Electronic Supplementary Information

A fluorescent turn-on probe for cyanide anion detection based on an AIE active cobalt(II) complex

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Contents

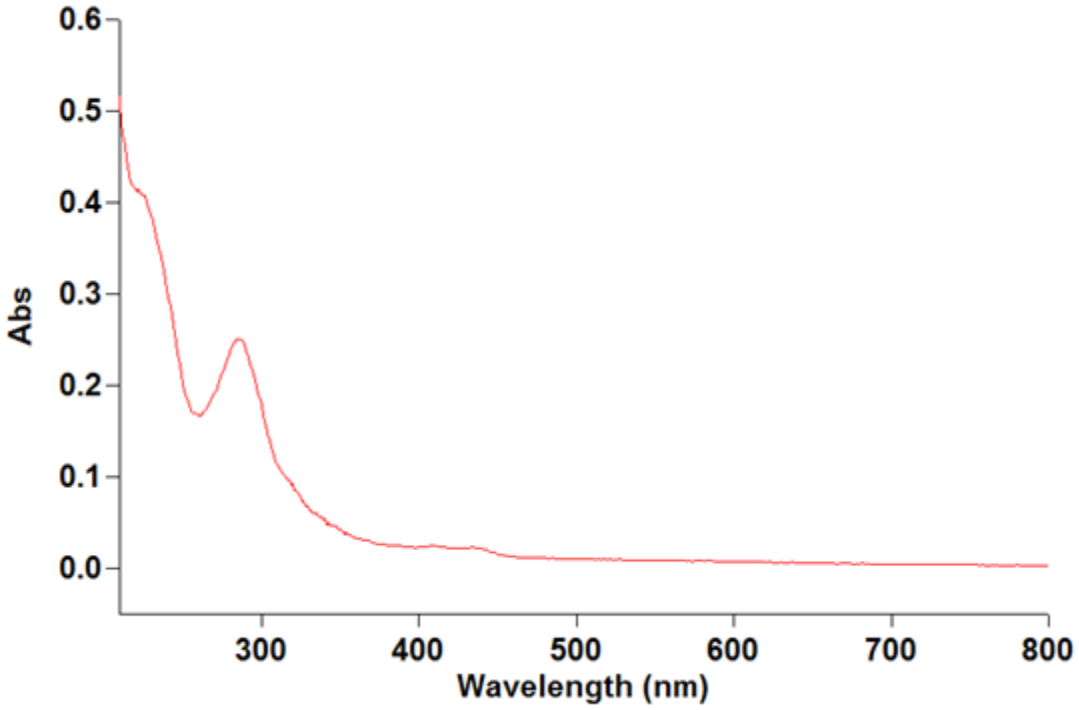


Figure S1. UV-vis absorption spectrum of **6** (MeOH, 25 µM).

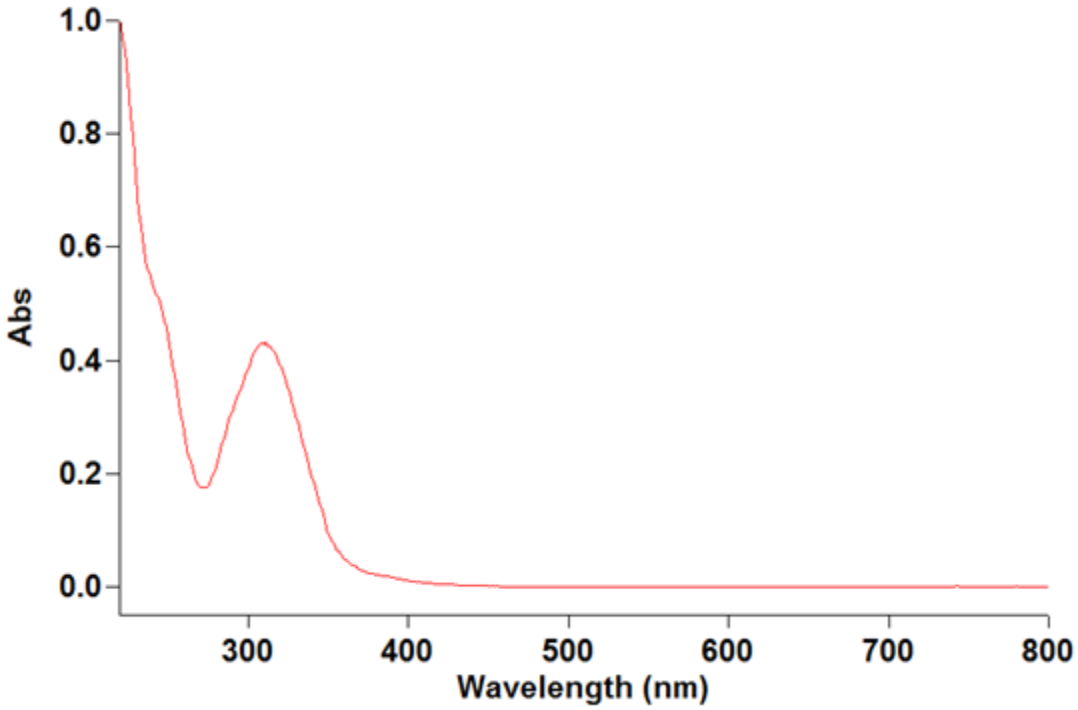


Figure S2. UV-vis absorption spectrum of **7** (MeOH, 50 µM).

