

## Supporting information

### **Silver(I) and copper(I) complexes of dicarboxylic acid derivatives: Synthesis, characterization and thermal studies.**

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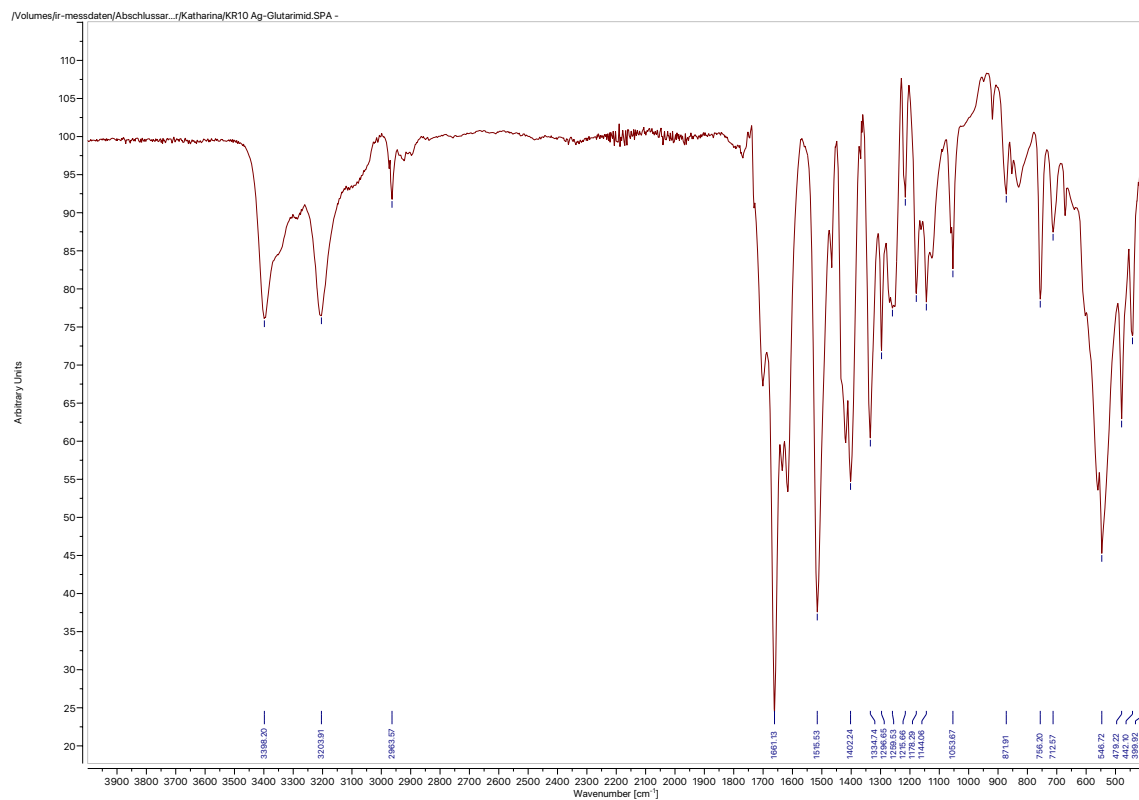
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**Table S1.** Crystallographic and refinement details.

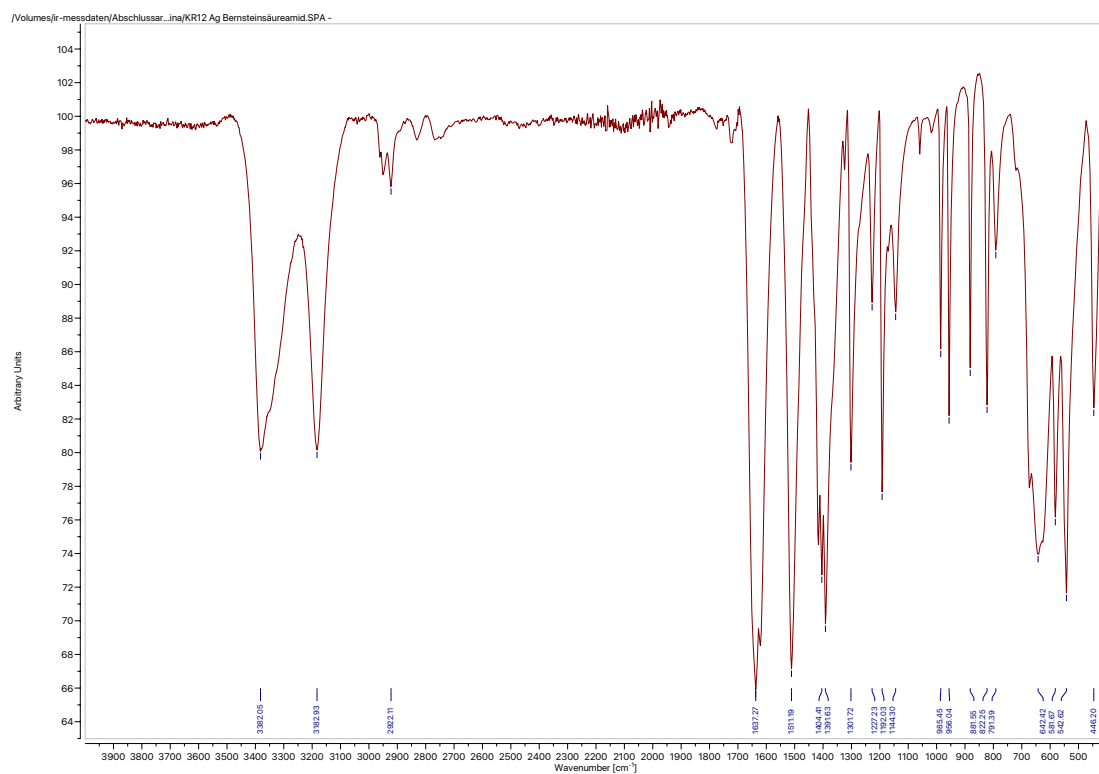
	<b>1a</b>	<b>2</b>	<b>2a</b>	<b>4</b>	<b>5a</b>	<b>6a</b>	<b>7a</b>	<b>8a</b>
CCDC code	2266684	2266682	2266685	2266683	2266686	2266689	2266688	2266687
Empirical formula	C <sub>41</sub> H <sub>38</sub> NO <sub>3</sub> P <sub>2</sub> Ag	C <sub>4</sub> H <sub>6</sub> NO <sub>3</sub> Ag	C <sub>80</sub> H <sub>71</sub> N <sub>2</sub> O <sub>6</sub> P <sub>4</sub> Ag <sub>2</sub>	C <sub>6</sub> H <sub>9</sub> O <sub>4</sub> Ag	C <sub>41</sub> H <sub>37</sub> O <sub>3</sub> P <sub>2</sub> Ag	C <sub>41</sub> H <sub>39</sub> O <sub>2</sub> P <sub>2</sub> Ag	C <sub>41</sub> H <sub>39</sub> O <sub>2</sub> P <sub>2</sub> Cu	C <sub>41</sub> H <sub>37</sub> O <sub>3</sub> P <sub>2</sub> Cu
Formula weight	762.53	223.97	748.51	253.00	747.51	733.53	689.20	703.18
Crystal system	Triclinic	Monoclinic	Triclinic	Triclinic	Triclinic	Triclinic	Triclinic	Triclinic
Space group	P-1	I2/a	P-1	P-1	P-1	P-1	P-1	P-1
Unit cell dimensions	a = 10.0106(2) Å b = 12.9687(4) Å c = 14.2233(5) Å α = 83.910(3)° β = 81.050(2)° γ = 74.464(2)°	a = 8.2908(3) Å b = 5.5316(2) Å c = 25.8750(7) Å α = 90.0° β = 98.688(3)° γ = 90.0°	a = 12.9269(4) Å b = 13.0551(6) Å c = 13.1031(6) Å α = 82.882(4)° β = 63.085(4)° γ = 76.981(3)°	a = 4.9613(3) Å b = 5.5191(3) Å c = 15.1983(8) Å α = 80.741(4)° β = 89.972(5)° γ = 69.536(5)°	a = 12.7395(5) Å b = 12.9755(5) Å c = 13.0231(5) Å α = 65.870(4)° β = 60.907(6)° γ = 72.017(4)°	a = 12.5986(3) Å b = 12.9564(5) Å c = 13.0912(6) Å α = 65.559(4)° β = 61.698(3)° γ = 72.399(3)°	a = 12.5138(5) Å b = 12.8214(6) Å c = 12.9599 (5) Å α = 118.343(4)° β = 106.582(4)° γ = 106.582(4)	a = 12.2887(4) Å b = 12.8724(4) Å c = 13.3577(5) Å α = 88.579(3)° β = 67.420(4)° γ = 62.412(3)°
Volume Å <sup>3</sup>	1753.37(9)	1173.05(7)	1920.48(15)	384.12(4)	1700.36(14)	1696.48(12)	1669.22(14)	1698.69(12)
Z	2	8	1	2	2	2	2	2
ρ <sub>calc</sub> g/cm <sup>3</sup>	1.444	2.536	1.294	2.187	1.460	1.436	1.371	1.375
μ mm <sup>-1</sup>	0.706	3.360	0.644	2.585	0.726	0.724	0.786	0.776
F(000)	784.0	864.0	767.0	248.0	768.0	756.0	720.0	732.0
Crystal size	0.04 × 0.08 × 0.12	0.06 × 0.07 × 0.08	0.05 × 0.06 × 0.08	0.02 × 0.02 × 0.09	0.07 × 0.08 × 0.10	0.06 × 0.09 × 0.11	0.05 × 0.08 × 0.09	0.08 × 0.11 × 0.15
2θ range for data collection	4.66 to 58.74°	6.372 to 58.834°	5.258 to 59.064°	5.442 to 58.23°	4.708 to 59.028°	4.742 to 59.074°	4.816 to 59.196°	5.394 to 58.94°
Reflections collected	17951	5512	18040	3157	16249	15388	15962	16361
Independent reflections	8122 [R <sub>int</sub> = 0.0254]	1416 [R <sub>int</sub> = 0.0166]	8837 [R <sub>int</sub> = 0.0258]	1764 R <sub>int</sub> = 0.0319]	7873 [R <sub>int</sub> = 0.0268]	7772 [R <sub>int</sub> = 0.0255]	7719 [R <sub>int</sub> = 0.0280]	7864 [R <sub>int</sub> = 0.0255]
Data/restraints/parameters	8122/0/433	1416/0/83	8837/54/518	1764/0/95	7873/0/425	7772/0/416	7719/0/416	7864/0/425
Goodness-of-fit on F <sup>2</sup>	1.036	1.092	1.039	1.076	1.045	1.047	1.033	1.033
Final R indices [ <i>I</i> > 2σ( <i>I</i> )]	R <sub>1</sub> = 0.0297 wR <sub>2</sub> = 0.0627	R <sub>1</sub> = 0.0135 wR <sub>2</sub> = 0.0302	R <sub>1</sub> = 0.0304 wR <sub>2</sub> = 0.0652	R <sub>1</sub> = 0.0454 wR <sub>2</sub> = 0.1138	R <sub>1</sub> = 0.0285 wR <sub>2</sub> = 0.0592	R <sub>1</sub> = 0.0285 wR <sub>2</sub> = 0.0584	R <sub>1</sub> = 0.0328 wR <sub>2</sub> = 0.0745	R <sub>1</sub> = 0.0337 wR <sub>2</sub> = 0.0806
Largest difference peak/hole e/Å <sup>3</sup>	0.74/-0.35	0.47/-0.27	0.42/-0.65	1.81/-1.88	0.43/-0.37	0.54/-0.41	0.45/-0.37	0.68/-0.29

## NMR- and IR-spectra of the polymeric silver(I) carboxylates.

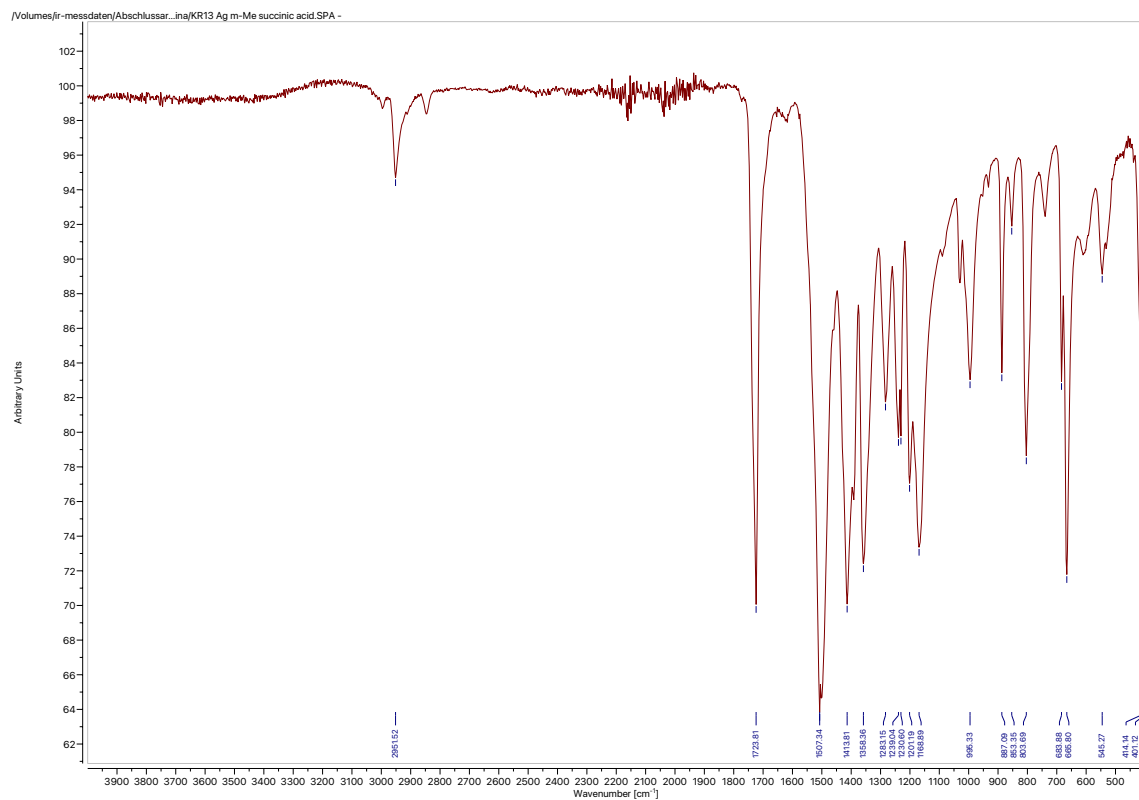
### ATR-IR-spectrum of (1)



