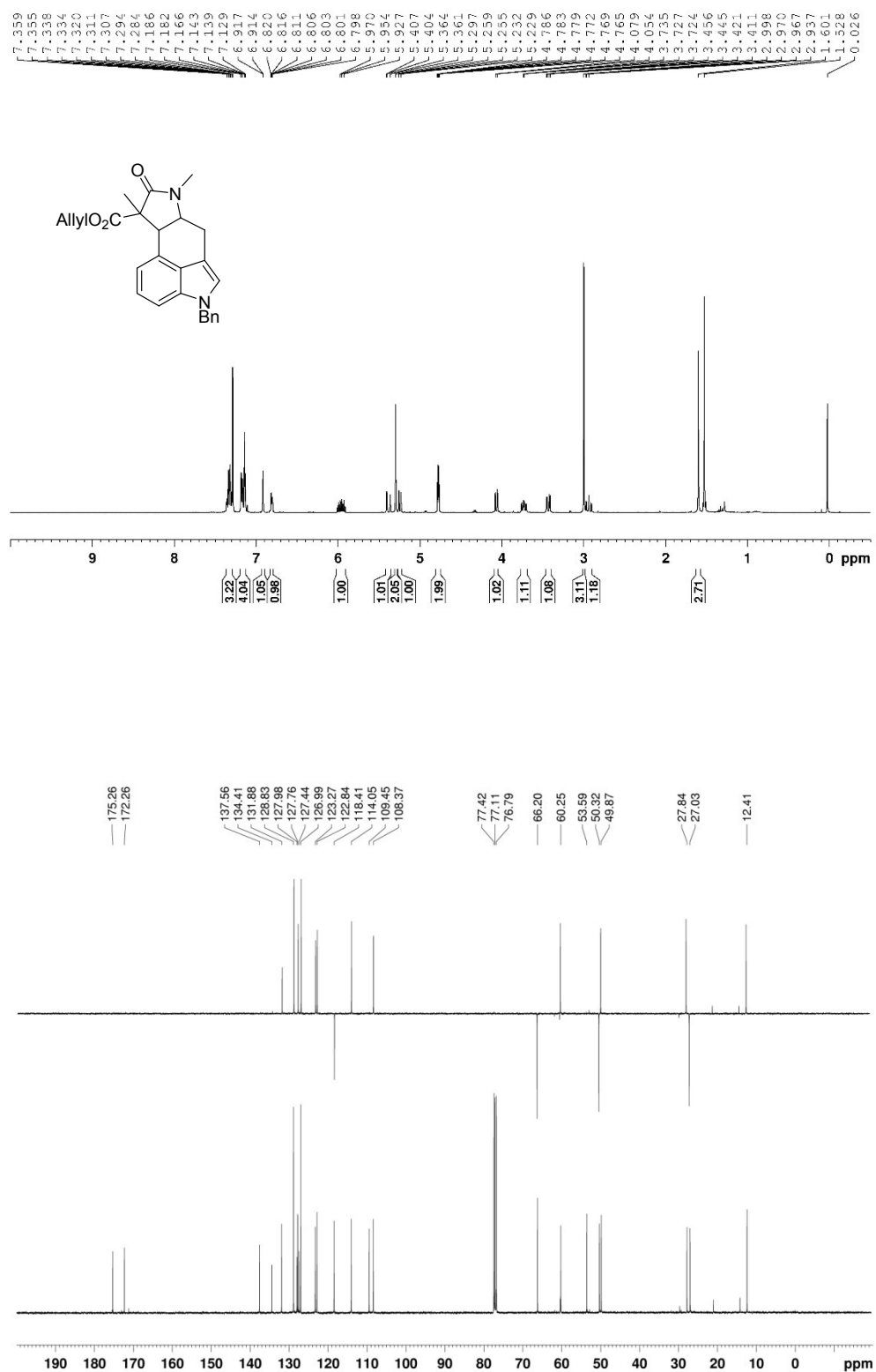
^1H NMR (400 MHz, $\text{DMSO-}d_6$) and ^{13}C NMR (100 MHz, $\text{DMSO-}d_6$) spectra of ($\pm$)-**9**



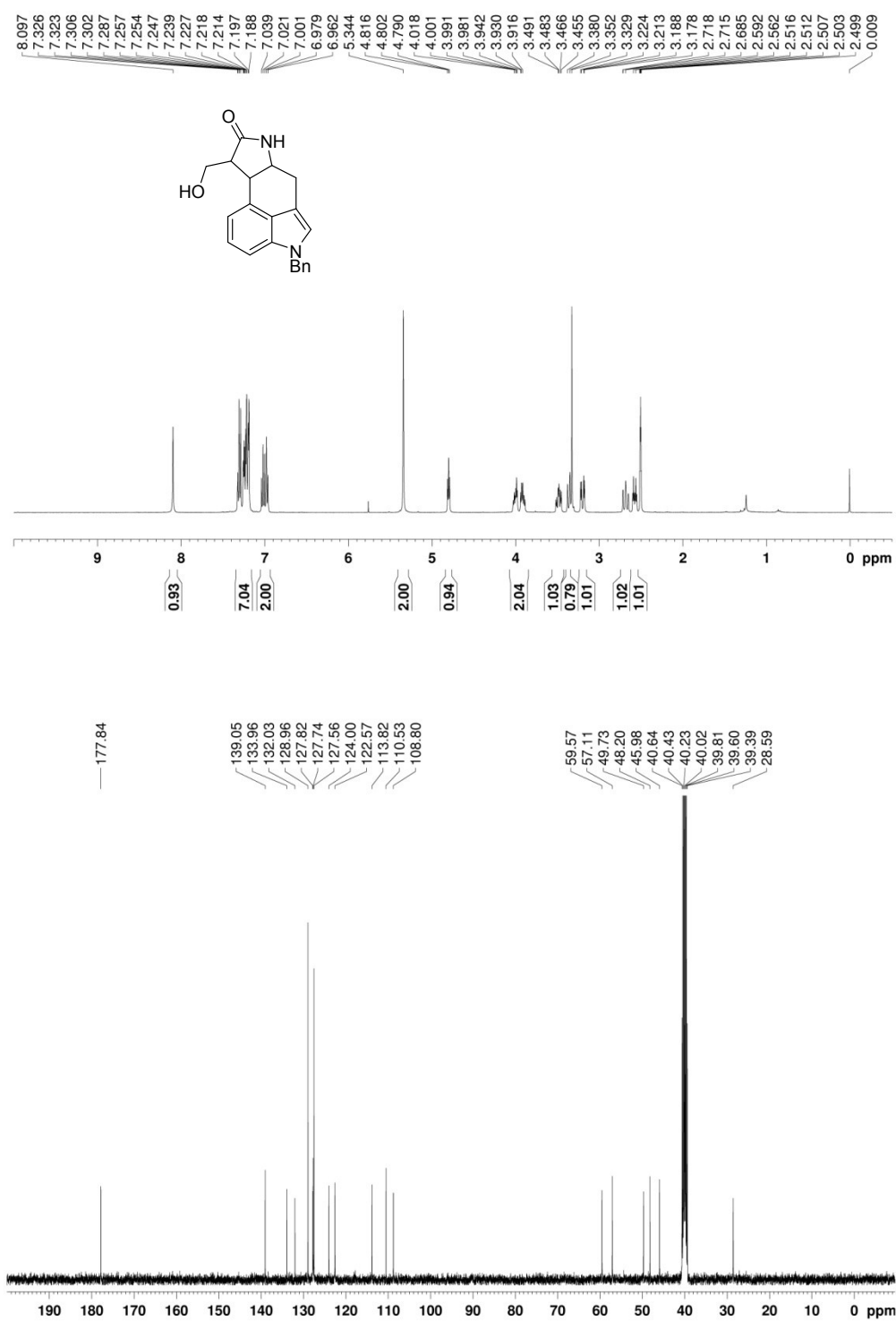
^1H NMR (400 MHz, CDCl_3) and ^{13}C NMR (100 MHz, CDCl_3) spectra of ($\pm$)-**10**



