

Supplementary Information

Figure S1. ^1H NMR spectrum of **3**.

Figure S2. ^{13}C NMR spectrum of **3**.

Figure S3. ^1H NMR spectrum of **6**.

Figure S4. ^{13}C NMR spectrum of **6**.

Figure S5. ^1H NMR spectrum of **4**.

Figure S6. ^{13}C NMR spectrum of **4**.

Figure S7. ^1H NMR spectrum of **4a**.

Figure S8. ^{13}C NMR spectrum of **4a**.

Figure S9. ^1H NMR spectrum of **7**.

Figure S10. ^{13}C NMR spectrum of **7**.

Figure S11. ^1H NMR spectrum of **7a**.

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Figure S13. ^1H NMR spectrum of **5**.

Figure S14. ^{13}C NMR spectrum of **5**.

Figure S15. ^1H NMR spectrum of **5a**.

Figure S16. ^{13}C NMR spectrum of **5a**.

Figure S17. ^1H NMR spectrum of **8**.

Figure S18. ^{13}C NMR spectrum of **8**.

Figure S19. ^1H NMR spectrum of **8a**.

Figure S20. ^{13}C NMR spectrum of **8a**.

Figure S21. Purity of **3** by HPLC.

Figure S22. Purity of **6** by HPLC.

Figure S23. Purity of **4** by HPLC.

Figure S24. Purity of **4a** by HPLC.

Figure S25. Purity of **7** by HPLC.

Figure S26. Purity of **7a** by HPLC.

Figure S27. Purity of **5** by HPLC.

Figure S28. Purity of **5a** by HPLC.

Figure S29. Purity of **8** by HPLC.

Figure S30. Purity of **8a** by HPLC.

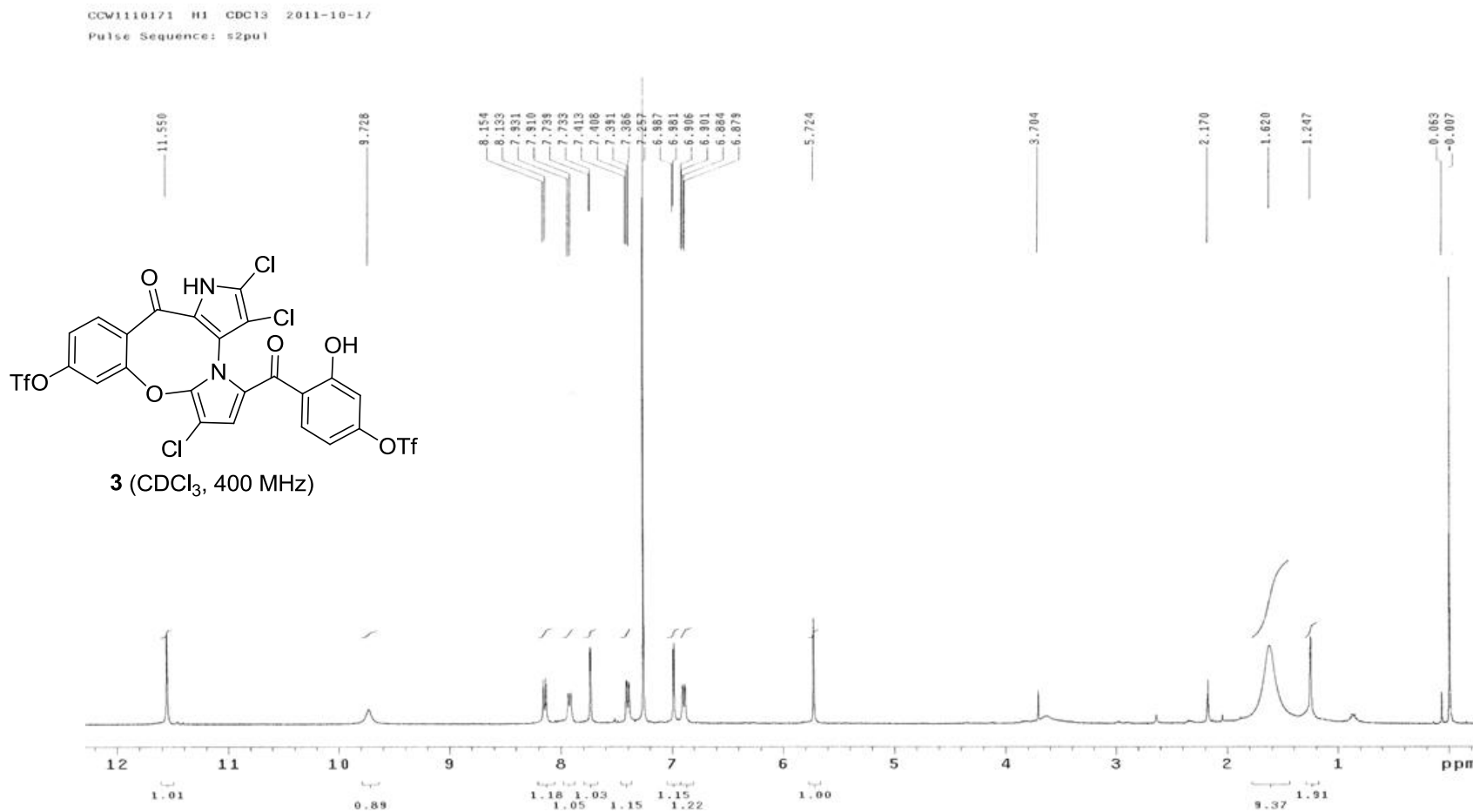
Figure S1. ^1H NMR spectrum of **3**.

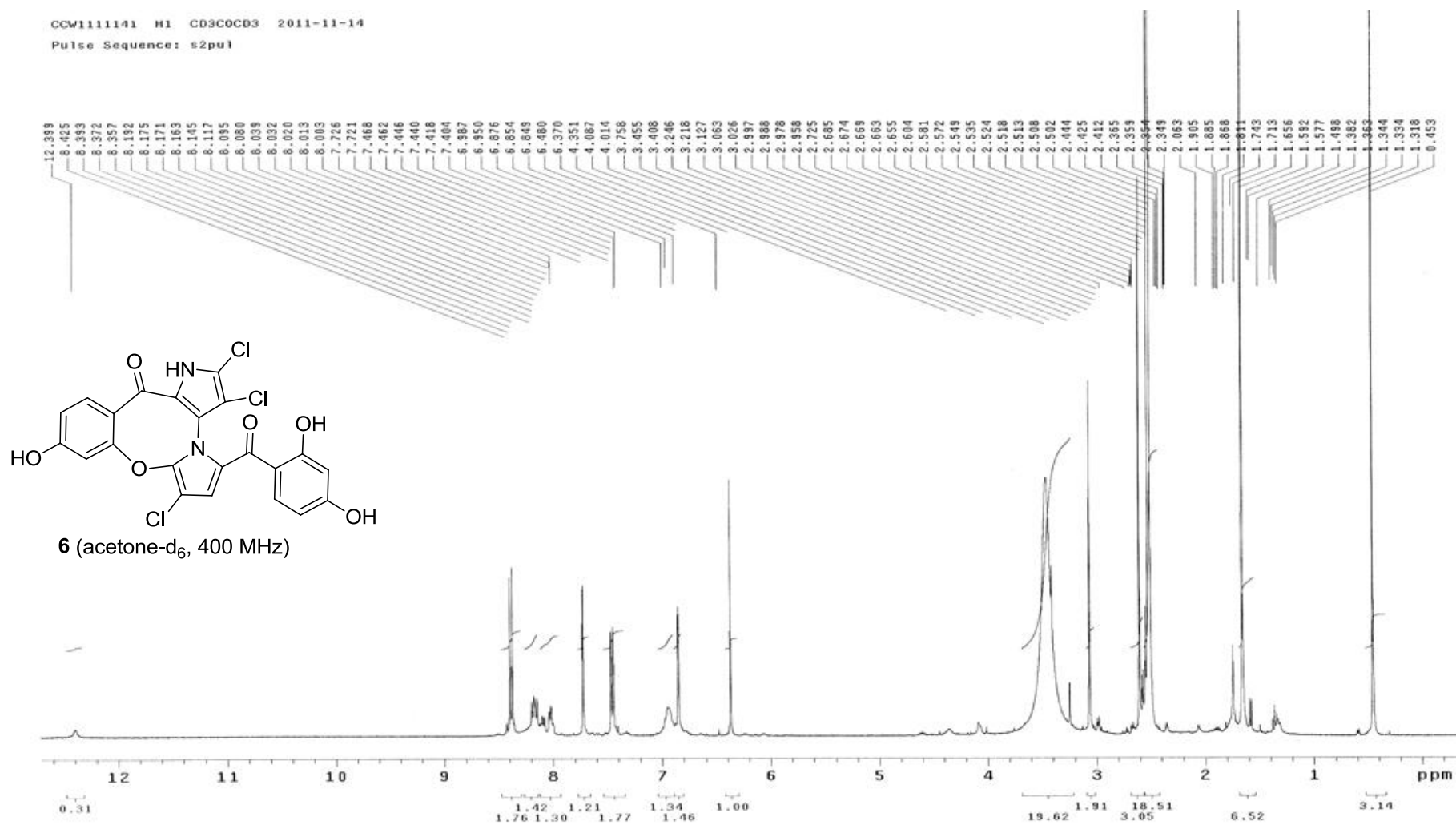
Figure S3. ^1H NMR spectrum of 6.

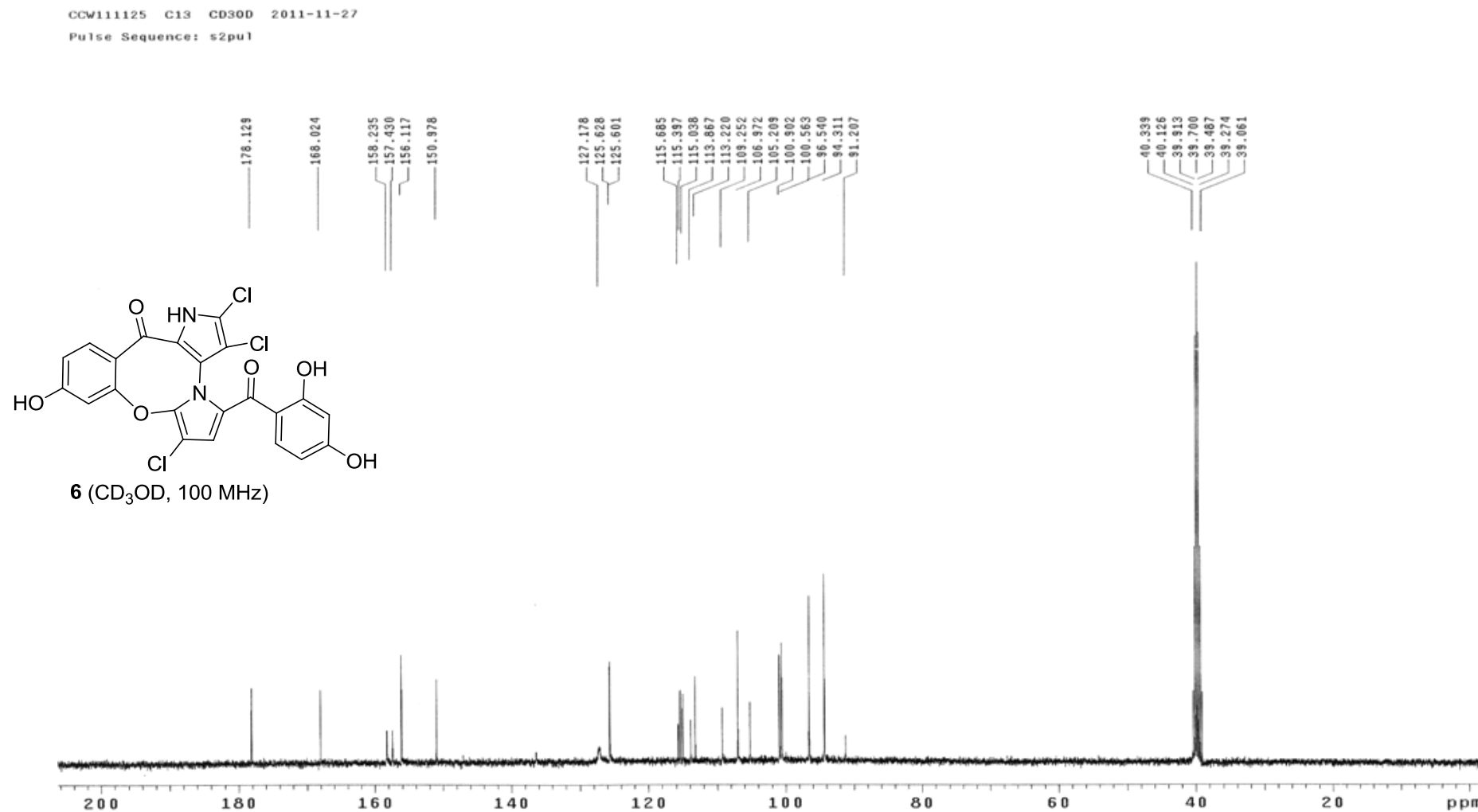
Figure S4. ^{13}C NMR spectrum of **6**.