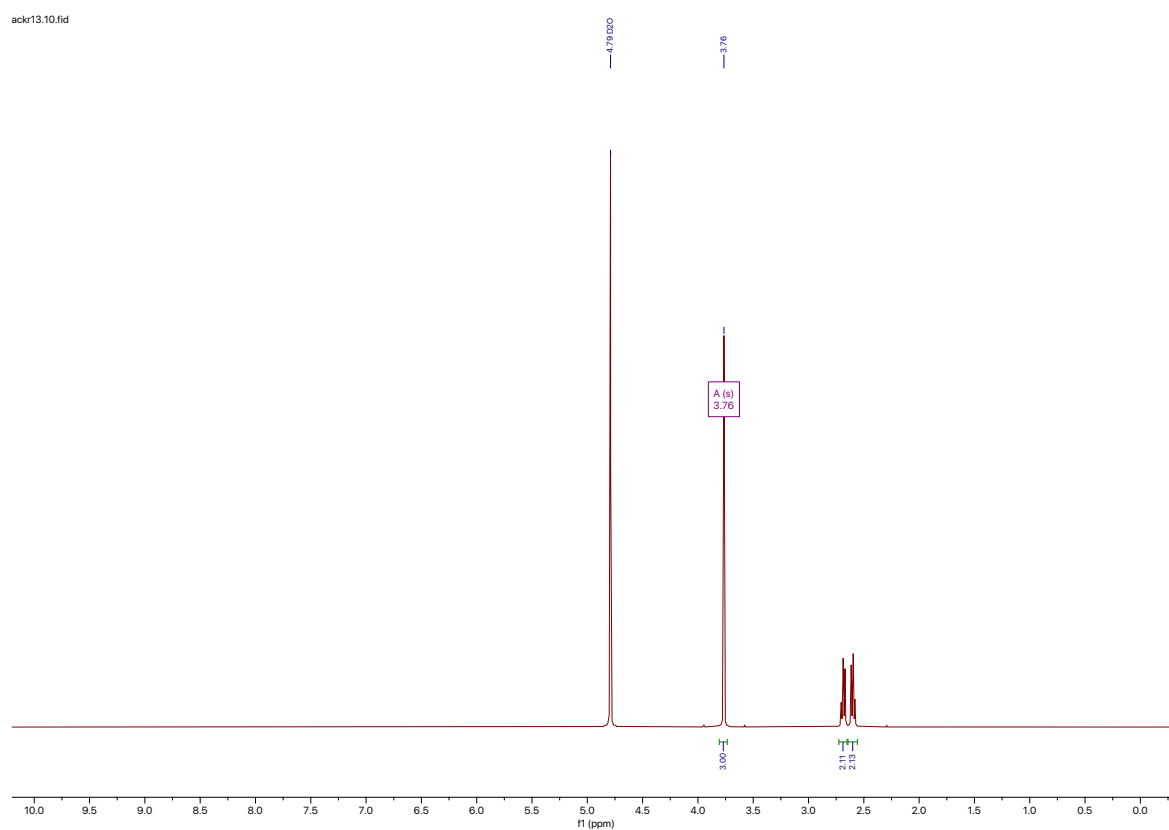
### ATR-IR-spectrum of (2)



## ATR-IR-spectrum of (3)



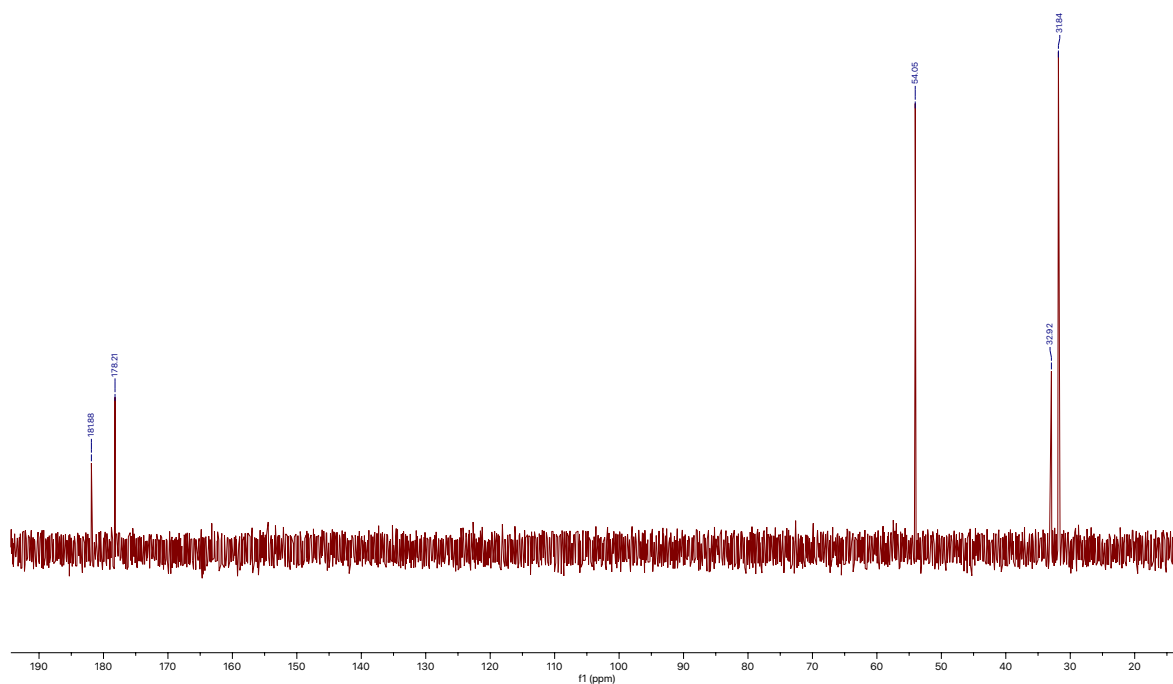
## <sup>1</sup>H-NMR spectrum of (3) in D<sub>2</sub>O



## $^{13}\text{C}$ -NMR spectrum of (3) in $\text{D}_2\text{O}$

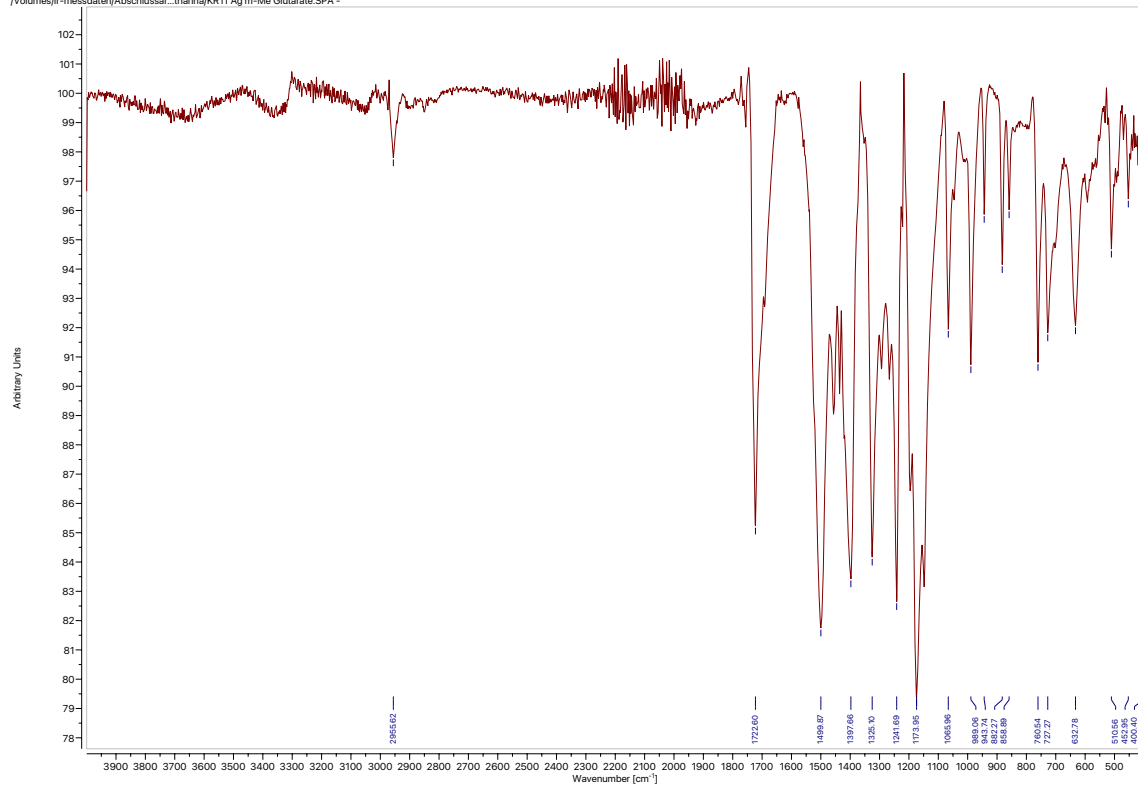
ackr13.11.fid

\*\*\*\* Das Spektrum konnte nicht auf TMS referenziert werden \*\*\*\*

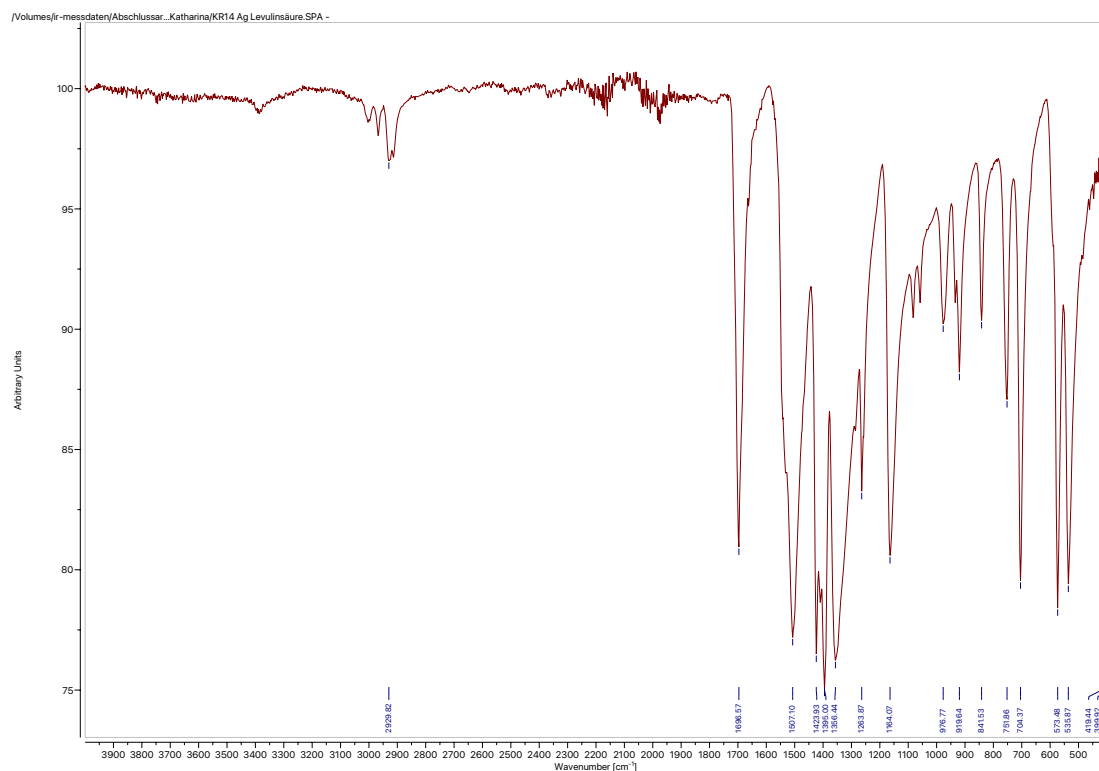


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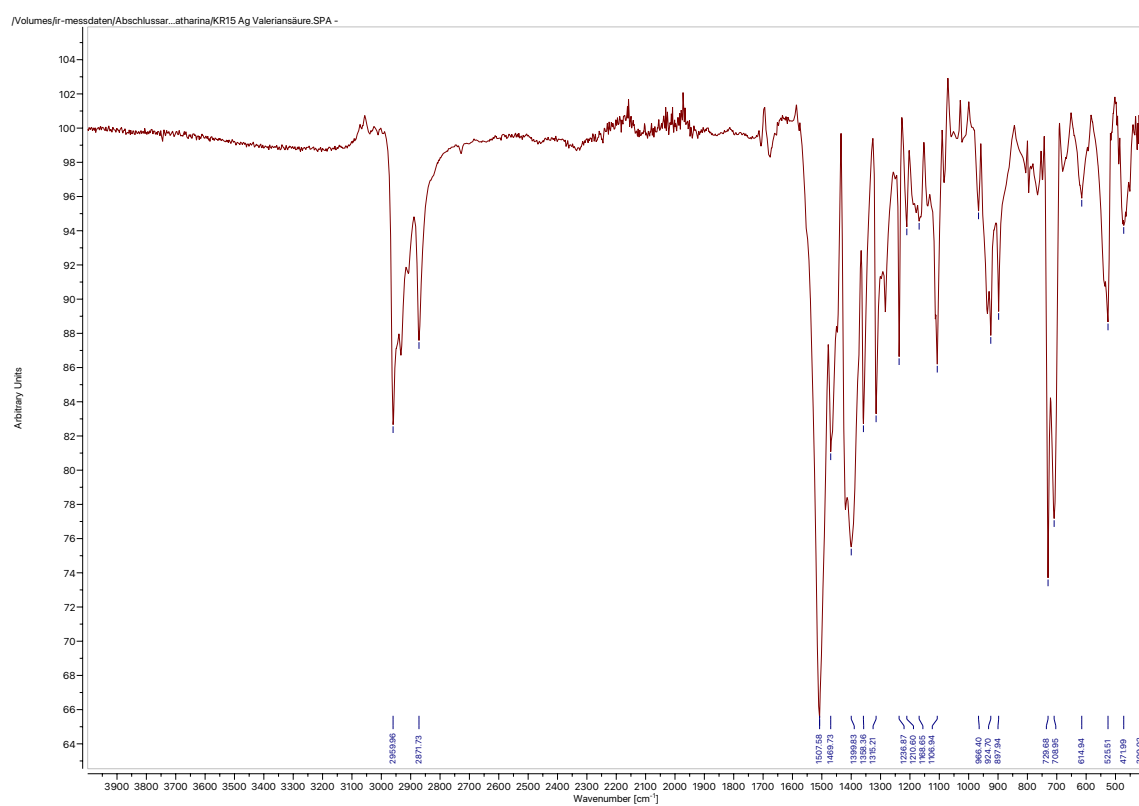
/Volumes/ir-messdaten/Abschlussar...tharina/KR11 Ag m-Me Glutarate SPA -