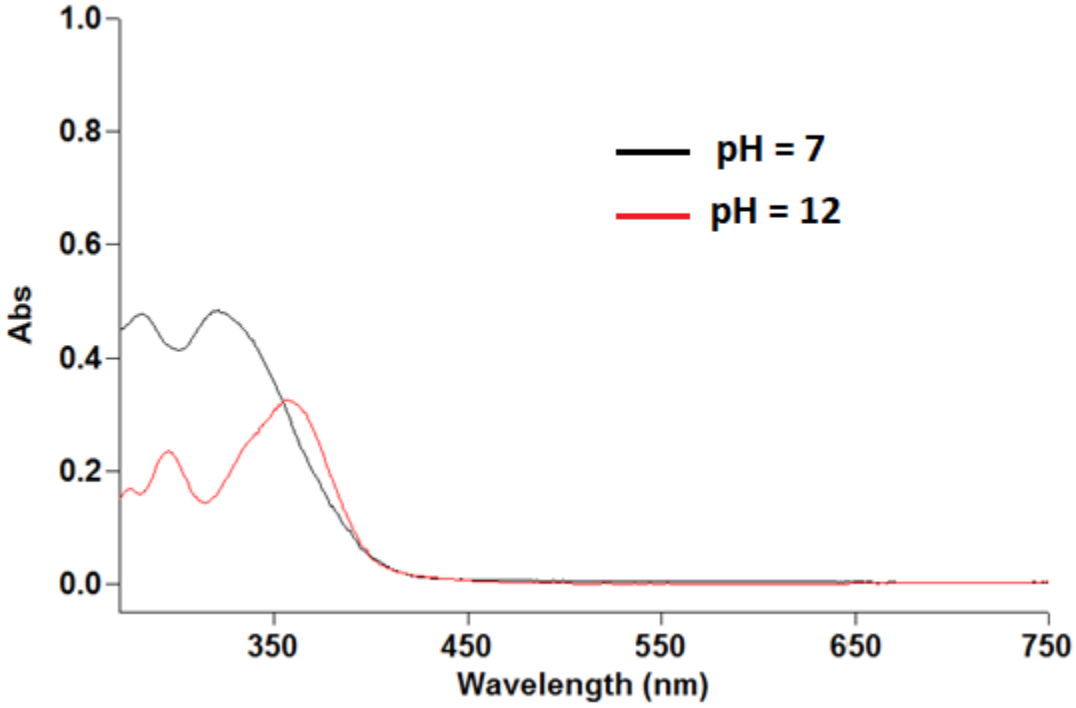


Figure S3. UV-vis absorption spectrum of **7** (50 µM) in 9:1 H_2O:MeOH at pH = 7 and 12.

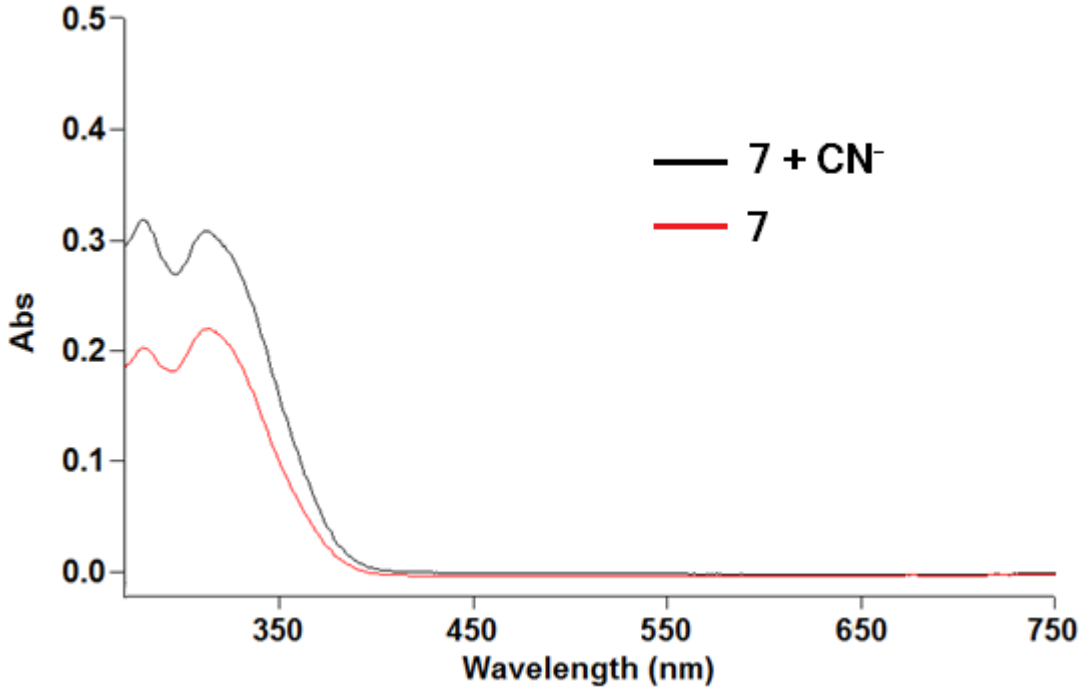


Figure S4. UV-vis absorption spectrum of **7** (25 µM) in 9:1 H_2O:MeOH at pH = 7 in presence and absence of 2 equivalents of CN-.

