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ELECTRONIC SUPPORTING INFORMATION

Biomass-derived safer medium to replace toxic dipolar solvents and access cleaner Heck coupling

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CONTENTS

Experimental Section

Unless otherwise stated, all solvents and reagents were used as obtained from commercial sources without further purification. GLC analyses were performed by using Hewlett-Packard HP 5890A equipped with a capillary column DB-35MS (30 m, 0.53 mm), a FID detector and hydrogen as gas carrier. GC-EIMS analyses were carried out by using a Hewlett-Packard HP 6890N Network GC system/5975 Mass Selective Detector equipped with an electron impact ionizer at 70 eV. NMR spectra were recorded on a Bruker DRX-ADVANCE 400 MHz (^{1}H at 400 MHz and ^{13}C at 100.6 MHz) in $CDCl_3$ using TMS as the internal standard. Elemental Analyses were conducted on a Fisons EA1108CHN. Melting points were measured on a Büchi 510. . ICP-OES 710 Agilent Technology.

Preparation of the samples for ICP

The compounds (ca. 100 mg) were dissolved in ca. 3 mL of aqua regia and stirred for 10 minutes at room temperature. Water was added to reach a final volume of 10 mL. If present, residual solid was filtered off and the sample was taken to the ICP analyzer.

Compounds **3a**[1], **3b**[1], **3c**[2], **3d**[3], **3e**[4], **3f**[3], **3g**[1], **3h**[5], **3i**[6], **3j**[6], **3k**[6], **3l**[6], **5a**[1], **5b**[3], **5c**[7], **5d**[7], **5e**[8], **5f**[9], **5g**[10], **5h**[11] are known compounds.

Characterization data and copies of the ^{1}H and ^{13}C NMR are reported below.

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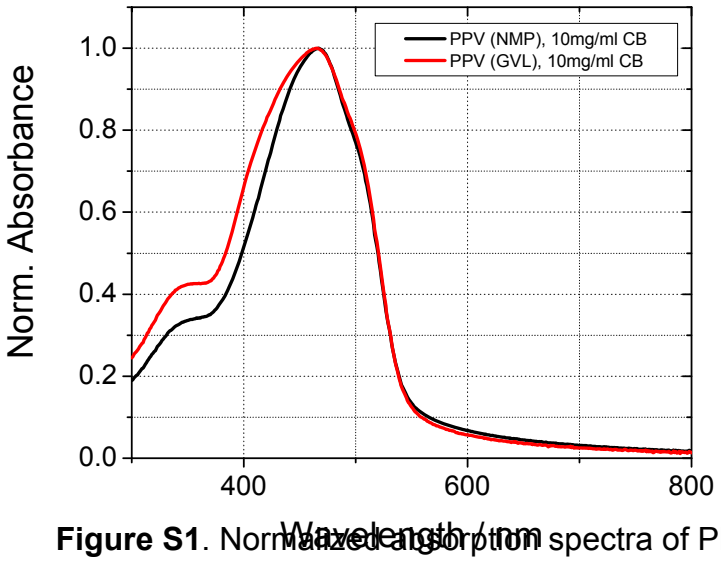


Figure S1. Normalized absorption spectra of PPV derivative **1** through NMP-based protocol (black line) and GVL-based protocol (red line) in thin film.

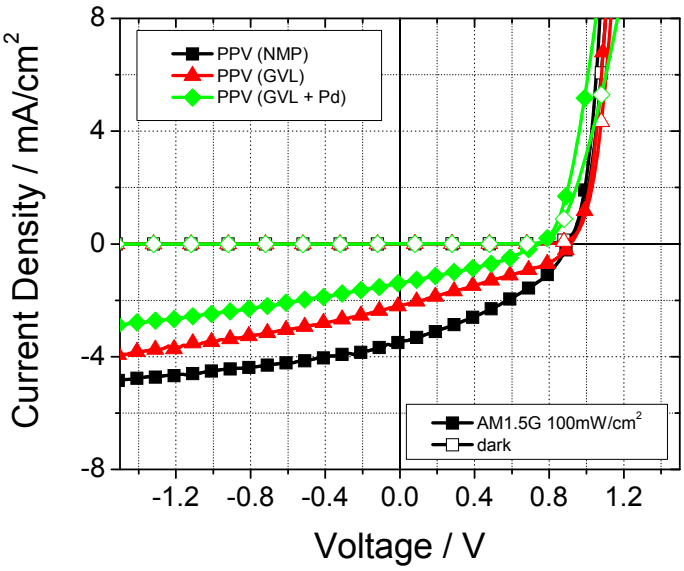


Figure S2. J-V characteristics of **1**/PCBM based OPVs.

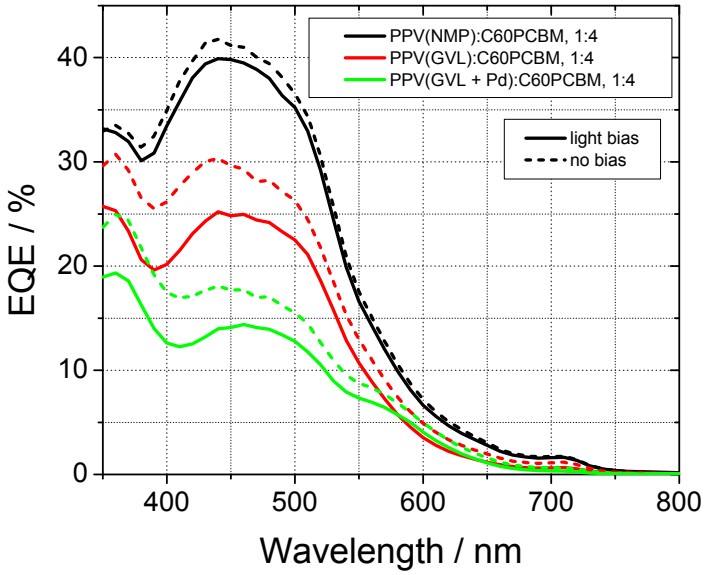


Figure S3. EQE spectra of BHJ **1** / PCBM. Black curves represent data using polymer **1** through NMP-based protocol. Red curves represent data using pure **1** through GVL-based protocol, while green curves represent data obtained using contaminated **1** through GVL-based protocol.

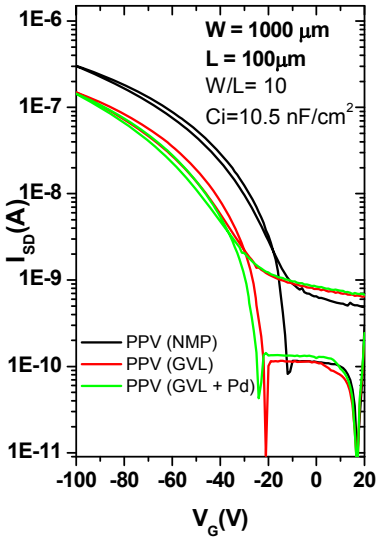


Figure S4. Typical transfer plot for spin-coated **1** OFETs. Black curves represent data using polymer **1** through NMP-based protocol. Red curves represent data using pure **1** through GVL-based protocol, while green curves represent data obtained using contaminated **1** through GLV-based protocol.

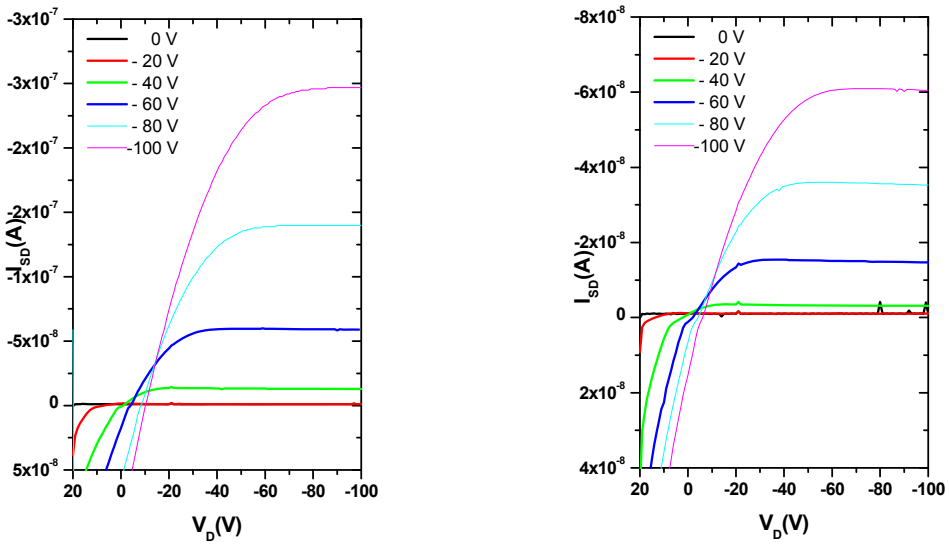
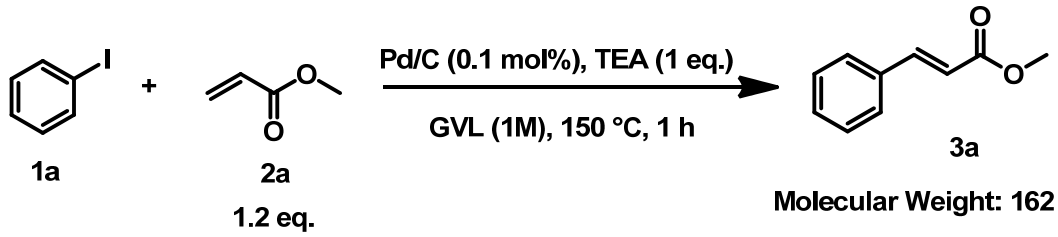


Figure S5. Typical output plot for spin-coated **1** OFETs through a) NMP-based and b) GVL based protocol.

Chem. Name	Methyl cinnamate (3a)
Lit. Ref.	*J. Org. Chem.*, **2006**, 71, 4339-4342



1a + **2a** (**1.2 eq.**) → **3a**

Molecular Weight: 162

METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), iodobenzene (**1a**) (416 mg, 0.228 mL, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and methyl acrylate (**2a**) (207 mg, 0.216 mL, 2.4 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 1 hour the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way **3a** was obtained as a pale yellow solid (266 mg, 82% yield).

Mol Formula	$C_{10}H_{10}O_2$	**m.p.**	38 °C

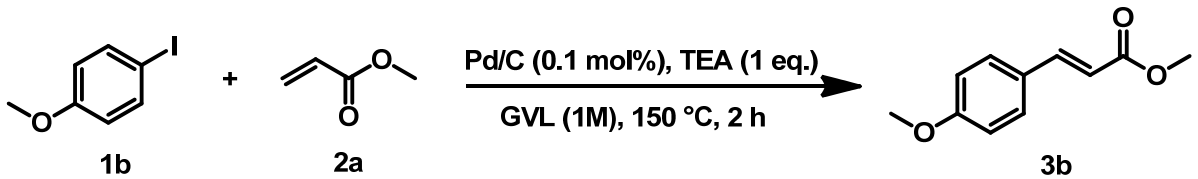
Elemental Analysis: Calc.: C: 74.06; H: 6.21; found: C: 74.10; H: 6.23

^{1}H NMR 400 MHz $CDCl_3$	**δ value**	**No. H**	**Mult.**	**j value/Hz**
	3.80	3	*s*	
	6.44	1	*d*	16
	7.37 – 7.38	3	*m*	
	7.51 – 7.52	2	*m*	
	7.70	1	*d*	16

^{13}C NMR (100.6 MHz, $CDCl_3$) δ : 51.6, 117.7, 128.0, 128.8, 130.2, 134.3, 144.8, 167.4

GC-EIMS (m/z, %): 51 (30), 77 (53), 102 (25), 103 (93), 131 (100), 132 (16), 161 (44), 162 (M^+, 86)

Chem. Name	(*E*)-methyl 3-(4methoxyphenyl)acrylate (3b)
Lit. Ref.	*J. Org. Chem.*, **2006**, 71, 4339-4342



1b + **2a** (**1.2 eq.**) → **3b** (**Molecular Weight: 192**)

METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodoanisole (**1b**) (478 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and methyl acrylate (**2a**) (207 mg, 0.216 mL, 2.4 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 2 hours the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way **3b** was obtained as a slightly yellow solid (315 mg, 82% yield).

Mol Formula	$C_{11}H_{12}O_3$	**m.p.**	90-91 °C

Elemental Analysis: Calc.: 68.74; H: 6.29; found: C: 68.82; H: 6.34

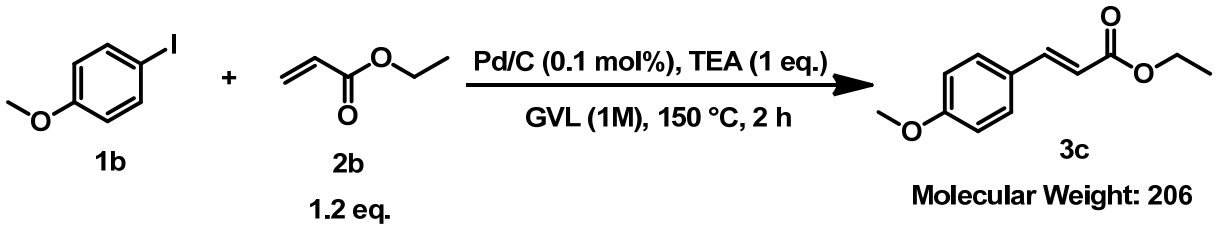
^{1}H NMR 400 MHz $CDCl_3$

δ value	No. H	Mult.	j value/Hz
3.78	3	*s*	
3.82	3	*s*	
6.30	1	*d*	16
6.89	2	*d*	8.8
7.46	2	*d*	8.8
7.64	1	*d*	16

^{13}C NMR (100.6 MHz, $CDCl_3$) δ : 51.5, 55.3, 114.2, 115.1, 127.0, 130.0, 144.4, 161.2, 167.7

GC-EIMS (m/z, %): 63 (15), 89 (25), 90 (16), 118 (17), 133 (34), 134 (16), 161 (100), 192 (M^+, 70)

Chem. Name	(*E*)-ethyl 3-(4methoxyphenyl)acrylate (3c)
Lit. Ref.	*J. Org. Chem.*, **2005**, 70, 6111-6113



1b + **2b** (**1.2 eq.**) → **3c**

Molecular Weight: 206

METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodoanisole (**1b**) (478 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and ethyl acrylate (**2b**) (240 mg, 0.264 mL, 2.4 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 2 hours the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way **3c** was obtained as a white solid (371 mg, 90% yield).

Mol Formula	$C_{12}H_{14}O_3$	**m.p.**	49 °C

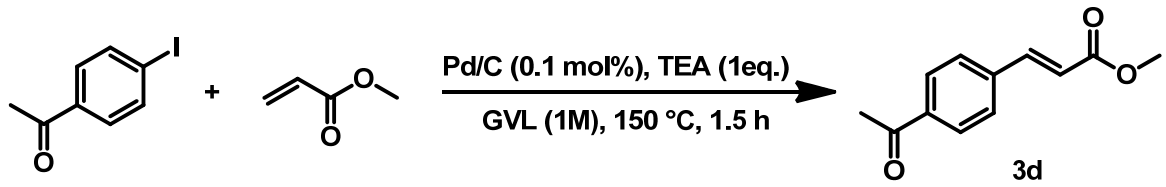
Elemental Analysis: Calc.: C: 69.88; H: 6.84; found: C: 69.92; H: 6.78

^{1}H NMR 400 MHz $CDCl_3$	**δ value**	**No. H**	**Mult.**	**j value/Hz**
	1.30	3	*t*	7.0
	3.79	3	*s*	
	4.22	2	*q*	7.2
	6.86	2	*d*	8.8
	7.44	2	*d*	8.4
	7.61	1	*d*	16

^{13}C NMR (100.6 MHz, $CDCl_3$) δ : 14.3, 55.2, 60.2, 114.2, 115.6, 127.0, 129.6, 144.1, 161.1, 167.3

GC-EIMS (m/z, %): 63 (15), 89 (24), 90 (18), 118 (17), 133 (36), 134 (16), 161 (100), 192 (M^+, 71)

Chem. Name	(*E*)-methyl 3-(4-acetoxyphenyl) acrylate (3d)
Lit. Ref.	*Adv. Synth. & Cat.*, **2008**, 350, 2551-2558



1c **2a** **3d**

1.2 eq.

Molecular Weight: 204

METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodoacetophenone (**1c**) (502 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and methyl acrylate (**2a**) (207 mg, 0.216 mL, 2.4 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 1.5 hours the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way **3d** was obtained as a white solid (355 mg, 87% yield).

Mol Formula	$C_{10}H_{10}O_3$	**m.p.**	106 °C

Elemental Analysis: Calc.: C: 70.57; H: 5.92; found: C: 70.63; H: 5.95

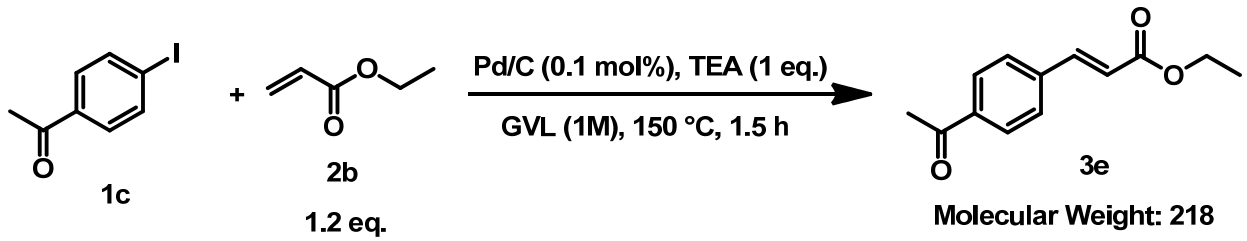
^{1}H NMR 400 MHz $CDCl_3$

δ value	No. H	Mult.	j value/Hz
2.58	3	*s*	
3.78	3	*s*	
6.48	1	*d*	16
7.56	2	*d*	8
7.66	1	*d*	16
7.93	2	*d*	8

^{13}C NMR (100.6 MHz, $CDCl_3$) δ : 26.6, 51.8, 120.2, 128.0, 128.8, 137.9, 138.5, 143.1, 166.8, 197.2

GC-EIMS (m/z, %): 43 (26), 76 (10), 102 (25), 161 (15), 189 (100), 190 (13), 204 (M^+, 29)

Chem. Name	(*E*)-ethyl 3-(4-acetoxyphenyl) acrylate (3e)
Lit. Ref.	*J. Am. Chem. Soc.*, **2003**, 125, 6034-6035



METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodoacetophenone (**1c**) (502 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and ethyl acrylate (**2b**) (240 mg, 0.264 mL, 2.4 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 1.5 hours the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way **3e** was obtained as a slightly yellow solid (371 mg, 85% yield).