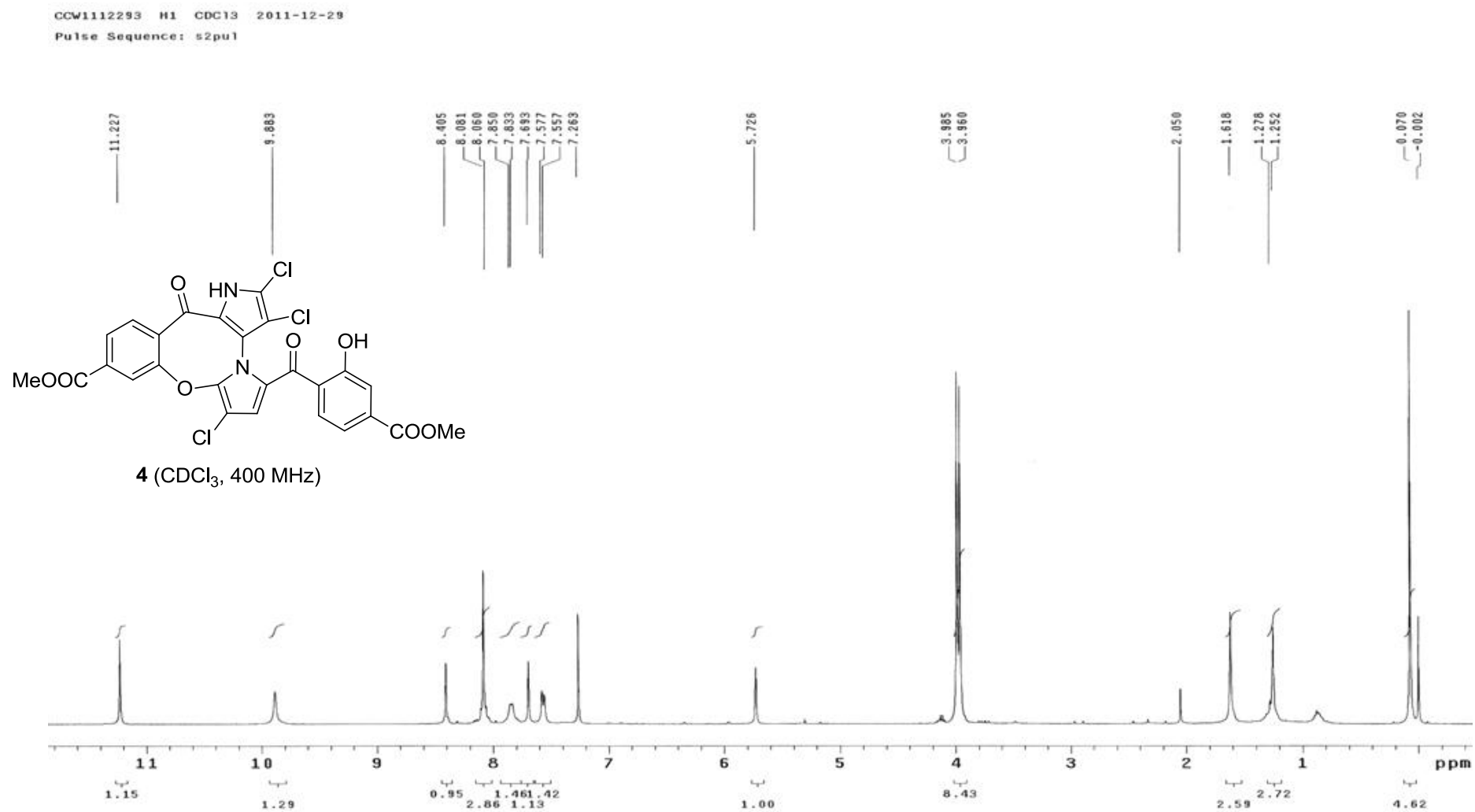
Figure S5. ^1H NMR spectrum of 4.

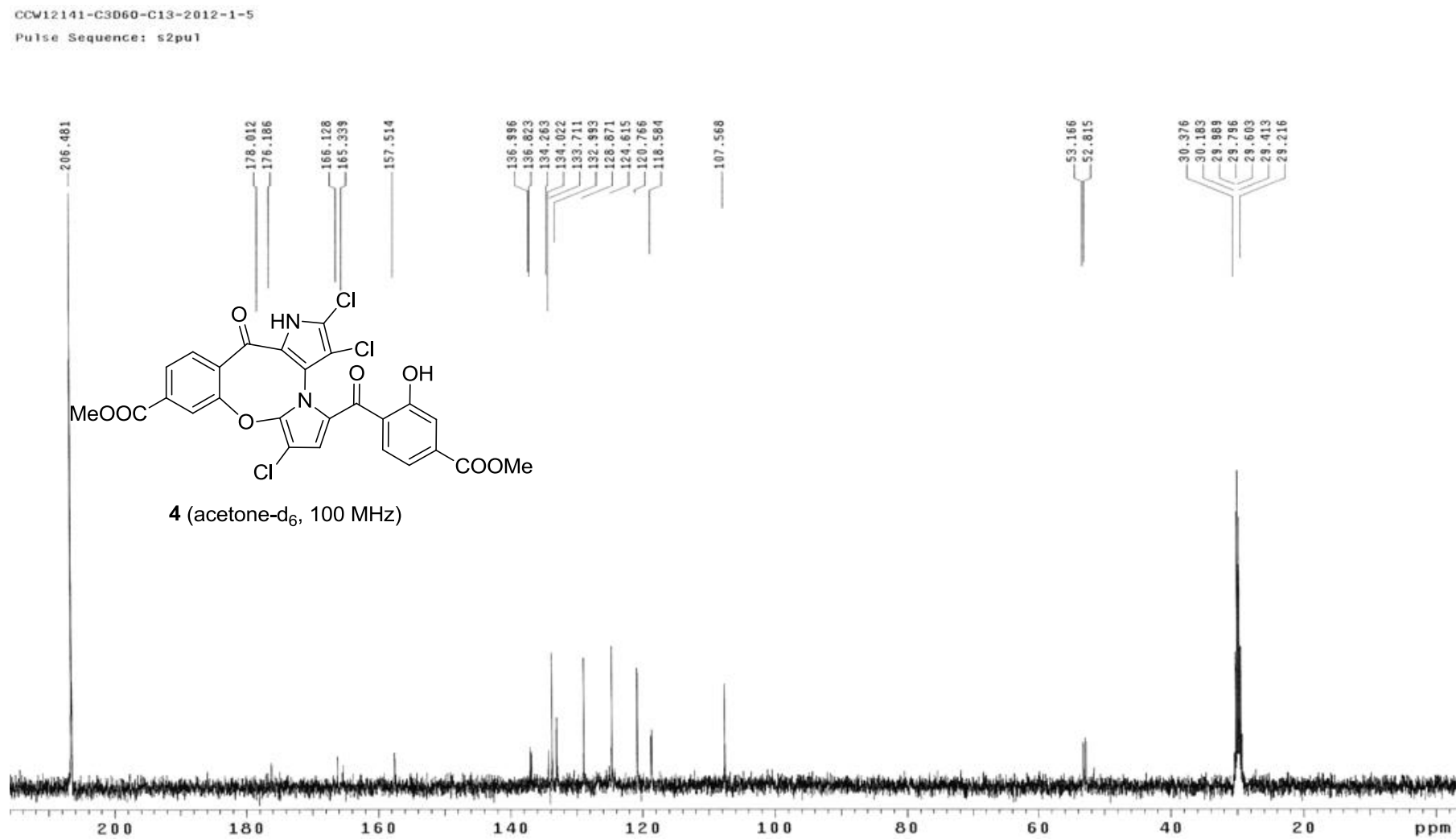
Figure S6. ^{13}C NMR spectrum of 4.

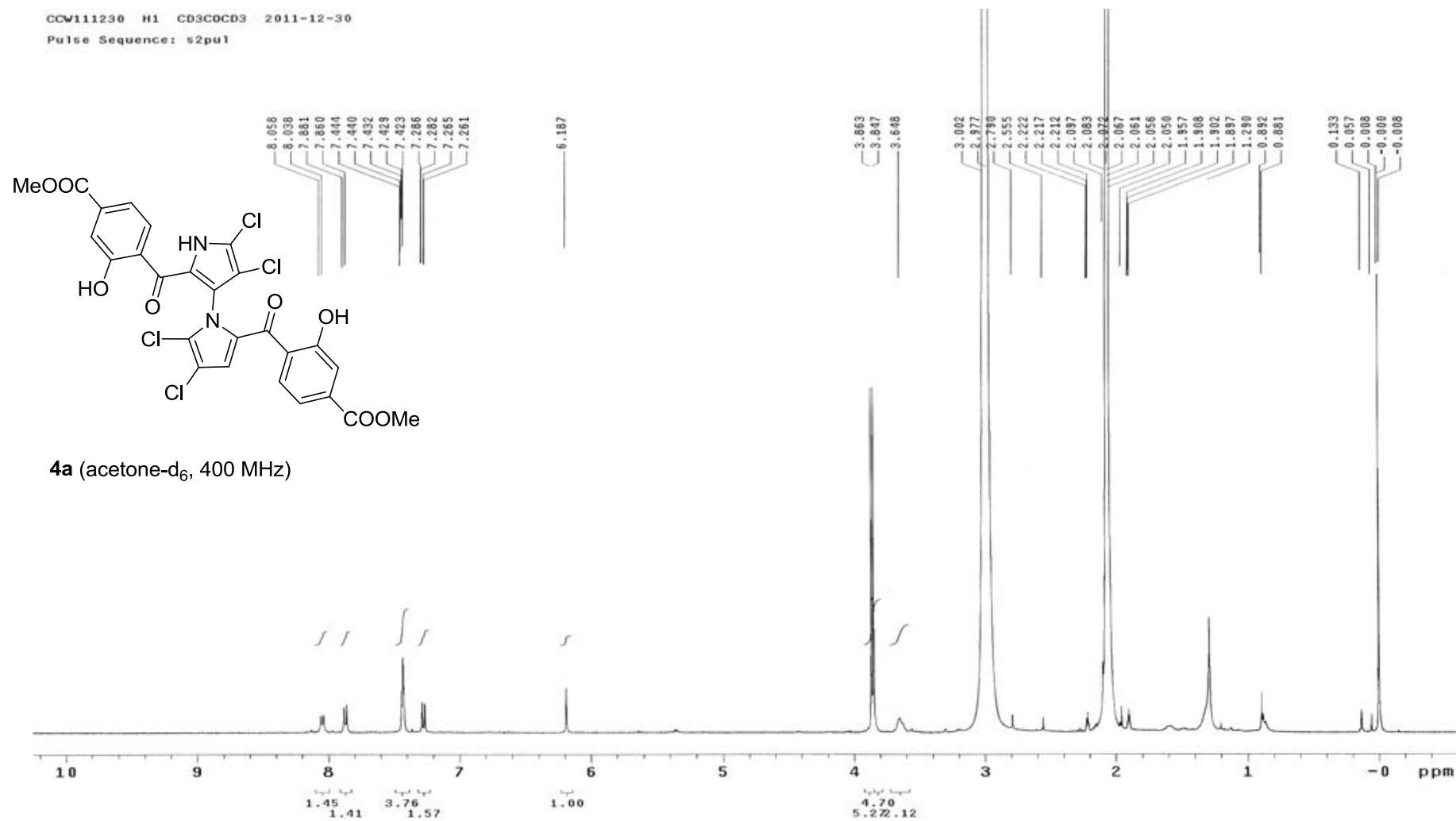
Figure S7. ^1H NMR spectrum of **4a**.