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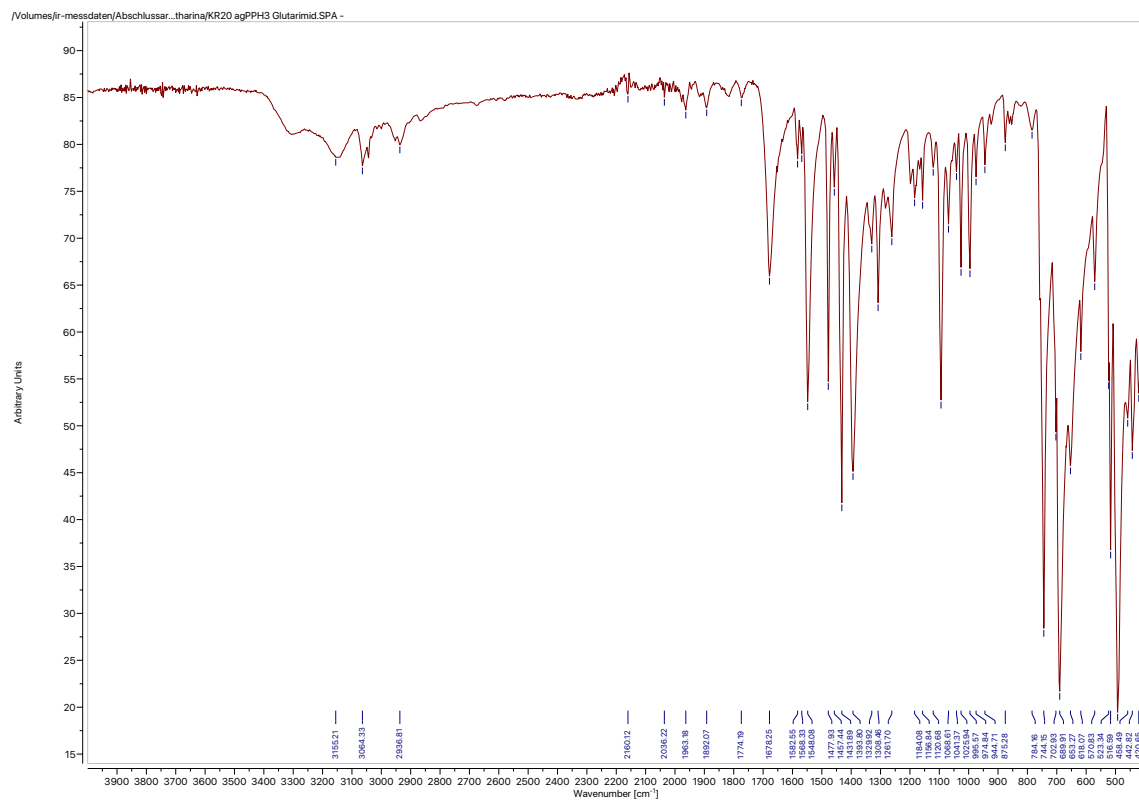


## ATR-IR-spectrum of (6)

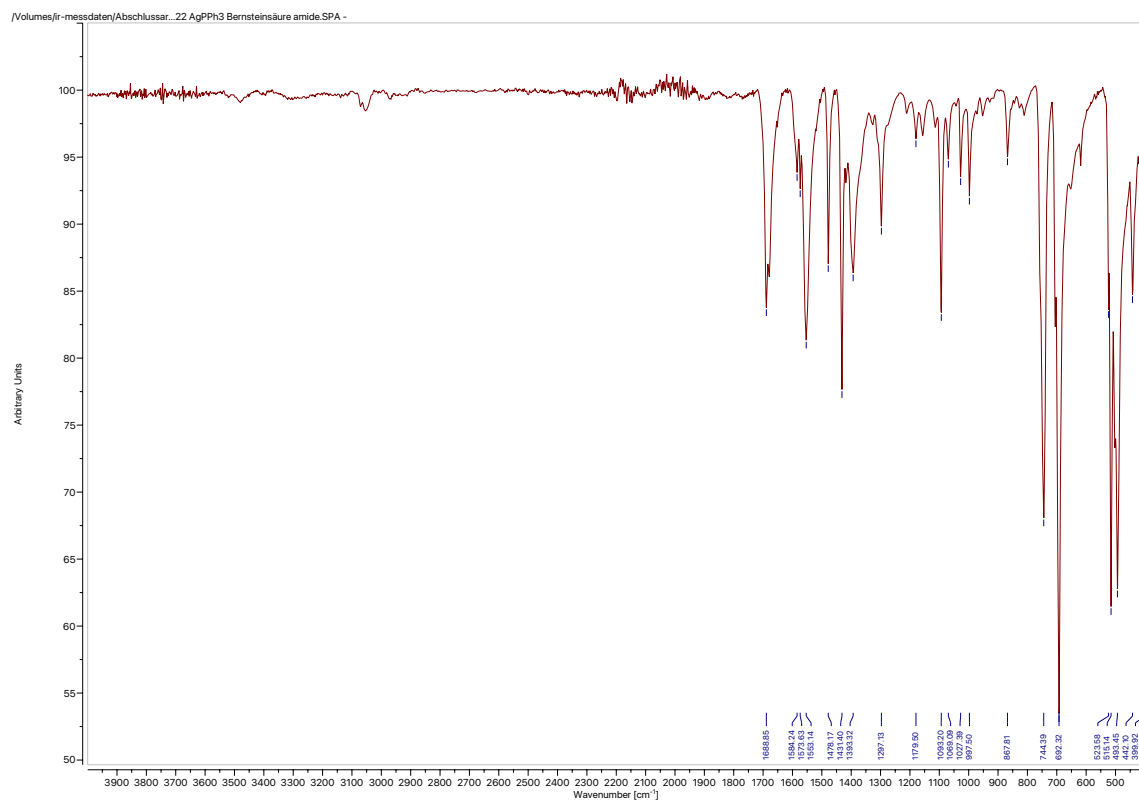


## NMR- and IR-spectra of the bis(triphenylphosphine) silver(I) complexes.

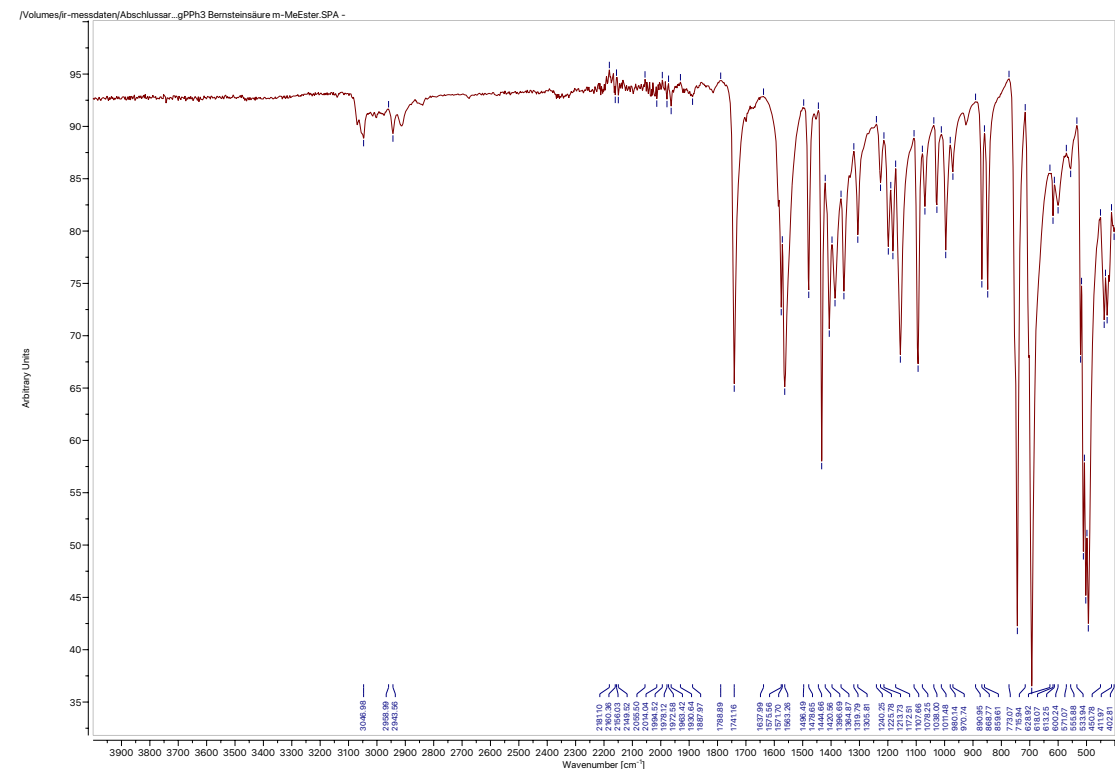
### ATR-IR-spectrum of (1a)



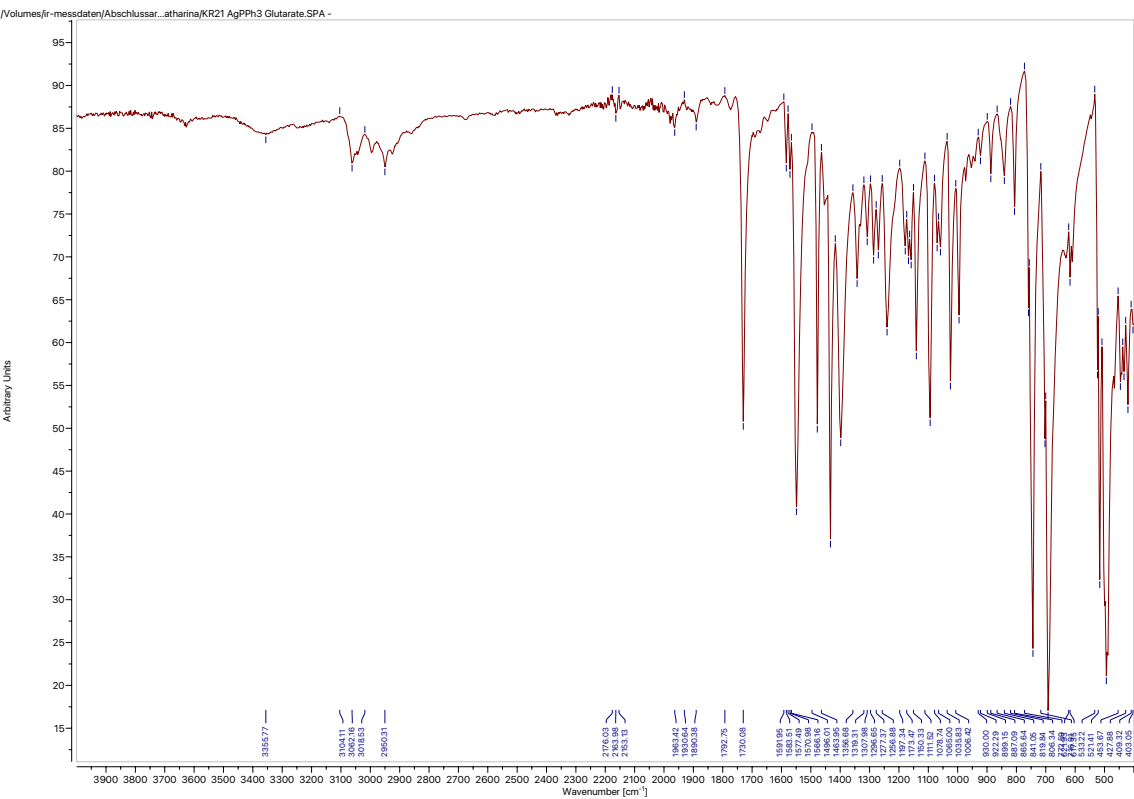
### ATR-IR-spectrum of (2a)



ATR-IR-spectrum of (3a)

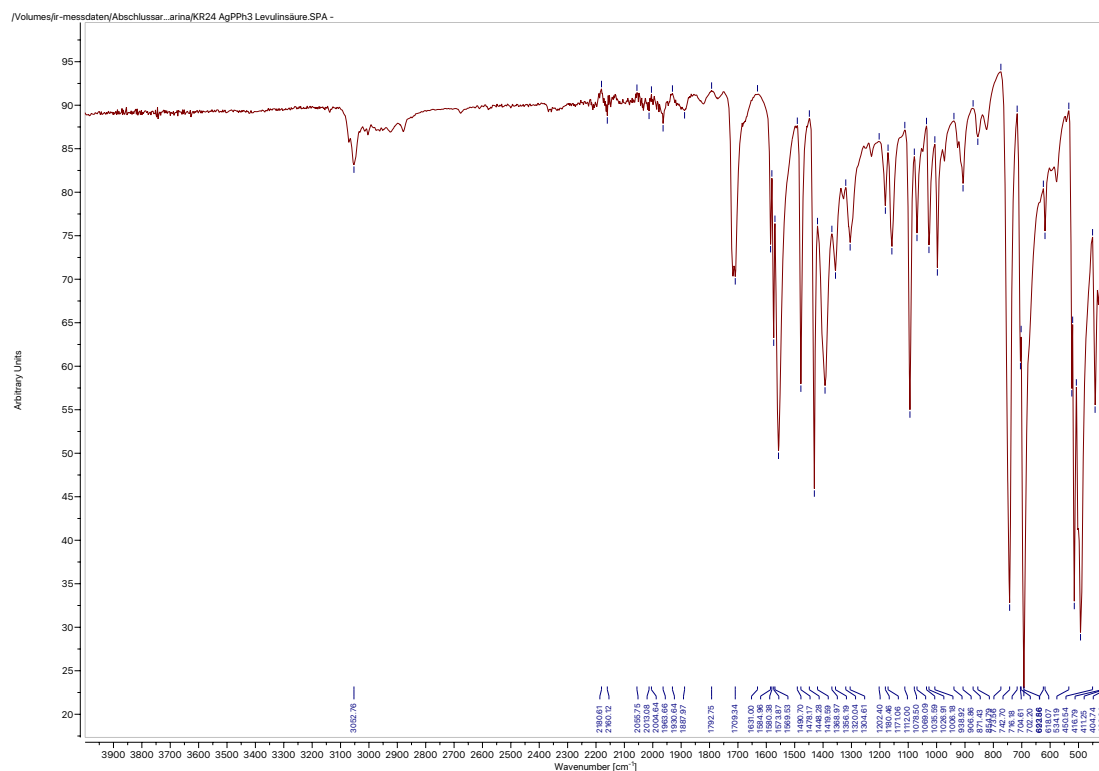


ATR-IR-spectrum of (4a)