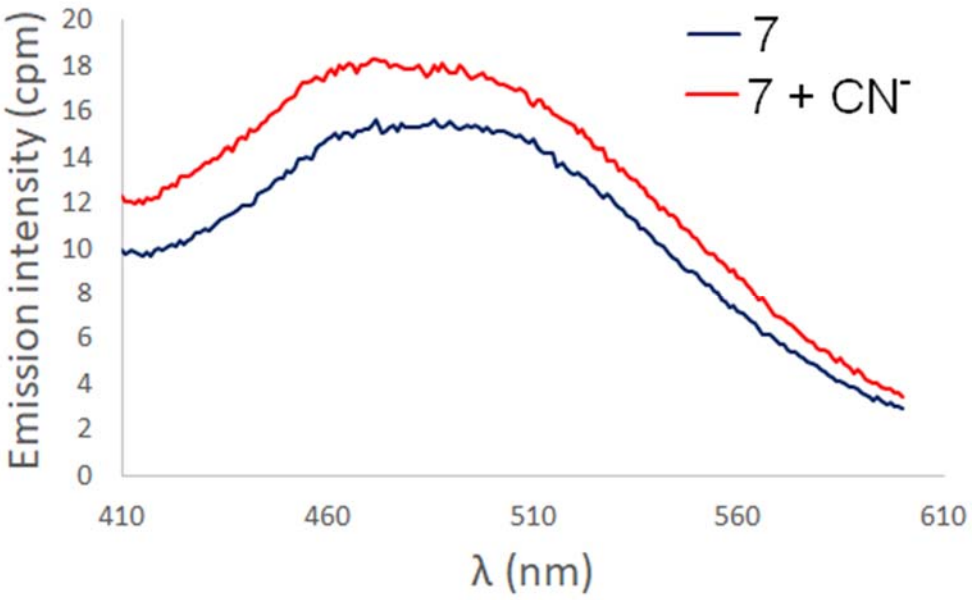


Figure S5. Emission response of **7** in MeOH in presence of 10 equivalents of CN^-, (λ_{ex} = 313 nm, [**7**] = 10 μM)**.**

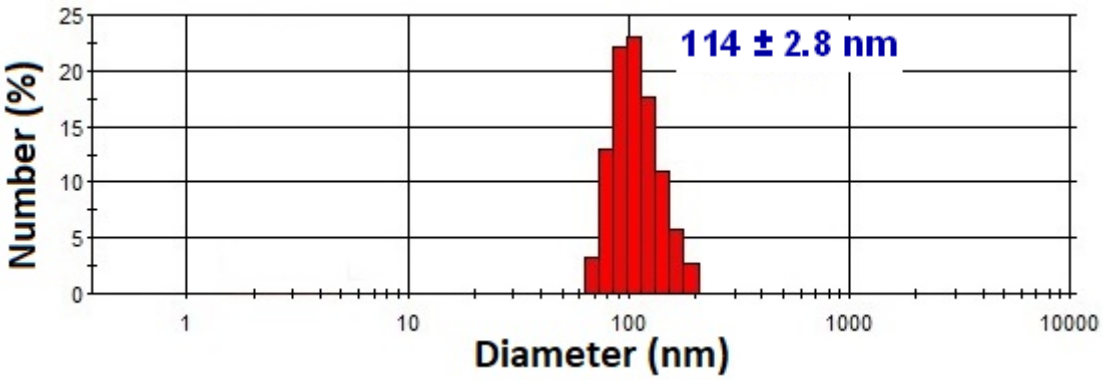


Figure S6. DLS particle size analysis of **7** (10 μM) in 9:1 H_2O:MeOH in presence of 2 equivalents of F^-.

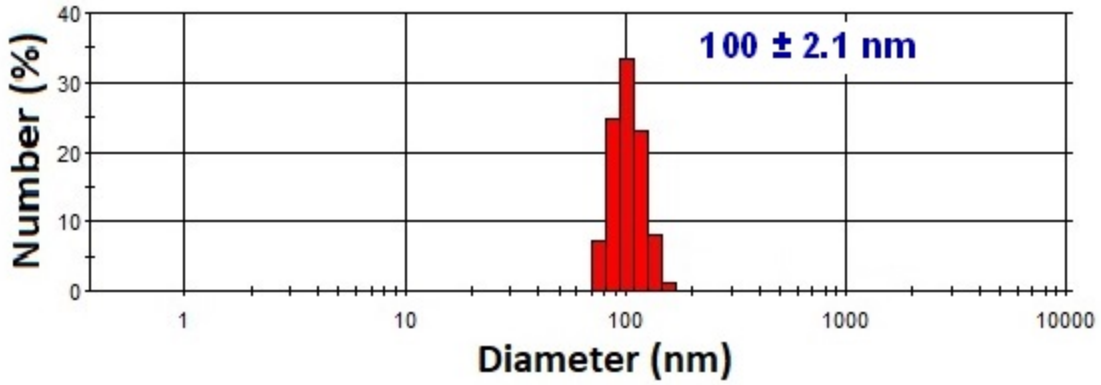


Figure S7. DLS particle size analysis of **7** (10 μM) in 9:1 H_2O:MeOH in presence of 2 equivalents of AcO^-.

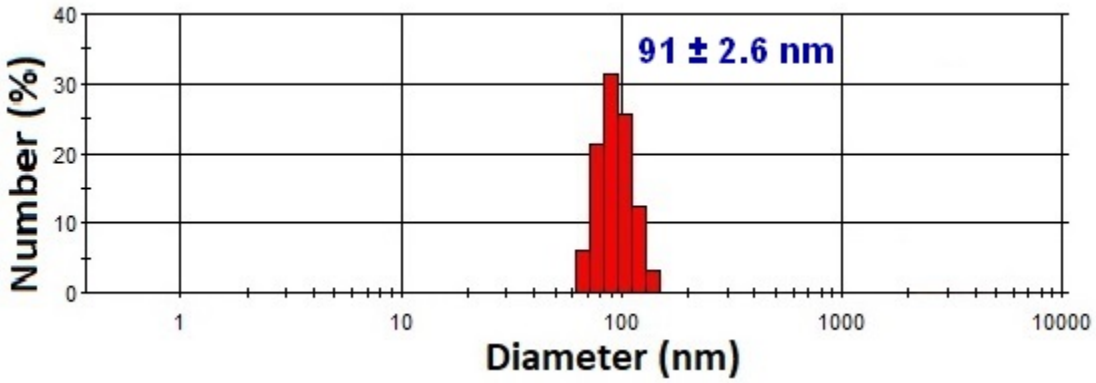


Figure S8. DLS particle size analysis of **7** (10 μM) in 9:1 H_2O:MeOH in presence of 2 equivalents of NO_3^-.