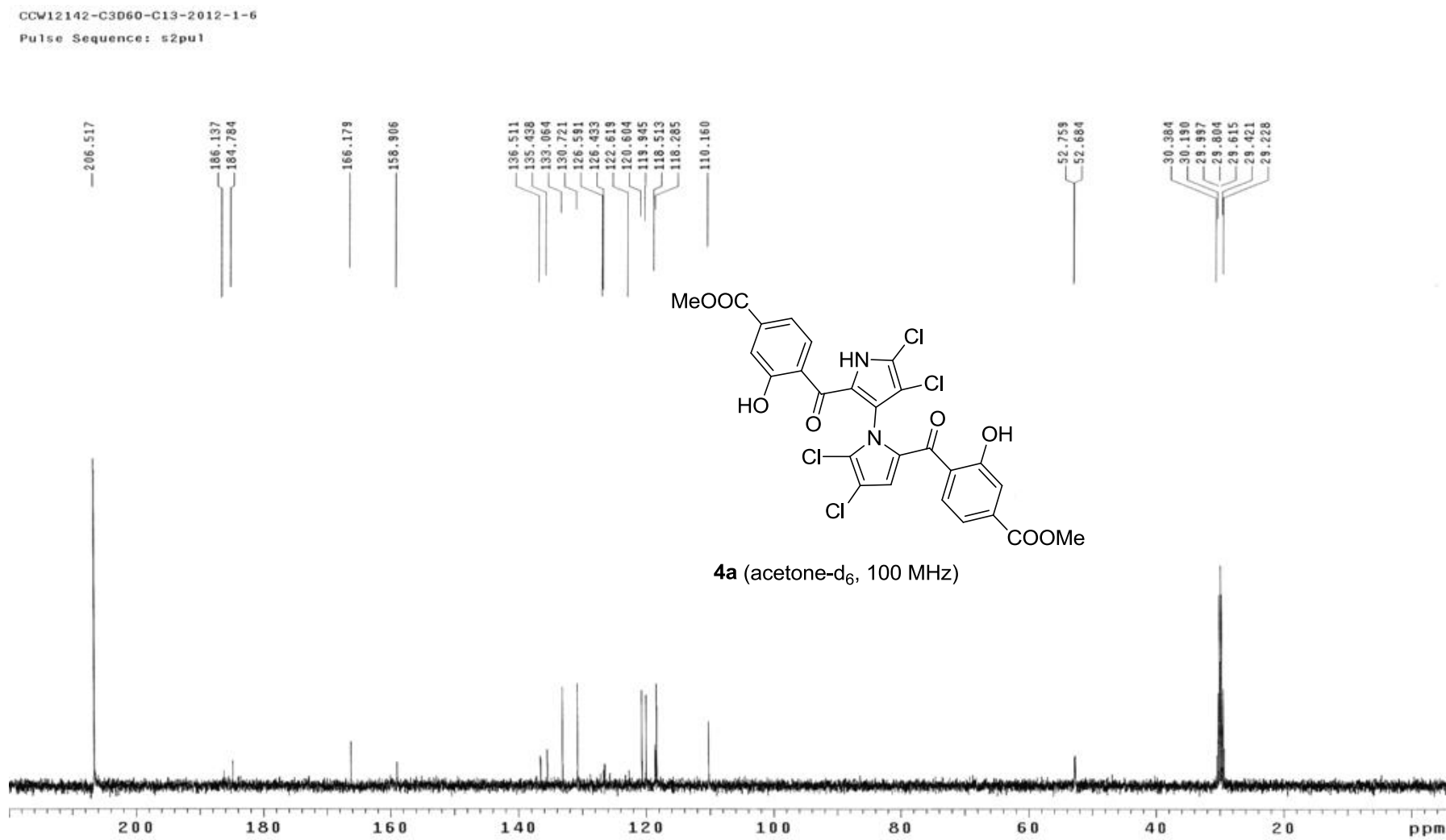
Figure S8. ^{13}C NMR spectrum of **4a**.

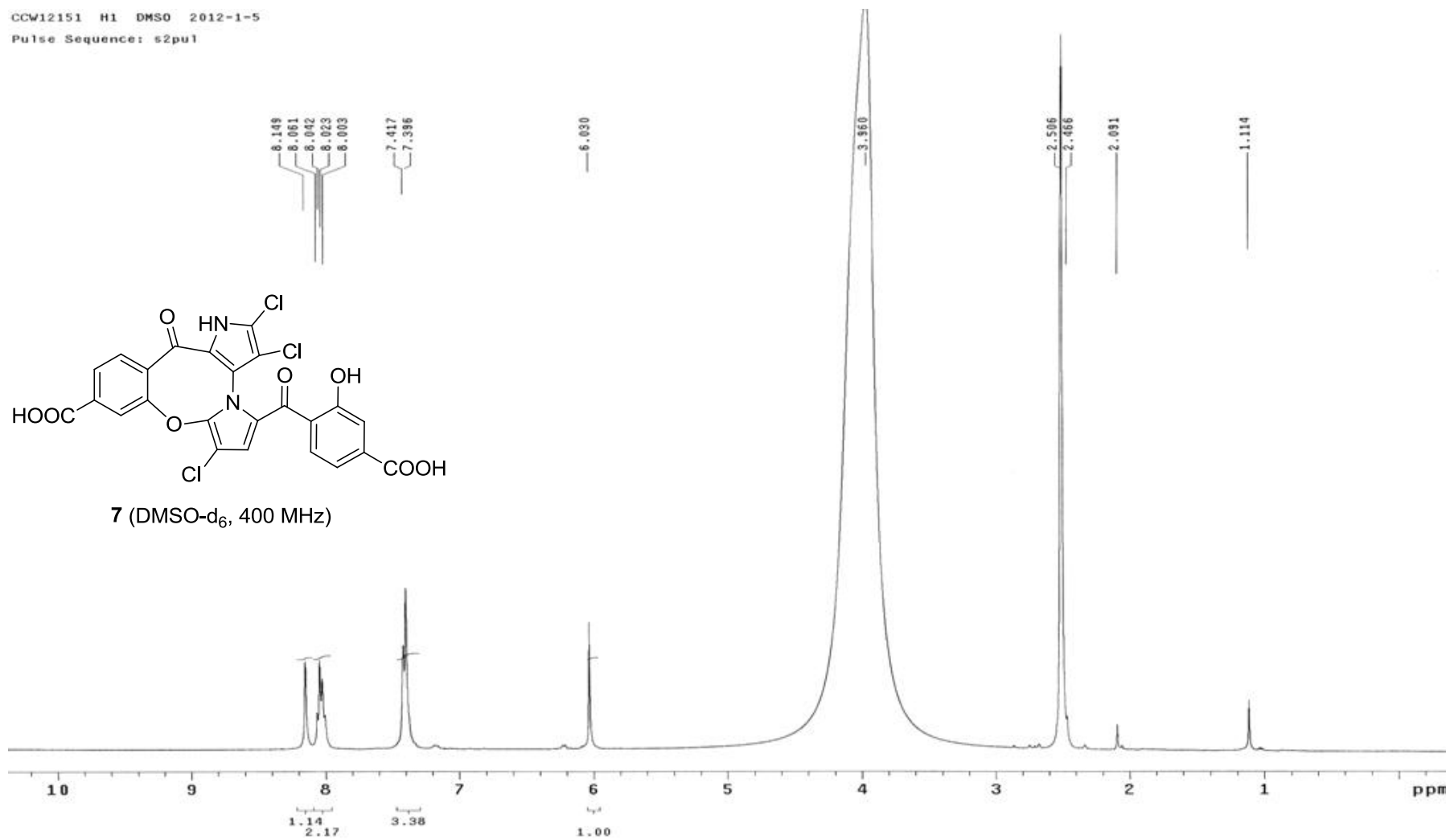
Figure S9. ^1H NMR spectrum of 7.

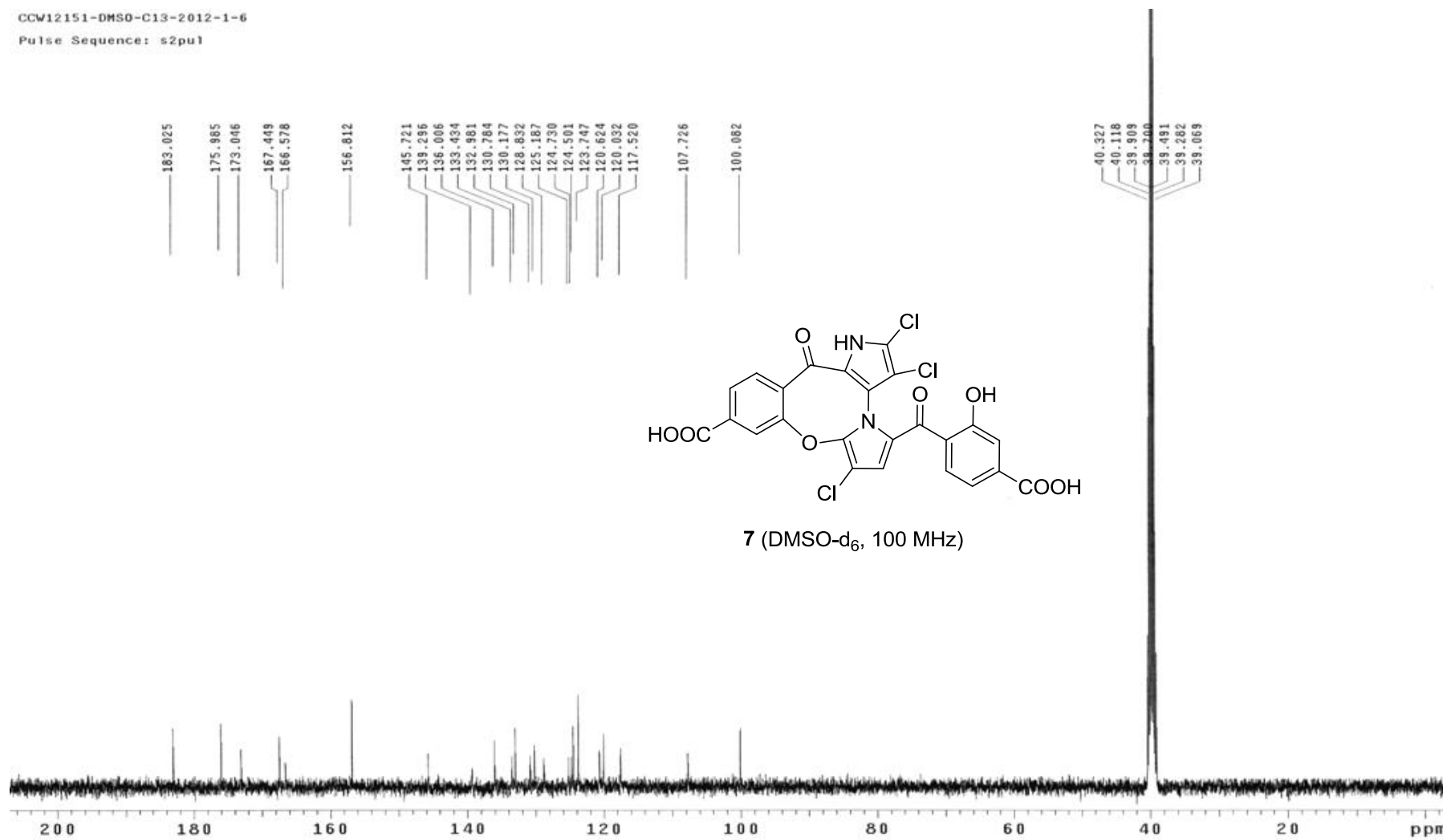
Figure S10. ^{13}C NMR spectrum of 7.

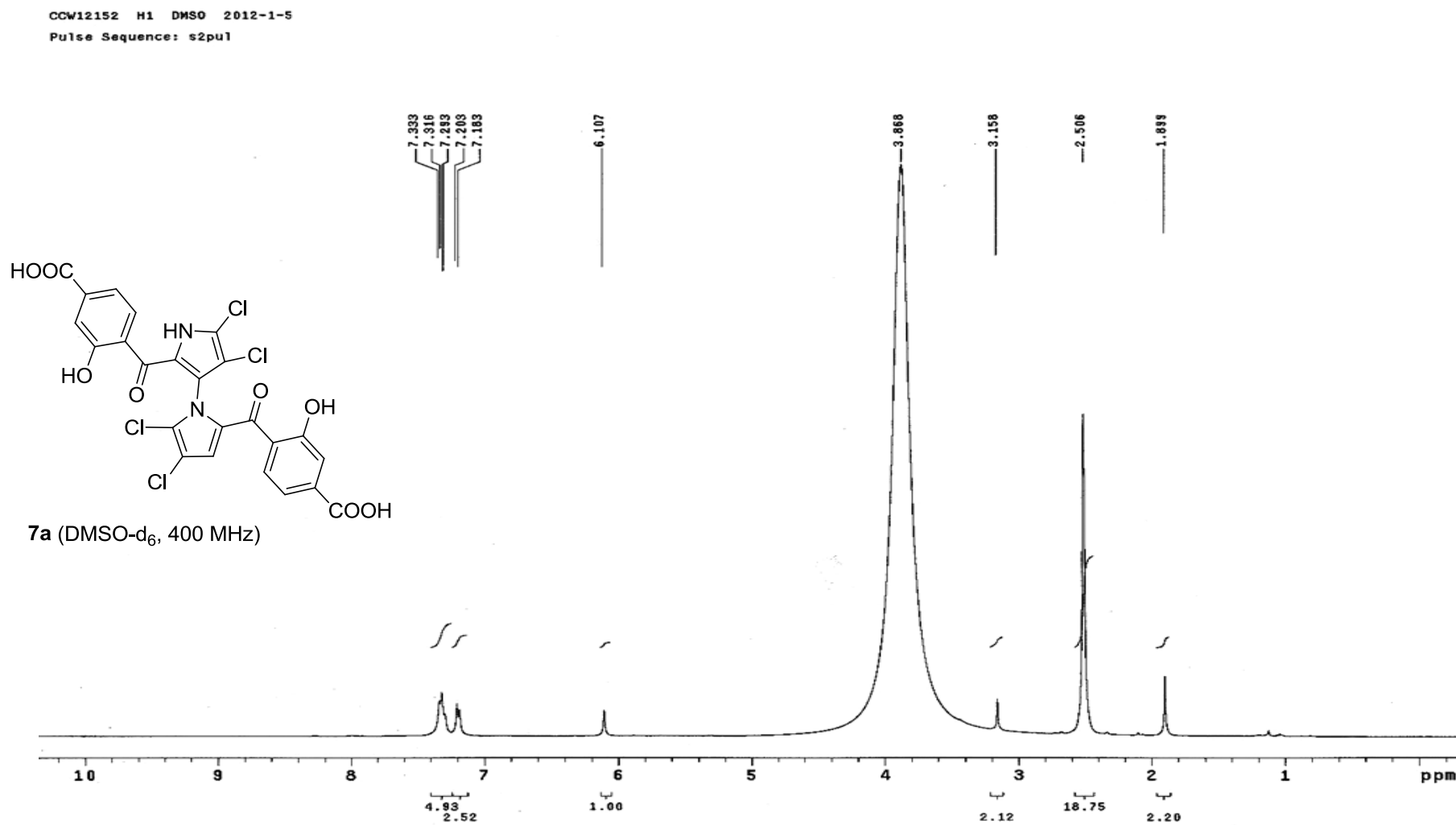
Figure S11. ^1H NMR spectrum of 7a.