Mol Formula	$C_{13}H_{14}O_3$	**m.p.**	46 °C

Elemental Analysis: Calc.: C: 71.54; H: 6.47; found: C: 7.63; H: 6.51

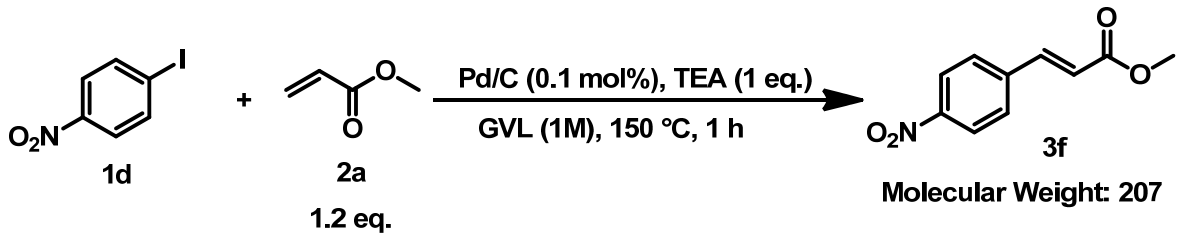
^{1}H NMR 400 MHz $CDCl_3$

δ value	No. H	Mult.	j value/Hz
1.33	3	*t*	7.0
2.6	3	*s*	
4.26	2	*q*	7.0
6.50	1	*d*	16
7.59	2	*d*	8
7.68	1	*d*	16
7.95	2	*d*	8.4

^{13}C NMR (100.6 MHz, $CDCl_3$) δ : 14.2, 26.6, 60.7, 120.7, 128.0, 128.7, 137.8, 138.7, 142.9, 166.4, 197.2

GC-EIMS (m/z, %): 43 (10), 76 (17), 102 (36), 131 (19), 173 (20), 175 (31), 203 (100), 204 (15), 218 (M^+, 33)

Chem. Name	(*E*)-methyl 3-(4-nitrophenyl) acrylate (3f)
Lit. Ref.	*Adv. Synth. & Cat.*, **2008**, 350, 2559-2565



METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodonitrobenzene (**1d**) (508 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and methyl acrylate (**2a**) (207 mg, 0.216 mL, 2.4 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 1 hour hours the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way **3f** was obtained as a slightly yellow solid (348 mg, 84% yield).

Mol Formula	$C_{10}H_9NO_4$	**m.p.**	161 °C

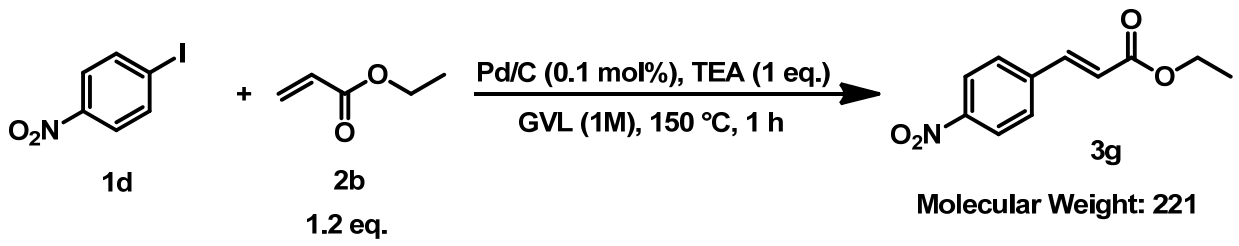
Elemental Analysis: Calc.: C: 57.97; H: 4.38; N: 6.76; found: C: 57.91; H: 4.43; N: 6.83

^{1}H NMR 400 MHz $CDCl_3$	**δ value**	**No. H**	**Mult.**	**j value/Hz**
	3.84	3	*s*	
	6.57	1	*d*	14.8
	7.67-7.74	3	*m*	
	8.27	2	*d*	8.8

^{13}C NMR (100.6 MHz, $CDCl_3$) δ : 52.2, 122.0, 124.1, 128.6, 140.4, 141.8, 148.4, 166.4

GC-EIMS (m/z, %): 50 (26), 51 (22), 63 (21), 74 (19), 75 (22), 76 (38), 89 (22), 90 (31), 102 (61), 118 (26), 130 (38), 176 (100), 207 (M^+, 57)

Chem. Name	(*E*)-ethyl 3-(4-nitrophenyl) acrylate (3g)
Lit. Ref.	*J. Org. Chem.*, **2006**, 71, 4339-4342



METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodonitrobenzene (**1d**) (508 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and ethyl acrylate (**2b**) (240 mg, 0.264 mL, 2.4 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 1 hour the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way **3g** was obtained as a slightly yellow solid (380 mg, 86% yield).

Mol Formula	$C_{11}H_{11}NO_4$	**m.p.**	135 °C

Elemental Analysis: Calc.: C: 59.73; H: 5.01; N: 6.33; found: C: 59.81; H: 5.10; N: 6.24

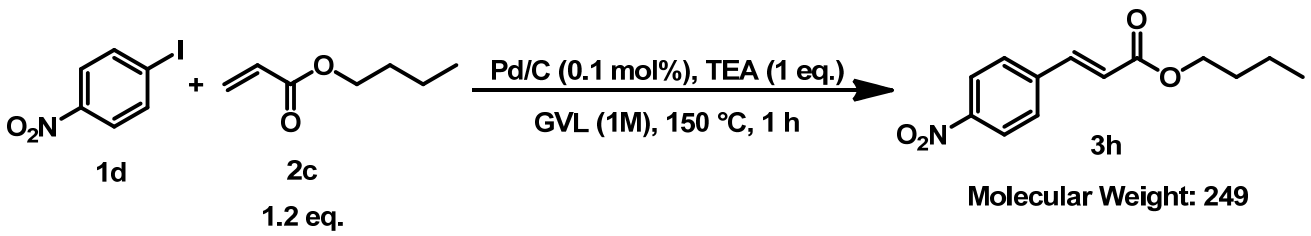
^{1}H NMR 400 MHz $CDCl_3$

δ value	No. H	Mult.	j value/Hz
1.35	3	*t*	7.0
4.29	2	*q*	7.0
6.56	1	*d*	16
7.66-7.72	3	*m*	
8.25	2	*d*	8.8

^{13}C NMR (100.6 MHz, DMSO) δ : 14.5, 60.8, 122.8, 124.3, 129.8, 140.8, 142.2, 148.4, 166.0

GC-EIMS (m/z, %): 50 (17), 51 (16), 75 (19), 76 (35), 102 (60), 130 (47), 176 (100), 193 (46), 221 (M^+, 22)

Chem. Name	(*E*)-butyl 3-(4-nitrophenyl) acrylate (3h)
Lit. Ref.	*Adv. Synth.& Cat.*, **2002**, 344, 495-498



1d 2c 3h

1.2 eq.

Molecular Weight: 249

METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodonitrobenzene (**1d**) (508 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and butyl acrylate (**2c**) (311 mg, 0.348 mL, 2.4 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 1 hour the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way **3h** was obtained as a slightly yellow solid (408 mg, 82% yield).

Mol Formula	$C_{13}H_{15}NO_4$	**m.p.**	64-65 °C

Elemental Analysis: Calc.: C: 62.64; H. 6.07; N: 5.62; found: C: 62.72; H: 6.12; N: 5.68

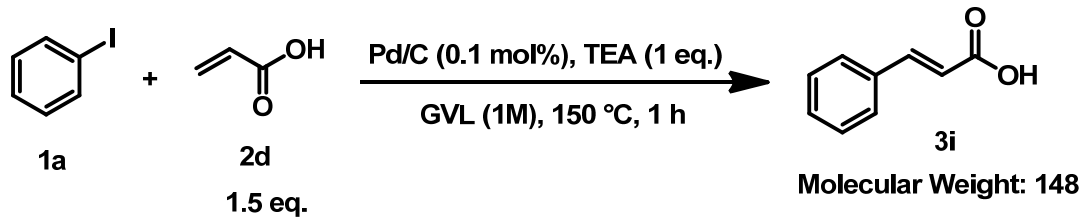
^{1}H NMR 400 MHz $CDCl_3$

δ value	No. H	Mult.	j value/Hz
0.939	3	*t*	7.4
1.37-1.46	2	*m*	
1.64-1.71	2	*m*	
4.21	2	*t*	6.6
6.54	1	*d*	16
7.64-7.69	3	*m*	
8.21	2	*d*	8.0

^{13}C NMR (100.6 MHz, DMSO) δ : 14.5, 60.8, 122.8, 124.3, 129.8, 140.8, 142.2, 148.4, 166.0

GC-EIMS (m/z, %): 56 (47), 76 (29), 90 (21), 102 (66), 130 (38), 176 (100), 177 (21), 193 (39), 194 (48)

Chem. Name	Cinnamic Acid (3i)
Lit. Ref.	*J. Org. Chem.* **2004**, 69, 8805-8807



1a + **2d** (1.5 eq.) → **3i**

Molecular Weight: 148

METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), iodobenzene (**1a**) (416 mg, 0.228 mL, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and acrylic acid (**2d**) (216 mg, 0.206 mL, 3 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 1 hour the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way **3i** was obtained as a white solid (249 mg, 84% yield).

Mol Formula	$C_9H_8O_2$	**m.p.**	132-135 °C

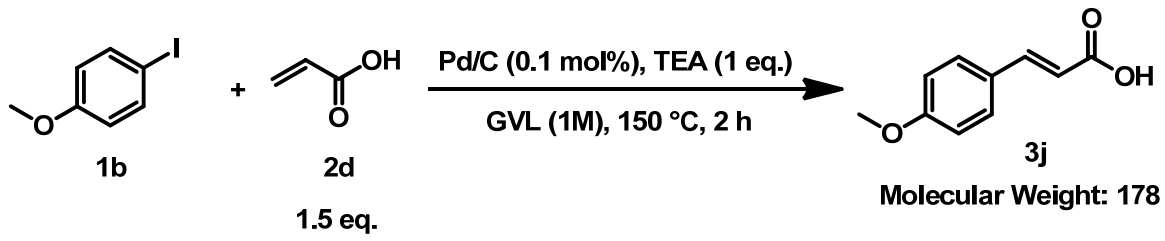
Elemental Analysis: Calc.: C: 72.96; H: 5.44; found: C: 73.04; H: 5.38

^{1}H NMR 400 MHz $CDCl_3$	**δ value**	**No. H**	**Mult.**	**j value/Hz**
	6.57	1	*d*	16
	7.45-7.46	3	*m*	
	7.63	1	*d*	16
	7.72-7.74	2	*m*	

^{13}C NMR (100.6 MHz, $CDCl_3$) δ : 117.2, 128.3, 128.9, 130.7, 133.9, 147.0, 128.8, 172.4

GC-EIMS (m/z, %): 43 (22), 45 (21), 50 (29), 51 (45), 77 (65), 91 (37), 102 (40), 103 (66), 131 (32), 147 (100), 148 (67), 207 (M^+, 15)

Chem. Name	(*E*)-3-(4-methoxyphenyl)acrylic acid (3j)
Lit. Ref.	*J. Org. Chem.*, **2004**, 69, 8805-8807



METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodoanisole (**1b**) (478 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and acrylic acid (**2d**) (216 mg, 0.206 mL, 3 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 2 hours the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way **3j** was obtained as a white solid (285 mg, 80 % yield).

Mol Formula	$C_{10}H_{10}O_3$	m.p.	172-173 °C

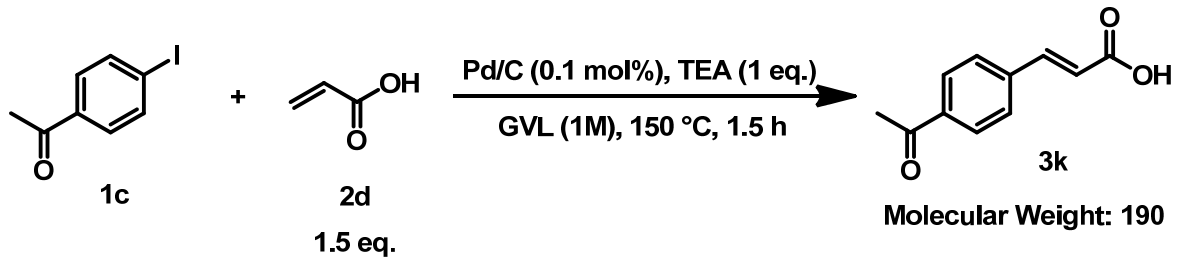
Elemental Analysis: Calc.: C: 67.41; H: 5.66; found: C: 67.34; H: 5.45

^{1}H NMR 400 MHz DMSO	δ value	No. H	Mult.	j value/Hz
	3.83	3	*s*	
	6.41	1	*d*	16
	7.01	2	*d*	8.4
	7.58	1	*d*	16
	7.68	2	*d*	8.4

^{13}C NMR (100.6 MHz, DMSO) δ : 55.7, 114.7, 116.8, 127.1, 130.3, 144.1, 161.3, 168.2

GC-EIMS (m/z, %): 63 (20), 77 (31), 79 (16), 89 (30), 90 (15), 132 (22), 133 (26), 161 (44), 177 (26), 178 (M^+, 100)

Chem. Name	(*E*)-methyl 3-(4-acetylphenyl) acrylic acid (3k)
Lit. Ref.	*J. Org. Chem.*, **2004**, 69, 8805-8807



Molecular Weight: 190

METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodoacetophenone (**1c**) (502 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and acrylic acid (**2d**) (216 mg, 0.206 mL, 3 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 1.5 hours the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way **3k** was obtained as a yellowish solid (323 mg, 85 % yield).

Mol Formula	$C_{11}H_{10}O_3$	**m.p.**	224-225 °C

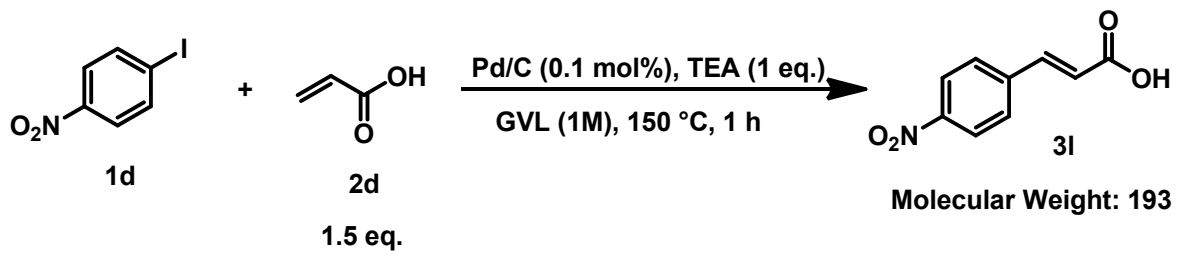
Elemental Analysis: Calc.: C: 69.46; H: 5.30; found: C: 69.51; H: 5.22

^{1}H NMR 400 MHz DMSO	**δ value**	**No. H**	**Mult.**	**j value/Hz**
	2.59	3	*s*	
	6.67	1	*d*	16
	7.64	1	*s*	16
	77.83	2	*d*	8
	7.96	2	*d*	8.4

^{13}C NMR (100.6 MHz, DMSO) δ : 27.2, 122.1, 128.8, 129.0, 137.9, 138.9, 142.9, 167.7, 197.8

GC-EIMS (m/z, %): Not performed

Chem. Name	(*E*)-3-(4-nitrophenyl) acrylic acid (3l)
Lit. Ref.	*J. Org. Chem*., **2004**, 69, 8805-8807



Molecular Weight: 193

METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodonitrobenzene (**1d**) (508 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and acrylic acid (**2d**) (216 mg, 0.206 mL, 3 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 1 hour the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way **3l** was obtained as a yellowish solid (320 mg, 83% yield).

Mol Formula	$C_9H_7NO_4$	**m.p.**	286-287 °C

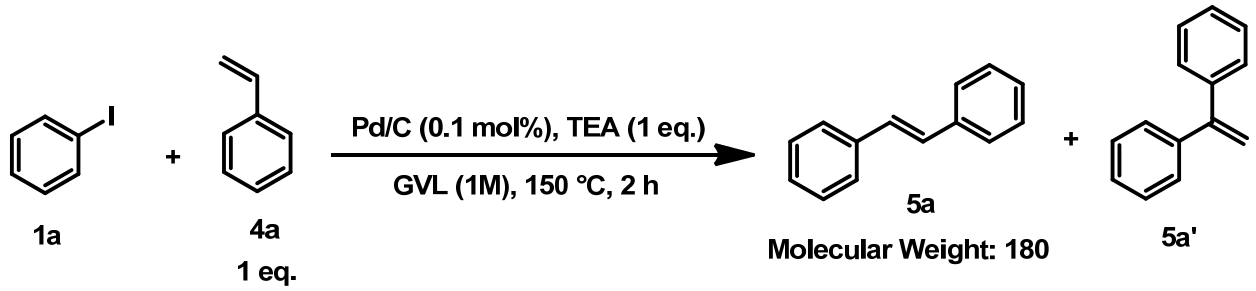
Elemental Analysis: Calc.: C: 55.96; H: 3.65; N: 7.25; found: C: 55.89; H: 3.61; N: 7.29

^{1}H NMR 400 MHz DMSO	**δ value**	**No. H**	**Mult.**	**j value/Hz**
	6.76-6.84	1	*m*	
	7.71-7.77	1	*m*	
	7.67-7.74	3	*m*	
	7.97	2	*d*	8.4
	8.23	2	*d*	8.4

^{13}C NMR (100.6 MHz, DMSO) δ : 124.0, 124.3, 129.7, 141.1, 141.7, 148.4, 167.4

GC-EIMS (m/z, %): Not performed

Chem. Name	(*E*)-1,2-diphenylethene (5a)
Lit. Ref.	*J. Org. Chem.*, **2006**, 71, 4339-4342



METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), iodobenzene (**1a**) (416 mg, 0.228 mL, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and styrene (**4a**) (206 mg, 0.228 mL, 2 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 2 hours the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way a white solid consisting in a 94:6 mixture of **5a** and 5**a'** (295 mg, 83% yield).