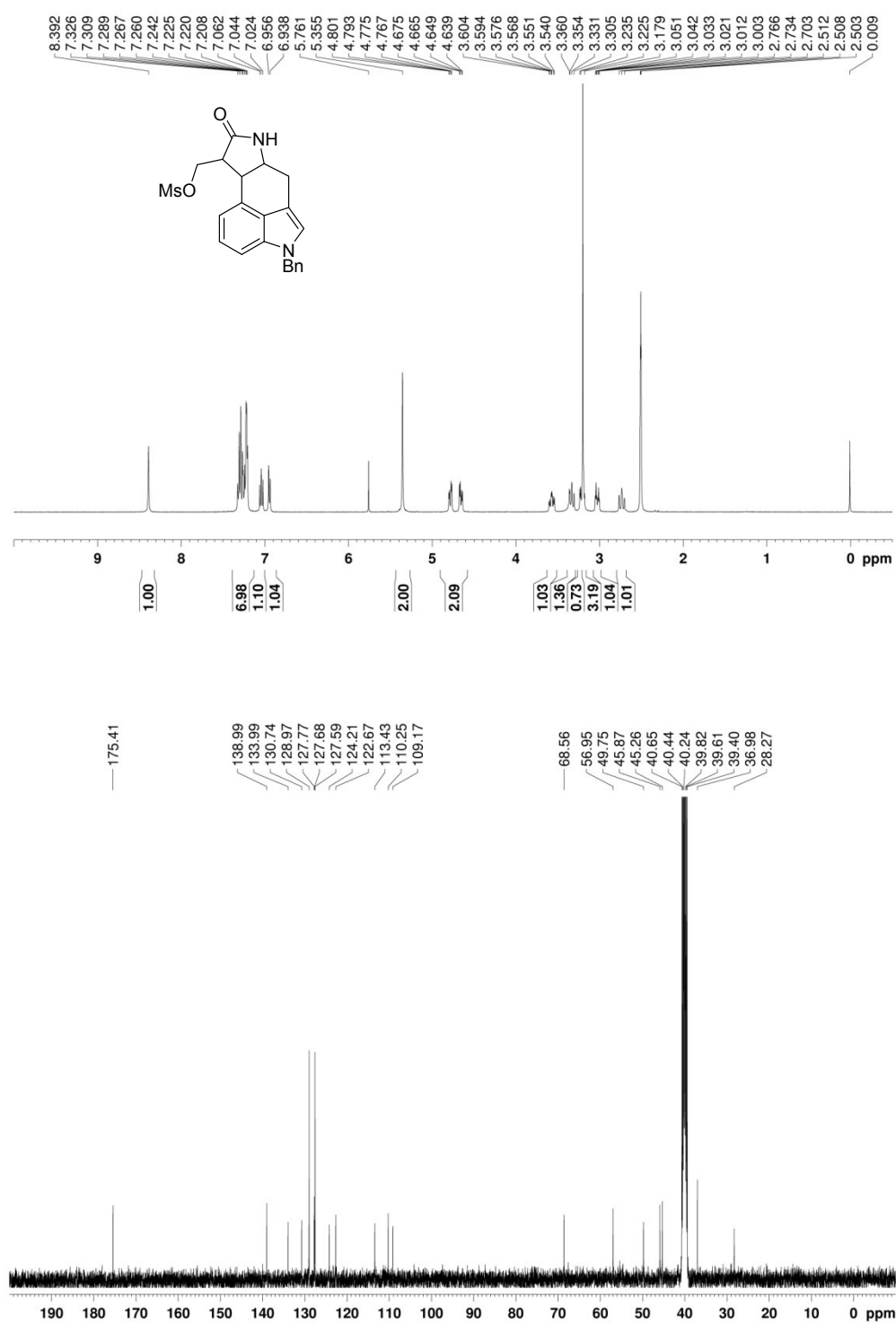
^1H NMR (400 MHz, CDCl_3) and ^{13}C NMR (100 MHz, CDCl_3) spectra of ($\pm$)-4



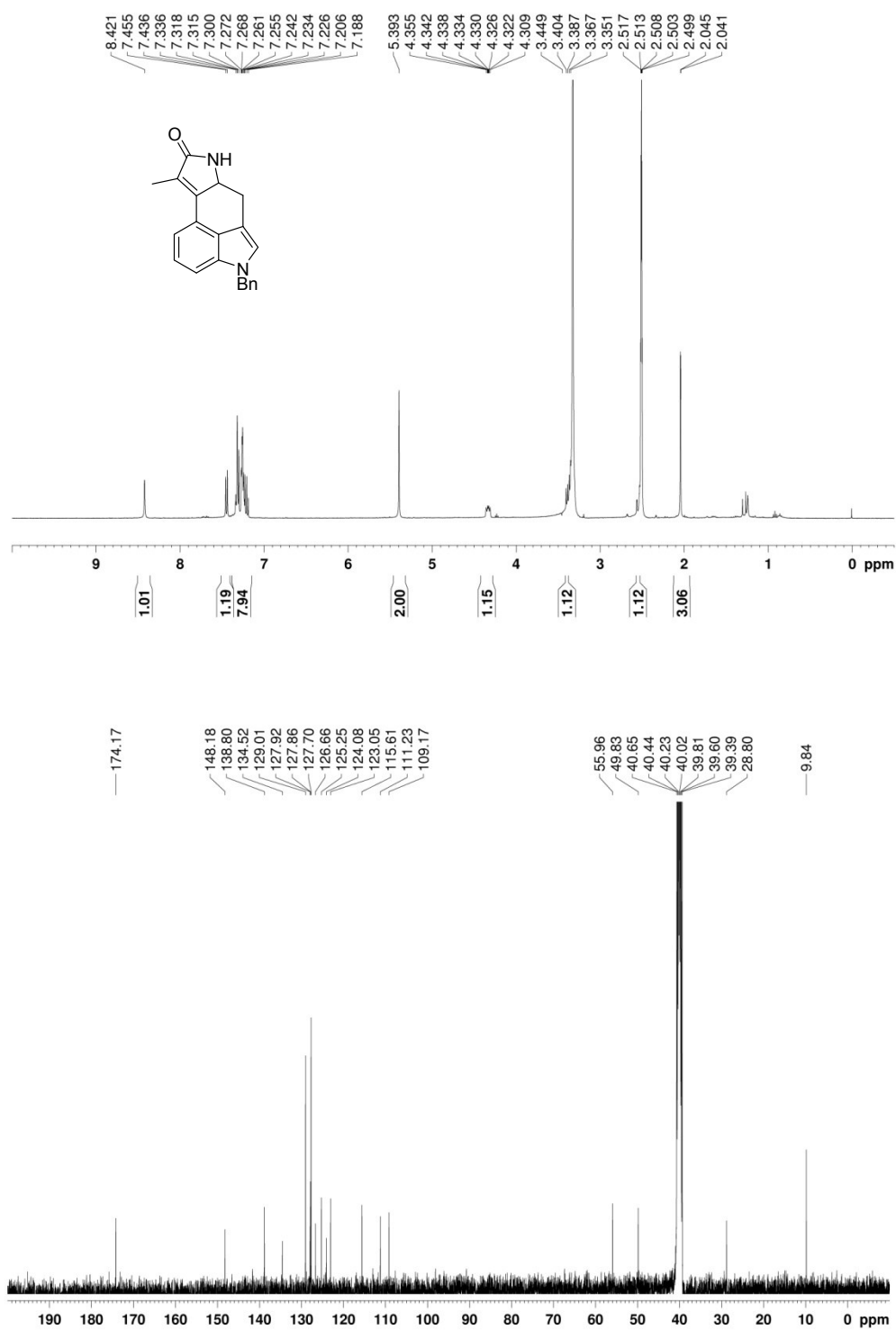
^1H NMR (400 MHz, $\text{DMSO-}d_6$) and ^{13}C NMR (100 MHz, $\text{DMSO-}d_6$) spectra of ($\pm$)-**11**



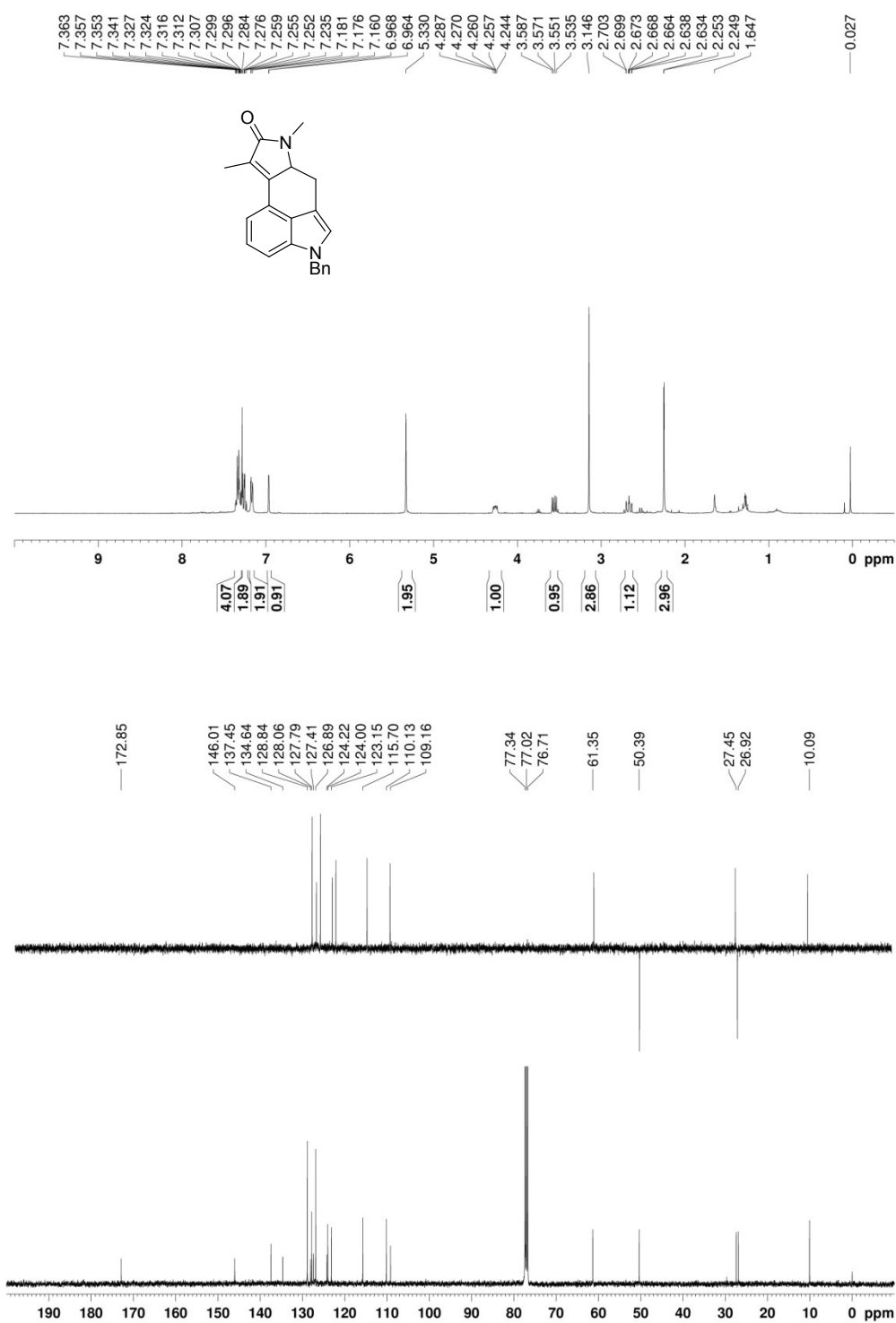