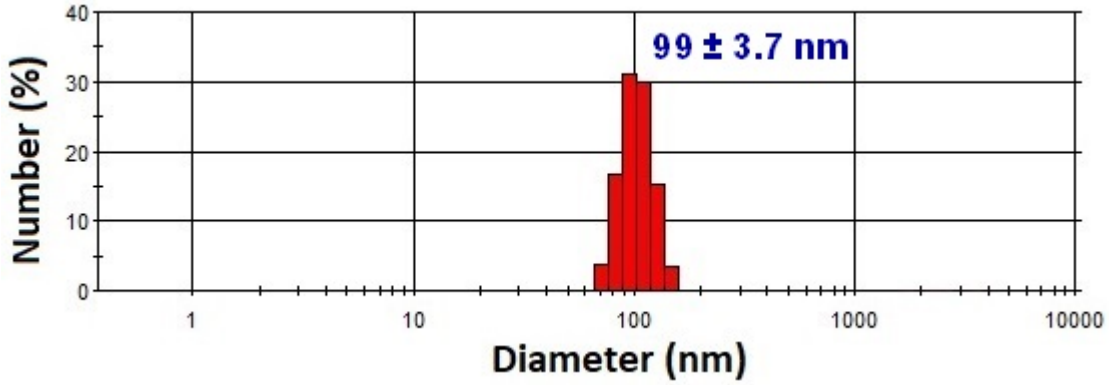
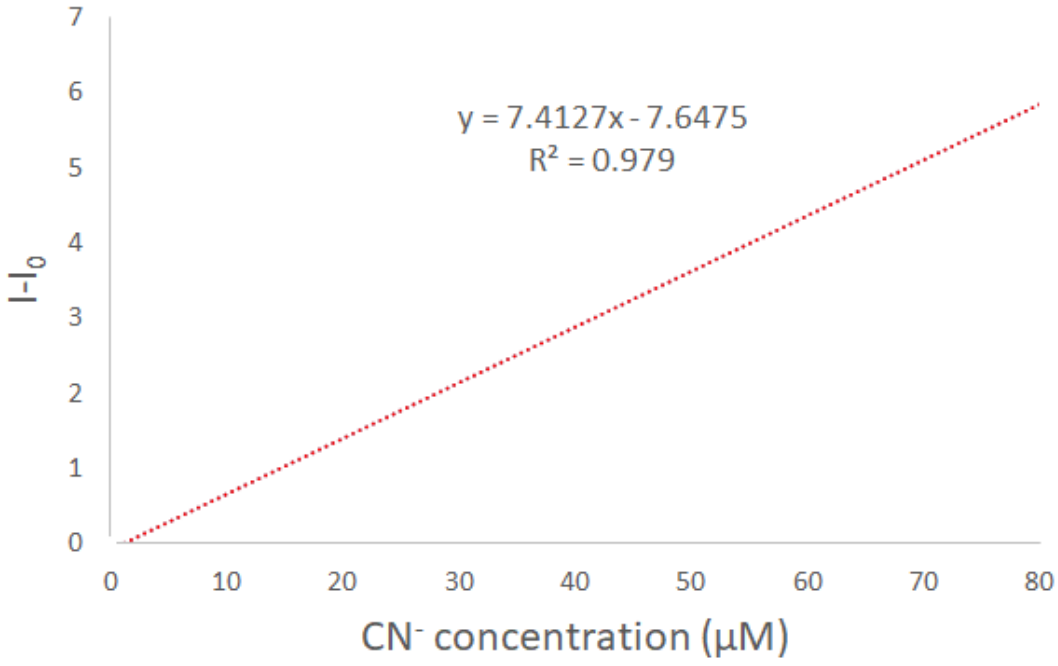


Figure S9. DLS particle size analysis of **7** (10 μM) in 9:1 H_2O:MeOH in presence of 2 equivalents of Br^-.



LOD = 3*(S.D./S) = 0.59 μM;
S.D. = standard deviation of the response of the curve; S= the slope of the calibration curve

Figure S10. Determination of limit of detection (LOD) of **7** for CN^-.

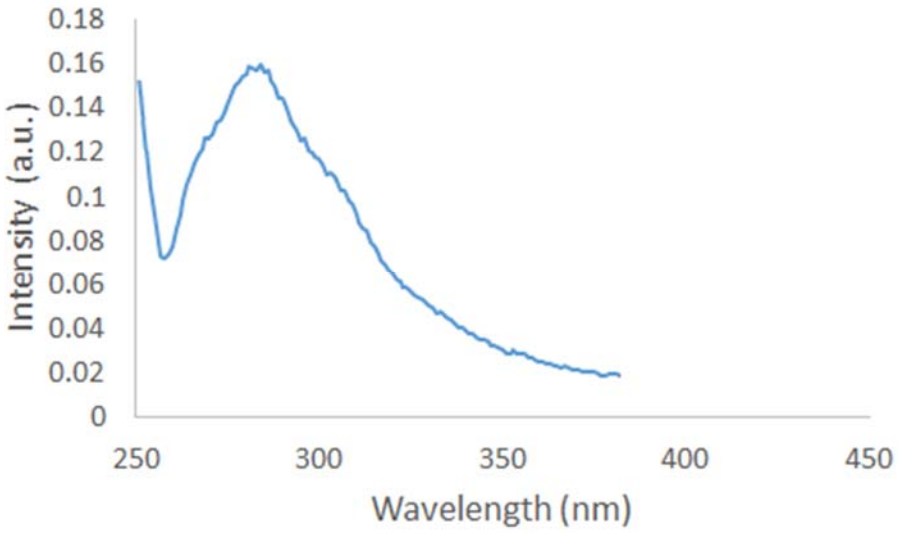


Figure S11. Excitation spectrum of **6** in MeOH (λ_{em} = 395 nm, [**6**] = 20 μM)**.**