Mol Formula	$C_{14}H_{12}$	**m.p.**	126-127 °C

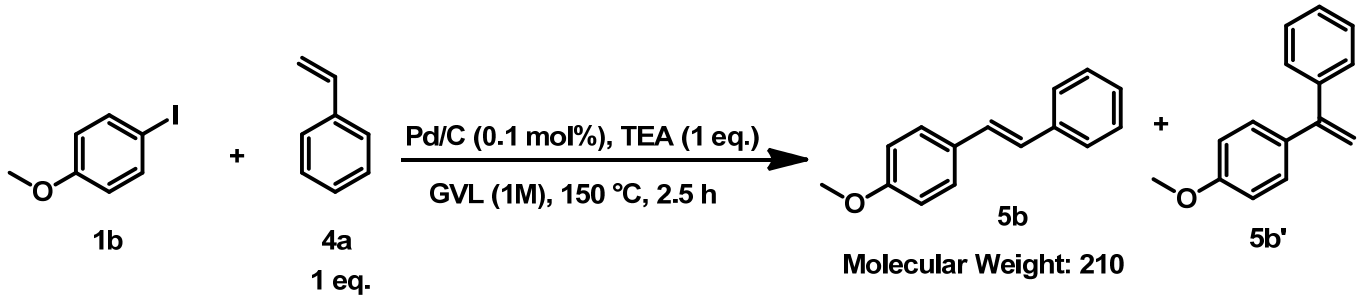
Elemental Analysis: Calc.: C: 93.29; H: 6.71; found: 93.38; H: 6.61

^{1}H NMR 400 MHz $CDCl_3$	**δ value**	**No. H**	**Mult.**	**J value/Hz**
	7.13	2	*s*	
	7.28-7.30	2	*m*	
	7.36-7.40	4	*m*	
	7.53-7.55	4	*m*	

^{13}C NMR (100.6 MHz, $CDCl_3$) δ : 126.6, 127.7, 128.8, 137.4

GC-EIMS (m/z, %): 89 (15), 152 (17), 165 (52), 178 (64), 179 (99), 180 (M^+, 100), 181 (14)

Chem. Name	**(*E*)-1-methoxy-4-styrylbenzene (5b)**
Lit. Ref.	*Adv. Synth. & Cat.*, **2008**, 350, 2551-2558



METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodoanisole (**1b**) (478 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and styrene (**4a**) (206 mg, 0.228 mL, 2 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 2.5 hours the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way a white solid consisting in a 95:5 mixture of **5b** and **5b'** (344 mg, 82% yield).

Mol Formula	$C_{15}H_{14}$	**m.p.**	138 °C

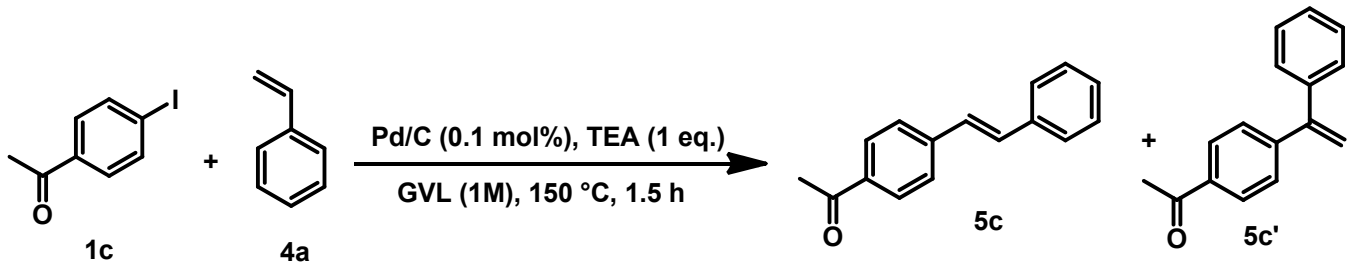
Elemental Analysis: Calc.: C: 85.68; H: 6.71; found: C: 85.71; H: 6.65

^{1}H NMR 400 MHz $CDCl_3$	**δ value**	**No. H**	**Mult.**	**j value/Hz**
	3.84	3	*s*	
	6.90-7.09	4	*m*	
	7.22-7.24	2	*m*	
	7.33-7.37	2	*m*	
	7.45-7.50	4	*m*	

^{13}C NMR (100.6 MHz, $CDCl_3$) δ : 55.2, 114.6, 126.2, 126.5, 127.1, 127.6, 128.1, 128.5, 130.1, 137.6, 159.2

GC-EIMS (m/z, %): 152 (33), 165 (51), 166 (19), 167 (38), 179 (16), 195 (29), 209 (27), 210 (M^+, 100), 211 (25)

Chem. Name	(*E*)-1-(4-styrylphenyl) ethanone (5c)
Lit. Ref.	*Eur. J. Org. Chem.*, **2007**, 13, 2197-2201



Molecular Weight: 222

METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodoacetophenone (**1c**) (502 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and styrene (**4a**) (206 mg, 0.228 mL, 2 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 1.5 hours the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way a white solid consisting in a 99:1 mixture of **5c** and **5c'** (382 mg, 86% yield).

Mol Formula	$C_{15}H_{14}$	m.p.	140-144 °C

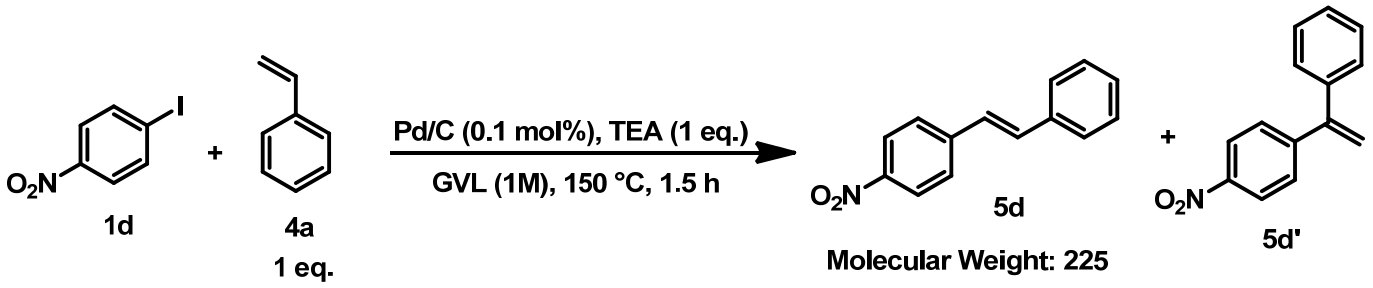
Elemental Analysis: Calc.: C: 86.45; H: 6.35; found: C: 86.39; H: 6.31

^{1}H NMR 400 MHz $CDCl_3$	δ value	No. H	Mult.	j value/Hz
	2.61	3	*s*	
	7.12-7.22	2	*m*	
	7.33-7.29	1	*m*	
	7.37-7.41	2	*m*	
	7.54-7.60	4	*m*	
	7.96	2	*d*	8

^{13}C NMR (100.6 MHz, $CDCl_3$) δ : 26.6, 126.4, 126.7, 127.3, 128.3, 128.7, 128.8, 131.4, 135.8, 136.6, 141.9, 197.5

GC-EIMS (m/z, %): 152 (18), 176 (15), 178 (70), 179 (24), 207 (100), 208 (17), 222 (M^+, 64)

Chem. Name	(*E*)-1-nitro-4-styrilbenzene (5d)
Lit. Ref.	*Eur. J. Org. Chem.*, **2007**, 13, 2197-2201



METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodonitrobenzene (**1d**) (508 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and styrene (**4a**) (206 mg, 0.228 mL, 2 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 1.5 hours the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way a yellowish solid consisting in a 99:1 mixture of **5d** and **5d'** (378 mg, 84% yield).

Mol Formula	$C_{15}H_{14}$	m.p.	158-159 °C

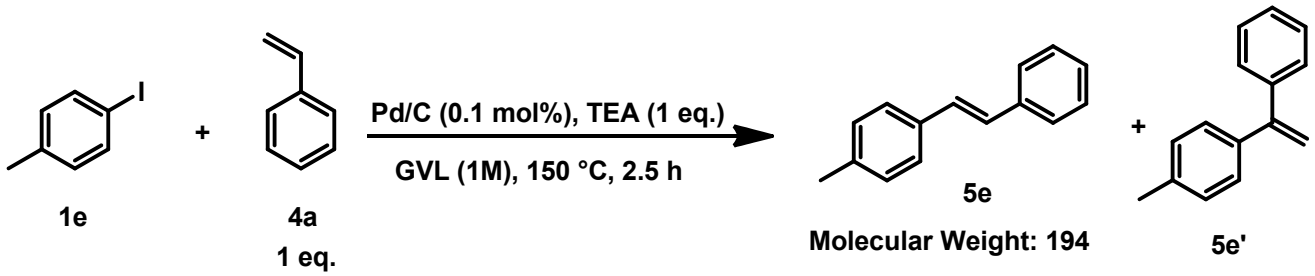
Elemental Analysis: Calc.: C: 74.65; H: 4.92; N: 6.22; found: C: 74.72; H: 4.87; N: 6.28

^{1}H NMR 400 MHz $CDCl_3$	δ value	No. H	Mult.	j value/Hz
	7.15	1	*d*	16.4
	7.30-7.44	4	*m*	
	7.56-7.65	4	*m*	
	8.23	2	*d*	8.4

^{13}C NMR (100.6 MHz, $CDCl_3$) δ : 124.1, 126.2, 126.8, 127.0, 128.8, 133.2, 136.1, 143.8, 146.6

GC-EIMS (m/z, %): 151 (14), 152 (36), 165 (18), 176 (20), 177 (19), 178 (100), 179 (36), 225 (M^+, 70)

Chem. Name	(E)-1-methyl-4-styrylbenzene (5e)
Lit. Ref.	*Tetrahedron,* **2013***, 69,* 7925-7930



1e + **4a** (1 eq.) → **5e** (Molecular Weight: 194) + **5e'**

METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodotoluene (**1e**) (440 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and styrene (**4a**) (206 mg, 0.228 mL, 2 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 2.5 hours the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this way a white solid consisting in a 94:6 mixture of **5e** and **5e'** (322 mg, 83% yield).

Mol Formula	$C_{15}H_{14}$	**m.p.**	124 °C

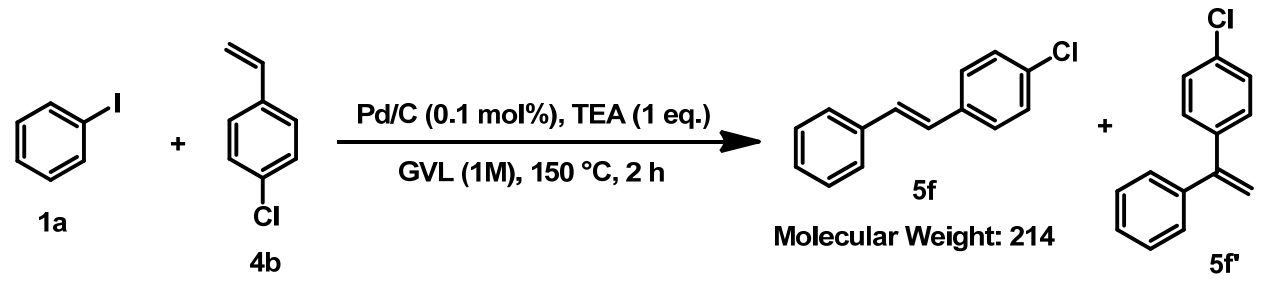
Elemental Analysis: Calc.: C: 85.68; H: 6.71; found: C: 85.71; H: 6.65

^{1}H NMR 400 MHz $CDCl_3$	**δ value**	**No. H**	**Mult.**	**j value/Hz**
	2.36	3	*s*	
	7.07-7.08	2	*m*	
	7.16-7.18	2	*m*	
	7.23-7.25	1	*m*	
	7.33-7.37	2	*m*	
	7.41-7.43	2	*m*	
	7.50-7.52	2	*m*	

^{13}C NMR (100.6 MHz, $CDCl_3$) δ : 21.4, 126.5, 126.6, 127.5, 127.8, 128.7, 128.8, 129.5, 134.6, 137.6, 137.7

GC-EIMS (m/z, %): 89 (12), 115 (23), 152 (15), 165 (18), 178 (82), 179 (100), 180 (16), 193 (19), 194 (M^+, 94), 195 (19)

Chem. Name	(E)-1-chloro-4-styrylbenzene (5f)
Lit. Ref.	*Green Chem.*, **2012**, *14*, 2513-2522



METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), iodobenzene (**1a**) (416 mg, 0.228 mL, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and 4-chlorostyrene (**4b**) (286 mg, 0.247 mL, 2.4 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 2 hours the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this a white solid consisting in a 92:8 mixture of **5f** and **5f'** (385 mg, 90% yield).

Mol Formula	$C_{14}H_{11}Cl$	m.p.	127-129°C

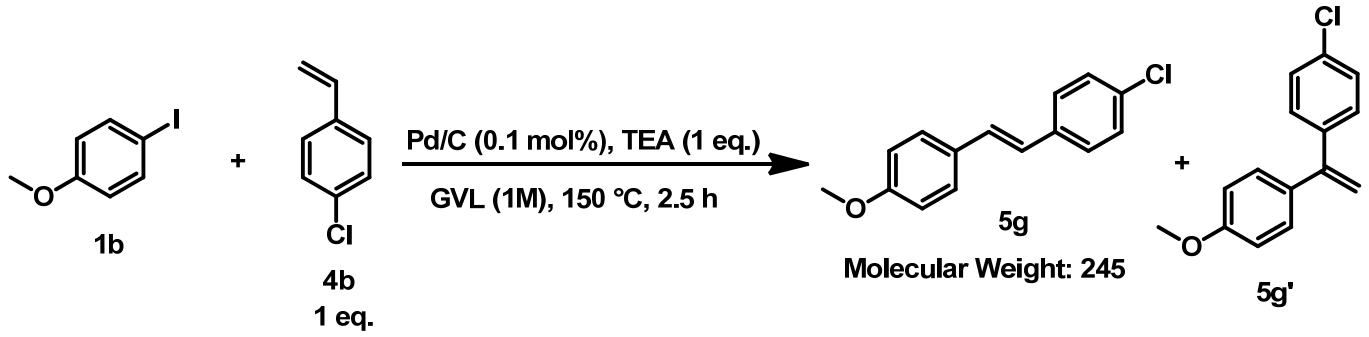
Elemental Analysis: Calc.: C: 78.32; H: 5.16; found: 78.64; H: 5.08.

^{1}H NMR 400 MHz $CDCl_3$	δ value	No. H	Mult.	J value/Hz
	7.07	2	*m*	
	7.26-7.39	5	*m*	
	7.44	2	*d*	8.4
	7.51	2	*d*	7.6

^{13}C NMR (100.6 MHz, $CDCl_3$) δ : 126.7, 127.5, 127.8, 128.0, 128.9, 129.0, 129.4, 133.3, 135.9, 137.1

GC-EIMS (m/z, %): 50 (17), 51 (21), 63 (18), 75 (20), 76 (27), 89 (24), 152 (17), 176 (24), 178 (100), 179 (94), 214 (70), 216 (23).

Chem. Name	(E)-1-chloro-4-(4-methoxystyryl)benzene (5g)
Lit. Ref.	*J. Mol. Cat. A: Chem.*, **2006**, *254,* 58-63



METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodoanisole (**1b**) (478 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and 4-chlorostyrene (**4b**) (286 mg, 0.247 mL, 2.4 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 2.5 hours the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this a white solid consisting in a 90:10 mixture of **5g** and **5g'** (441 mg, 90% yield).

Mol Formula	$C_{15}H_{13}ClO$	m.p.	193-194°C

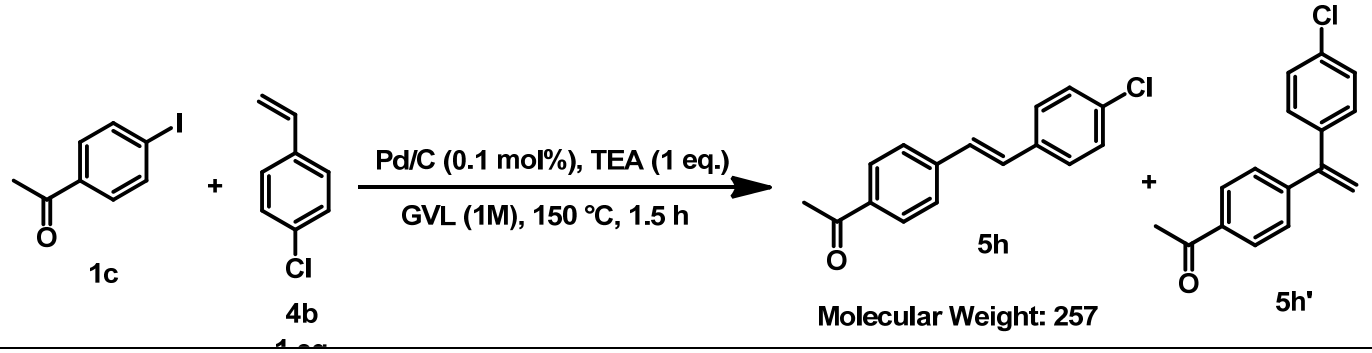
Elemental Analysis: Calc.: C: 73.62; H: 5.35; found: 74.01; H: 5.37.

^{1}H NMR 400 MHz $CDCl_3$	δ value	No. H	Mult.	J value/Hz
	3.84	3	*s*	
	6.89-6.94	3	*m*	
	7.03	1	*d*	16.4
	7.30-7.32	2	*m*	
	7.40-7.46	4	*m*	

^{13}C NMR (100.6 MHz, $CDCl_3$) δ : 55.4, 114.3, 125.3, 127.5, 127.9, 128.9, 129.8, 132.8, 136.2, 159.5

GC-EIMS (m/z, %): 165 (91), 166 (54), 229 (20), 244 (100), 245 (17), 246 (34)

Chem. Name	(E)-1-(4-(4-chlorostyryl)phenyl)ethanone (5h)
Lit. Ref.	*Tetrahedron Lett.*, **2012**, *53*, 5961-5965



METHOD:
In a screw capped vial equipped with a magnetic stirrer Pd/C 10 wt% (2.1 mg, 0.002 mmol, 0.1 mol%), GVL (2 mL), 4-iodoacetophenone (**1c**) (502 mg, 2 mmol), triethylamine (202 mg, 0.279 mL, 2 mmol) and 4-chlorostyrene (**4b**) (286 mg, 0.247 mL, 2.4 mmol) were consecutively added and the resulting mixture was left under stirring at 150 °C. After 1.5 hours the catalyst was filtered off, 3 mL of water were added and the mixture was cooled down to 0°C, then the precipitate was filtered off and washed with 1 mL of cold water. Ultimately the obtained solid was dried on high vacuum. In this a white solid consisting in a 97:3 mixture of **5h** and **5h'** (437 mg, 85% yield).