^1H NMR (400 MHz, $\text{DMSO}-d_6$) and ^{13}C NMR (100 MHz, $\text{DMSO}-d_6$) spectra of ($\pm$)-**12**



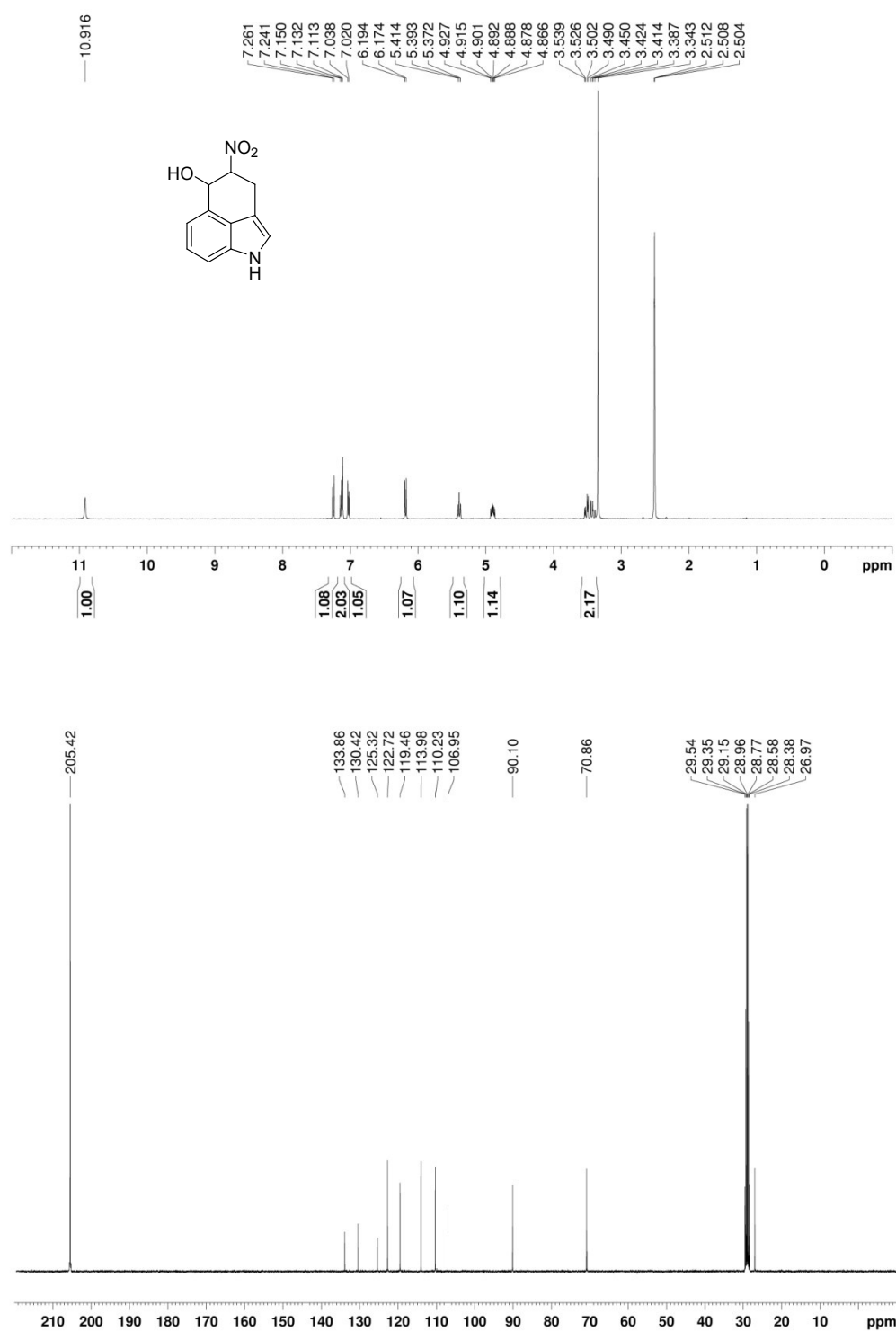
^1H NMR (400 MHz, $\text{DMSO-}d_6$) and ^{13}C NMR (100 MHz, $\text{DMSO-}d_6$) spectra of ($\pm$)-**13**