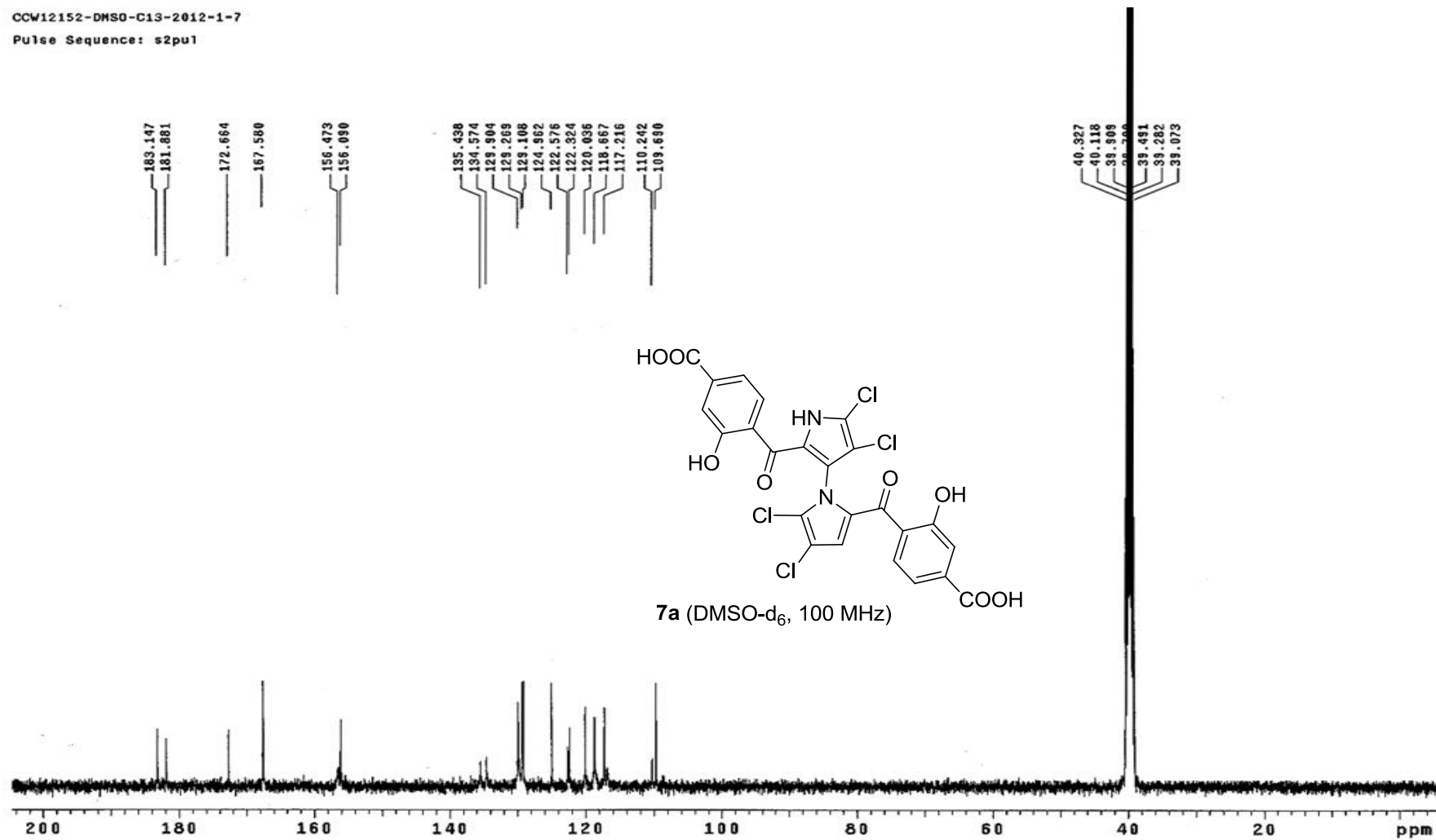
Figure S12. ^{13}C NMR spectrum of 7a.

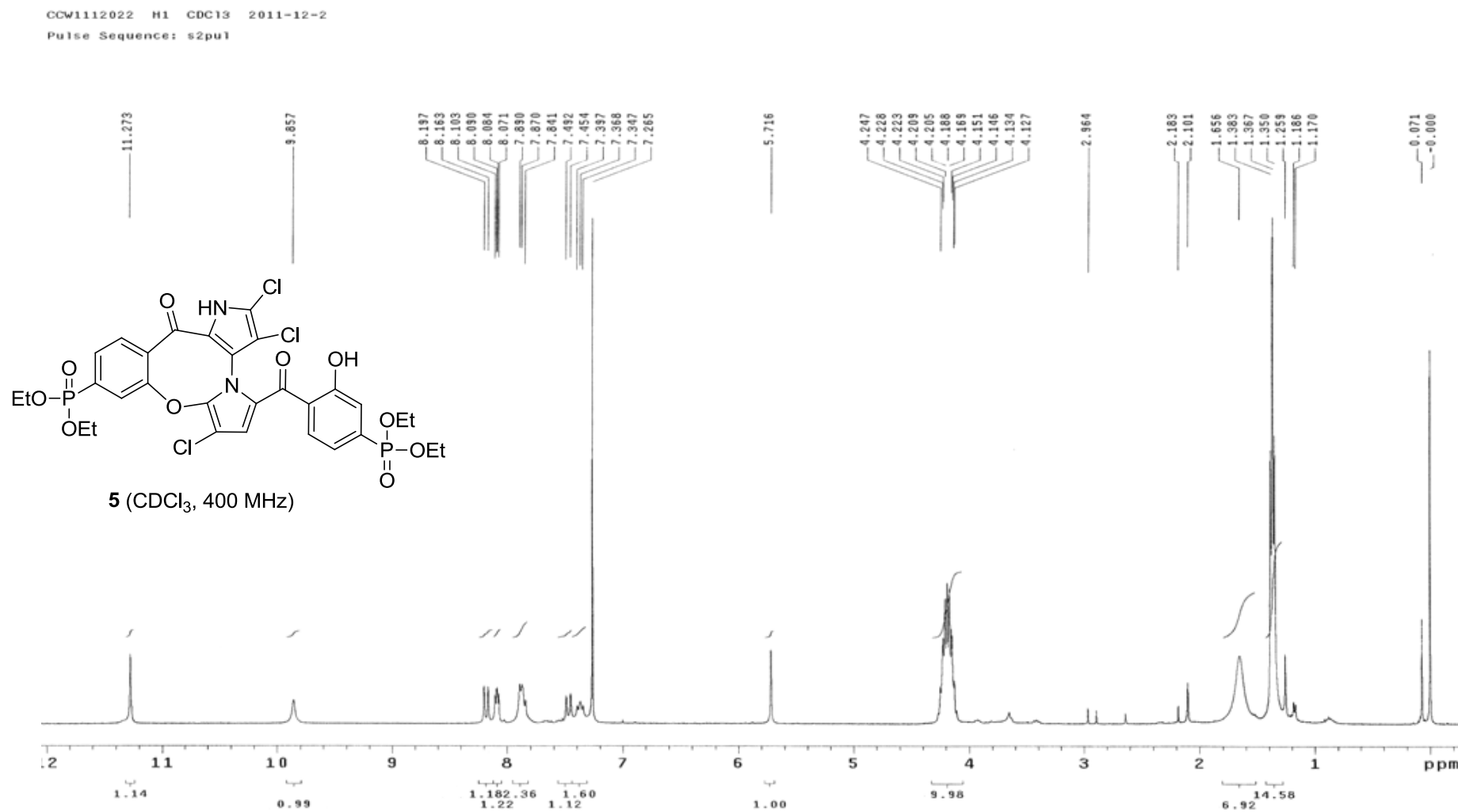
Figure S13. ¹H NMR spectrum of 5.

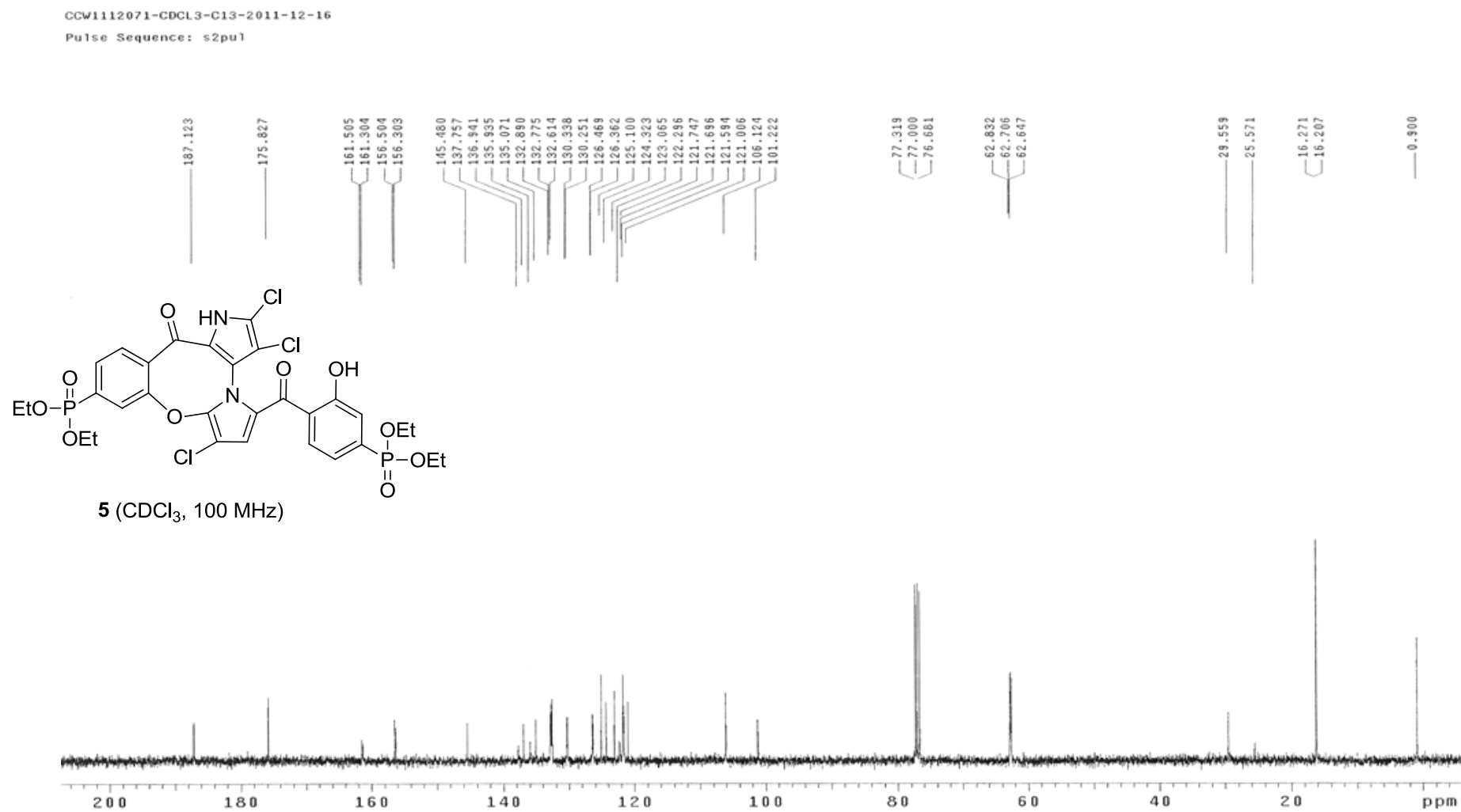
Figure S14. ^{13}C NMR spectrum of 5.