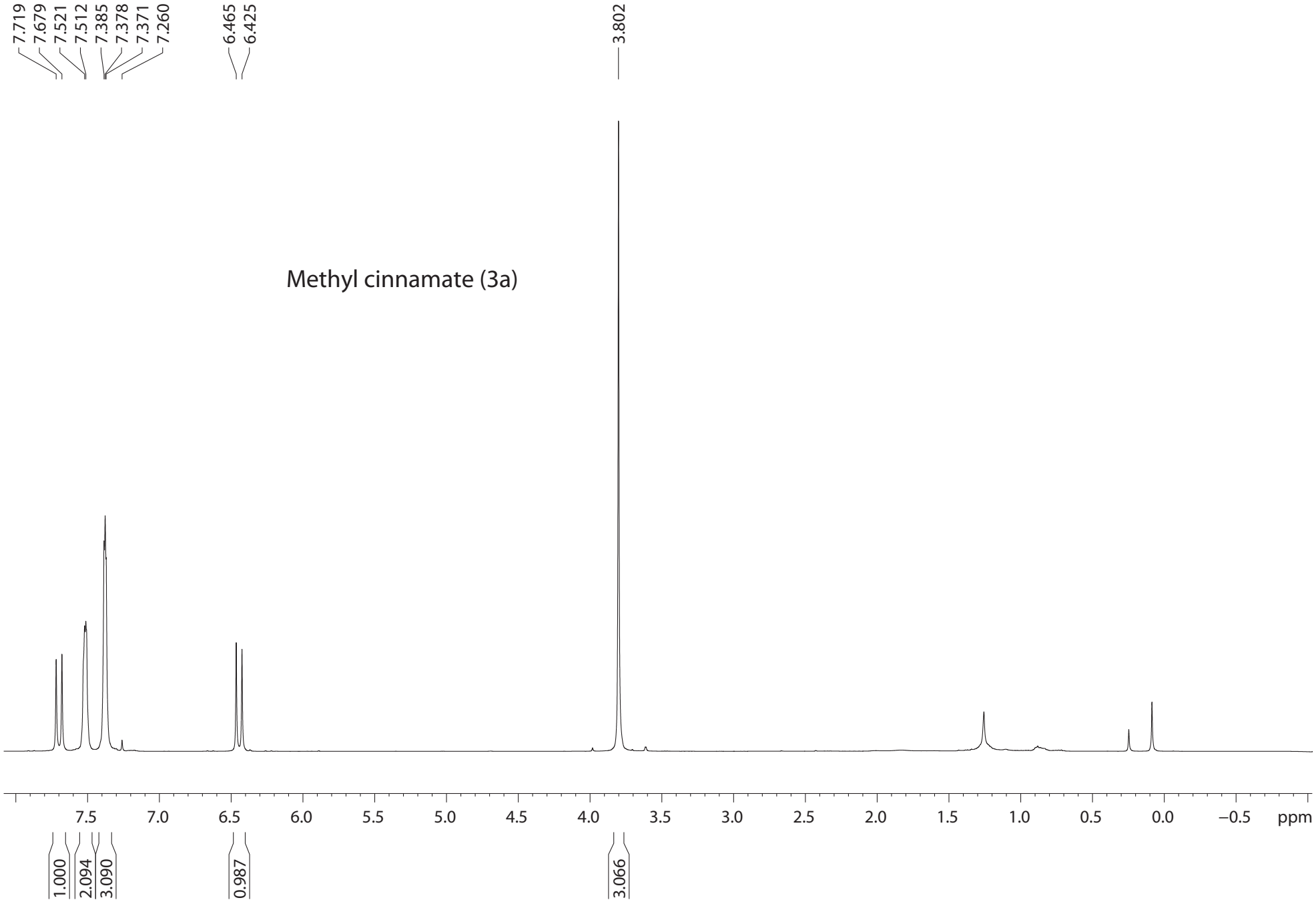
Mol Formula	$C_{16}H_{13}ClO$	m.p.	

Elemental Analysis: Calc.: C: 74.85; H: 5.10; found: 75.03; H: 5.12.

^{1}H NMR 400 MHz $CDCl_3$	δ value	No. H	Mult.	J value/Hz
	2.61	3	*s*	
	7.07-7.19	2	*m*	
	7.34	2	*d*	8.4
	7.46	2	*d*	8.4
	7.57	2	*d*	8.4
	7.95	2	*d*	8.4

^{13}C NMR (100.6 MHz, $CDCl_3$) δ : 26.7, 126.6, 128.0, 128.1, 129.0, 129.1, 130.2, 134.0, 135.3, 136.2, 141.7

GC-EIMS (m/z, %): 43 (25), 176 (29), 177 (18), 178 (56), 241 (100), 243 (36), 256 (74), 258 (24).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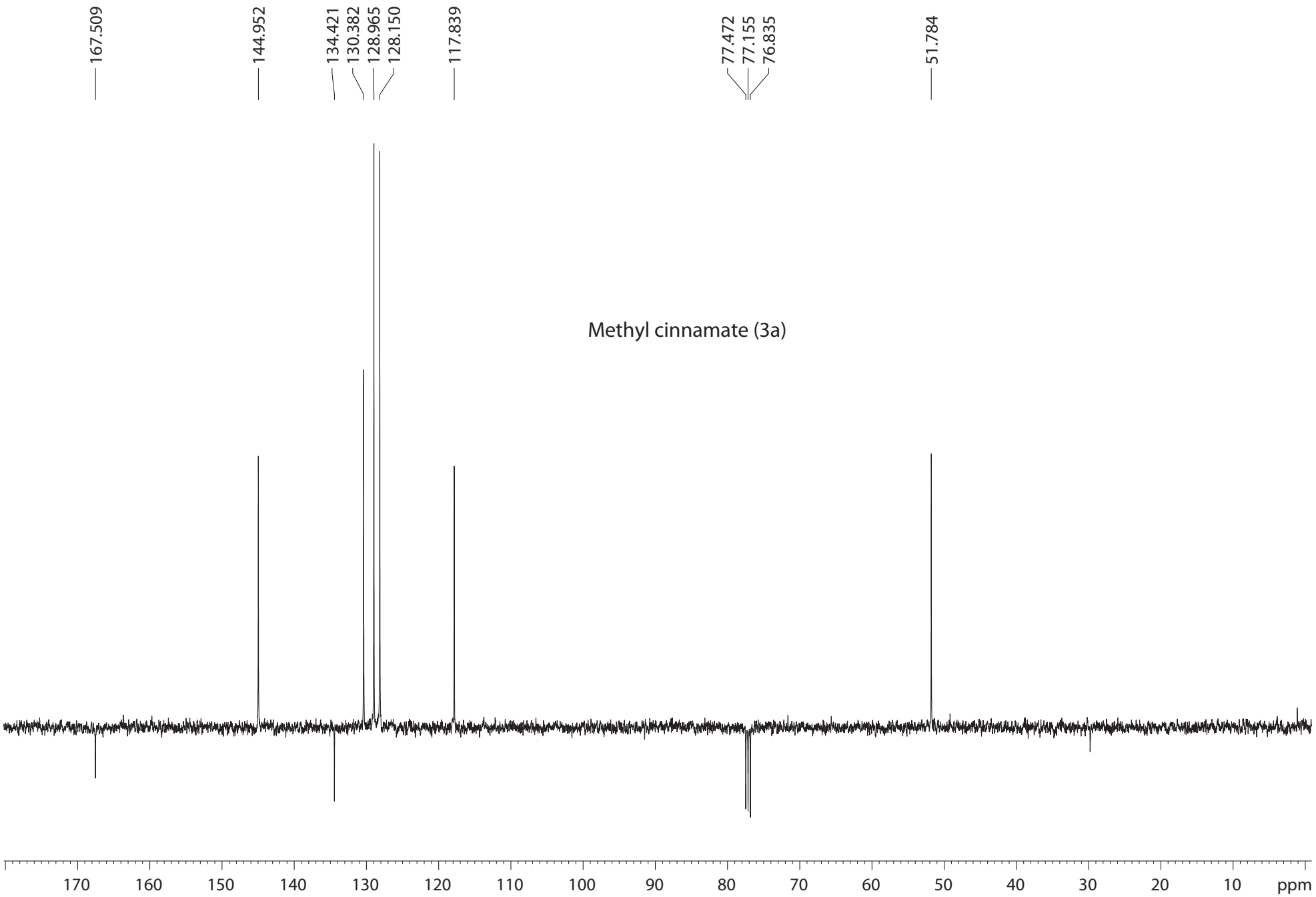
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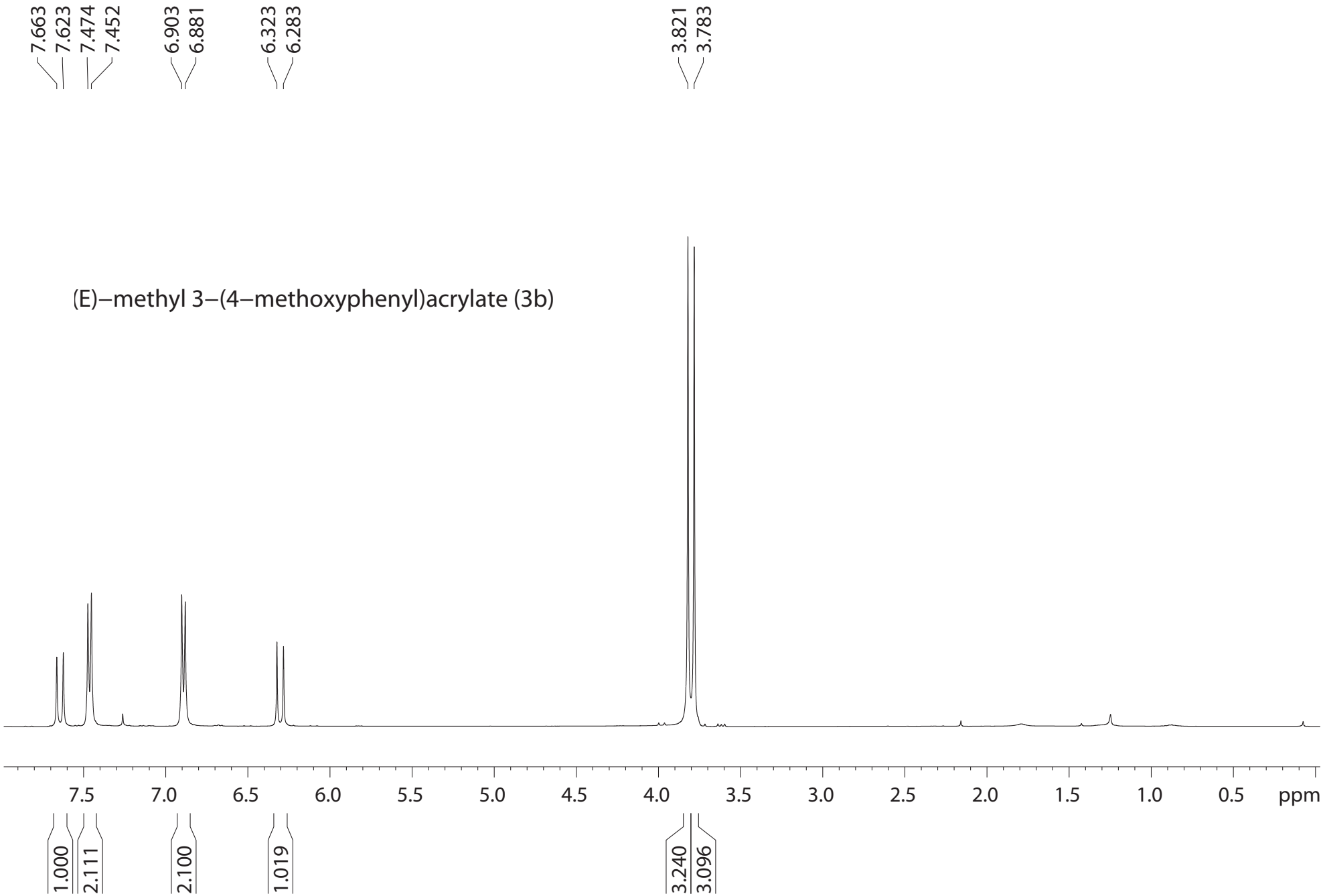
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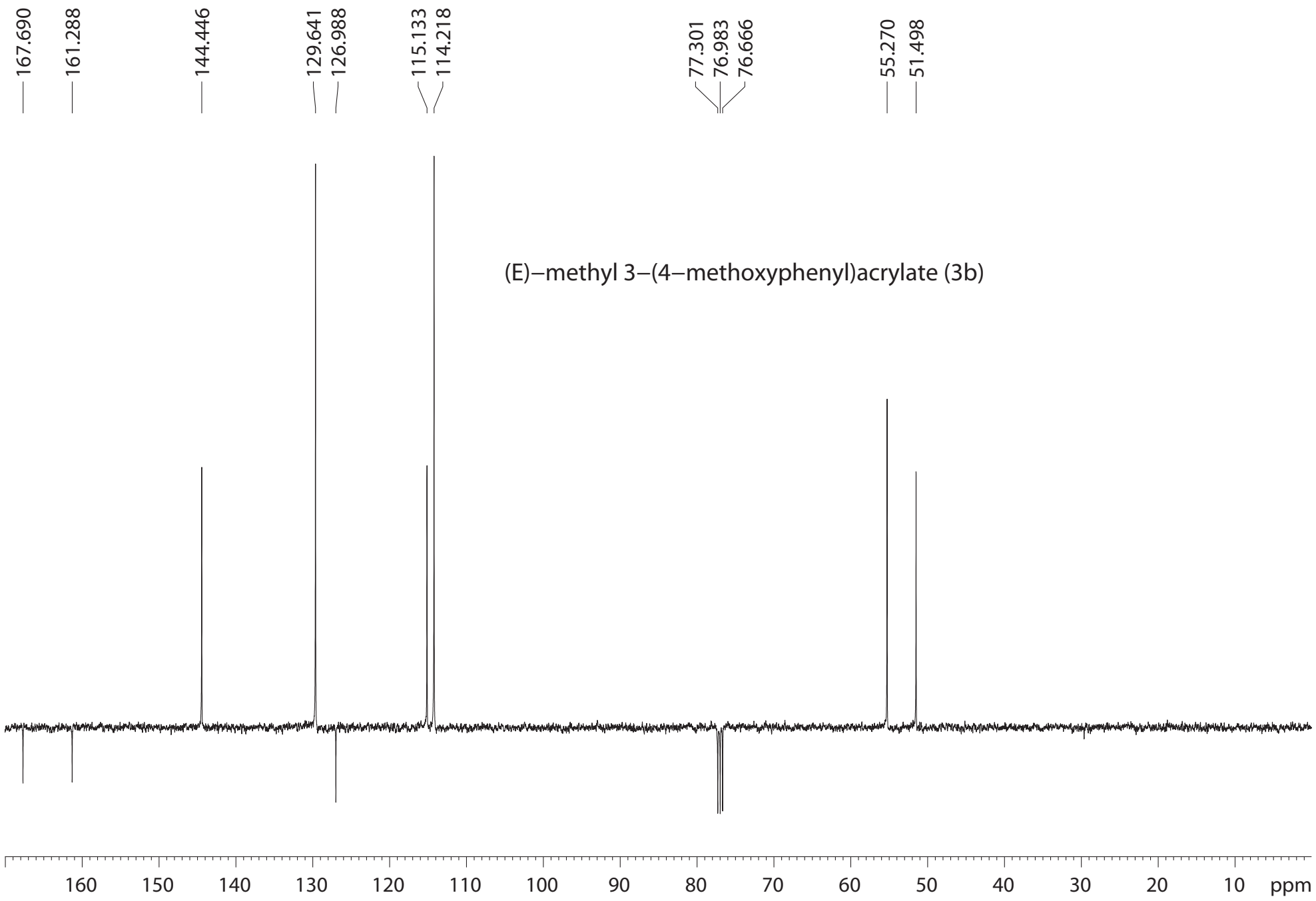
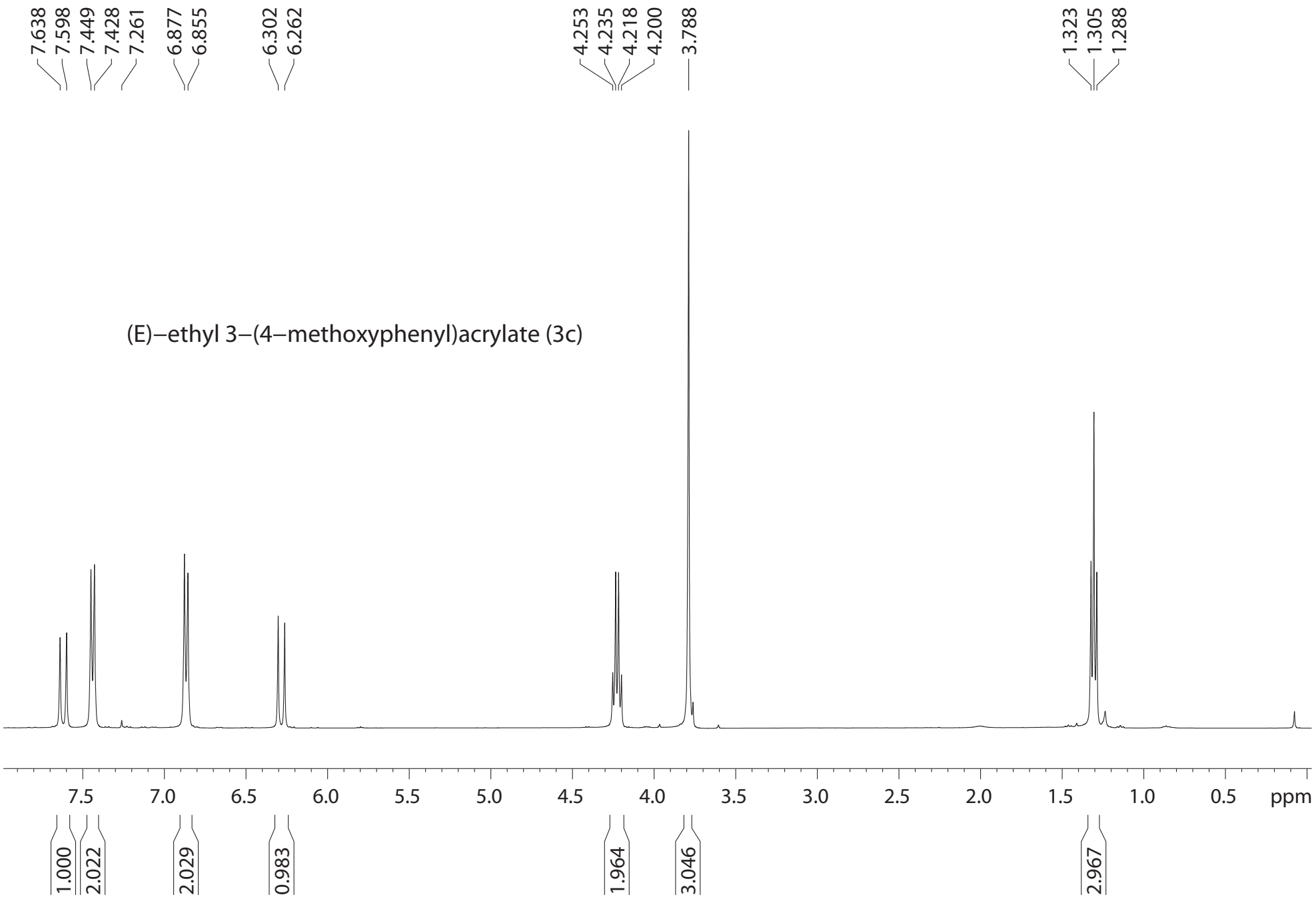
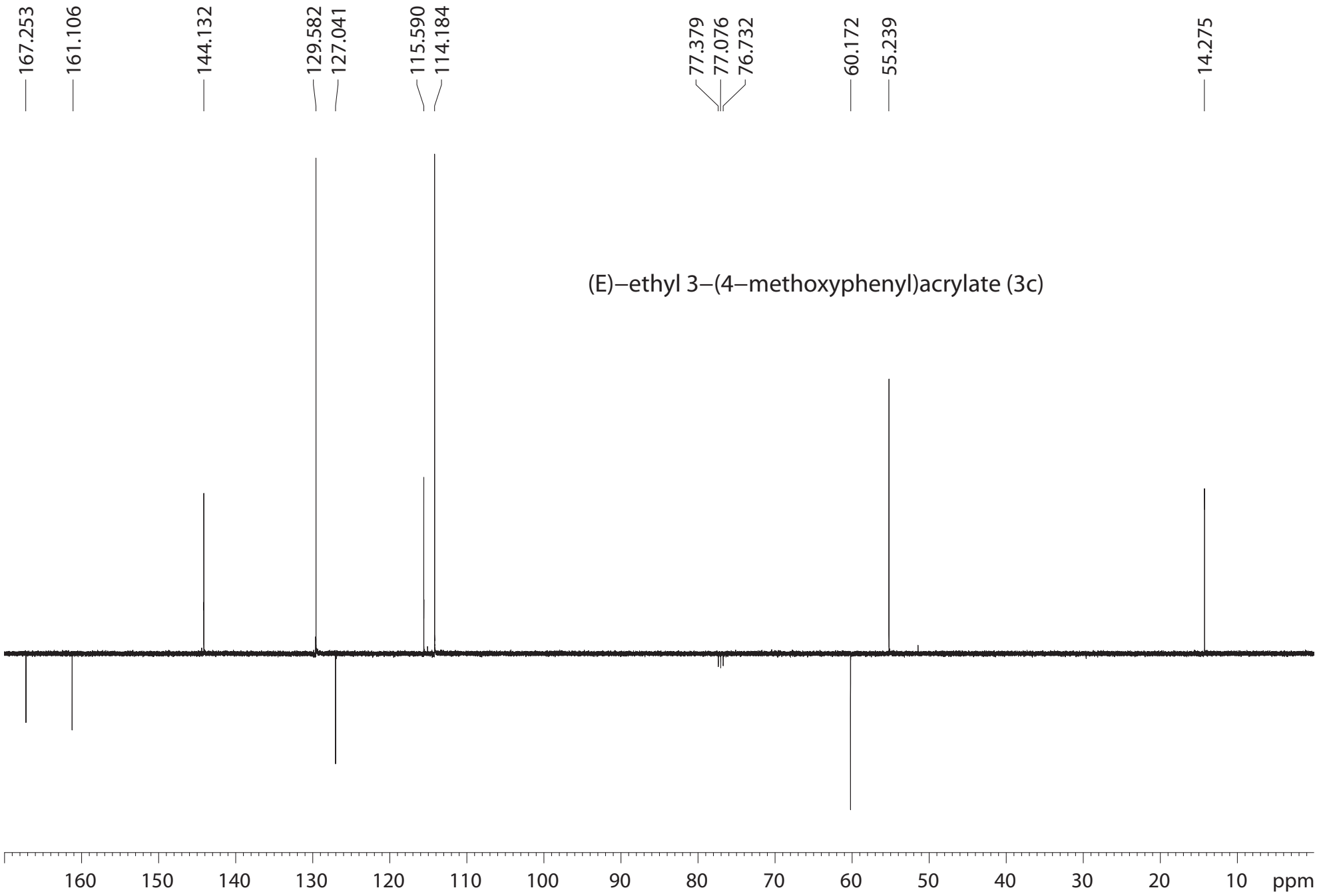
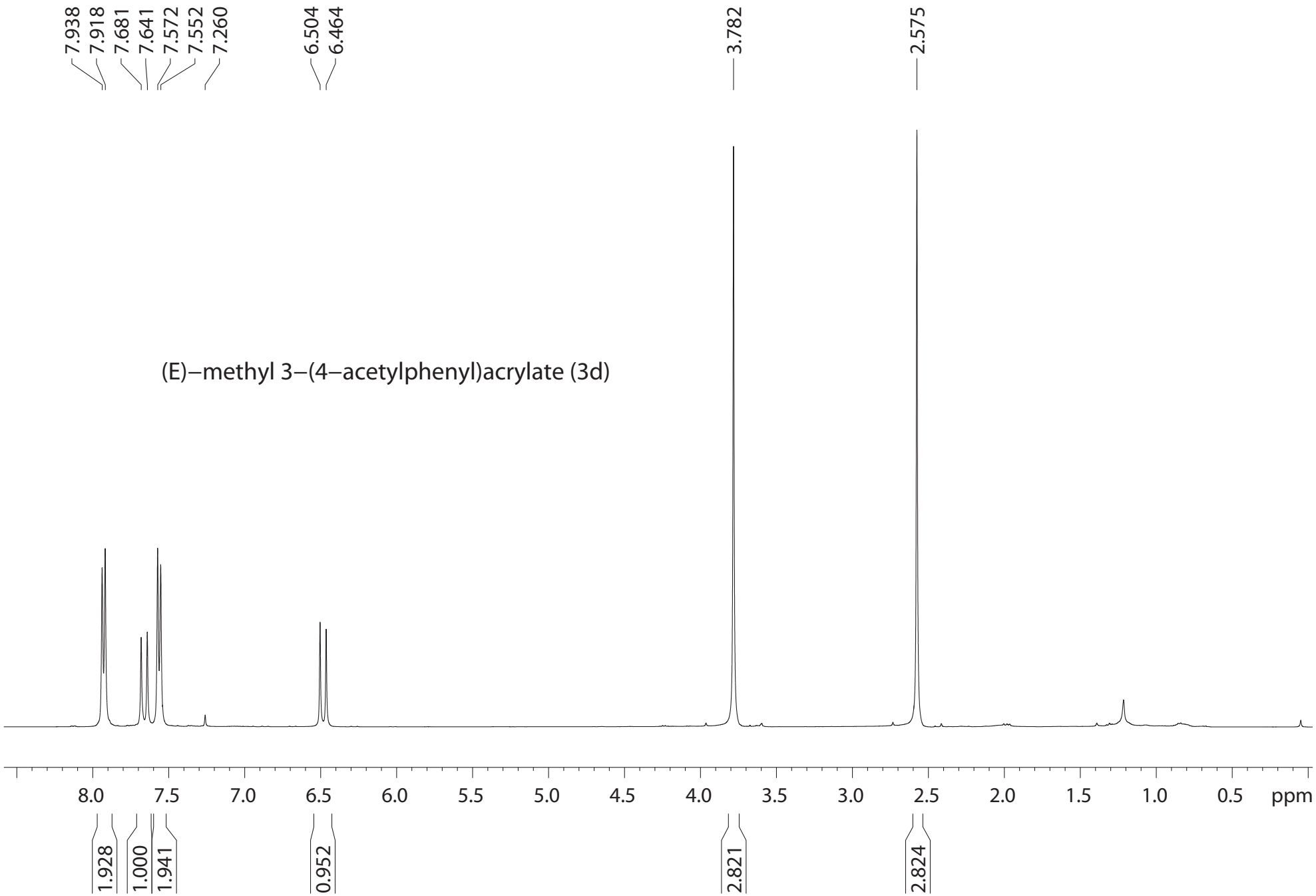
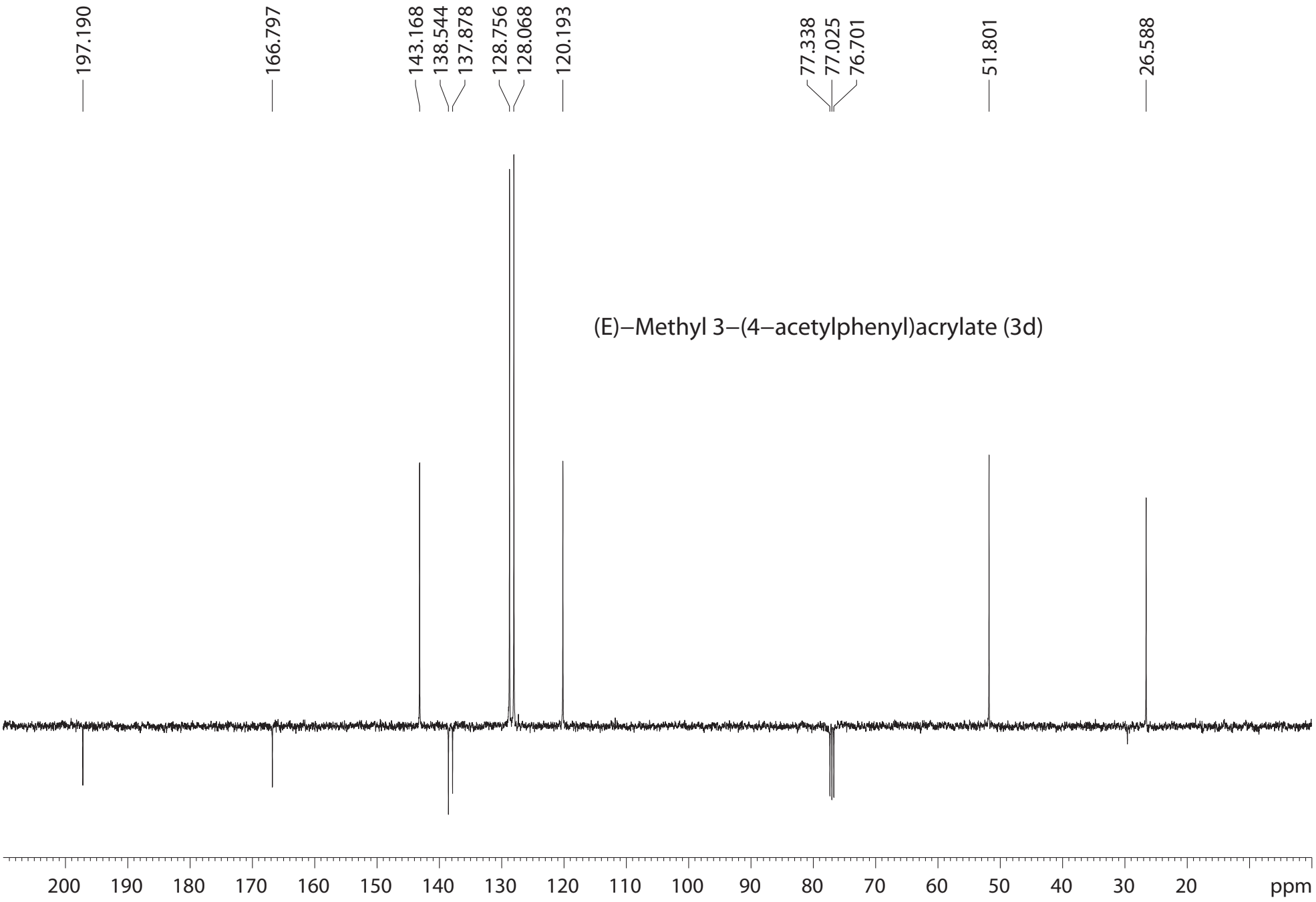
6.283
3.821
3.783
(E)–methyl 3–(4–methoxyphenyl)acrylate (3b)
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
1.000
2.111
2.100
1.019
3.240
3.096