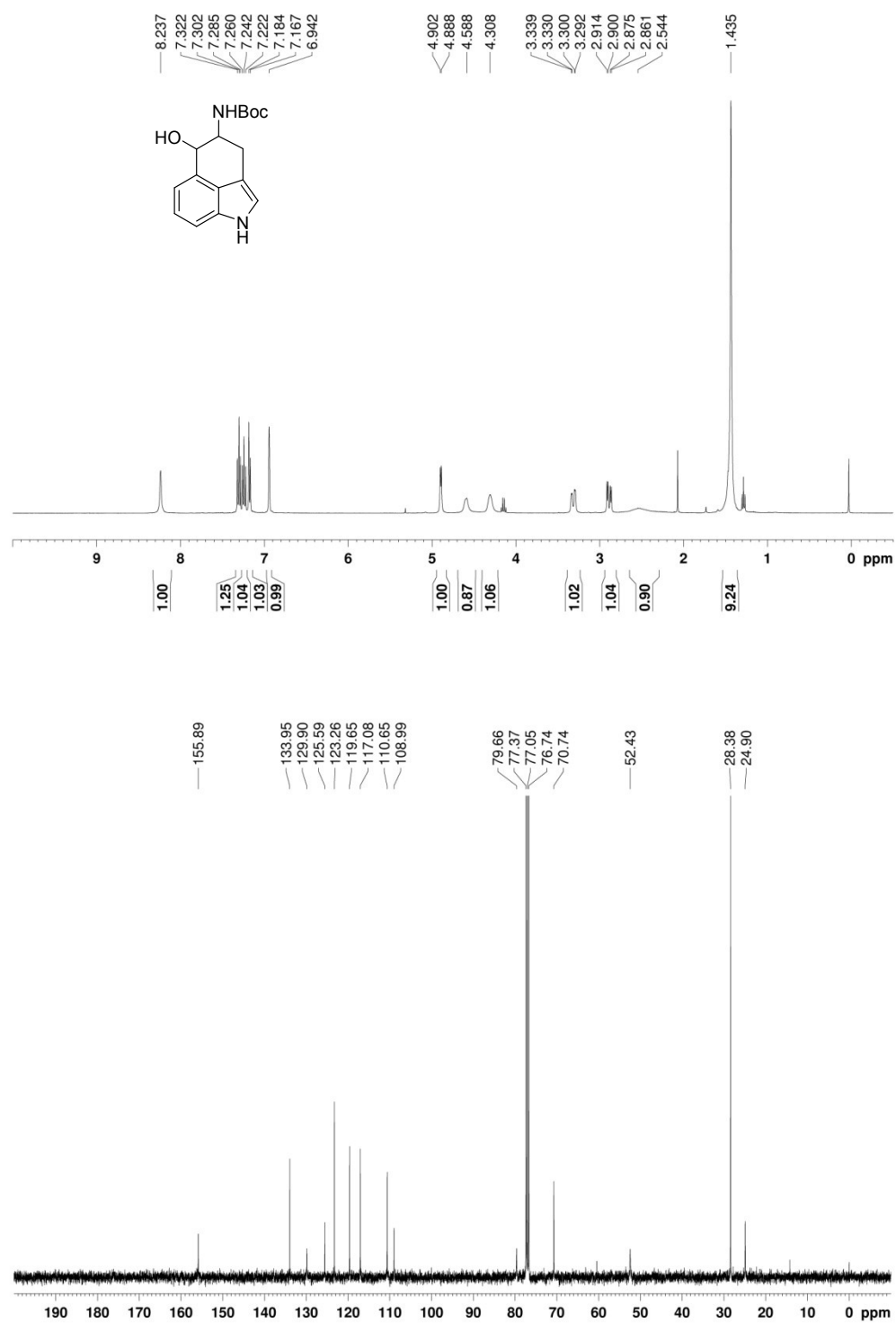
^1H NMR (400 MHz, CDCl_3) and ^{13}C NMR (100 MHz, CDCl_3) spectra of ($\pm$)-**2**



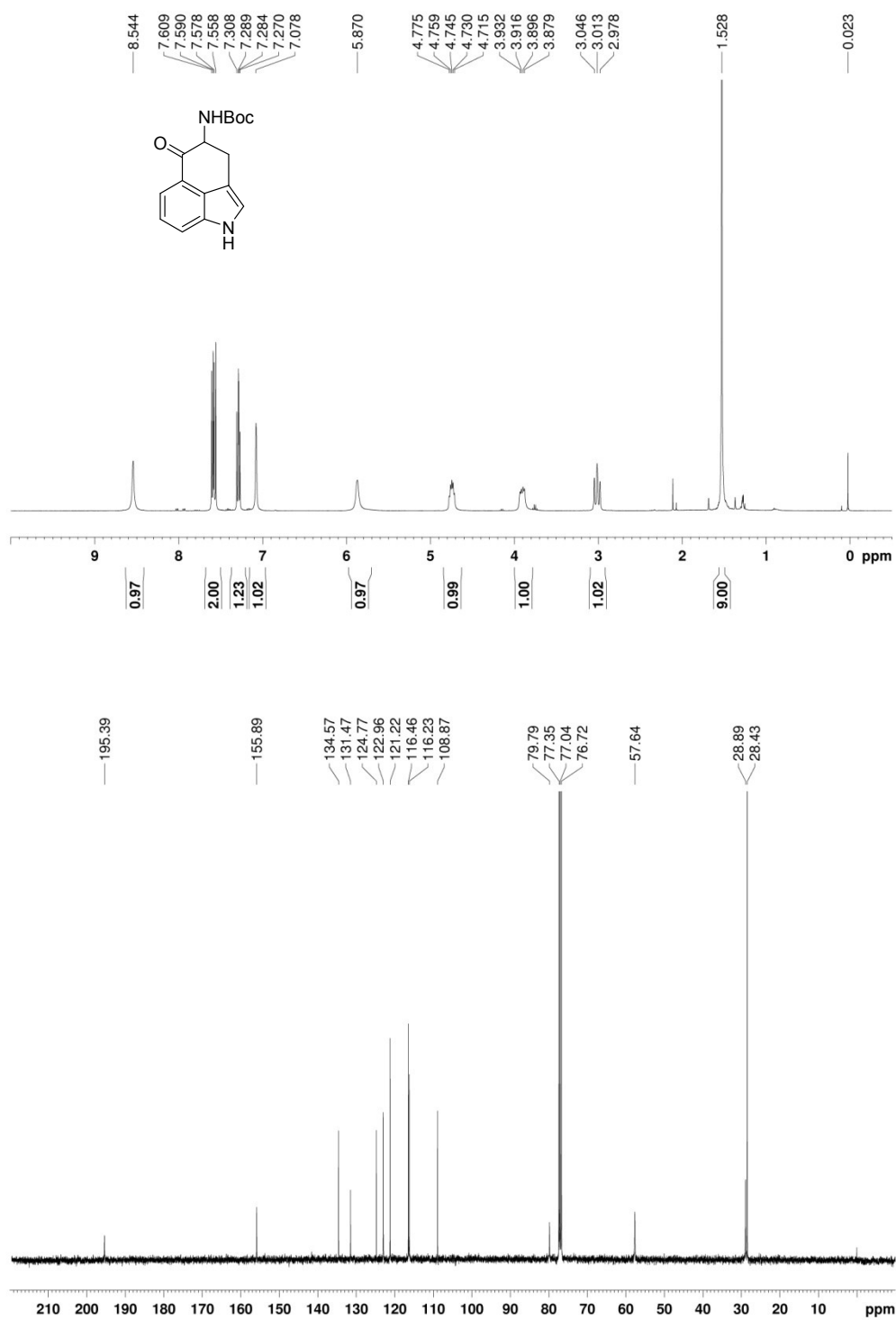
^1H NMR (400 MHz, $\text{DMSO}-d_6$) and ^{13}C NMR (100 MHz, $\text{acetone}-d_6$) spectra of ($\pm$)-**14**



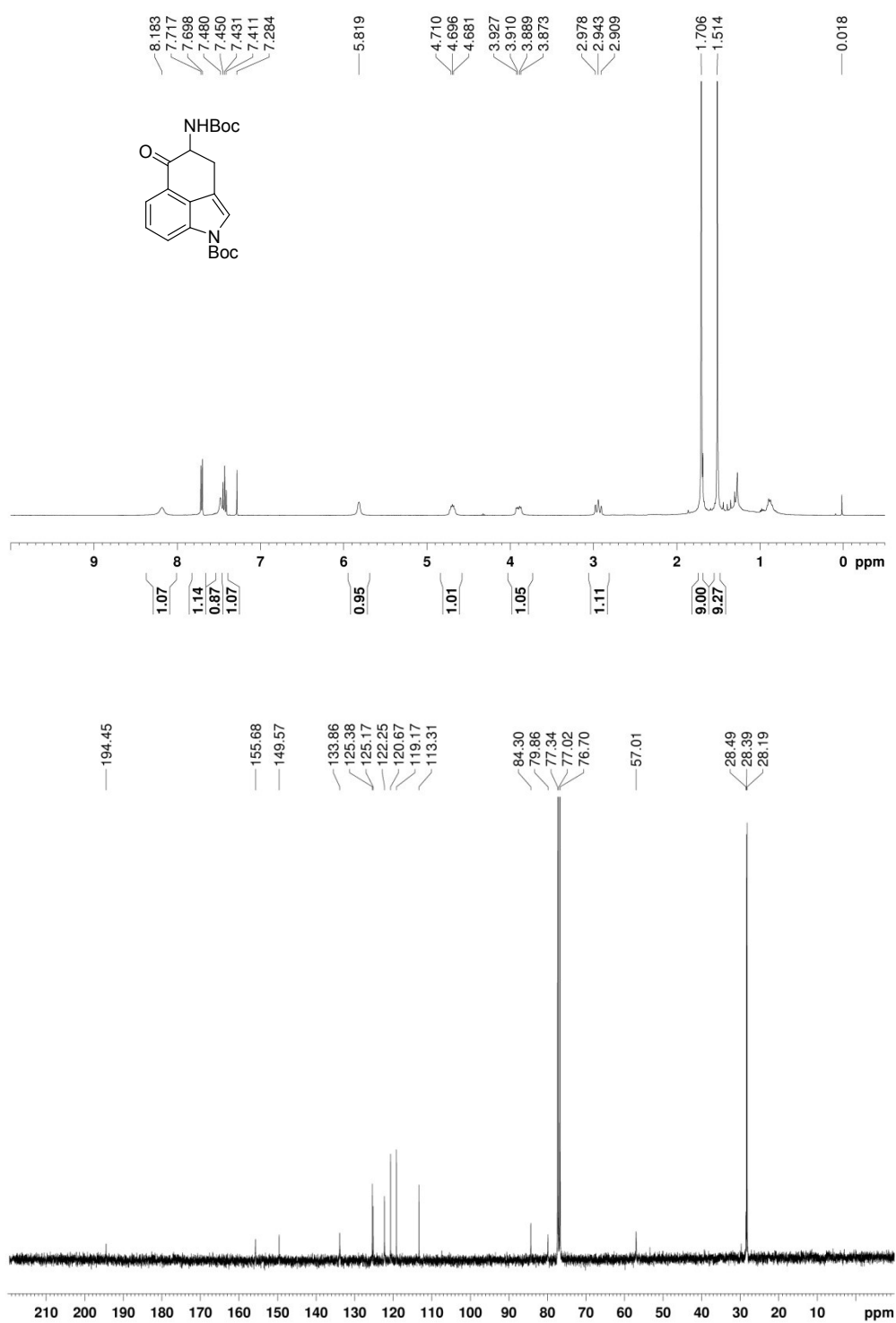