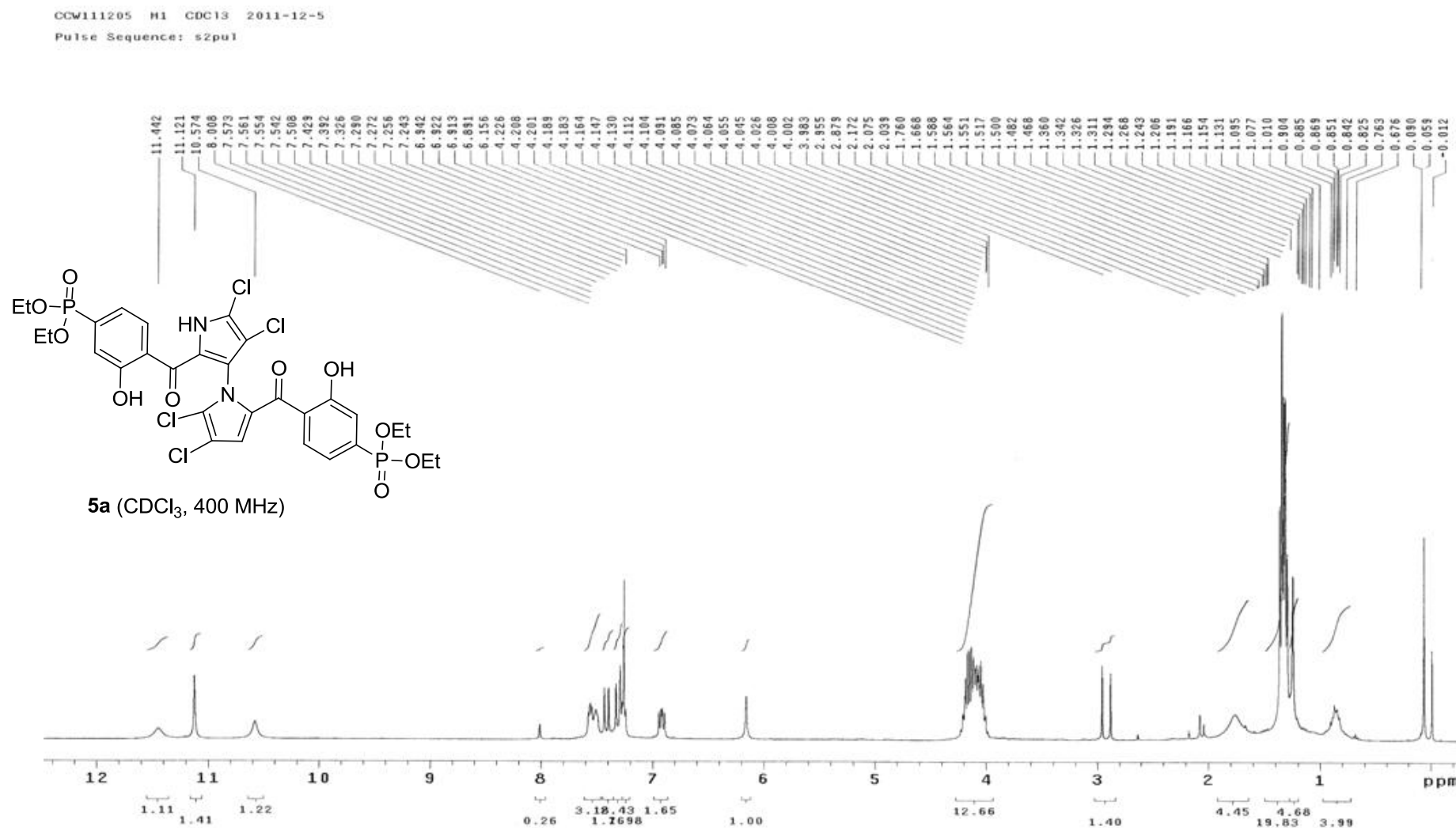
Figure S15. ^1H NMR spectrum of 5a.

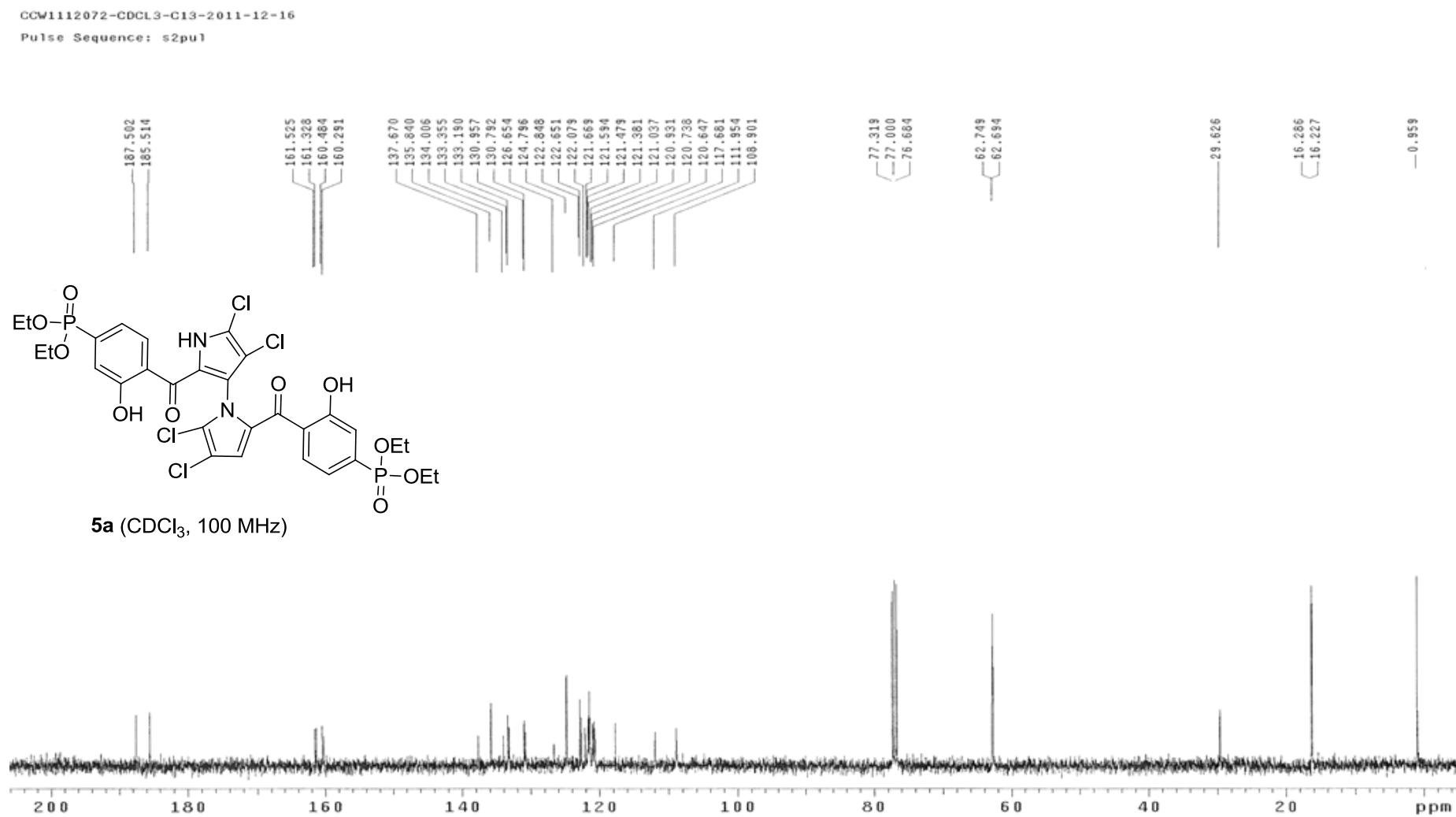
Figure S16. ^{13}C NMR spectrum of 5a.

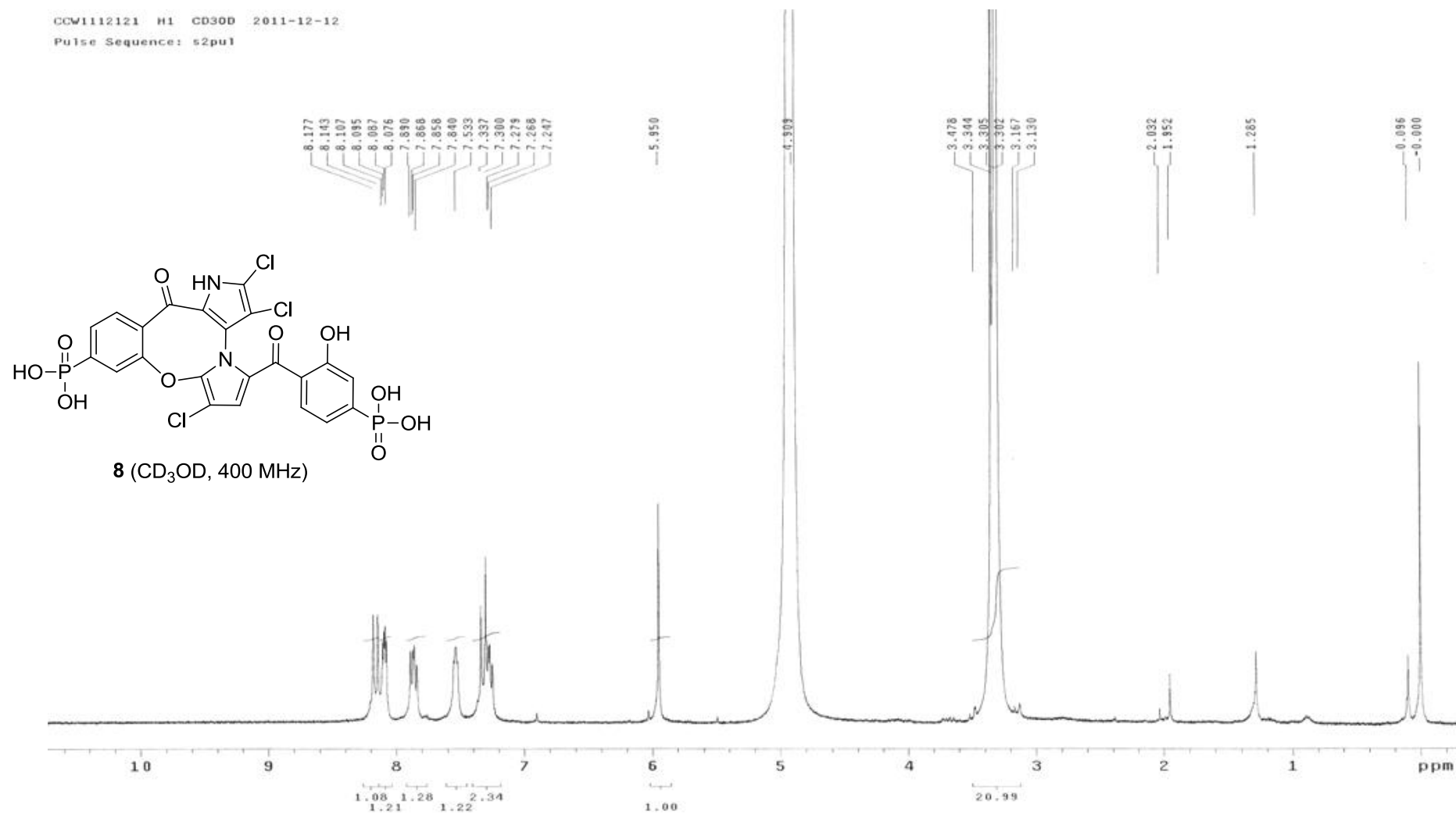
Figure S17. ^1H NMR spectrum of **8**.