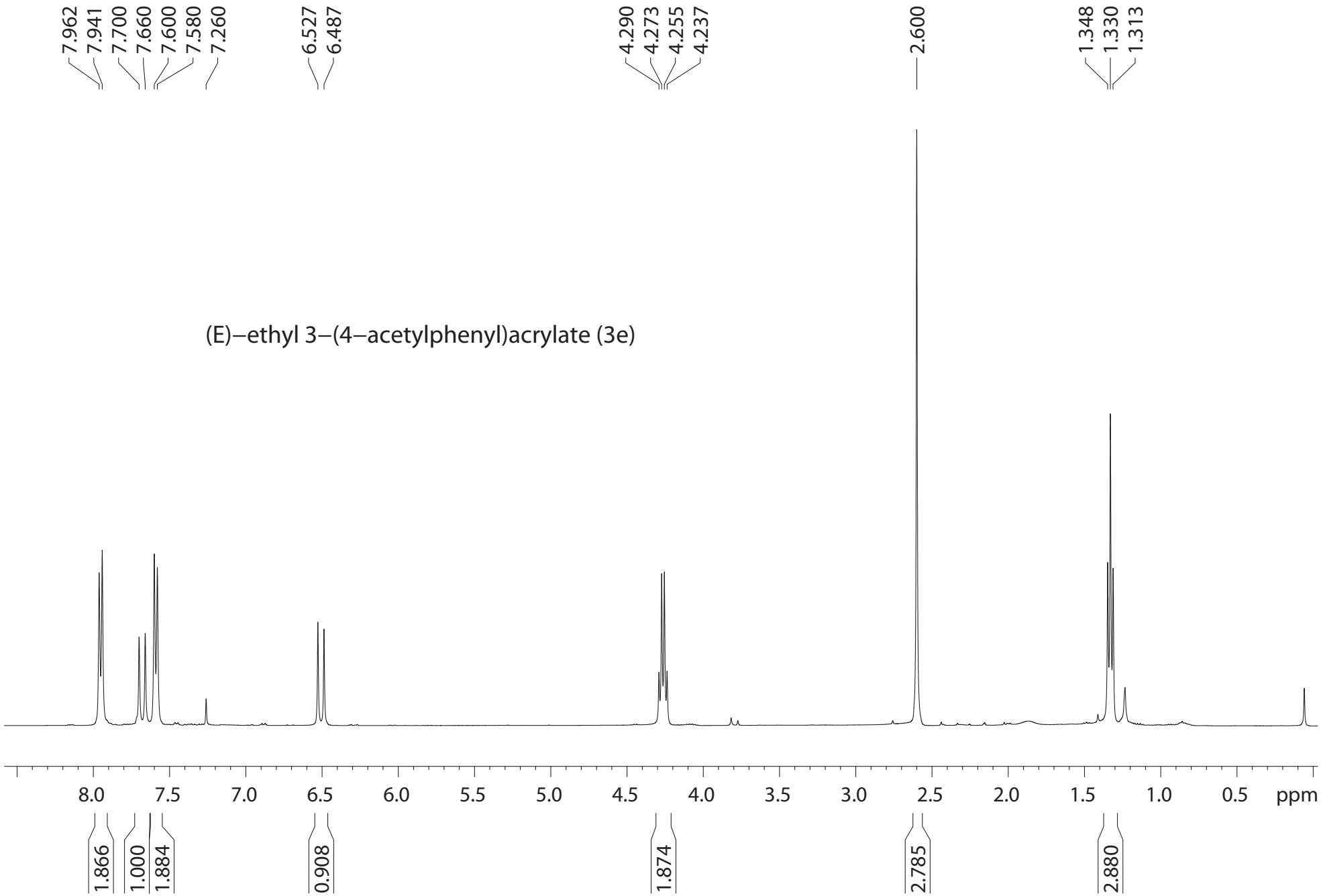

167.690
161.288
144.446
129.641
126.988
115.133
114.218
77.301
76.983
76.666
55.270
51.498
(E)–methyl 3–(4–methoxyphenyl)acrylate (3b)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

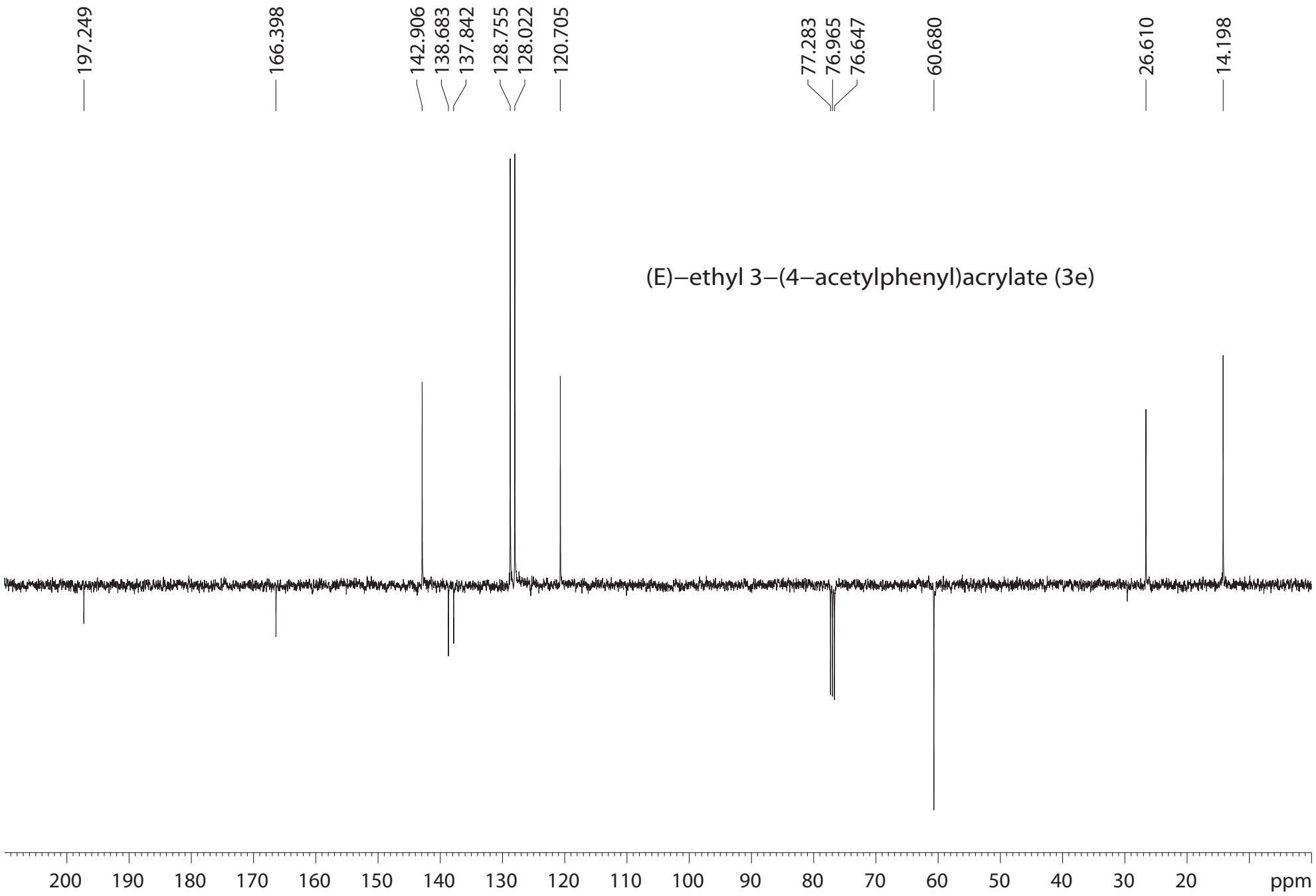

7.638
7.598
7.449
7.428
7.261
6.877
6.855
6.302
6.262
4.253
4.235
4.218
4.200
3.788
1.323
1.305
1.288
(E)–ethyl 3–(4–methoxyphenyl)acrylate (3c)
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
1.000
2.022
2.029
0.983
1.964
3.046
2.967