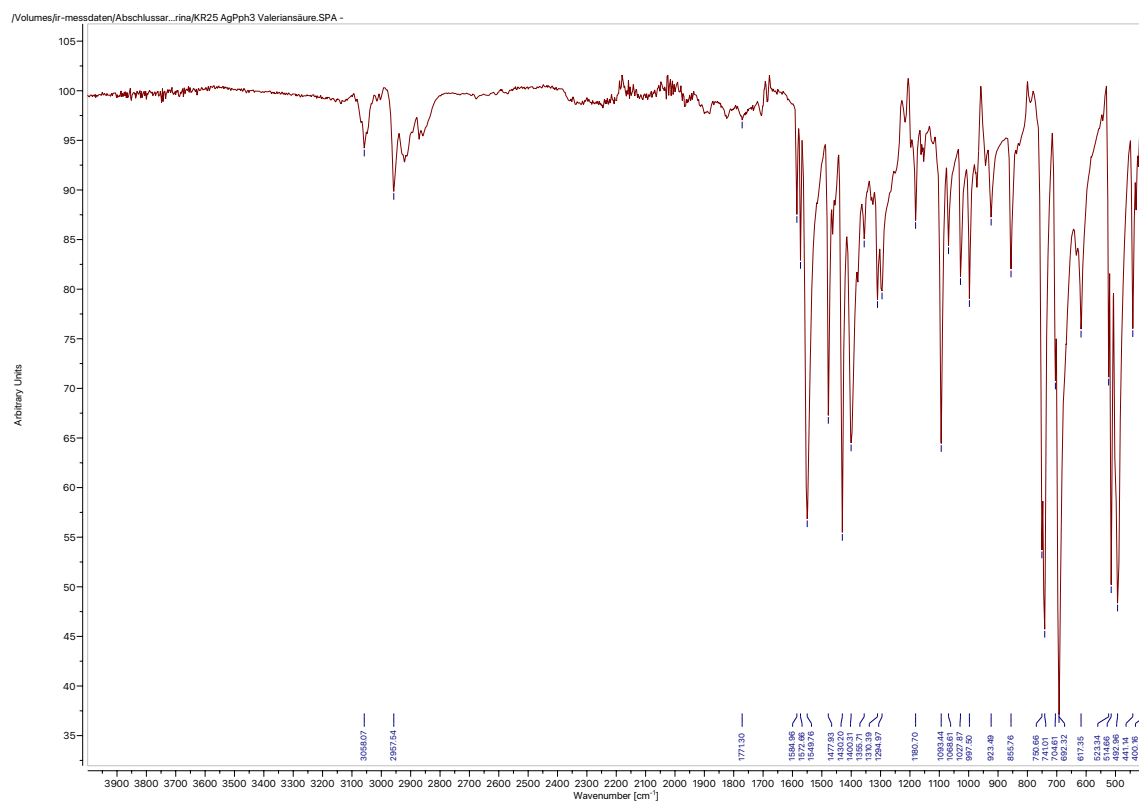




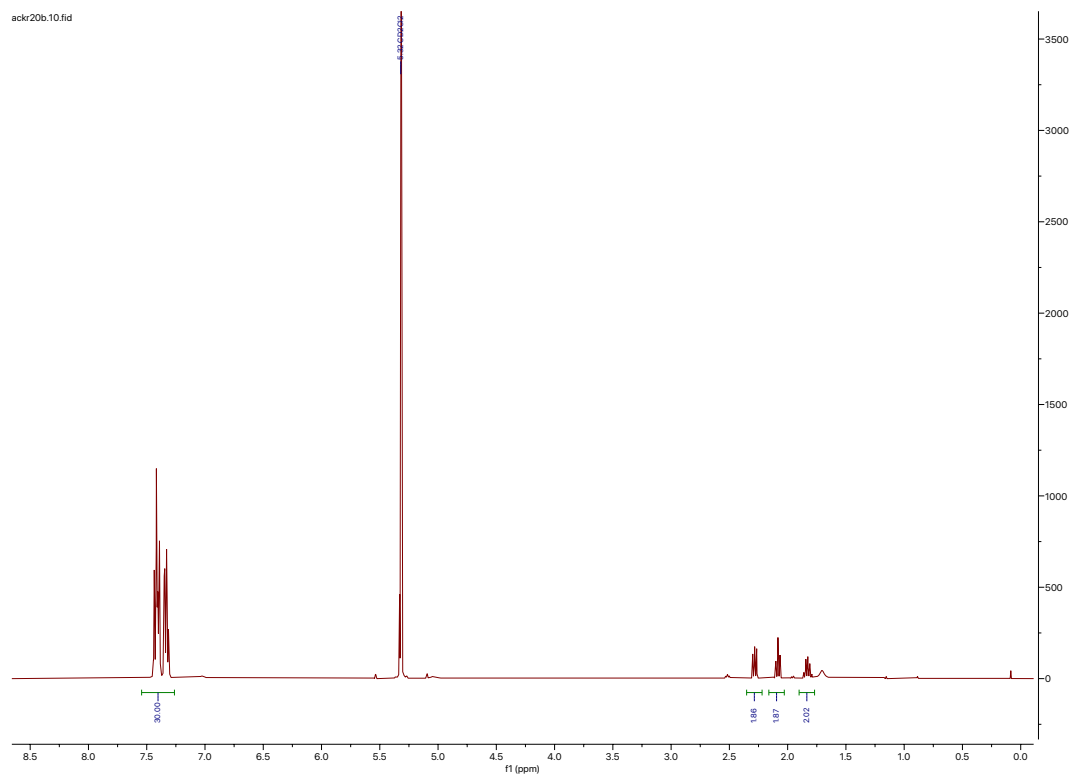
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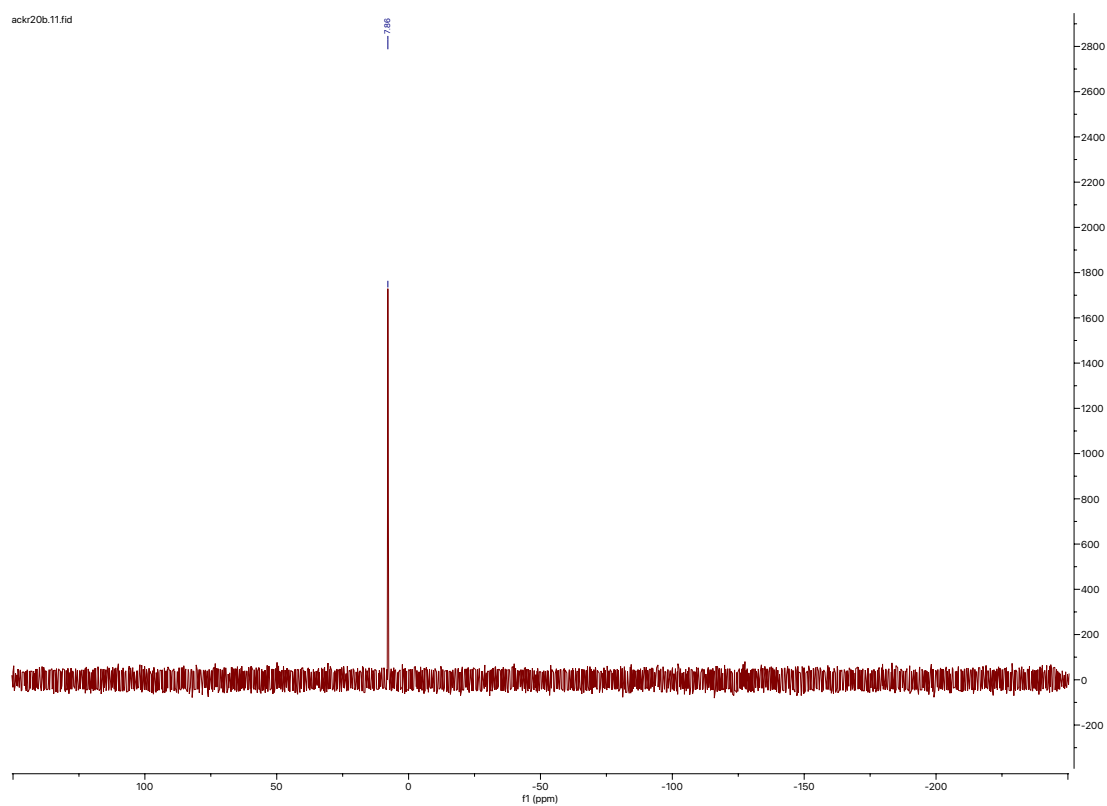
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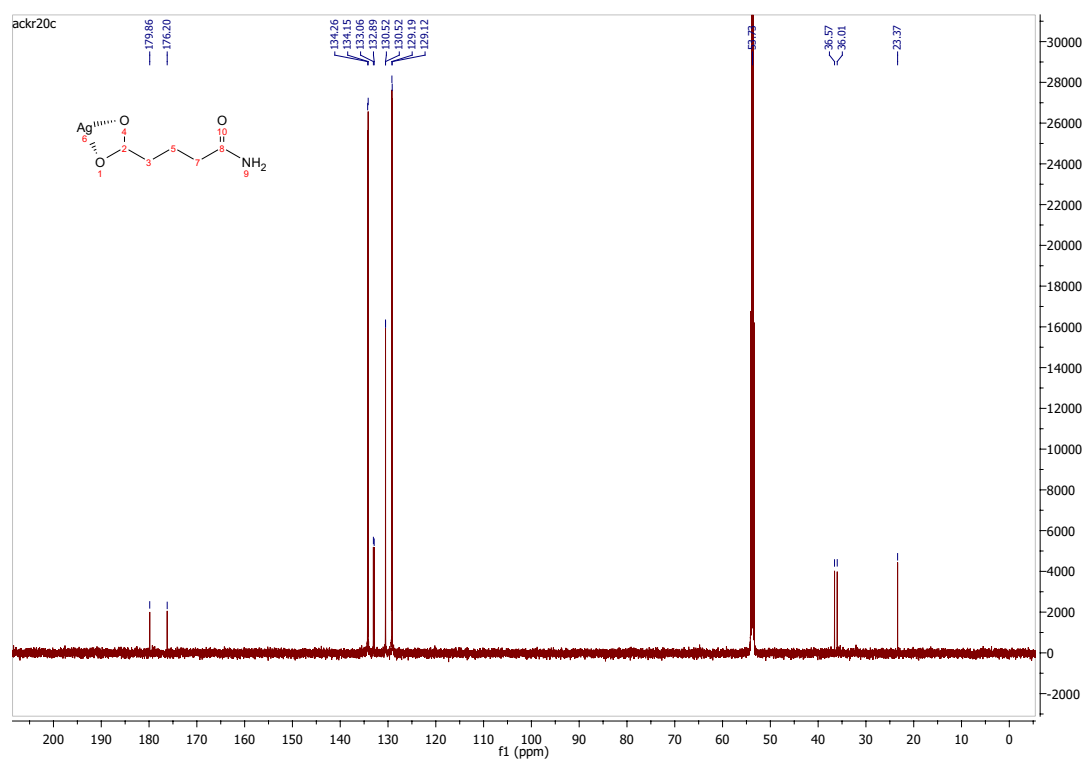
$^1\text{H}$ -NMR spectrum of (**1a**) in  $\text{CD}_2\text{Cl}_2$



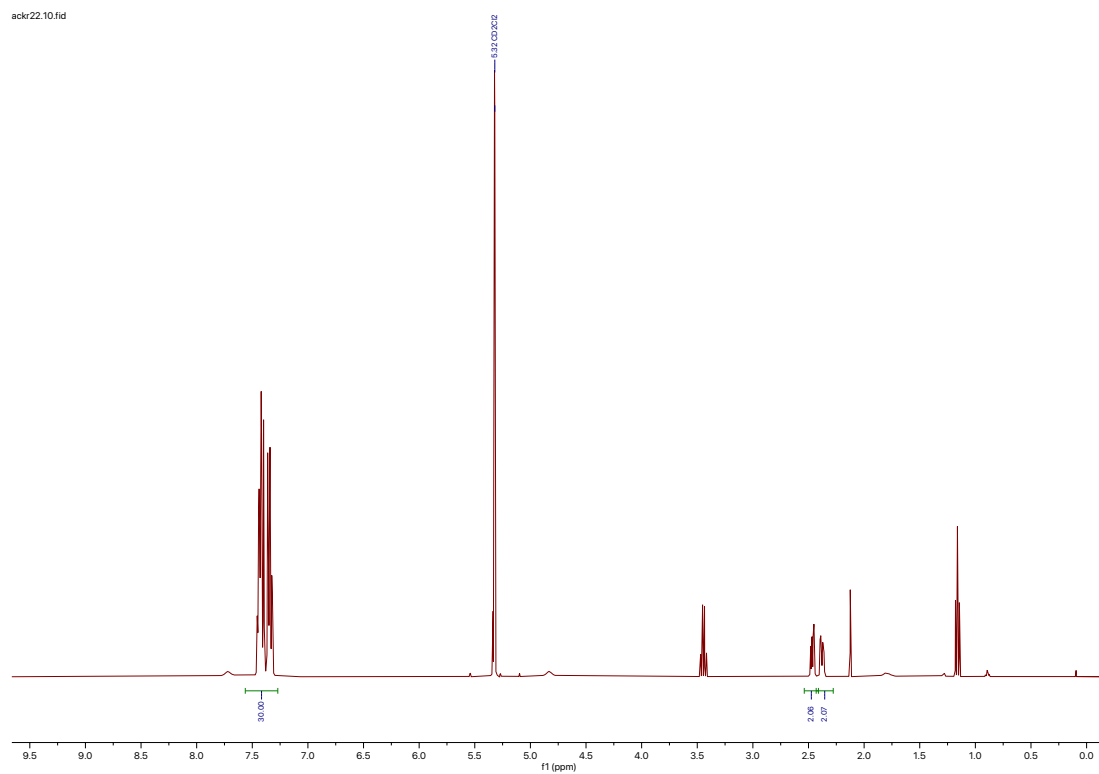
$^{31}\text{P}$ -NMR spectrum of (**1a**) in  $\text{CD}_2\text{Cl}_2$