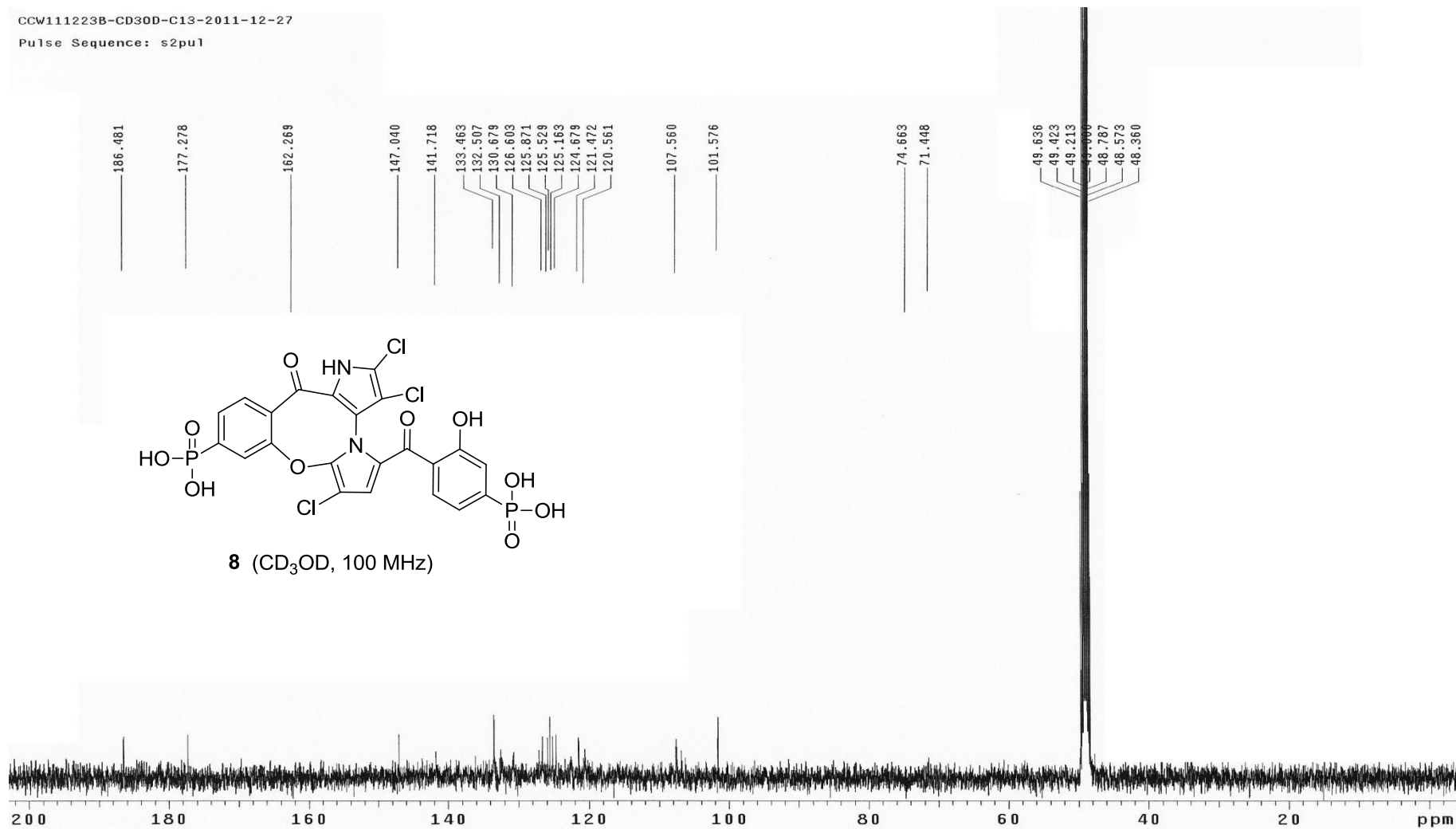
Figure S18. ^{13}C NMR spectrum of **8**.

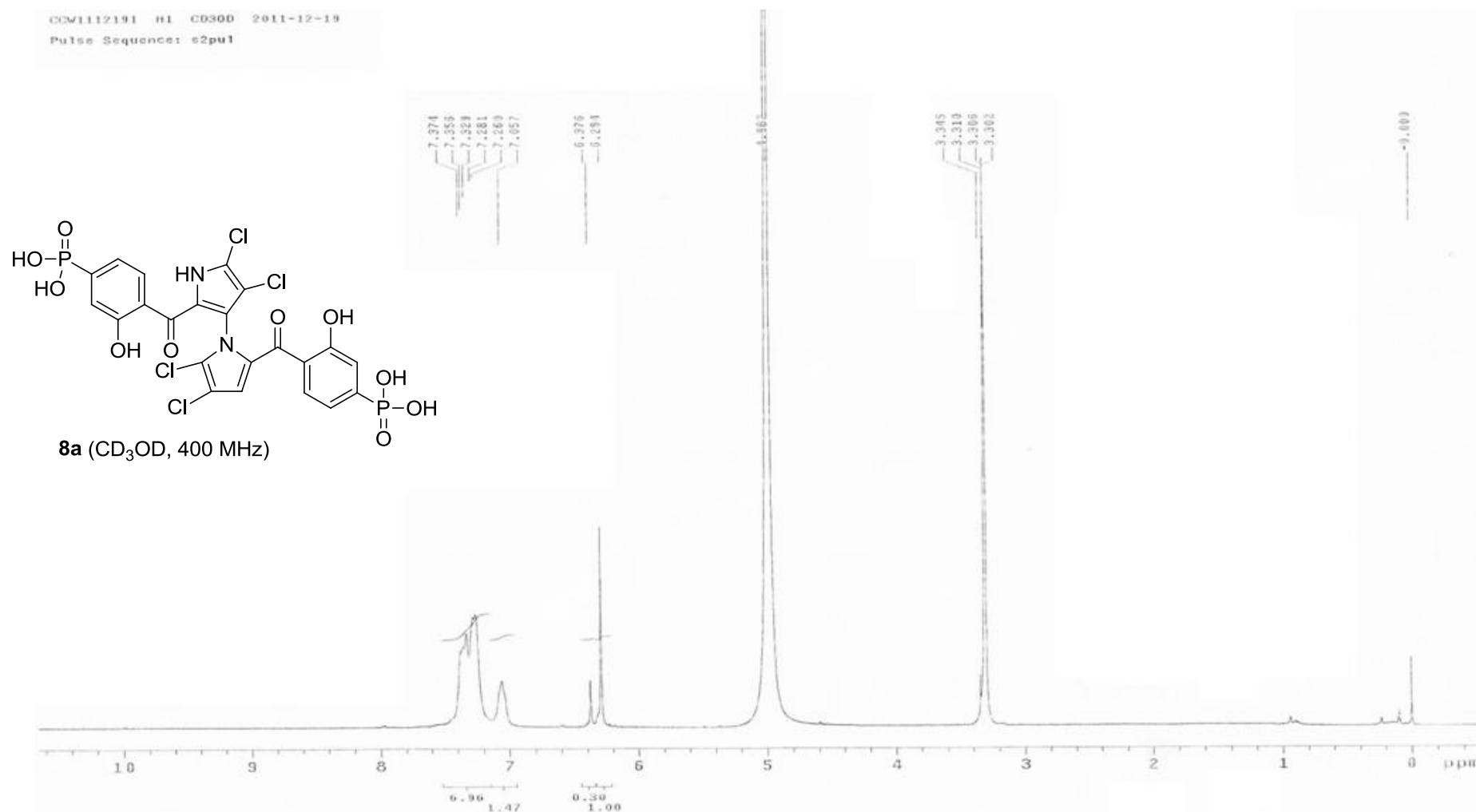
Figure S19. ^1H NMR spectrum of **8a**.

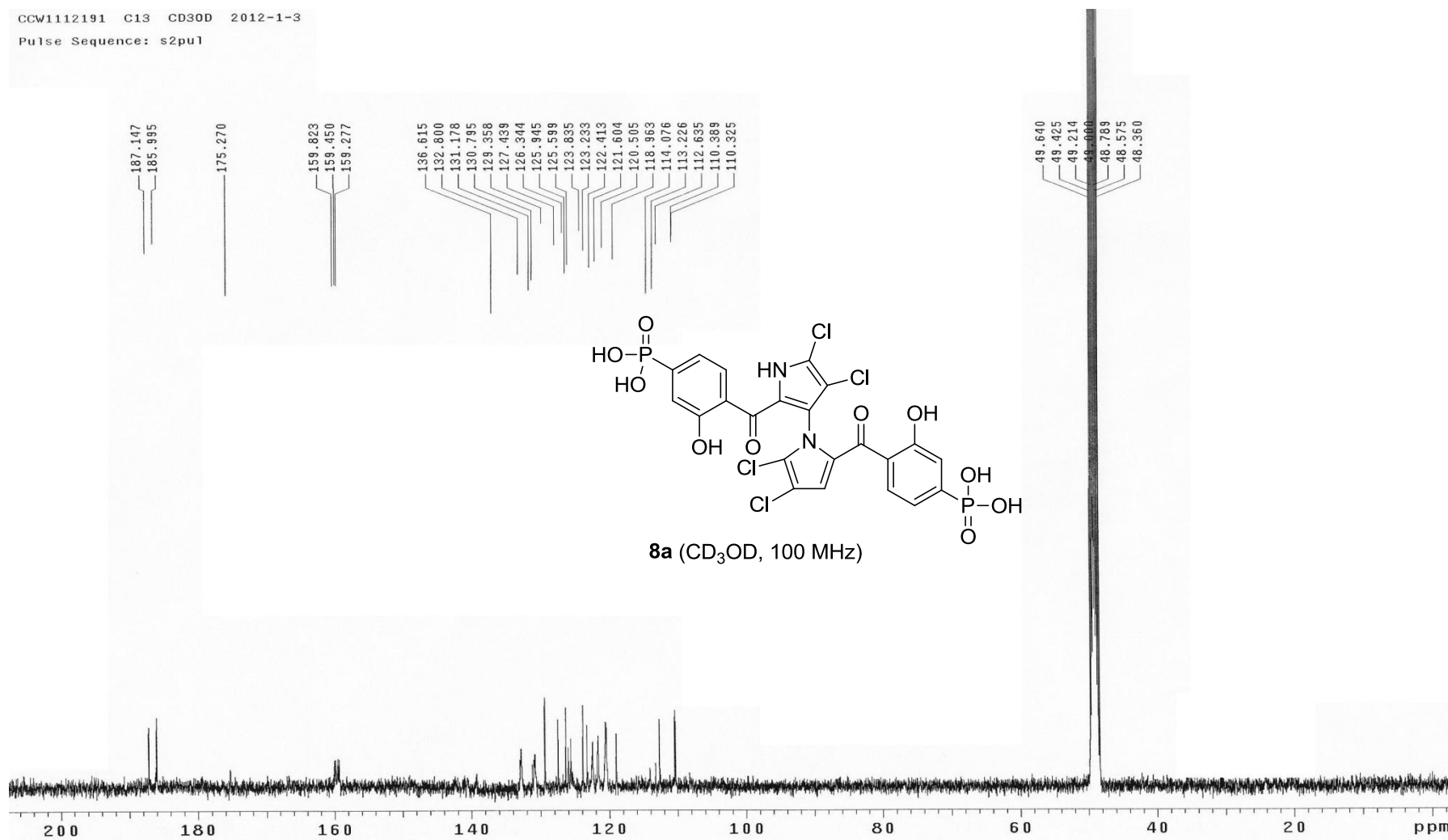
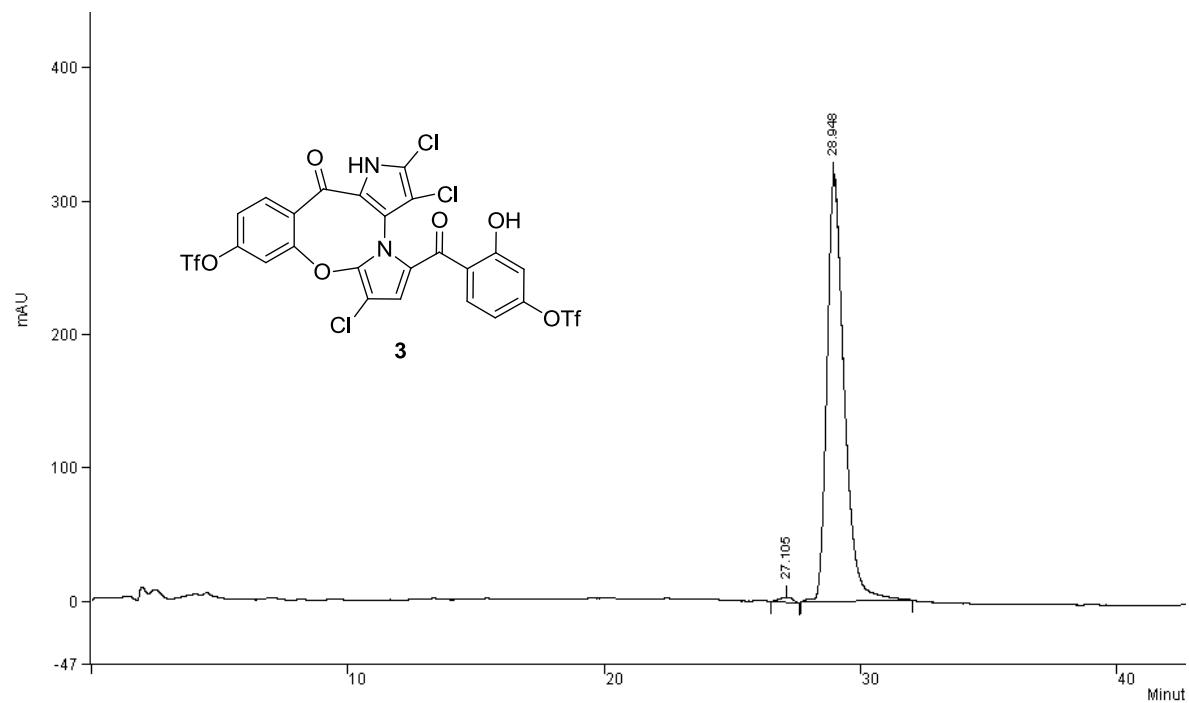
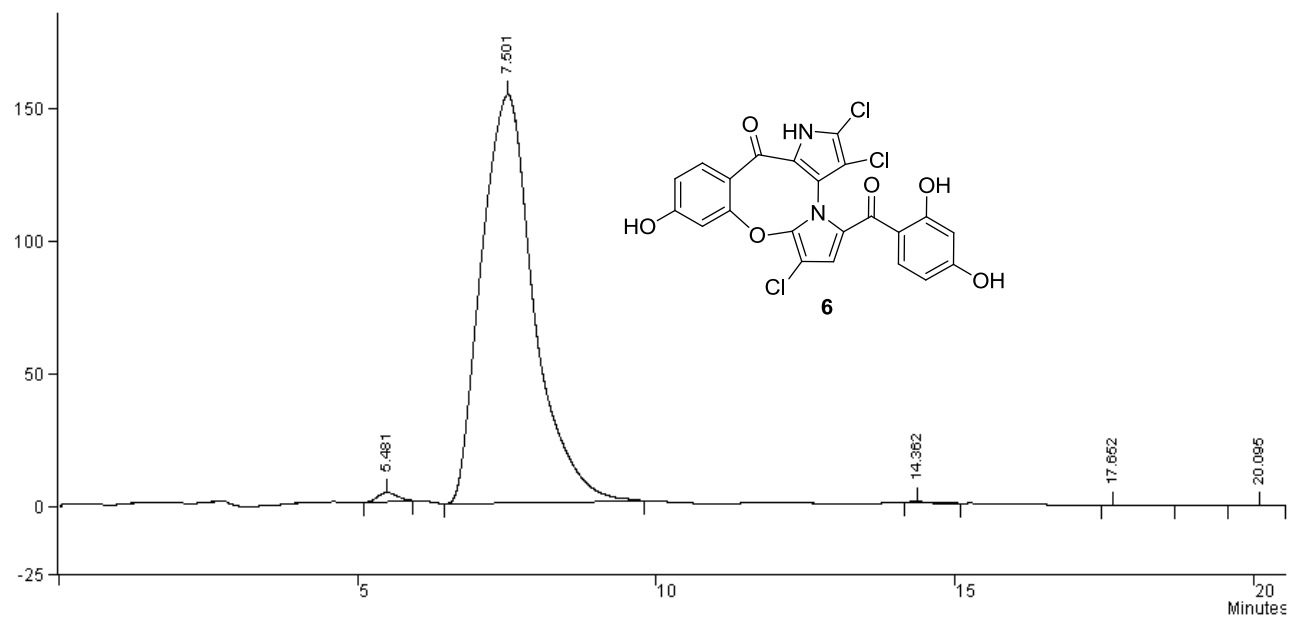
Figure S20. ^{13}C NMR spectrum of **8a**.