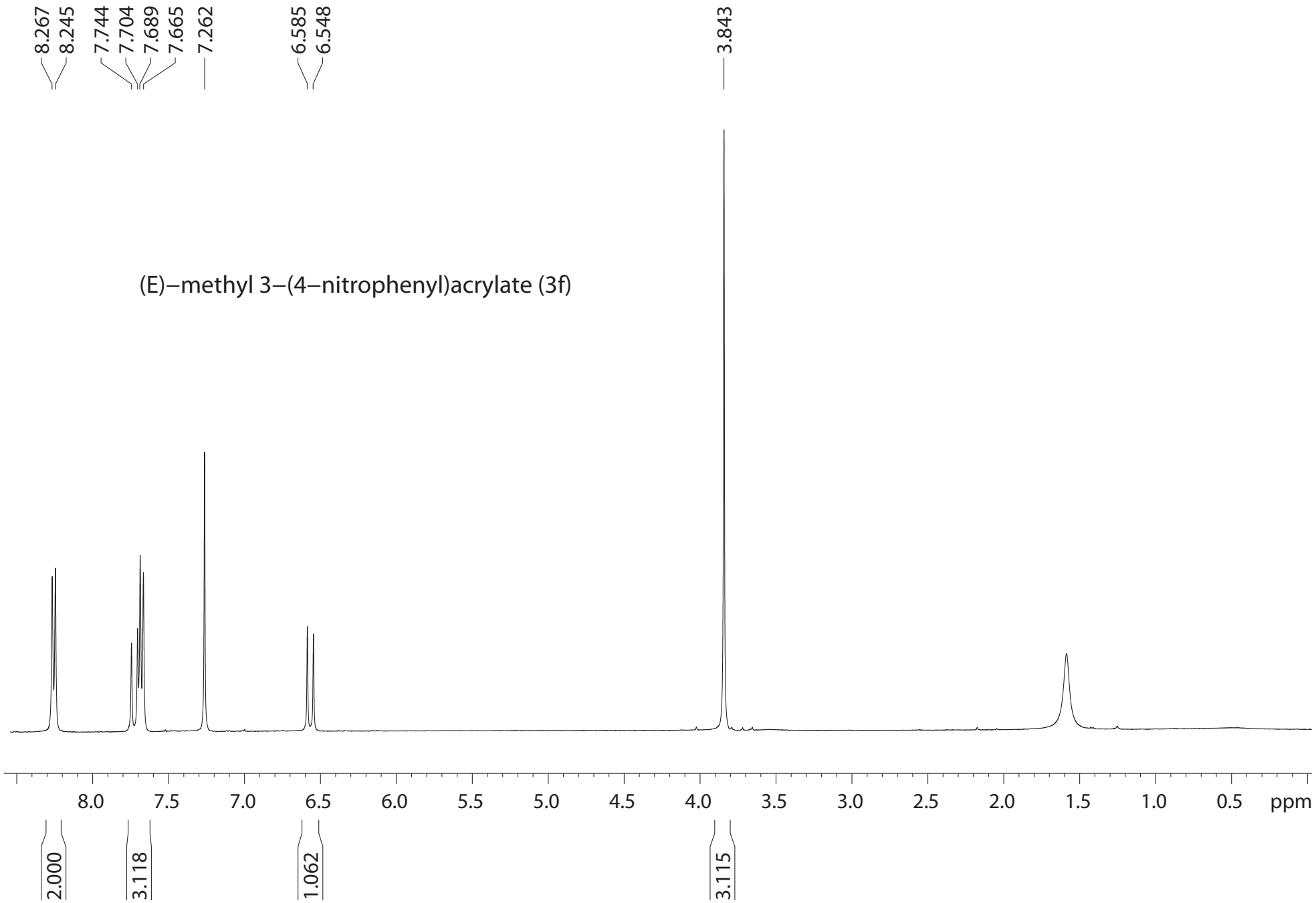

167.253
161.106
144.132
129.582
127.041
115.590
114.184
77.379
77.076
76.732
60.172
55.239
14.275
(E)–ethyl 3–(4–methoxyphenyl)acrylate (3c)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

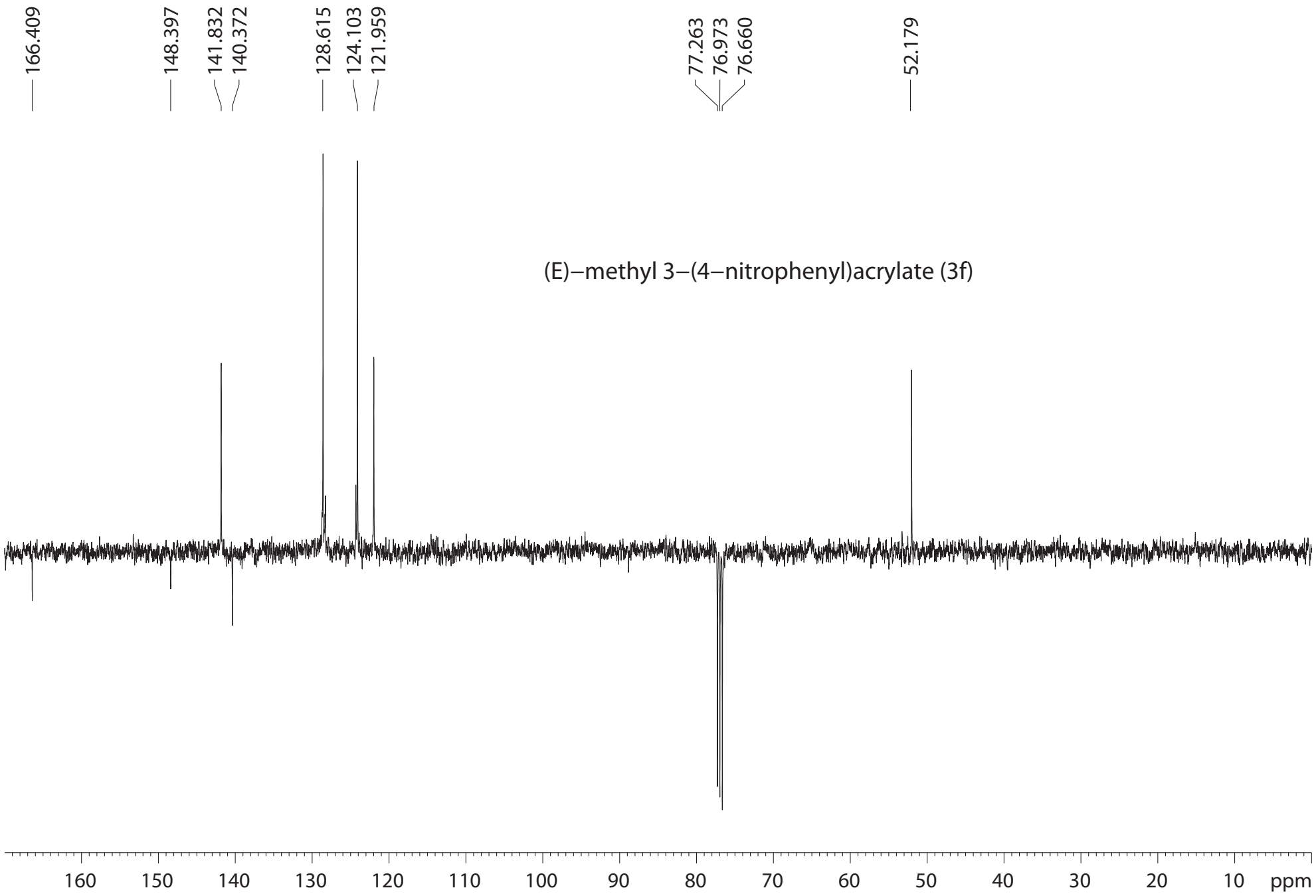

7.938
7.918
7.681
7.641
7.572
7.552
7.260
6.504
6.464
3.782
2.575
(E)–methyl 3–(4–acetylphenyl)acrylate (3d)
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
1.928
1.000
1.941
0.952
2.821
2.824

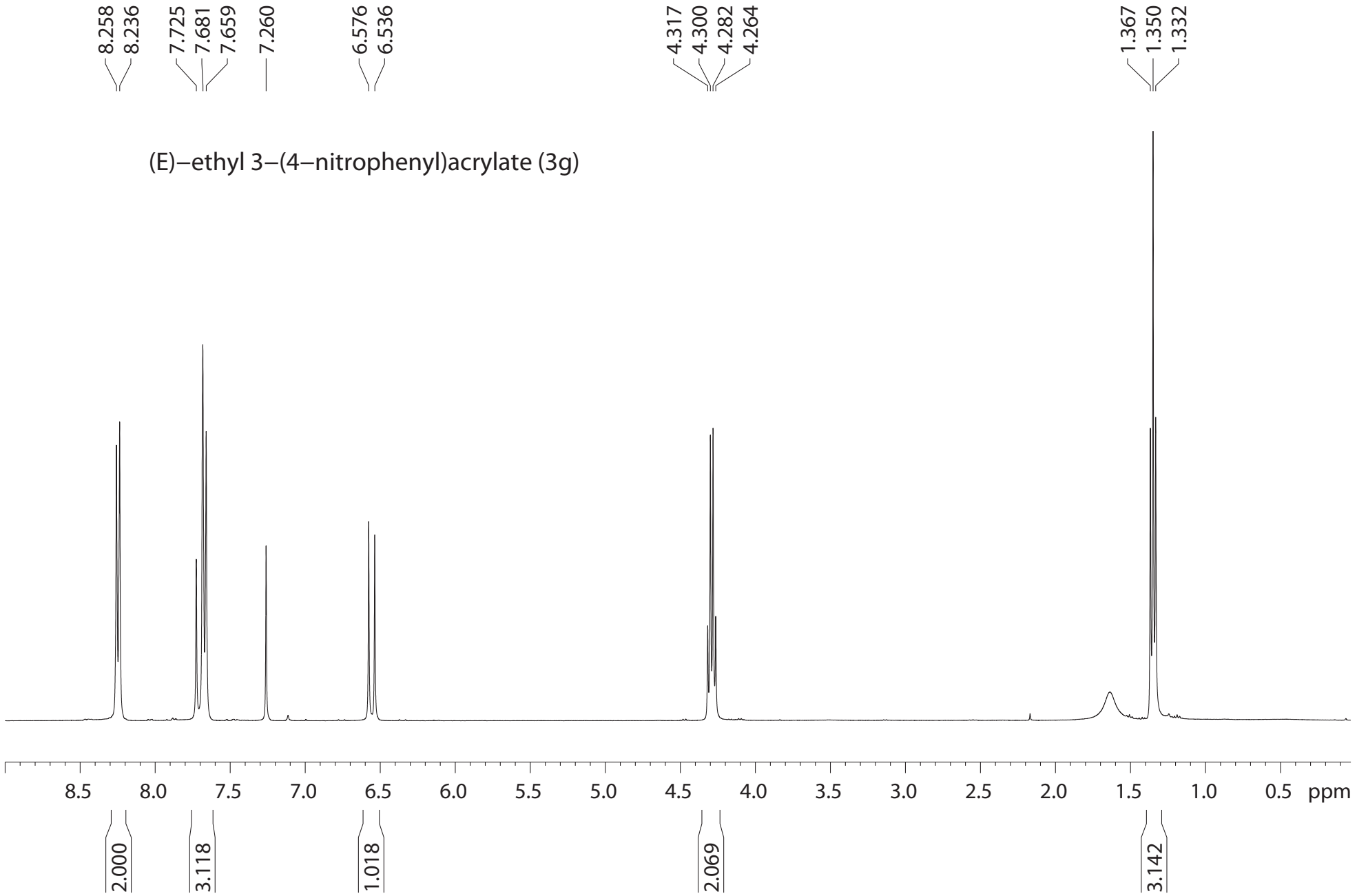

197.190
166.797
143.168
138.544
137.878
128.756
128.068
120.193
77.338
77.025
76.701
51.801
26.588
(E)–Methyl 3–(4–acetylphenyl)acrylate (3d)
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
ppm

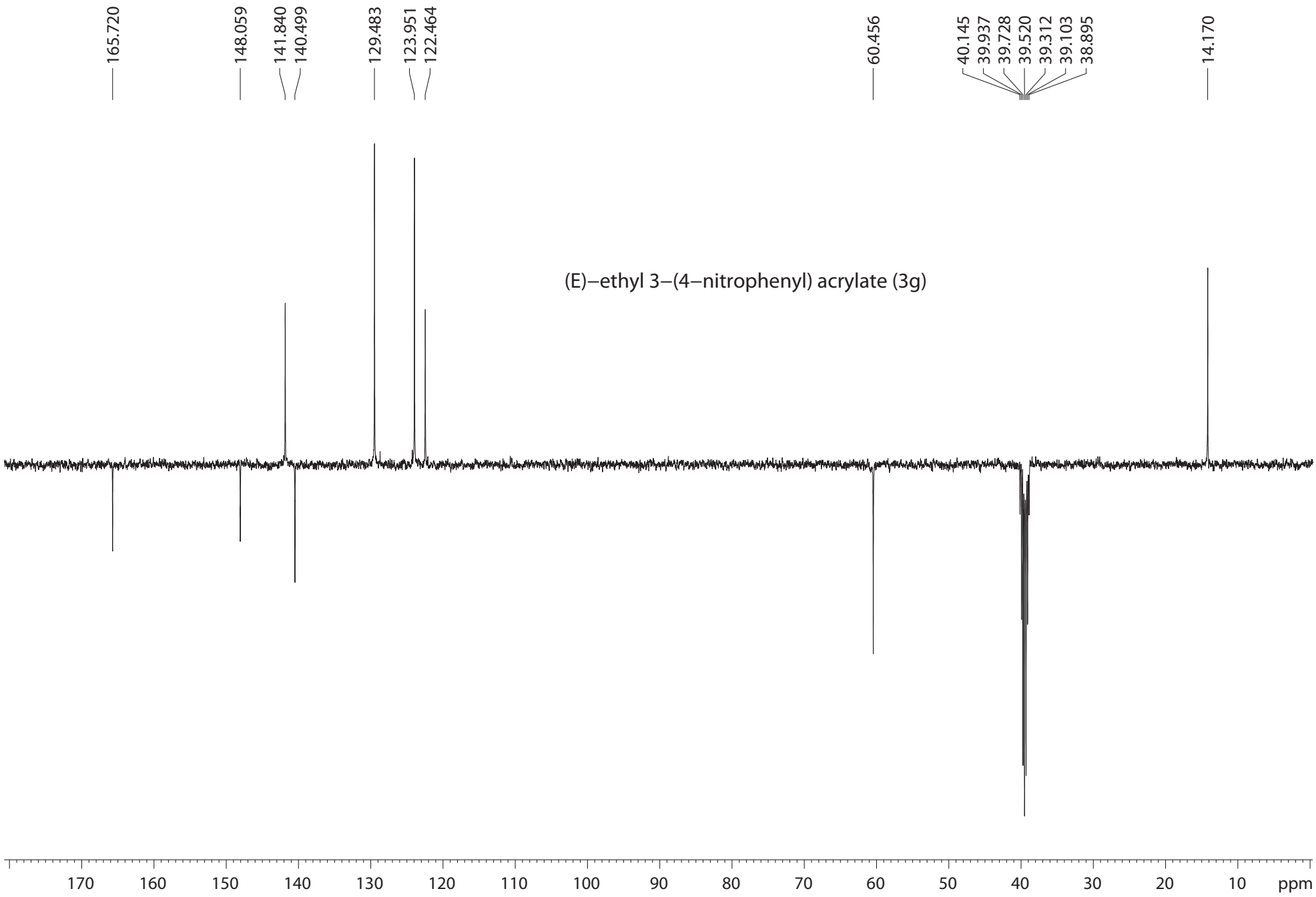

7.962
7.941
7.700
7.660
7.600
7.580
7.260
6.527
6.487
4.290
4.273
4.255
4.237
2.600
1.348
1.330
1.313
(E)–ethyl 3–(4–acetylphenyl)acrylate (3e)
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
1.866
1.000
1.884
0.908
1.874
2.785
2.880

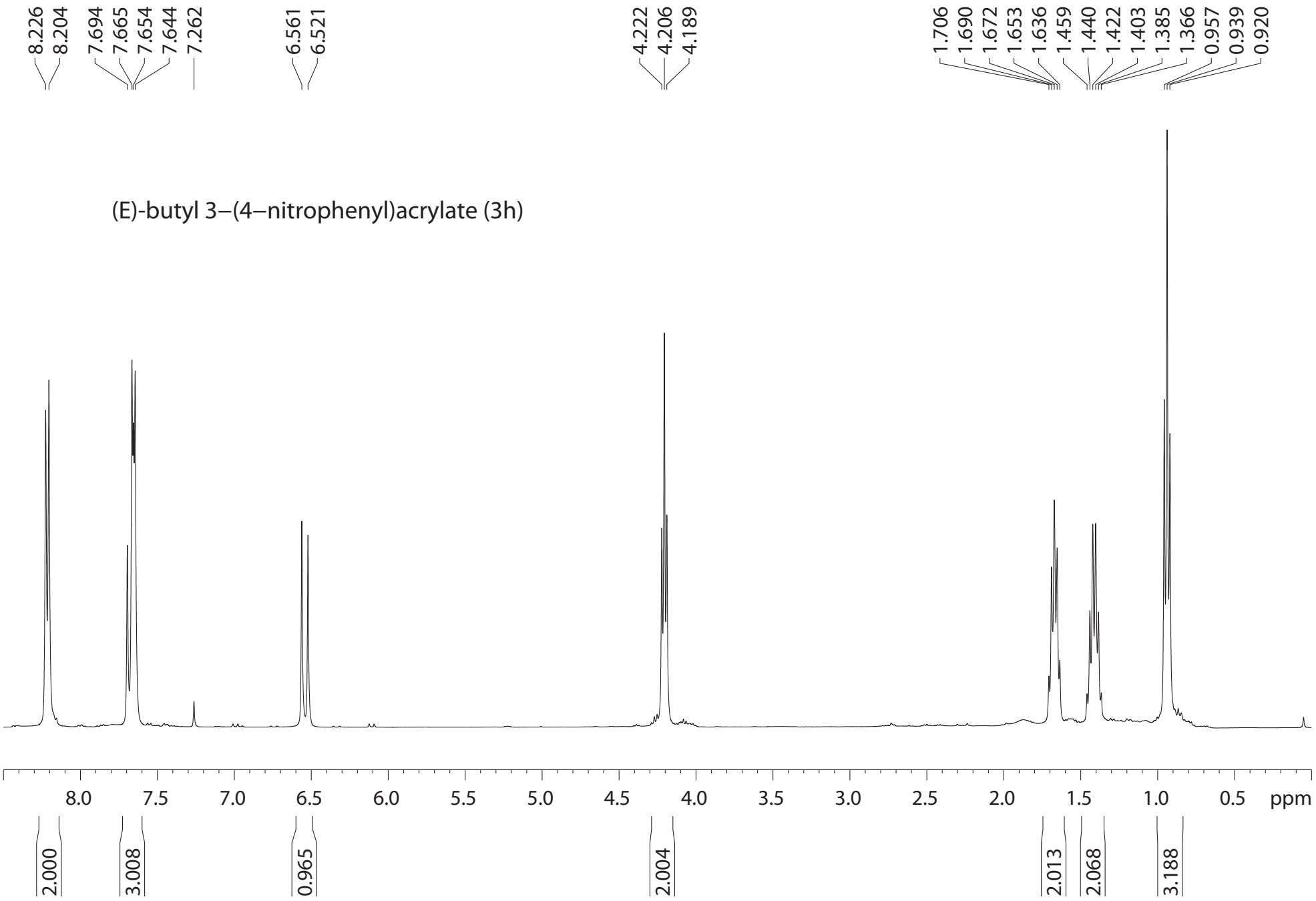

197.249
166.398
142.906
138.683
137.842
128.755
128.022
120.705
77.283
76.965
76.647
60.680
26.610
14.198
(E)–ethyl 3–(4–acetylphenyl)acrylate (3e)
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
ppm