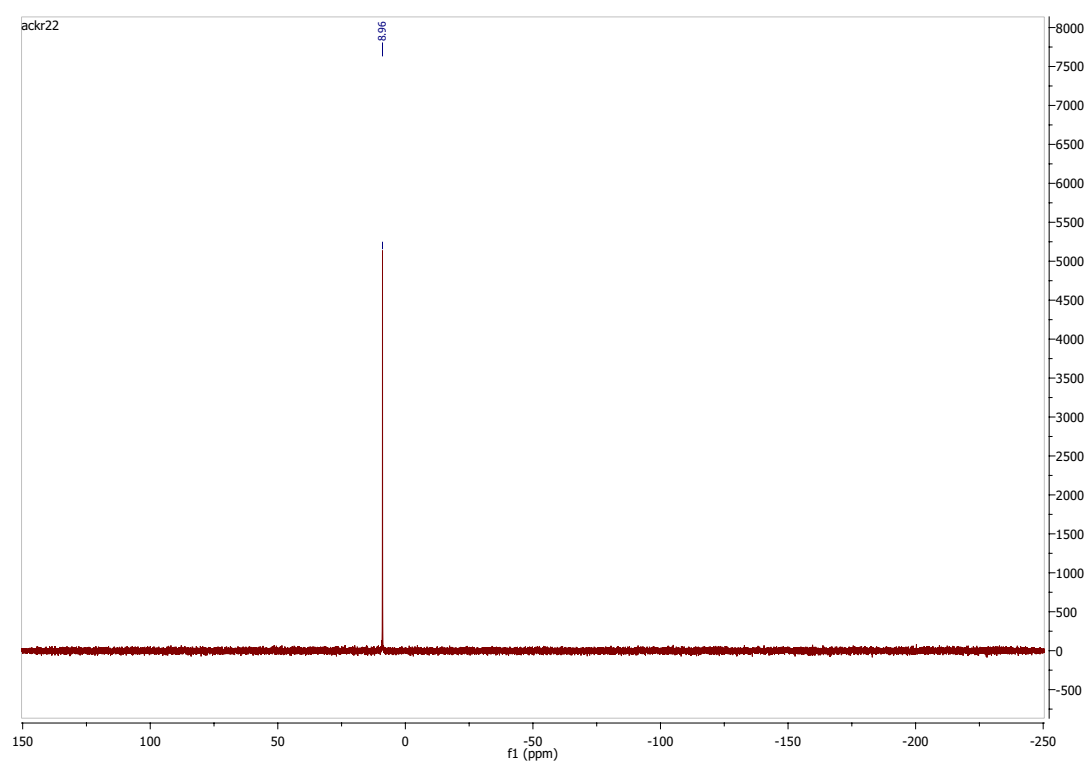
$^{13}\text{C}$ -NMR spectrum of (**1a**) in  $\text{CD}_2\text{Cl}_2$



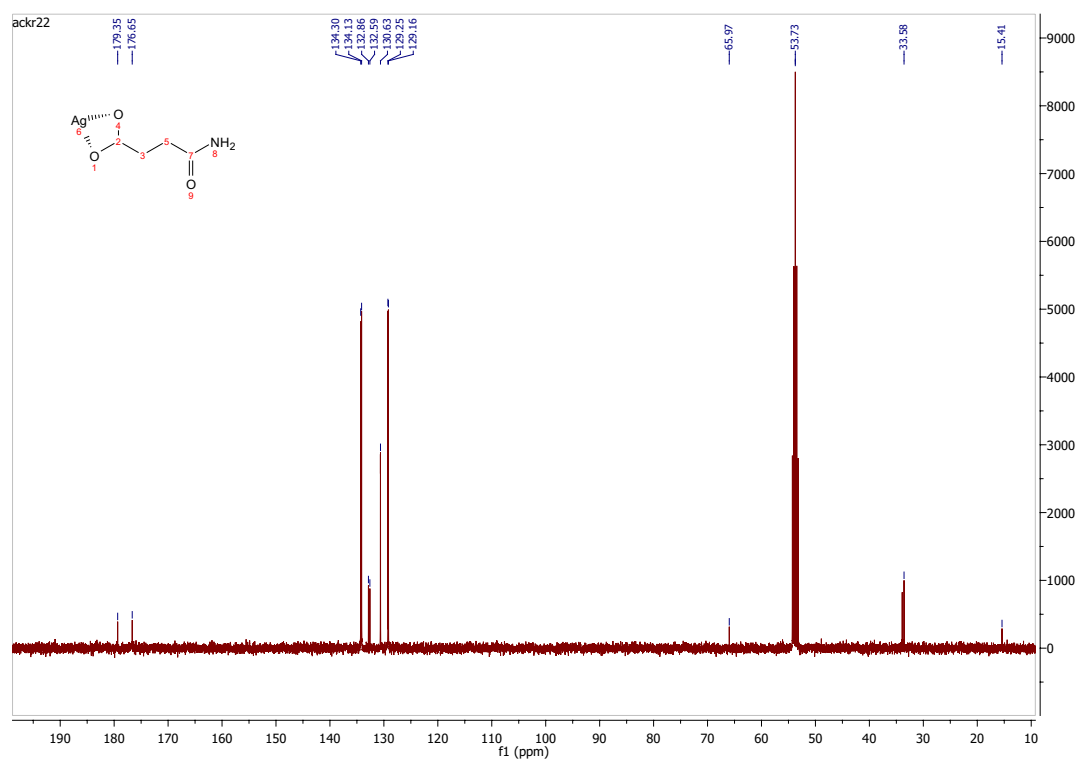
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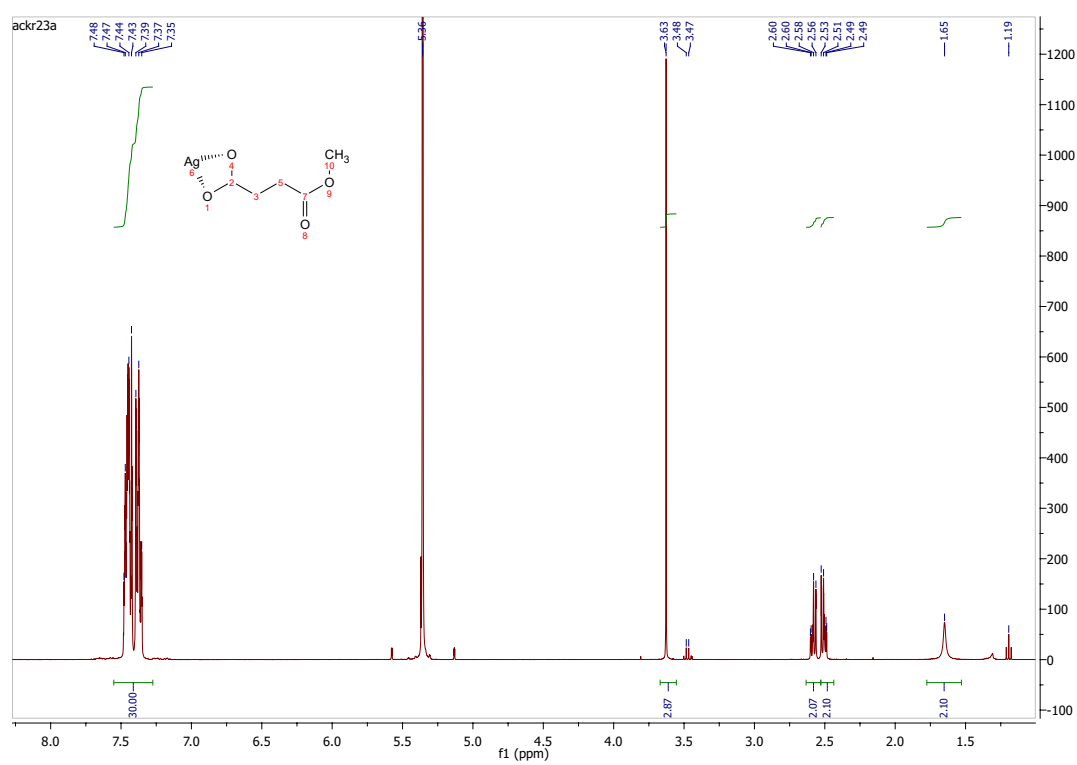
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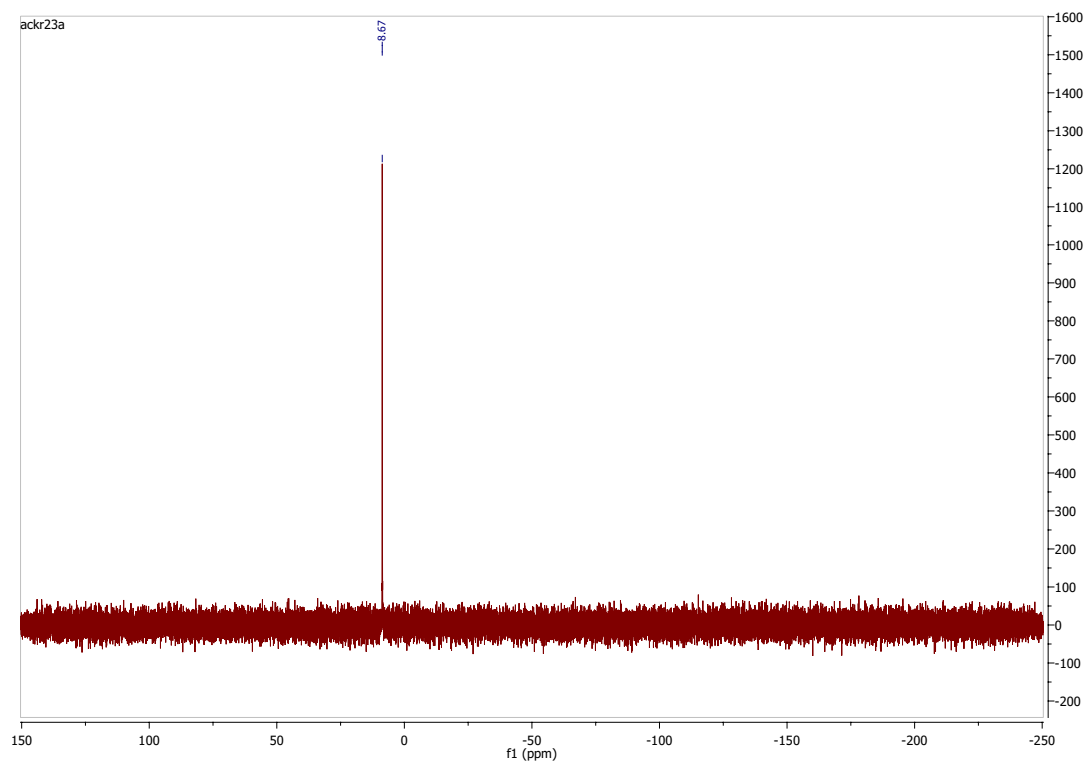
$^{13}\text{C}$ -NMR spectrum of (**2a**) in  $\text{CD}_2\text{Cl}_2$



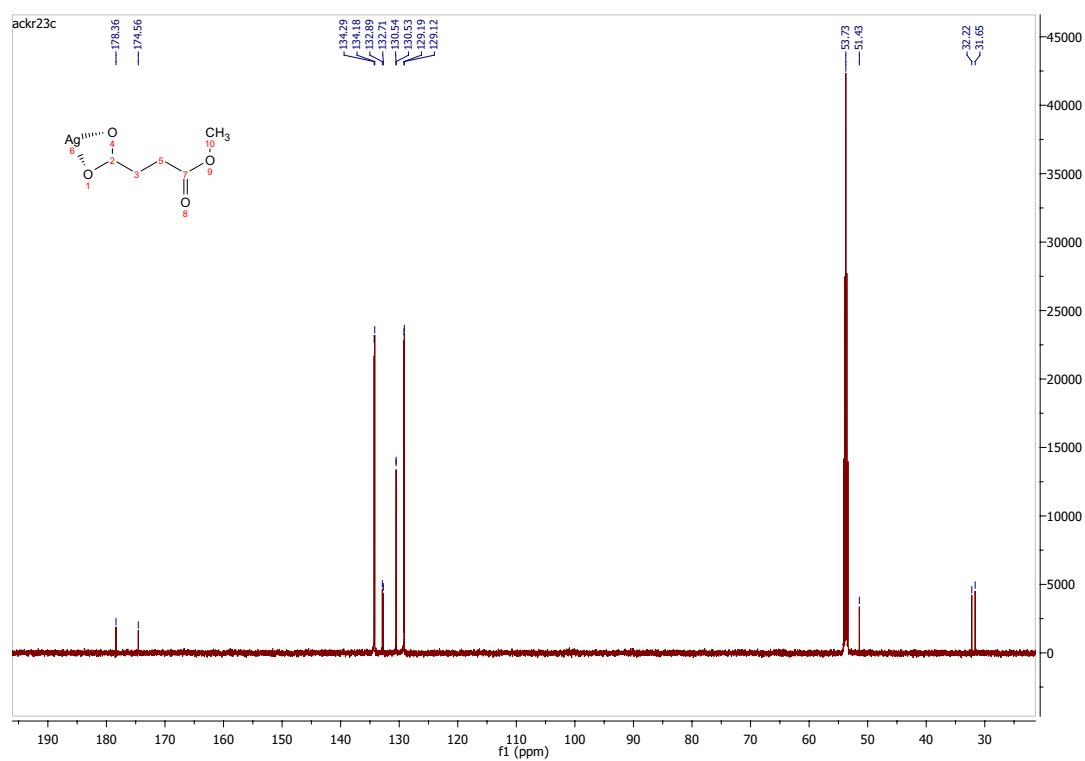
$^1\text{H}$ -NMR spectrum of (**3a**) in  $\text{CD}_2\text{Cl}_2$