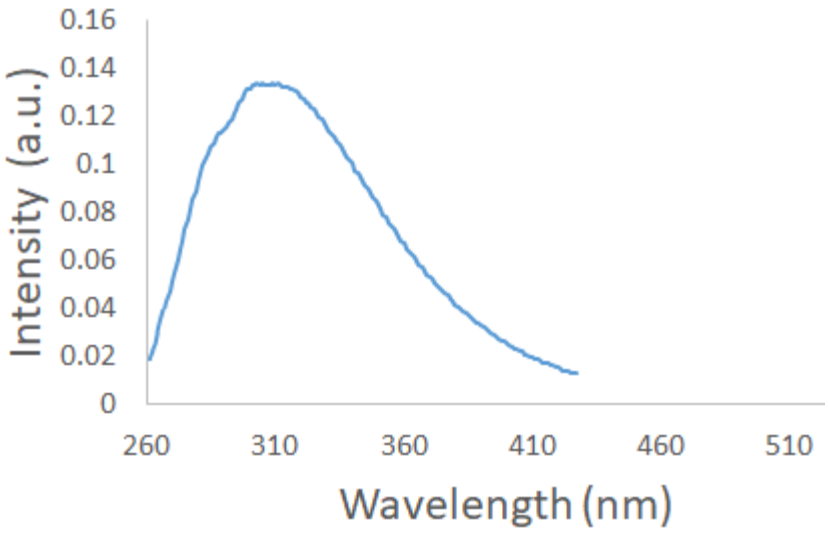


Figure S12. Excitation spectrum of **7** in MeOH (λ_{em} = 498 nm, [**7**] = 10 μM)**.**

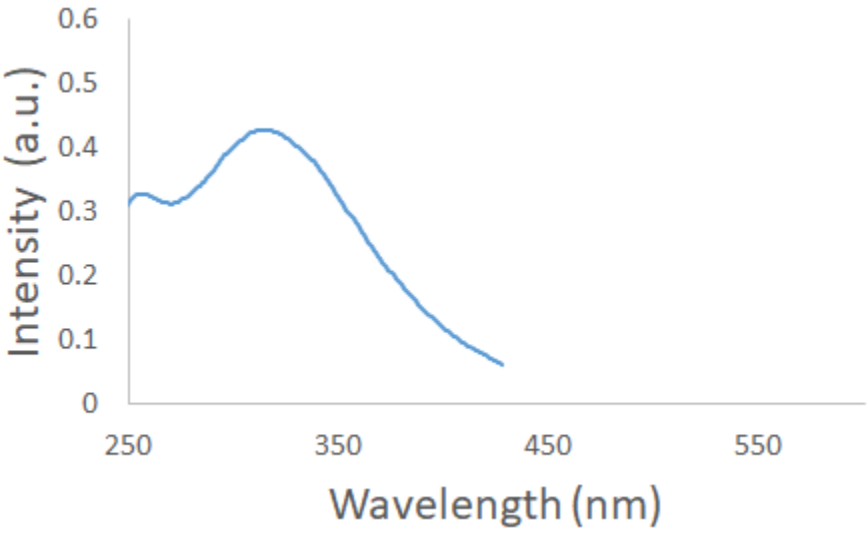


Figure S13. Excitation spectrum of **7** in 9:1 H_2O:MeOH (λ_{em} = 458 nm, [**7**] = 25 μM)**.**

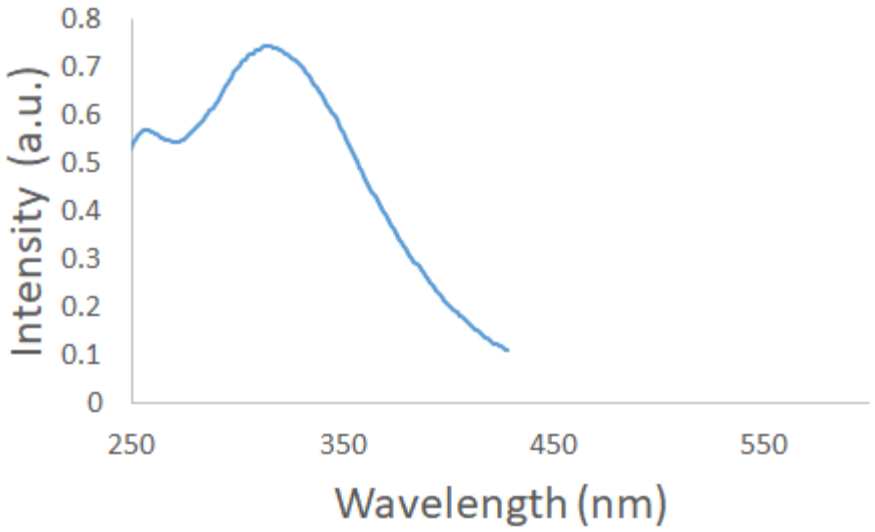


Figure S14. Excitation spectrum of **7** in 9:1 H_2O:MeOH in presence of 2 equivalents of CN^- (λ_{em} = 458 nm, [**7**] = 25 μM)**.**

Table S1. Crystallographic data for **7**.

Formula	$C_{34}\ H_{24}\ Cl_2\ Co\ N_4$
FW	618.40
Crystal System	monoclinic
Space group	P 1 21/c 1
a/Å	8.7245(17)
b/Å	23.515(5)
c/Å	13.894(3)
α/°	90
β/°	91.65(3)
γ/°	90
V/Å^3	2849.3(10)
Z	4
D_{calc}	1.442
μ (mm^{-1})	0.821
T/K	293(2)
No. of reflections	9151
No. of unique reflections	4914
No. of reflections with I > 2σ(I)	2925
R_1 [I > 2σ(I)]	0.0549
wR_2	0.1565
CCDC No.	1584255