^1H NMR (400 MHz, CDCl_3) and ^{13}C NMR (100 MHz, CDCl_3) spectra of ($\pm$)-**15**



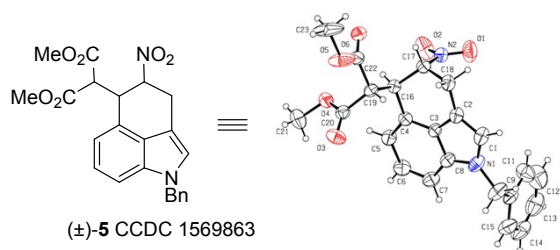
^1H NMR (400 MHz, CDCl_3) and ^{13}C NMR (100 MHz, CDCl_3) spectra of ($\pm$)-**16**



^1H NMR (400 MHz, CDCl_3) and ^{13}C NMR (100 MHz, CDCl_3) spectra of ($\pm$)-**3**



X-ray Data of (±)-5



Identification code	Xray_0301_2
Empirical formula	C ₂₃ H ₂₂ N ₂ O ₆
Formula weight	422.42
Temperature/K	293(2)
Crystal system	Orthorhombic
Space group	P2 ₁ 2 ₁ 2 ₁
a/Å	9.6235(6)
b/Å	13.3554(9)
c/Å	16.7938(9)
α /°	90
β /°	90
γ /°	90
Volume/Å ³	2158.4(2)
Z	4
ρ _{calc} /cm ³	1.300
μ /mm ⁻¹	0.095
F(000)	888.0
Crystal size/mm ³	0.21 × 0.15 × 0.14
Radiation	MoKα (λ = 0.71073)
2θ range for data collection/°	6.566 to 52.042
Index ranges	-9 ≤ h ≤ 11, -8 ≤ k ≤ 16, -20 ≤ l ≤ 18
Reflections collected	5512
Independent reflections	3828 [R _{int} = 0.0268, R _{sigma} = 0.0654]
Data/restraints/parameters	3828/0/282
Goodness-of-fit on F ²	1.044
Final R indexes [I > 2σ (I)]	R ₁ = 0.0646, wR ₂ = 0.1300
Final R indexes [all data]	R ₁ = 0.1153, wR ₂ = 0.1639
Largest diff. peak/hole / e Å ⁻³	0.17/-0.17
Flack parameter	-0.8(10)