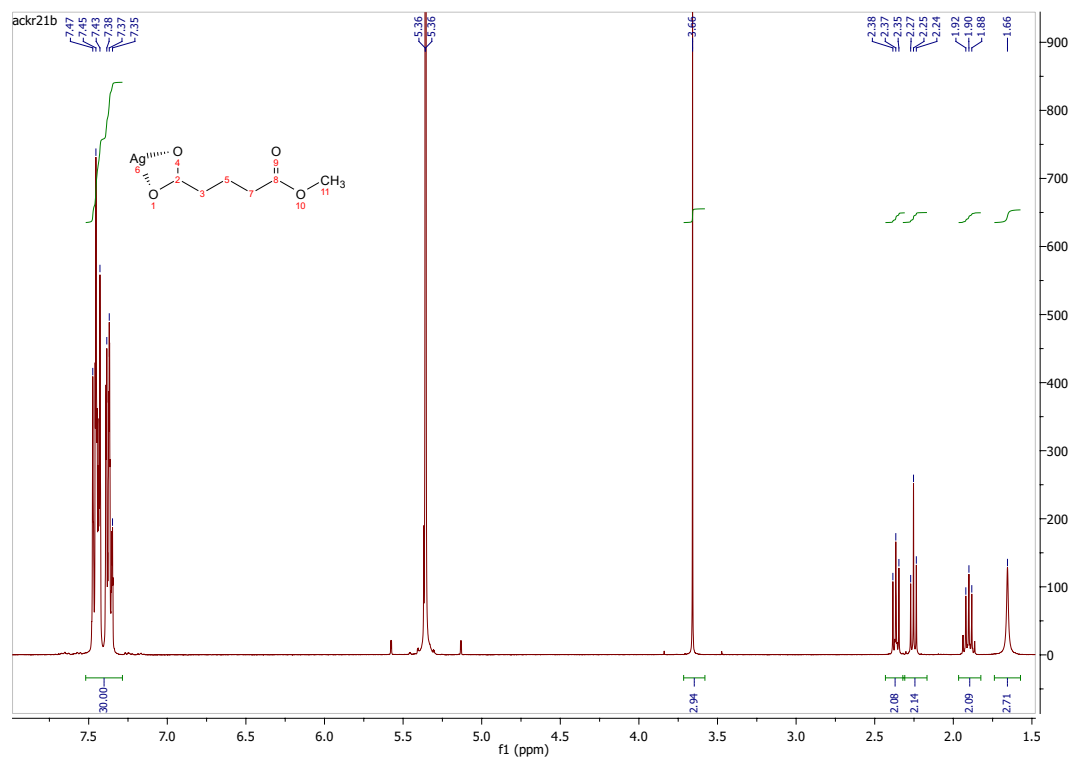
$^{31}\text{P}$ -NMR spectrum of (**3a**) in  $\text{CD}_2\text{Cl}_2$



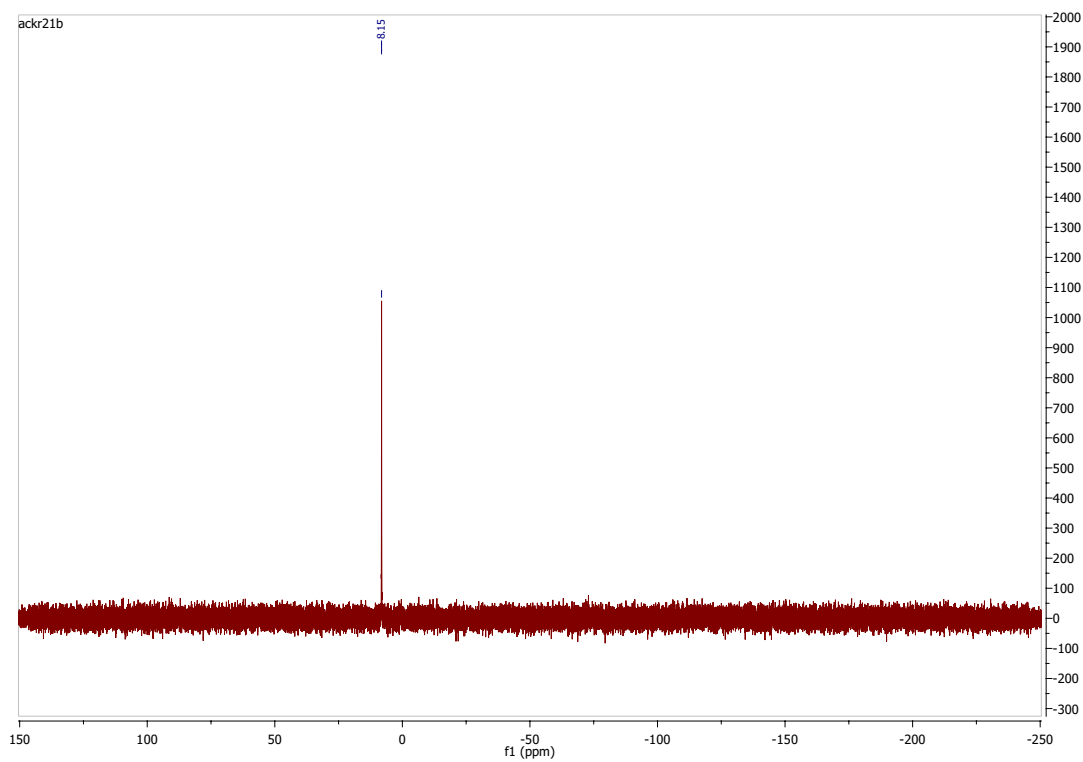
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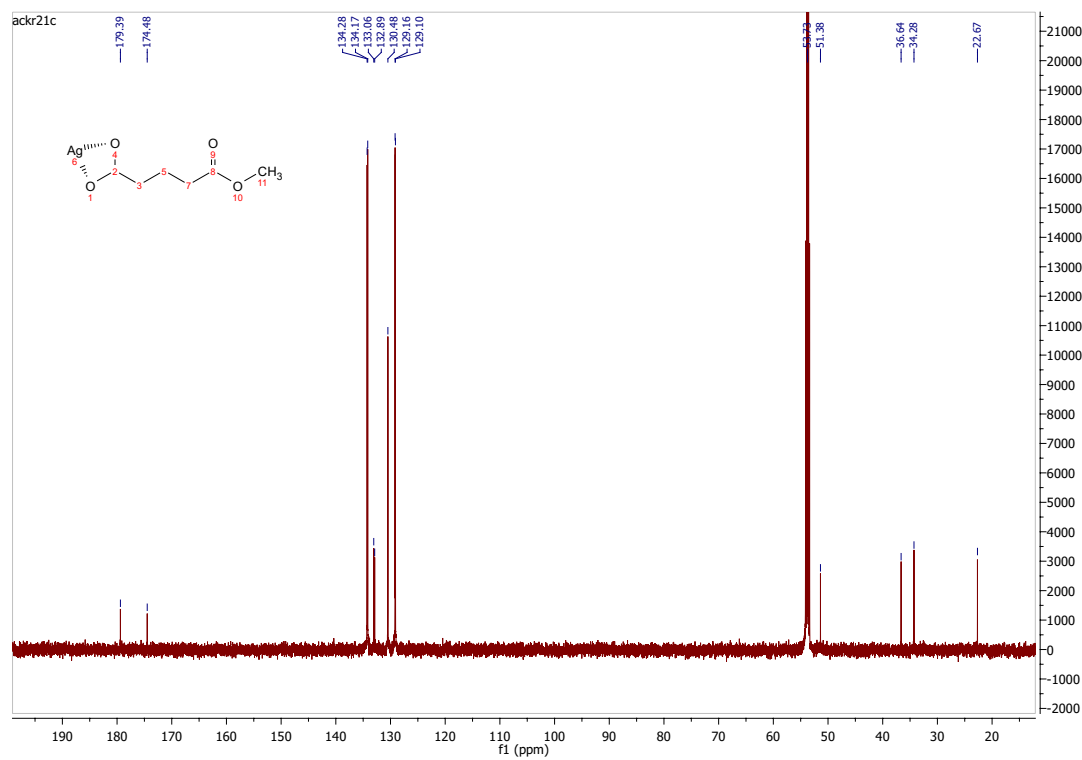
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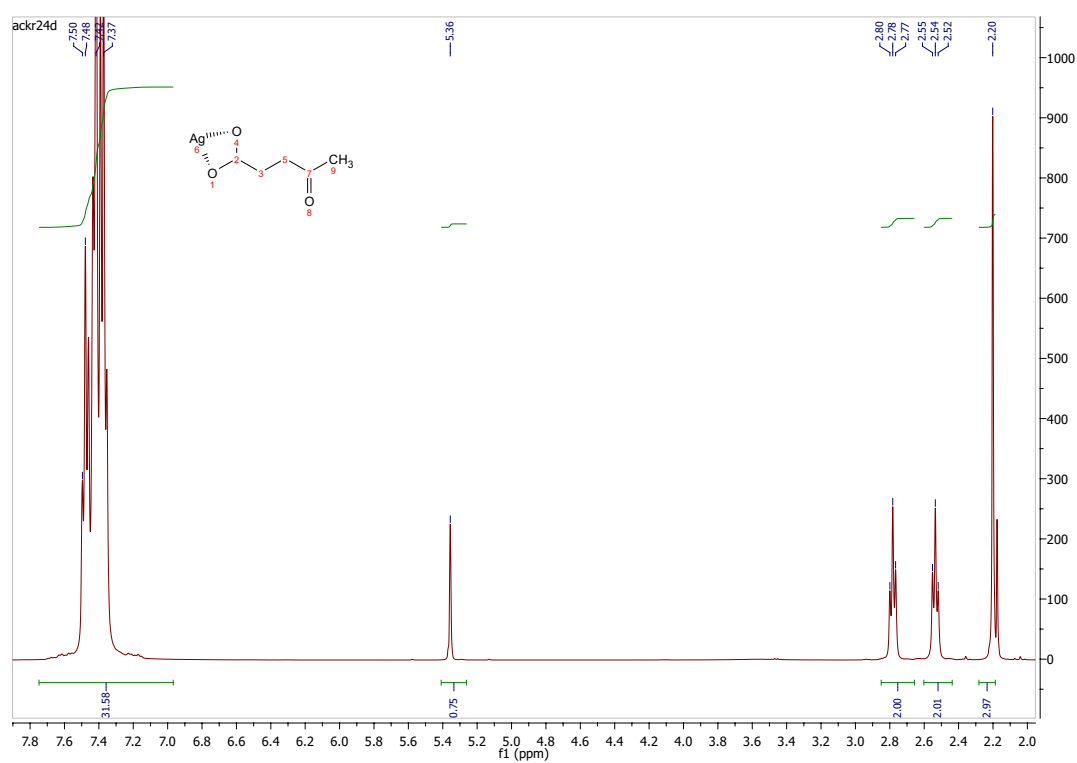
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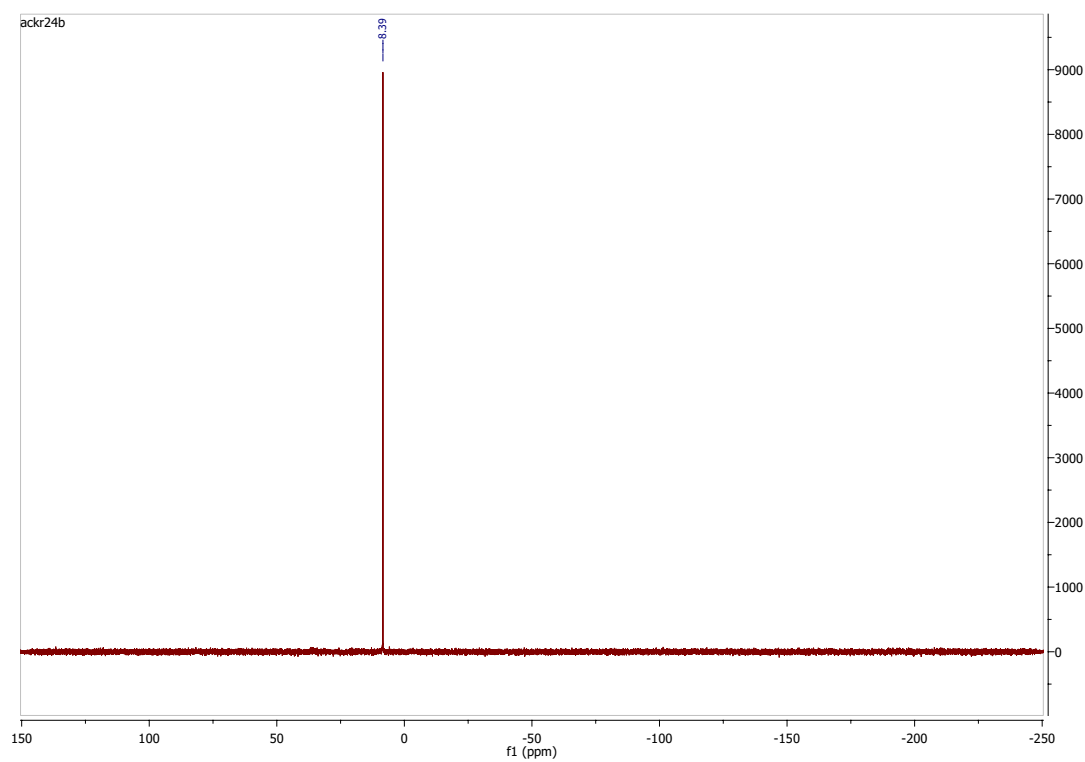
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$^1\text{H}$ -NMR spectrum of (**5a**) in  $\text{CD}_2\text{Cl}_2$