Figure S21. Purity of 3 by HPLC.



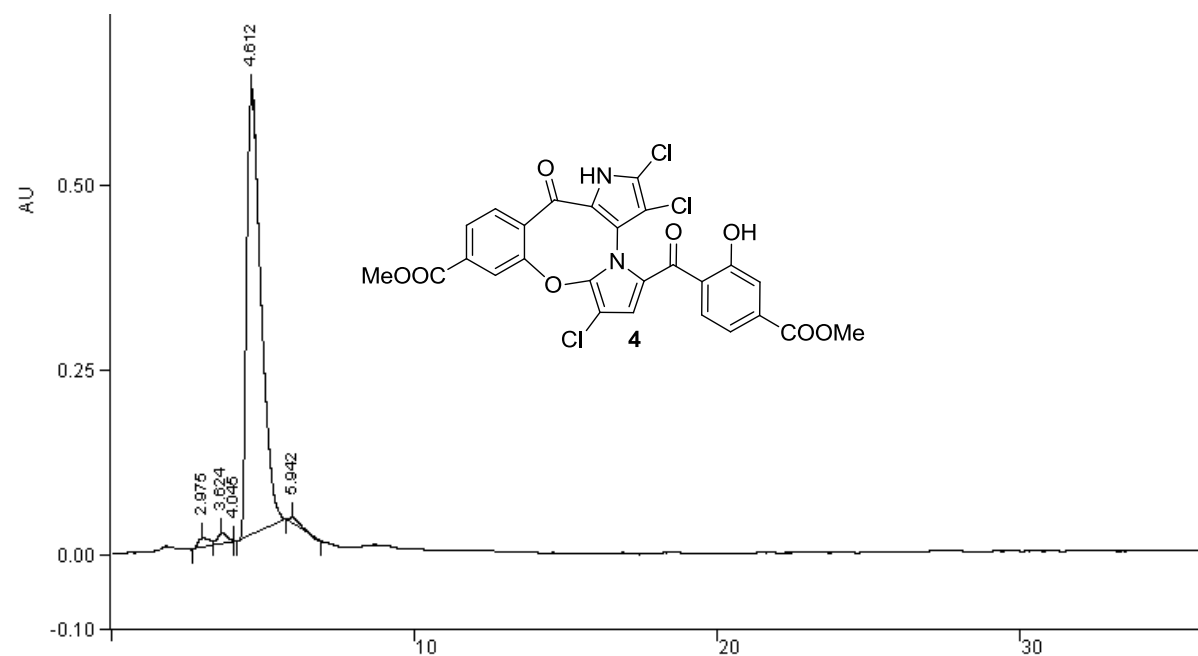
Peak No.	Peak Name	Result ()	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)
1		0.8561	27.105	0.000	1295006	BB	31.6
2		99.1439	28.948	0.000	149970096	BB	41.3
Totals:		100.0000		0.000	151265102		

Figure S22. Purity of 6 by HPLC.



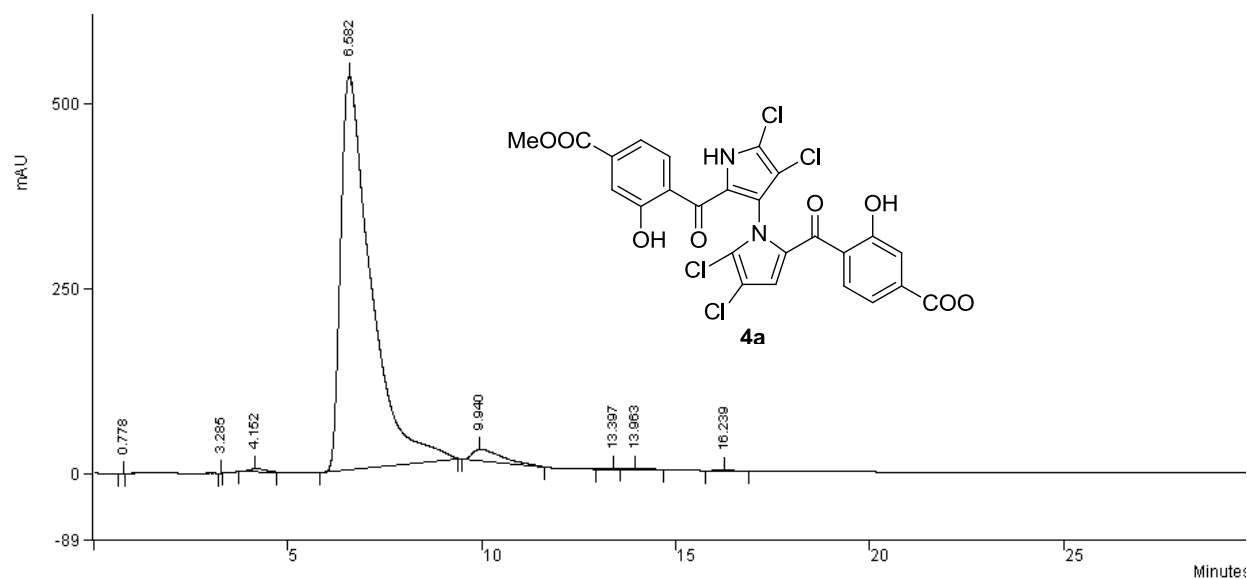
Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)
1		0.7887	5.481	0.000	748973	BB	23.3
2		98.8856	7.501	0.000	93902016	BB	56.6
3		0.1127	14.362	0.000	107065	BB	0.0
4		0.0884	17.652	0.000	83987	BB	0.0
5		0.1245	20.095	0.000	118235	BB	41.9
Totals:		99.9999		0.000	94960276		

Figure S23. Purity of 4 by HPLC.



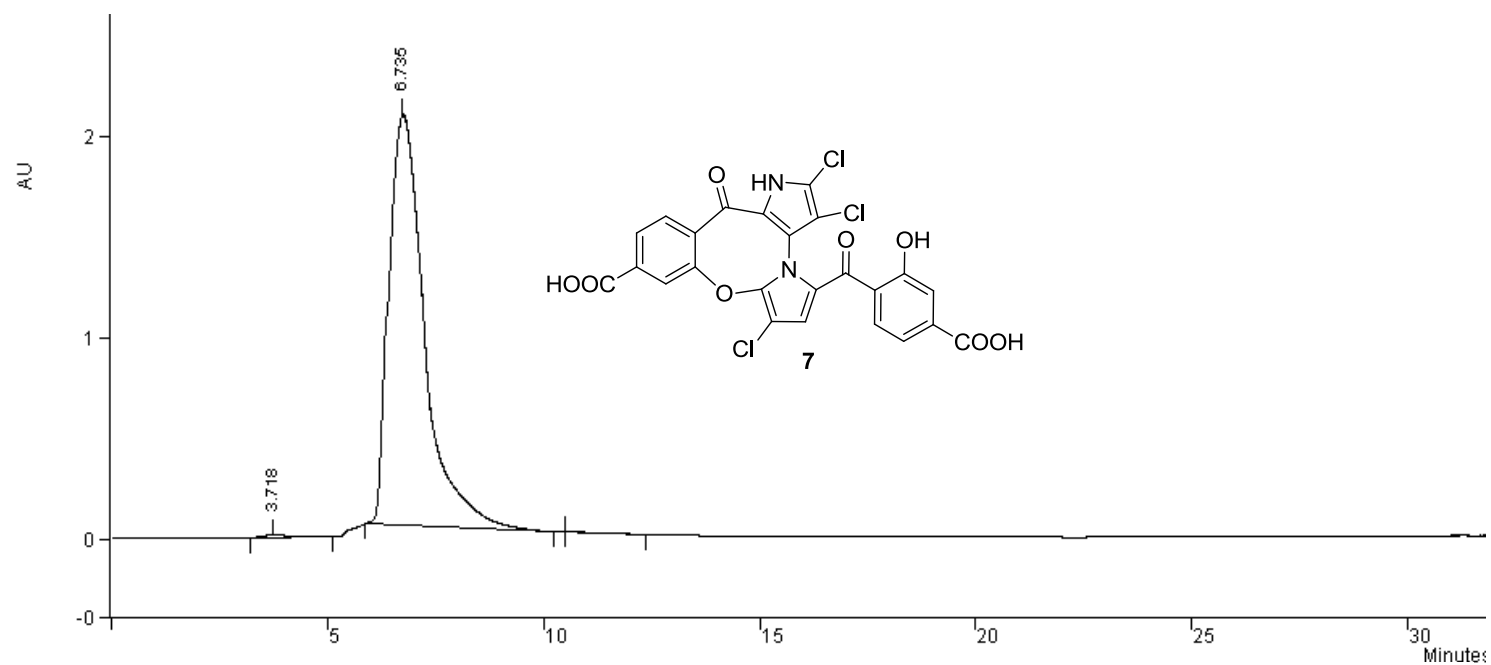
Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)
1		1.6994	2.975	0.000	3522723	BV	0.0
2		1.8720	3.624	0.000	3880466	VV	0.0
3		0.0228	4.045	0.000	47190	VP	0.0
4		95.6192	4.612	0.000	198208016	PB	31.9
5		0.7866	5.942	0.000	1630602	BB	10.1
Totals:		100.0000		0.000	207288997		

Figure S24. Purity of 4a by HPLC.