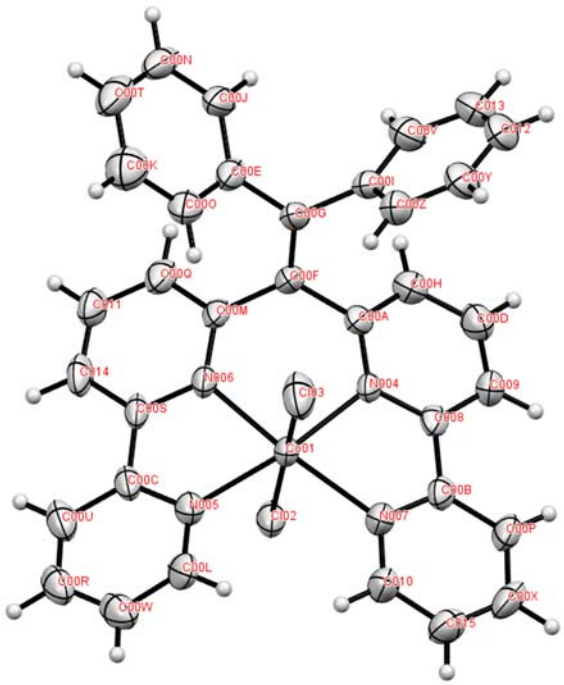
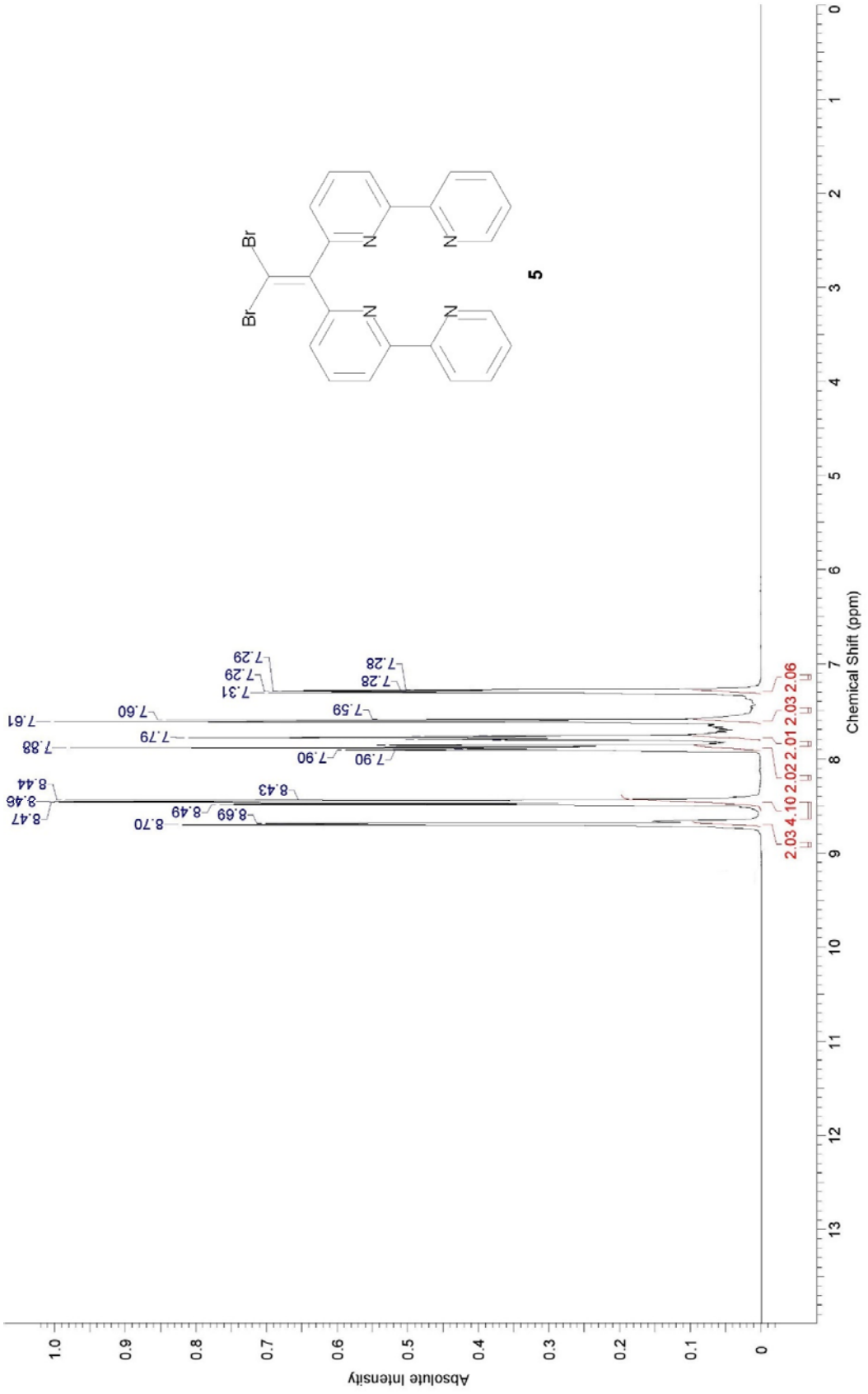
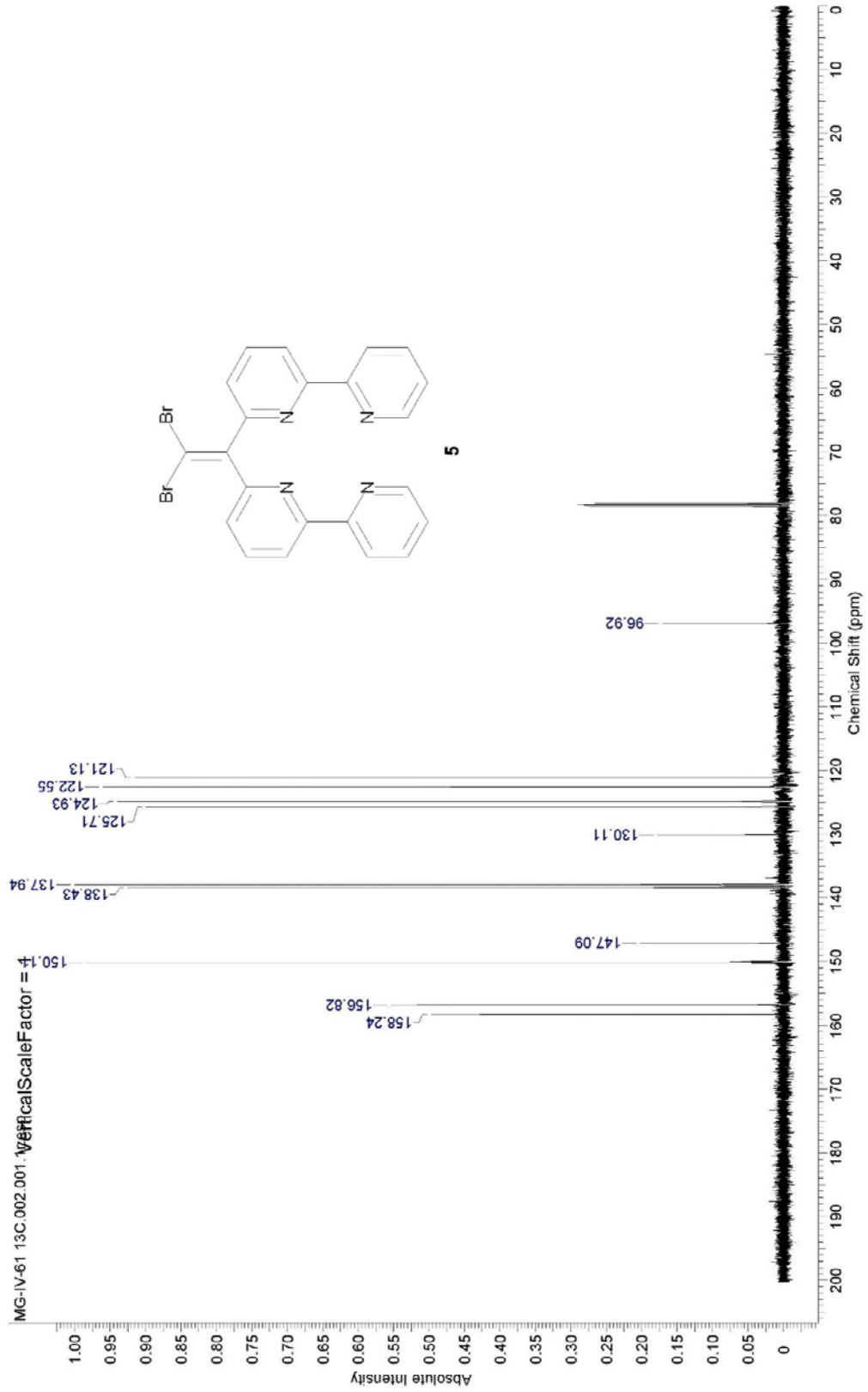