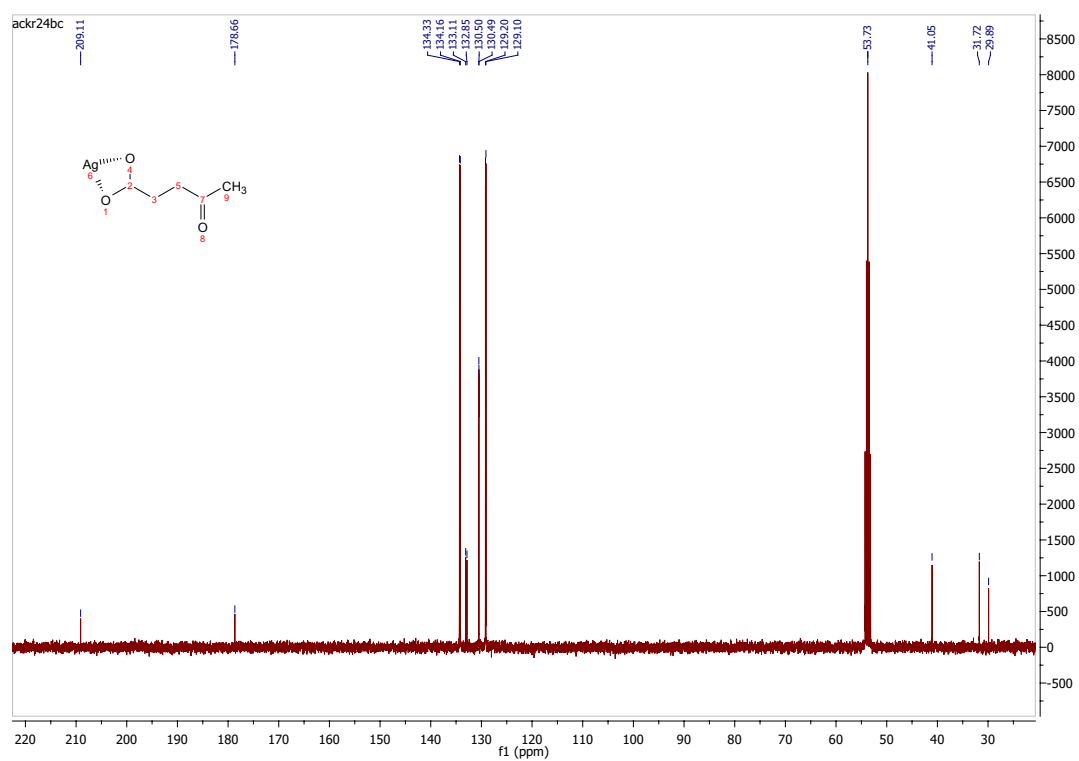


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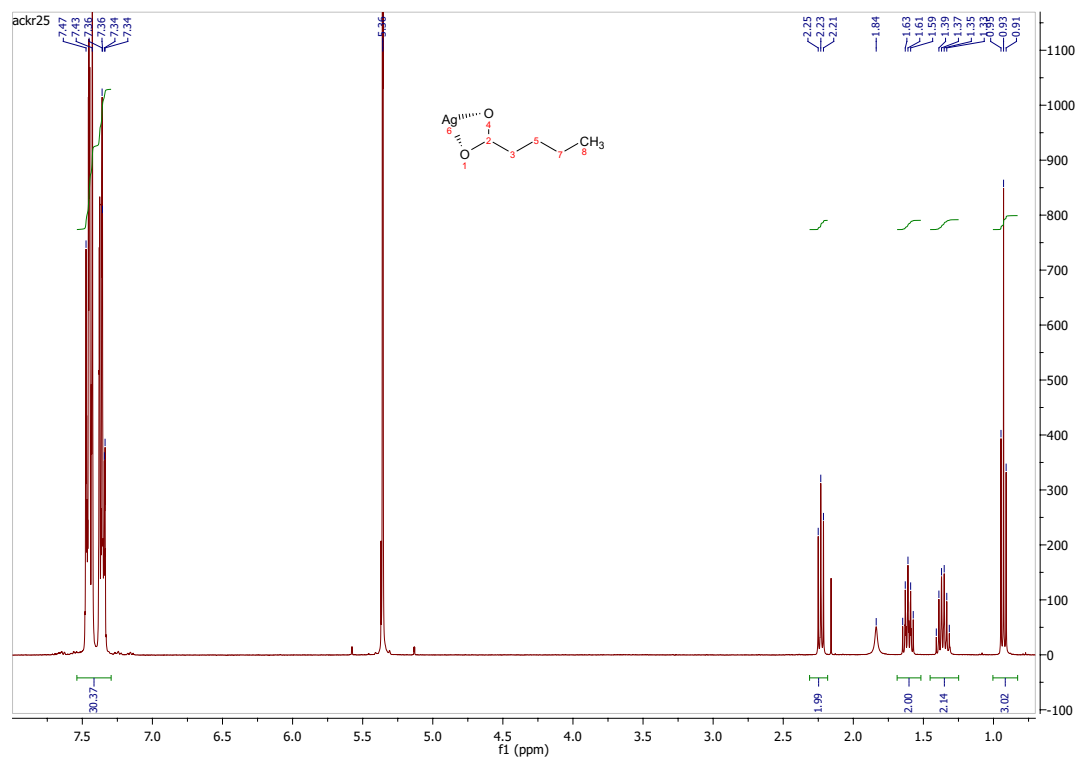




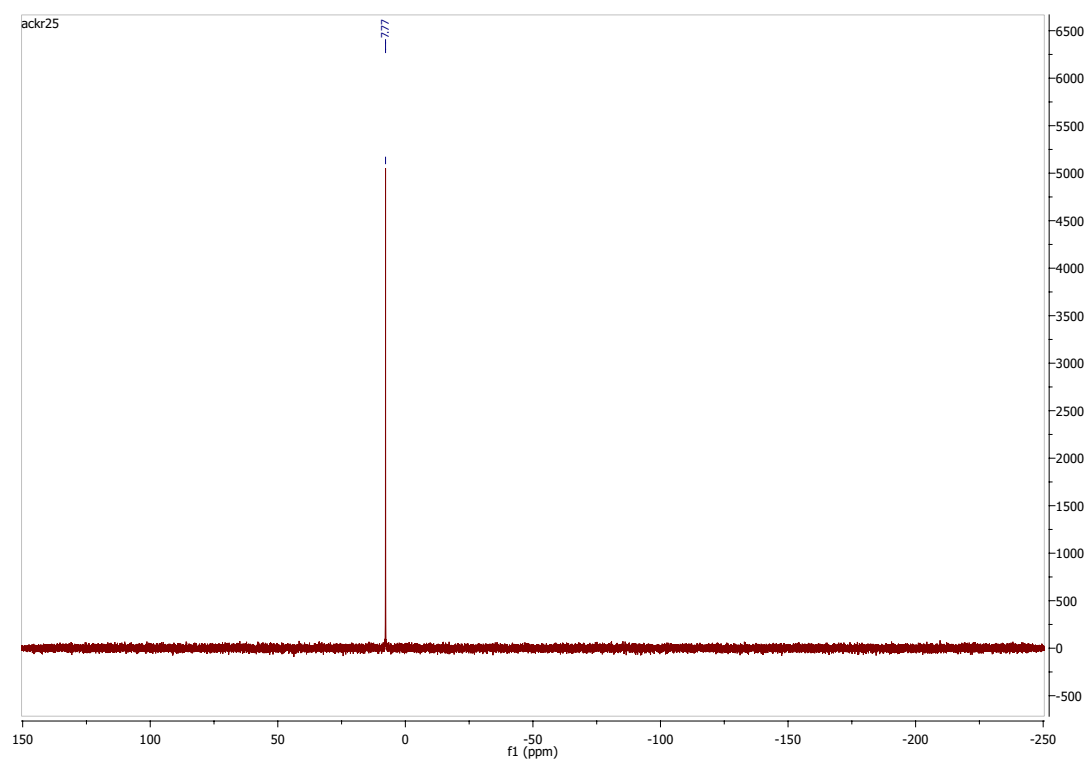
$^{13}\text{C}$ -NMR spectrum of (**5a**) in  $\text{CD}_2\text{Cl}_2$



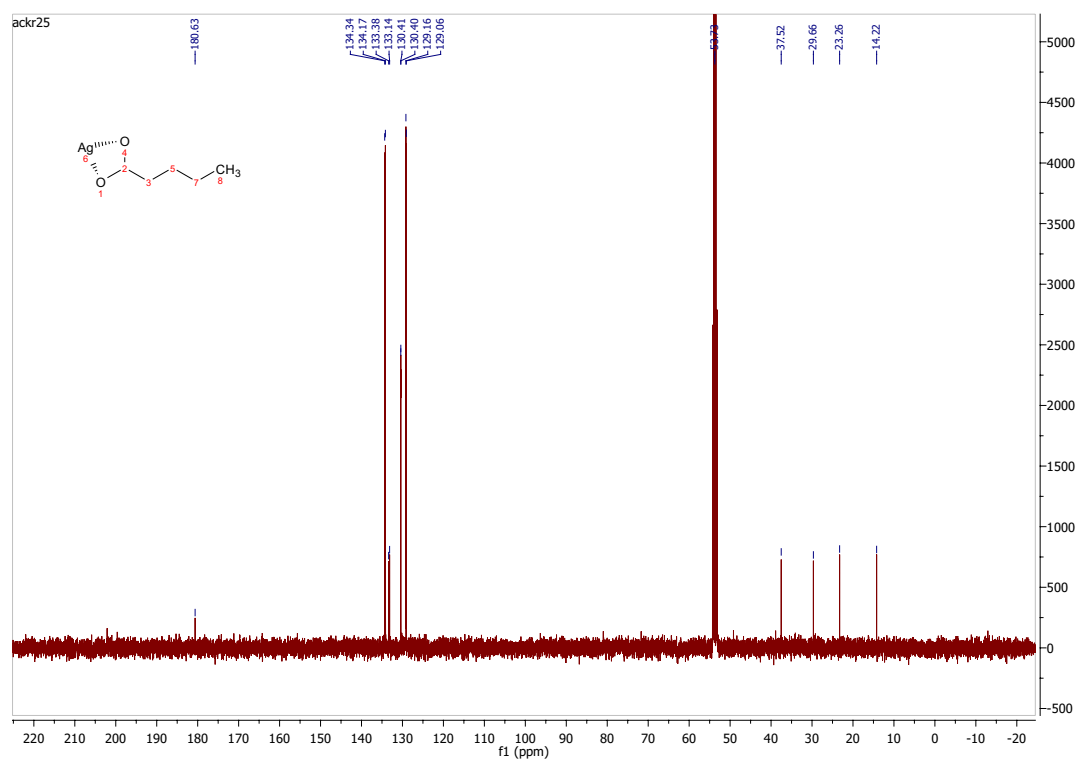
$^1\text{H}$ -NMR spectrum of (**6a**) in  $\text{CD}_2\text{Cl}_2$