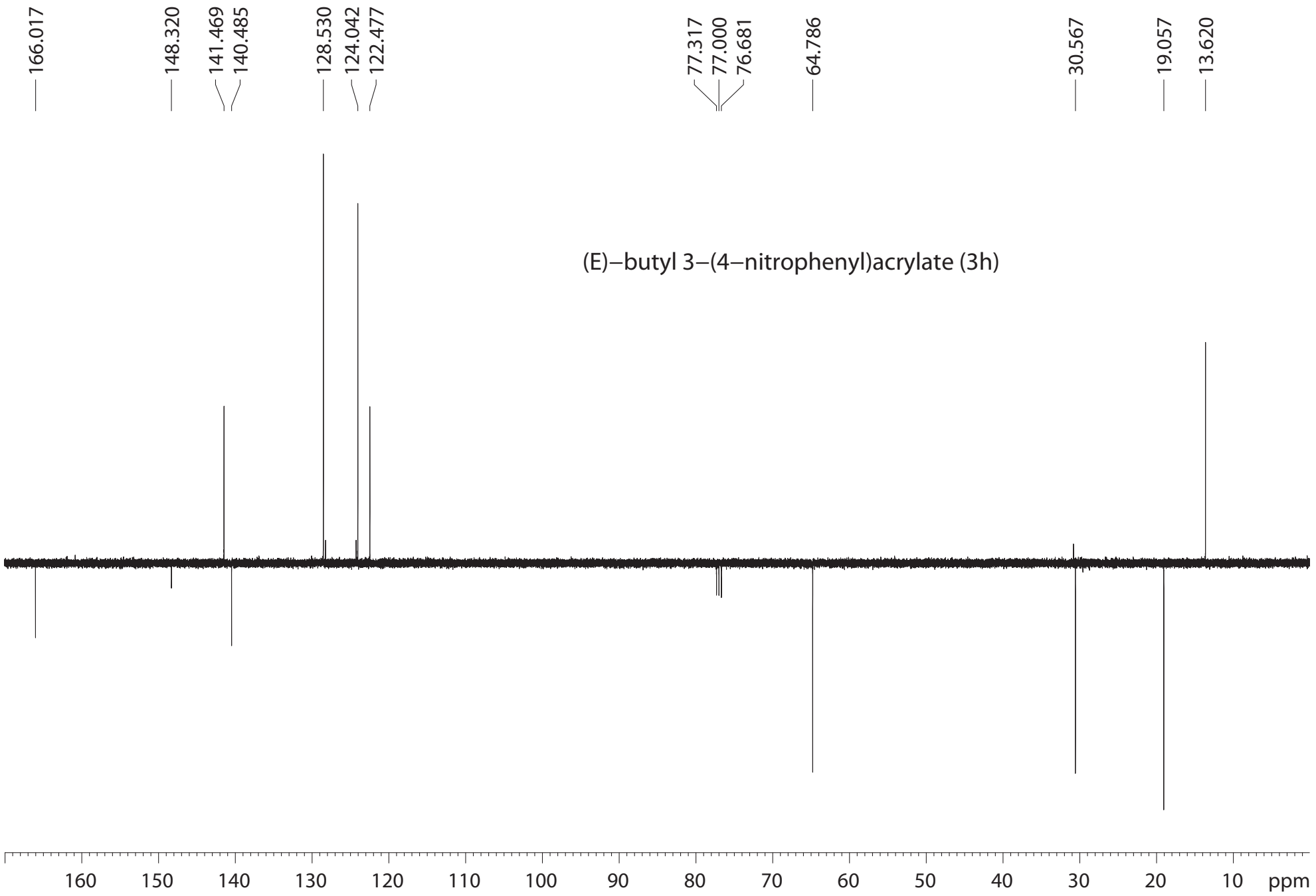

8.267
8.245
7.744
7.704
7.689
7.665
7.262
6.585
6.548
3.843
(E)–methyl 3–(4–nitrophenyl)acrylate (3f)
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
2.000
3.118
1.062
3.115

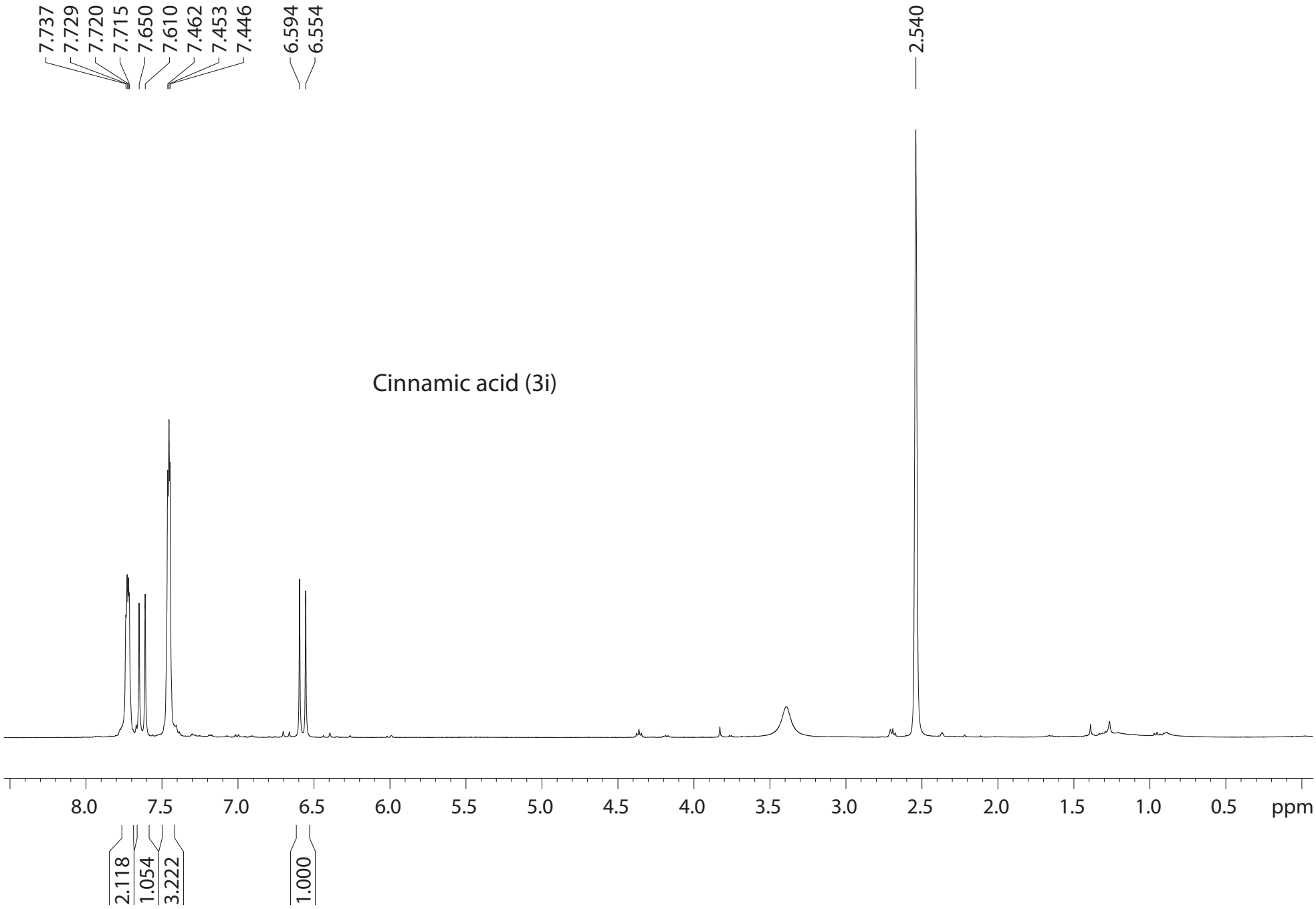

166.409
148.397
141.832
140.372
128.615
124.103
121.959
77.263
76.973
76.660
52.179
(E)–methyl 3–(4–nitrophenyl)acrylate (3f)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

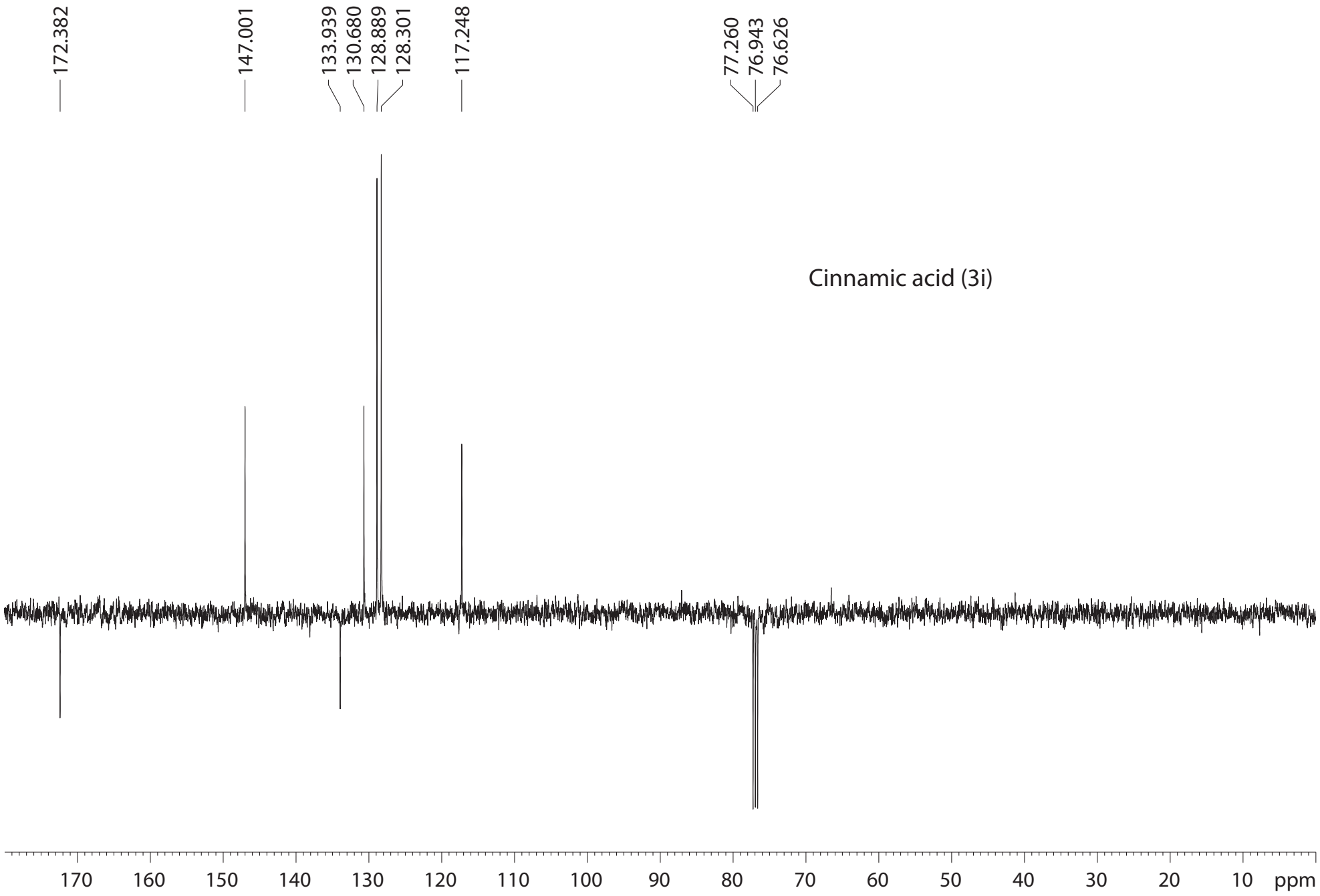

8.258
8.236
7.725
7.681
7.659
7.260
6.576
6.536
4.317
4.300
4.282
4.264
1.367
1.350
1.332
(E)–ethyl 3–(4–nitrophenyl)acrylate (3g)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
2.000
3.118
1.018
2.069
3.142

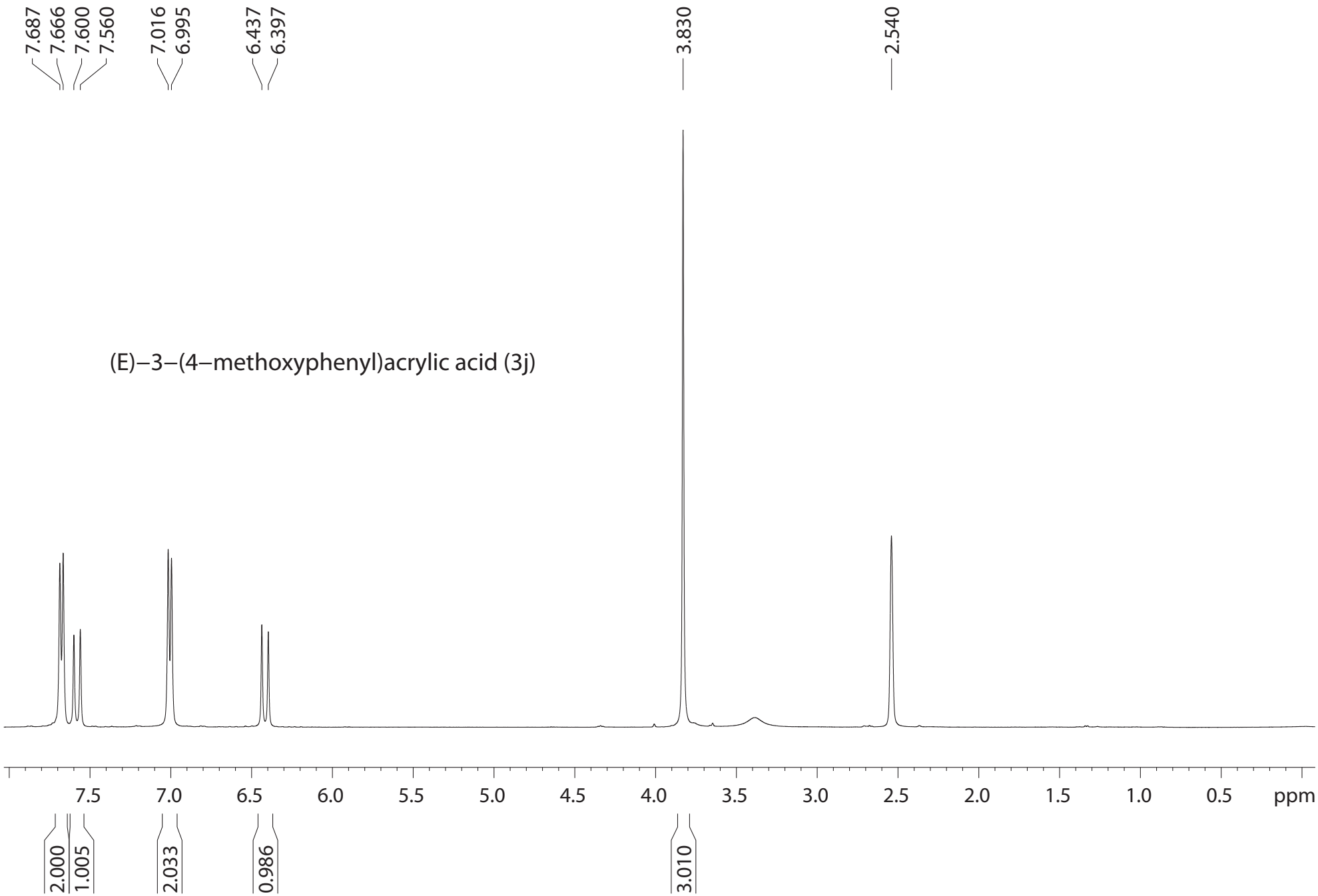

165.720
148.059
141.840
140.499
129.483
123.951
122.464
60.456
40.145
39.937
39.728
39.520
39.312
39.103
38.895
14.170
(E)–ethyl 3–(4–nitrophenyl) acrylate (3g)
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