Figure S15. ORTEP plot of Co-complex **7**


Br
Br
N
N
N
N
5
8.47
8.46
8.44
8.70
8.69
8.49
8.43
7.88
7.61
7.79
7.60
7.59
7.90
7.90
7.31
7.29
7.29
7.28
7.28
2.03 4.10 2.02 2.01 2.03 2.06
Absolute Intensity
Chemical Shift (ppm)


MG-IV-61 13C.002.001
VerticalScaleFactor = 4
Absolute Intensity
Chemical Shift (ppm)
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Br
N
N
N
N
5
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124.93
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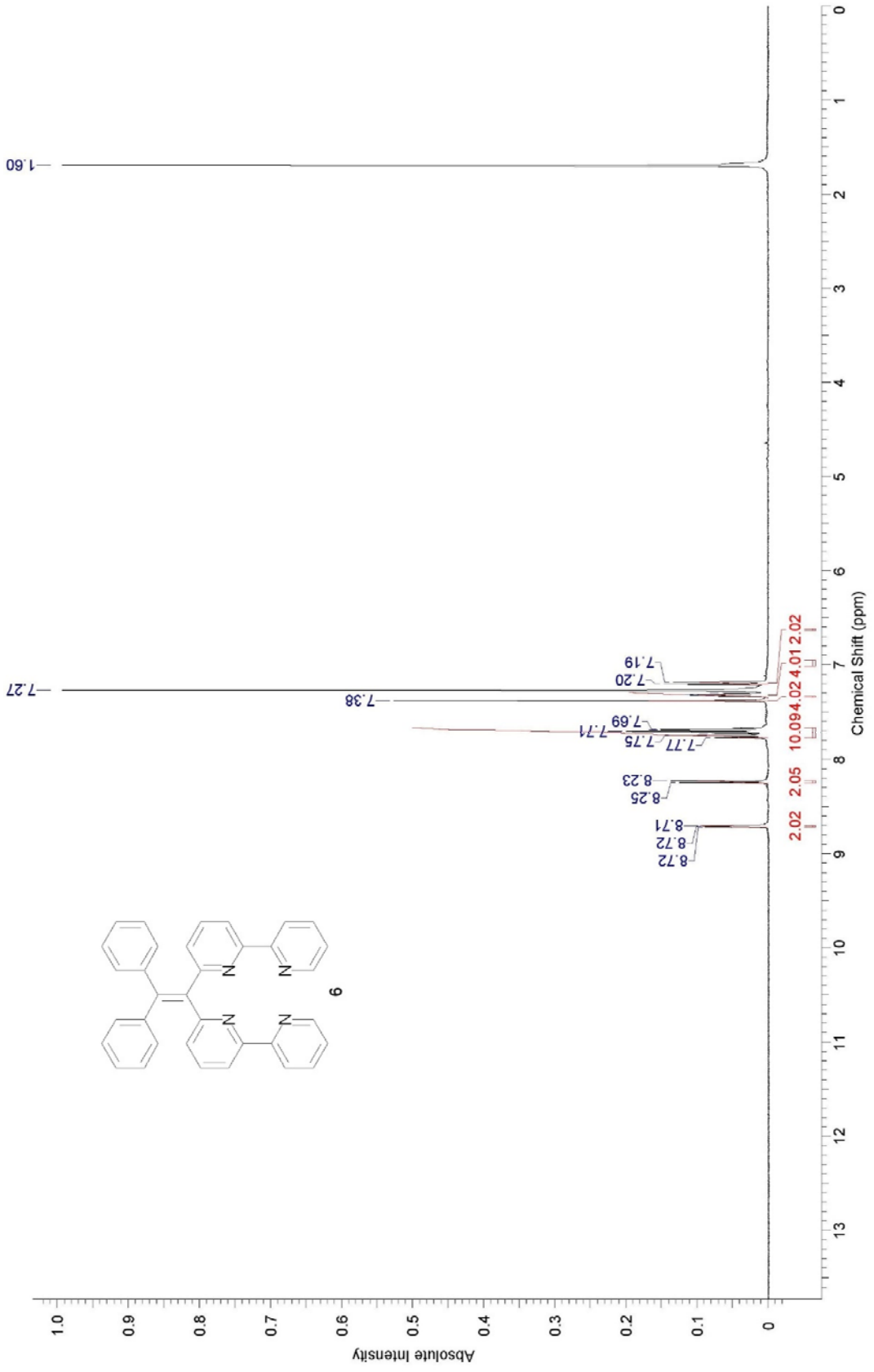
147.09
150.14
156.82
158.24