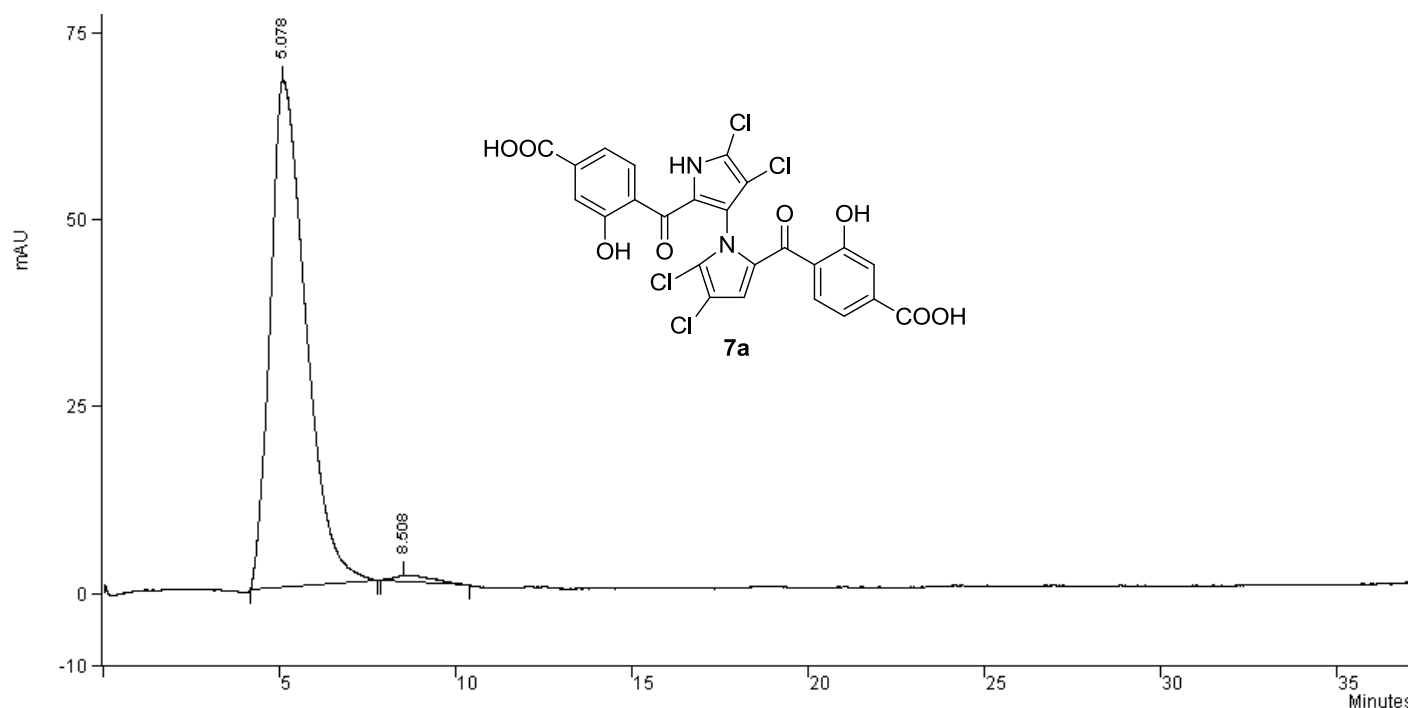
Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)
1		0.0056	0.778	0.000	16843	BB	0.0
2		0.0031	3.285	0.000	9358	BB	0.0
3		0.3875	4.152	0.000	1164280	BB	23.9
4		96.2882	6.582	0.000	289314240	BB	46.8
5		2.9043	9.940	0.000	8726362	BB	36.9
6		0.0837	13.397	0.000	251561	BV	26.4
7		0.1909	13.963	0.000	573666	VB	70.8
8		0.1367	16.239	0.000	410600	BB	32.5
Totals:		100.0000		0.000	300466910		

Figure S25. Purity of 7 by HPLC.

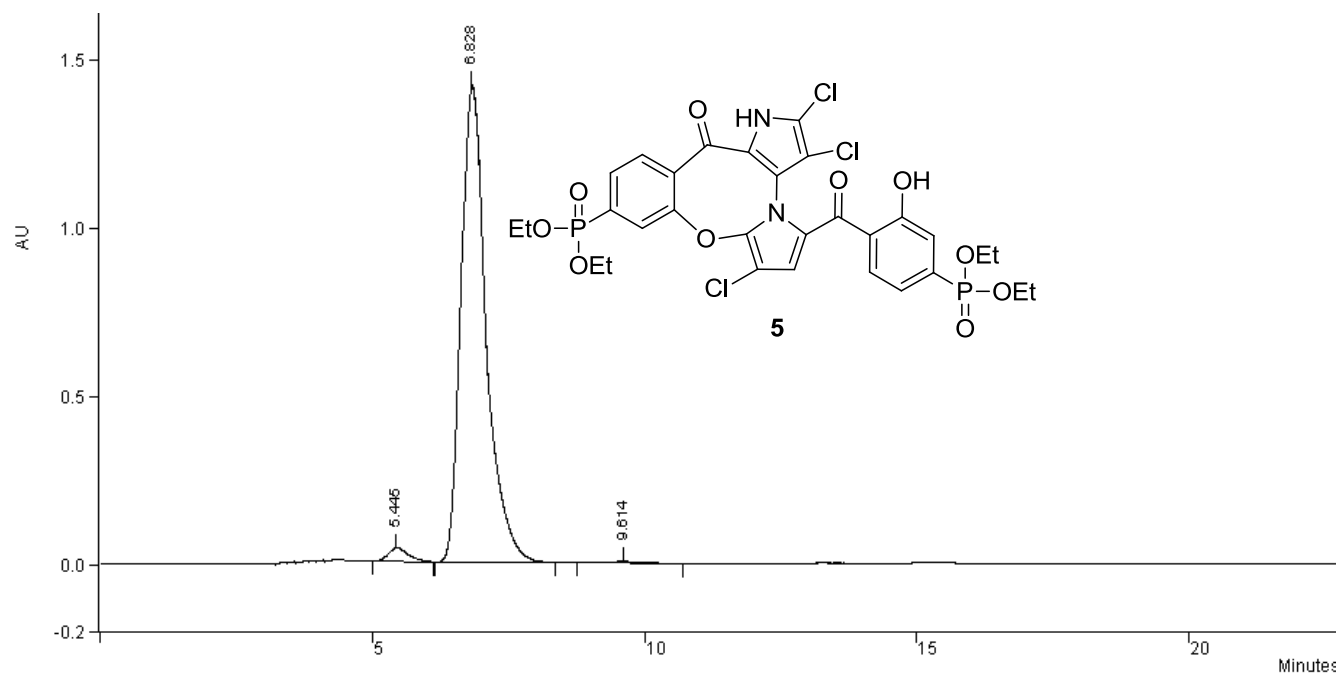


Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)
1		0.4585	3.718	0.000	5404698	BB	54.2
2		99.3966	6.735	0.000	1171587968	BB	51.8
3		0.1449	10.498	0.000	1707659	BB	0.0
Totals:		100.0000		0.000	1178700325		

Figure S26. Purity of 7a by HPLC.

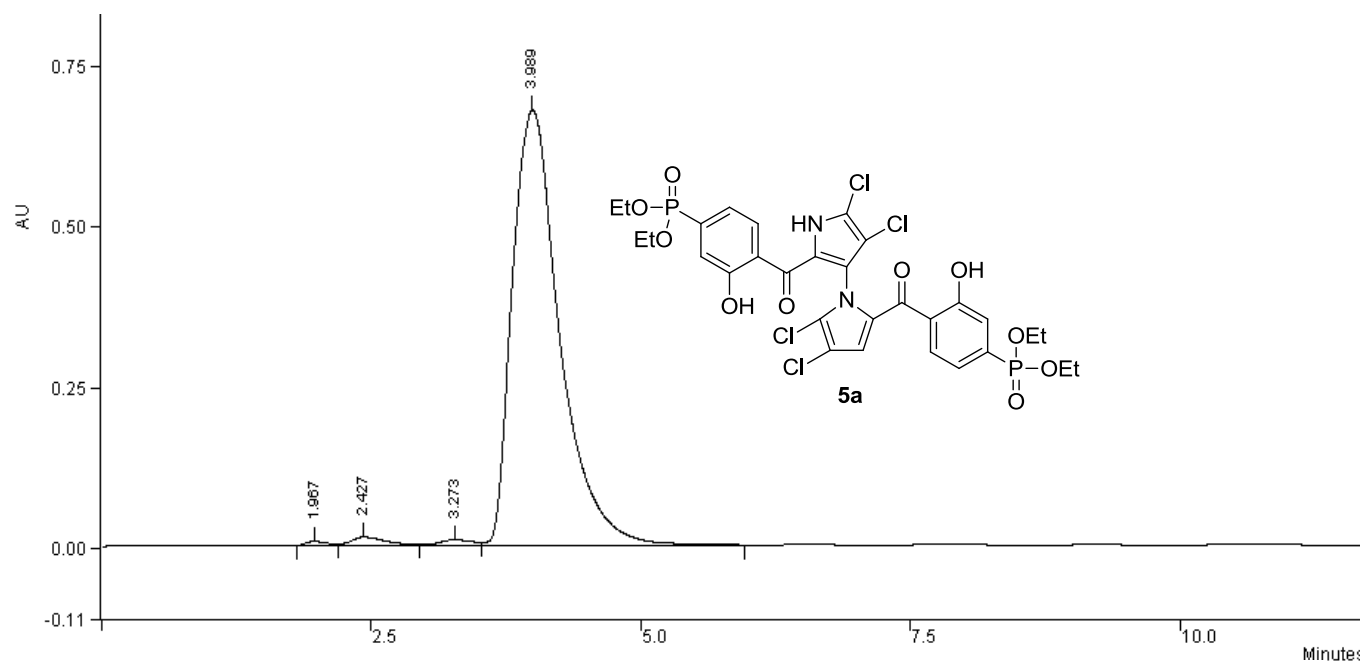


Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)
1		98.6235	5.078	0.000	47575300	BB	63.9
2		1.3765	8.508	0.000	664007	BB	55.7
Totals:		100.0000		0.000	48239307		

Figure S27. Purity of **5** by HPLC.

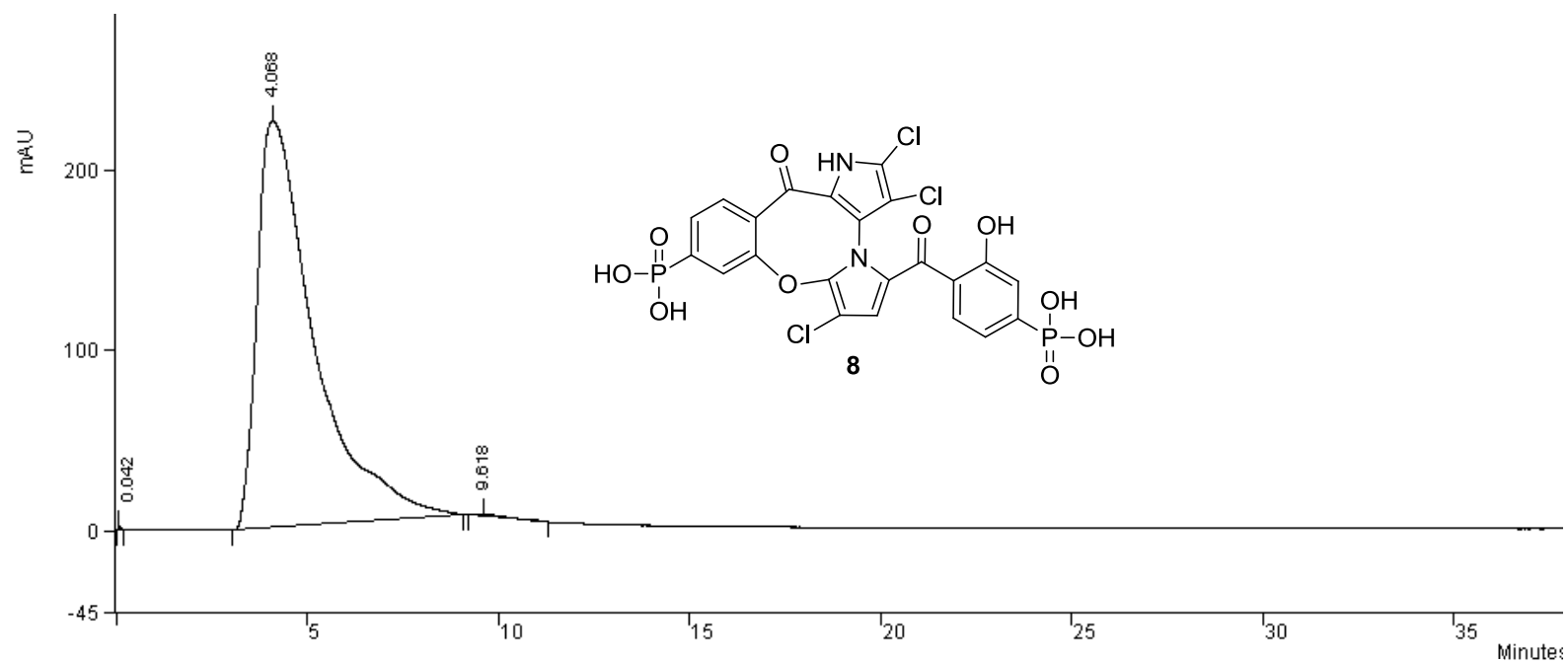
Peak No.	Peak Name	Result ()	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)
1		2.1044	5.445	0.000	9897132	BB	21.9
2		97.2323	6.828	0.000	457290304	BB	28.2
3		0.6633	9.614	0.000	3119744	BB	52.9
Totals:		100.0000		0.000	470307180		

Figure S28. Purity of 5a by HPLC.



Peak No.	Peak Name	Result ()	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)
1		0.5003	1.967	0.000	1070013	BV	17.8
2		1.5116	2.427	0.000	3232586	VV	21.7
3		0.9578	3.273	0.000	2048307	VV	19.8
4		97.0302	3.989	0.000	207502160	VB	27.8
Totals:		99.9999		0.000	213853066		

Figure S29. Purity of 8 by HPLC.



Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)
1		0.0206	0.042	0.000	48423	BB	3.4
2		99.7386	4.068	0.000	234118784	BB	86.0
3		0.2408	9.618	0.000	565247	BB	20.1
Totals:		100.0000		0.000	234732454		

Figure S30. Purity of 8a by HPLC.