$^{31}\text{P}$ -NMR spectrum of (**6a**) in  $\text{CD}_2\text{Cl}_2$

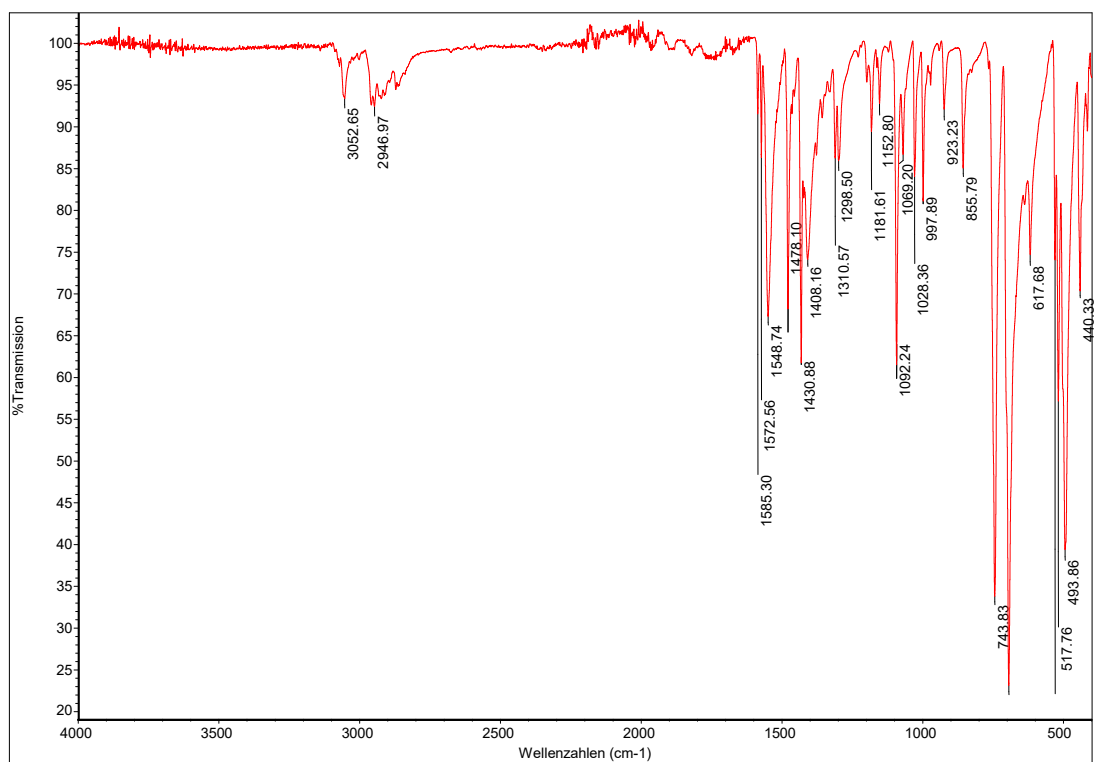


$^{13}\text{C}$ -NMR spectrum of (**6a**) in  $\text{CD}_2\text{Cl}_2$

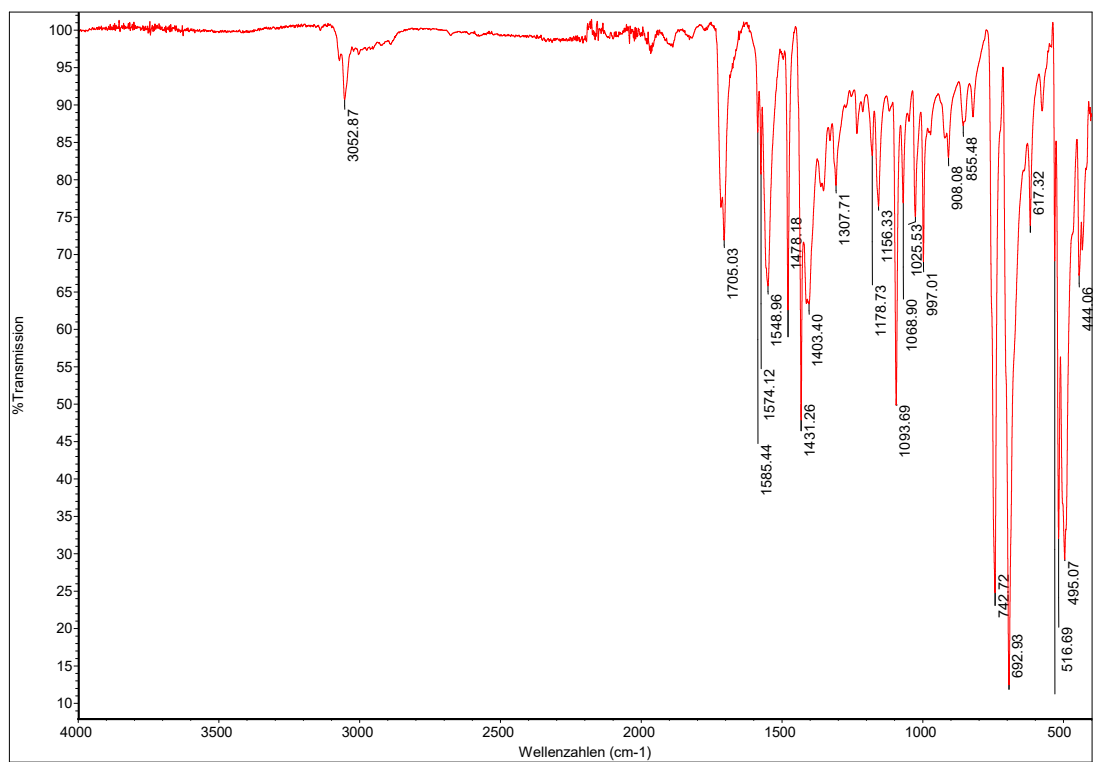


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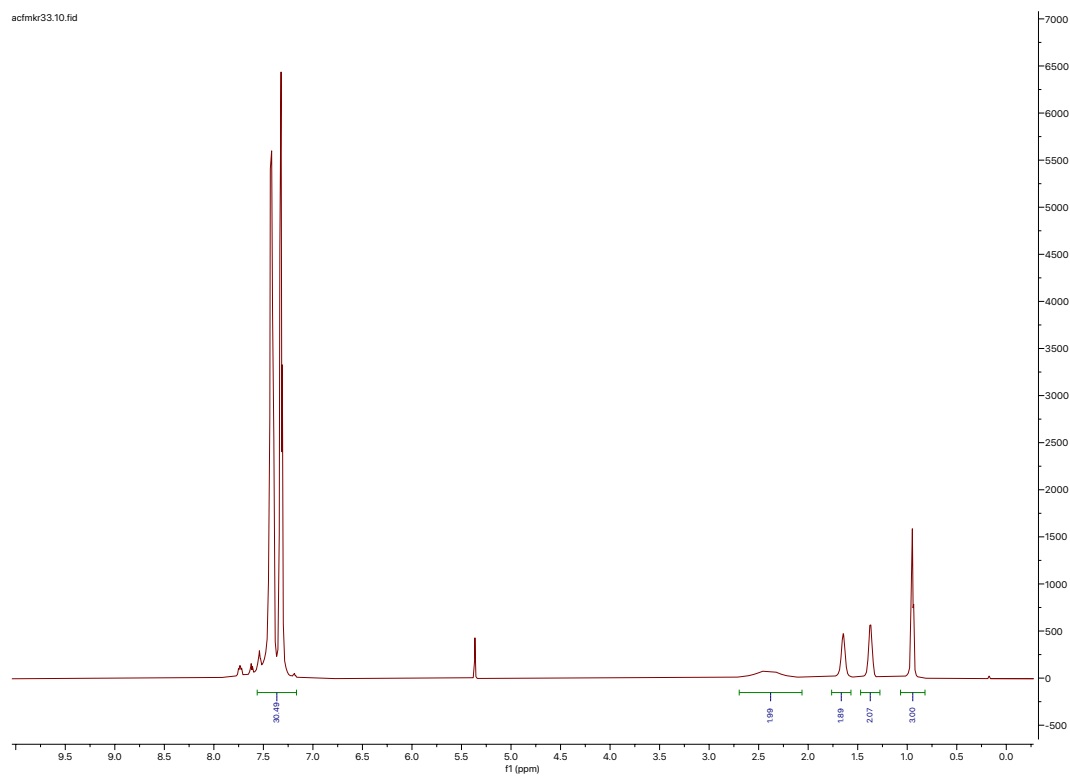
ATR-IR-spectrum of (7a)



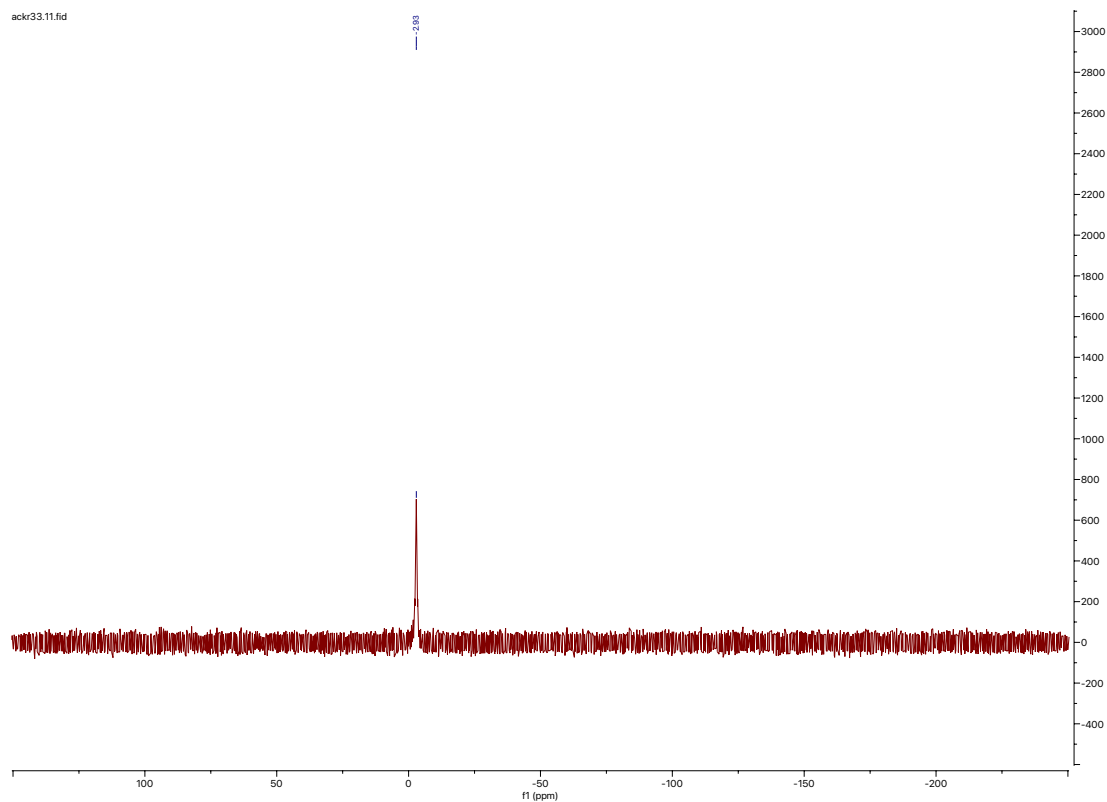
ATR-IR-spectrum of (8a)



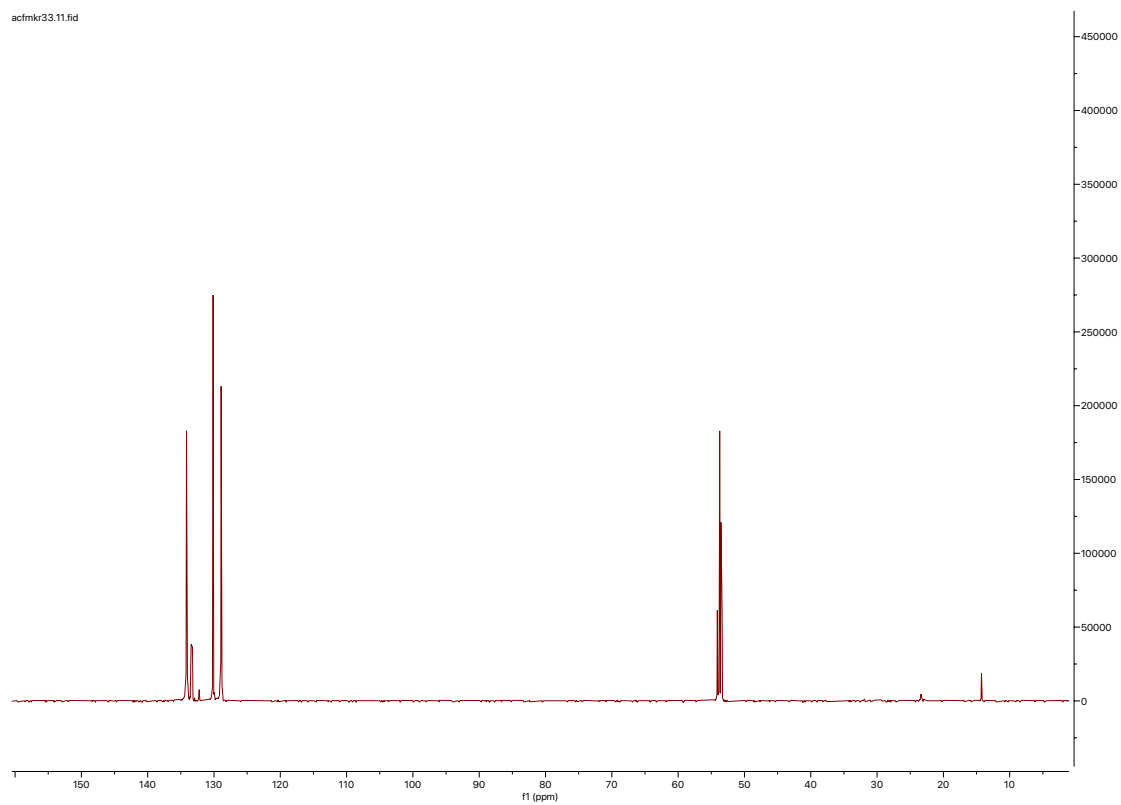
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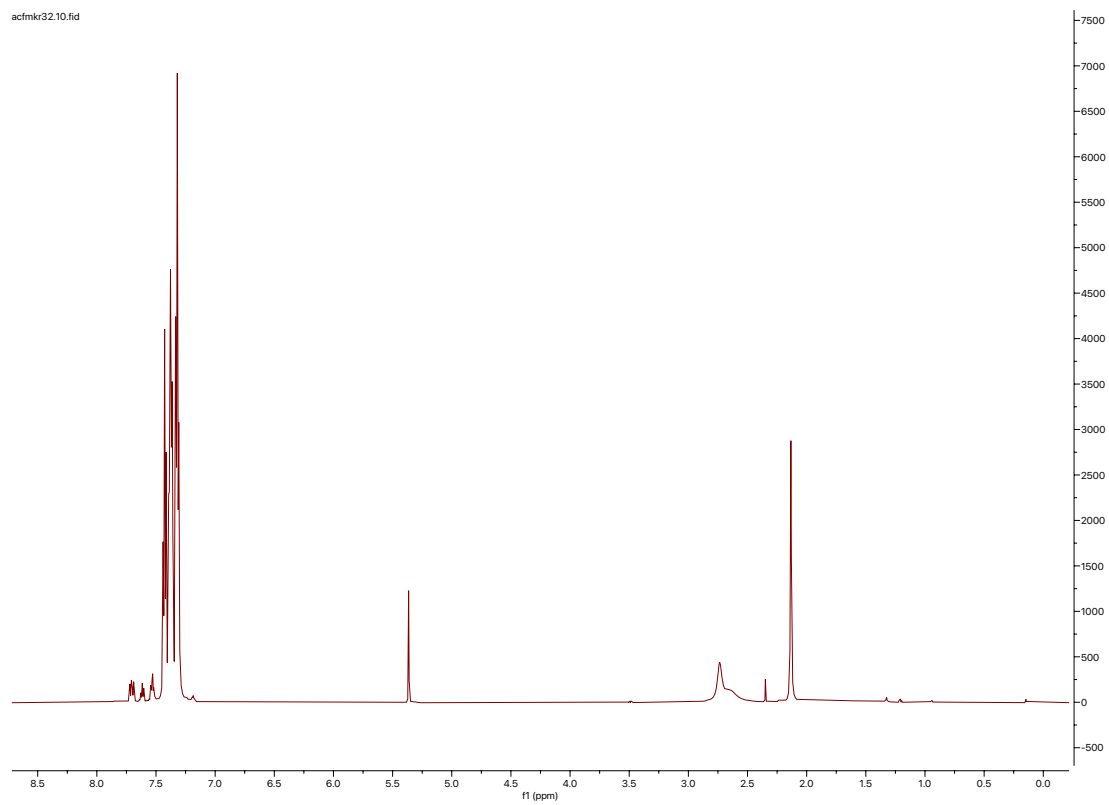
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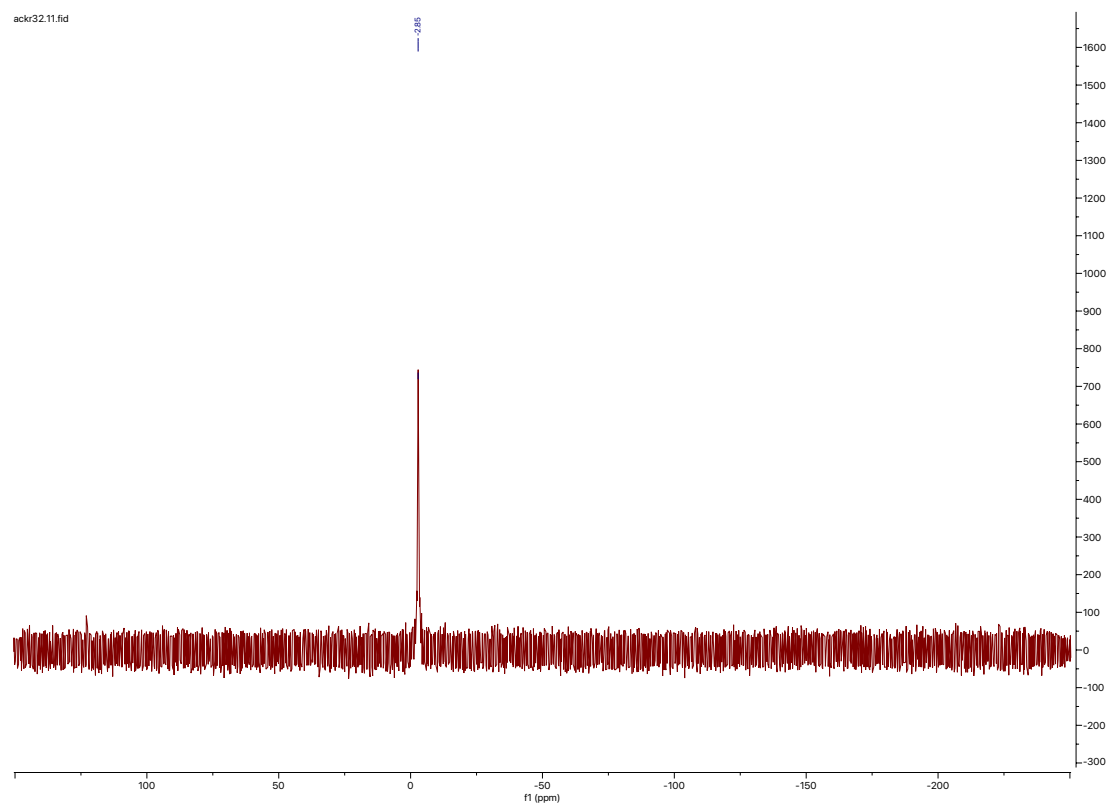
$^{13}\text{C}$ -NMR spectrum of (**7a**) in  $\text{CD}_2\text{Cl}_2$



$^1\text{H}$ -NMR spectrum of (**8a**) in  $\text{CD}_2\text{Cl}_2$



$^{31}\text{P}$ -NMR spectrum of (**8a**) in  $\text{CD}_2\text{Cl}_2$



$^{13}\text{C}$ -NMR spectrum of (**8a**) in  $\text{CD}_2\text{Cl}_2$