Absolute Intensity
Chemical Shift (ppm)
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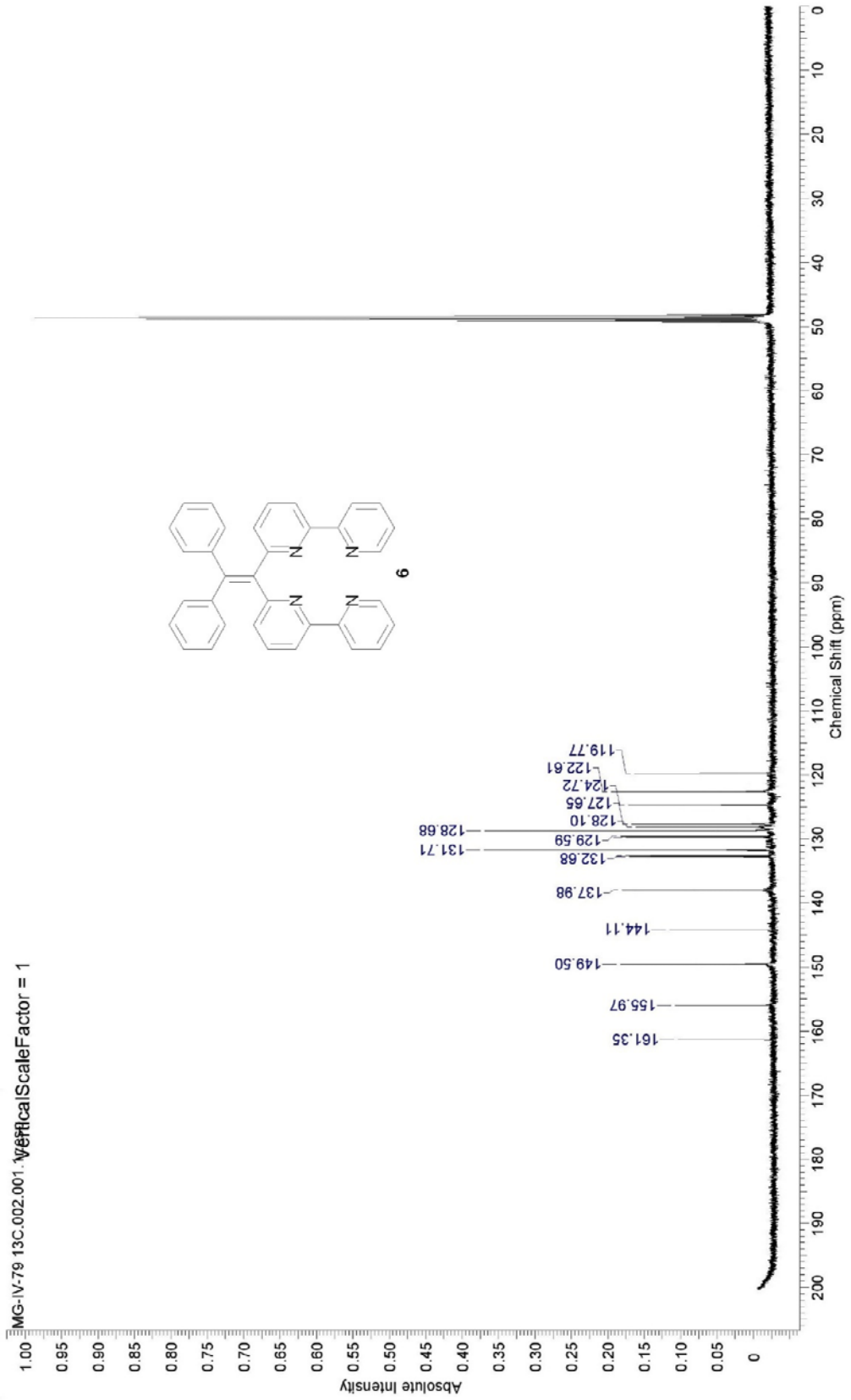
7.38
7.19
7.20
7.69
7.71
7.75
7.77
8.23
8.25
8.71
8.72
8.72
2.02
2.05
10.09
4.02
4.01
2.02
N
N
N
N
6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Chemical Shift (ppm)
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155.97
149.50
144.11
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132.68
131.71
129.59
128.68
128.10
127.65
124.72
122.61
119.77
6