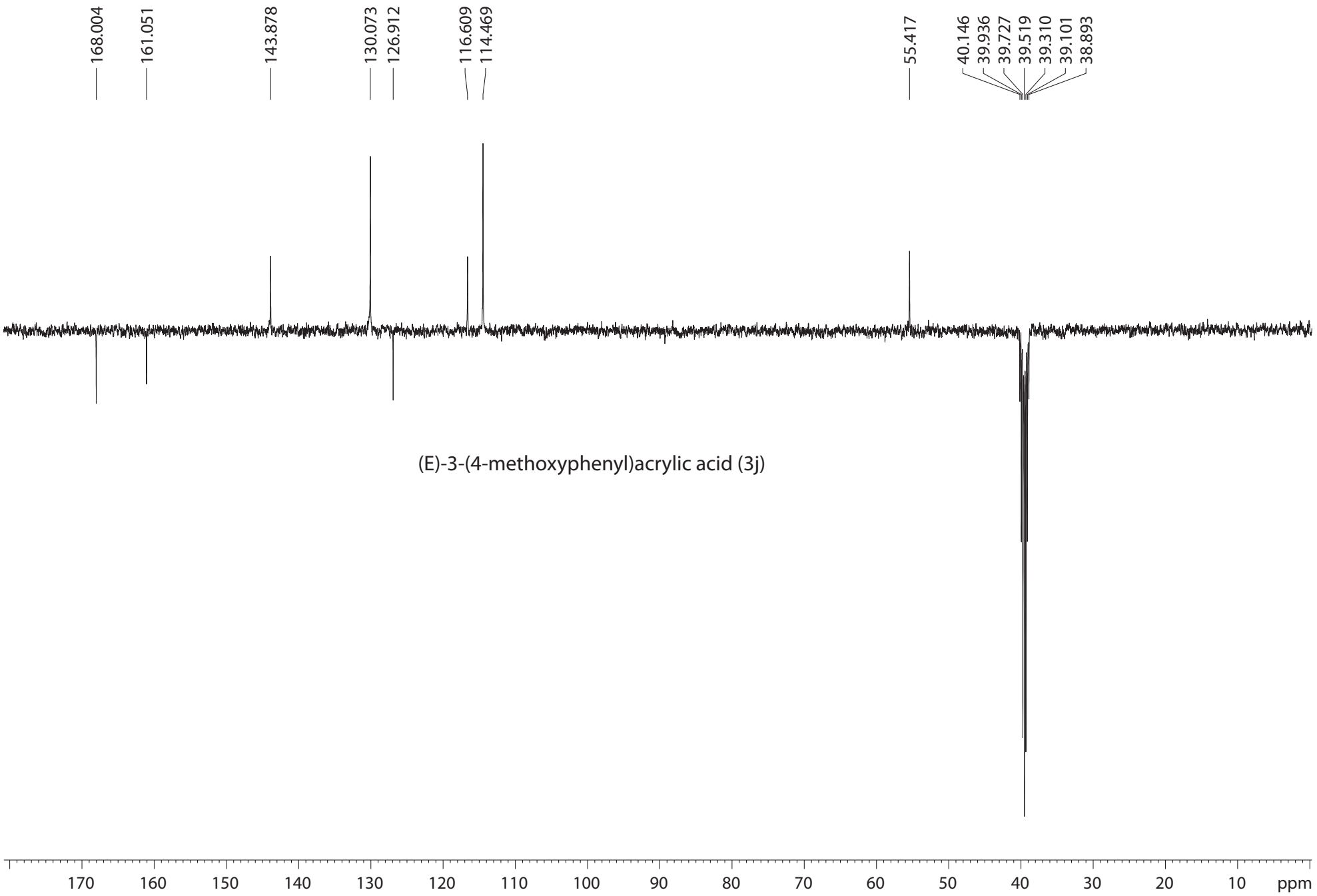

8.226
8.204
7.694
7.665
7.654
7.644
7.262
6.561
6.521
4.222
4.206
4.189
1.706
1.690
1.672
1.653
1.636
1.459
1.440
1.422
1.403
1.385
1.366
0.957
0.939
0.920
(E)-butyl 3–(4–nitrophenyl)acrylate (3h)
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
2.000
3.008
0.965
2.004
2.013
2.068
3.188

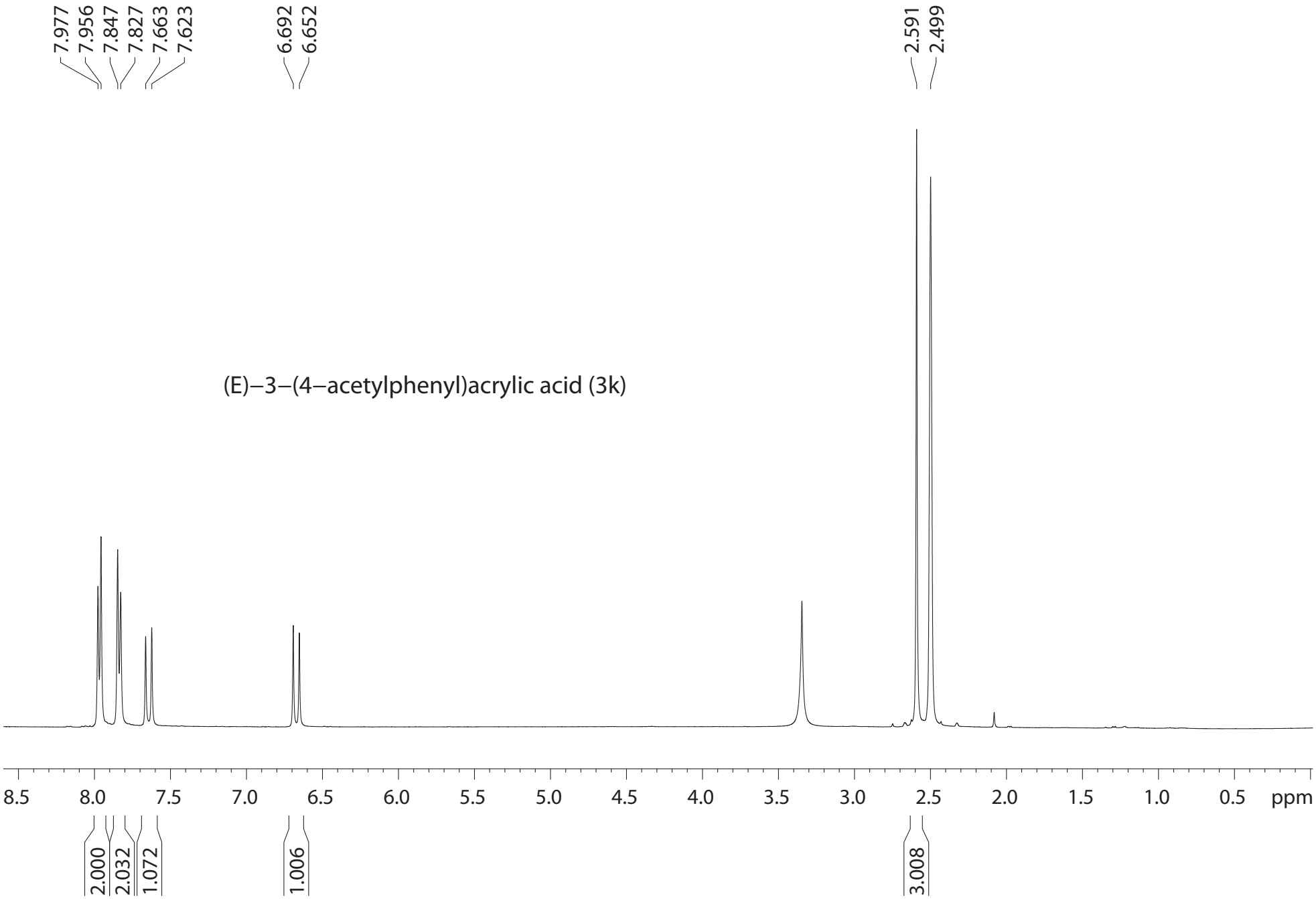

166.017
148.320
141.469
140.485
128.530
124.042
122.477
77.317
77.000
76.681
64.786
30.567
19.057
13.620
(E)–butyl 3–(4–nitrophenyl)acrylate (3h)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

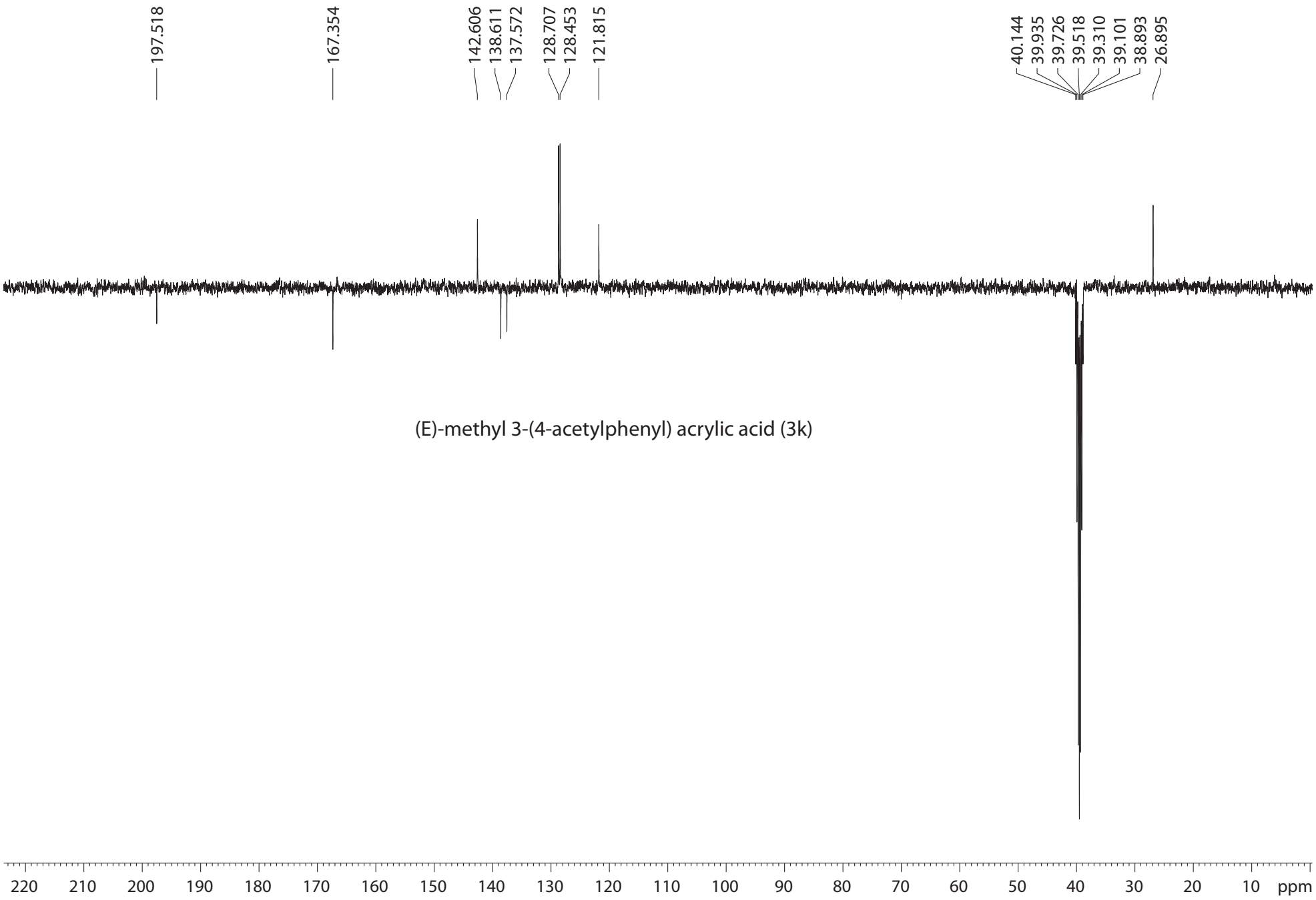

7.737
7.729
7.720
7.715
7.650
7.610
7.462
7.453
7.446
6.594
6.554
2.540
Cinnamic acid (3i)
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
2.118
1.054
3.222
1.000


172.382
147.001
133.939
130.680
128.889
128.301
117.248
77.260
76.943
76.626
Cinnamic acid (3i)
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

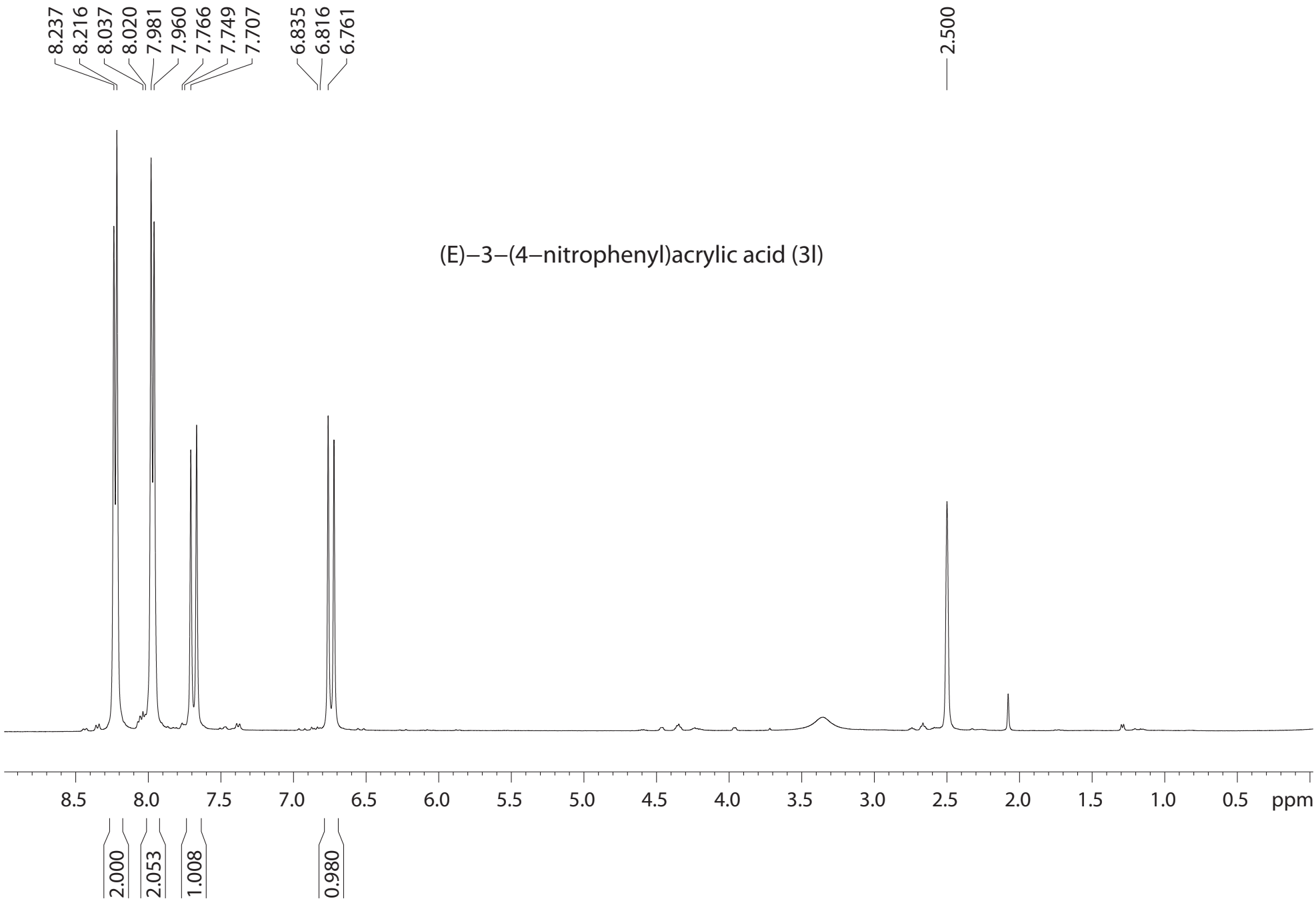

7.687
7.666
7.600
7.560
7.016
6.995
6.437
6.397
3.830
2.540
(E)−3−(4−methoxyphenyl)acrylic acid (3j)
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
2.000
1.005
2.033
0.986
3.010

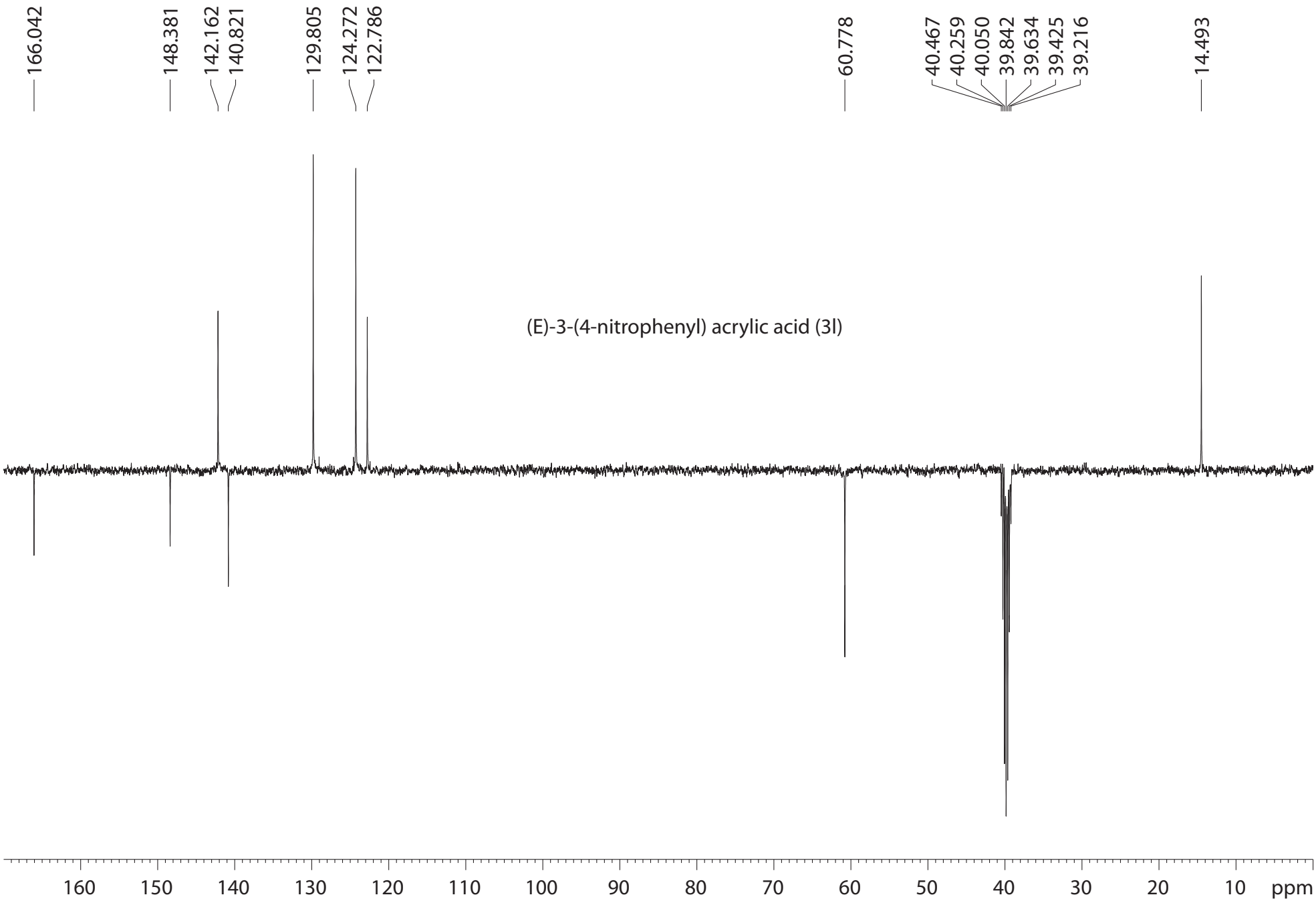

168.004
161.051
143.878
130.073
126.912
116.609
114.469
55.417
40.146
39.936
39.727
39.519
39.310
39.101
38.893
(E)-3-(4-methoxyphenyl)acrylic acid (3j)
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

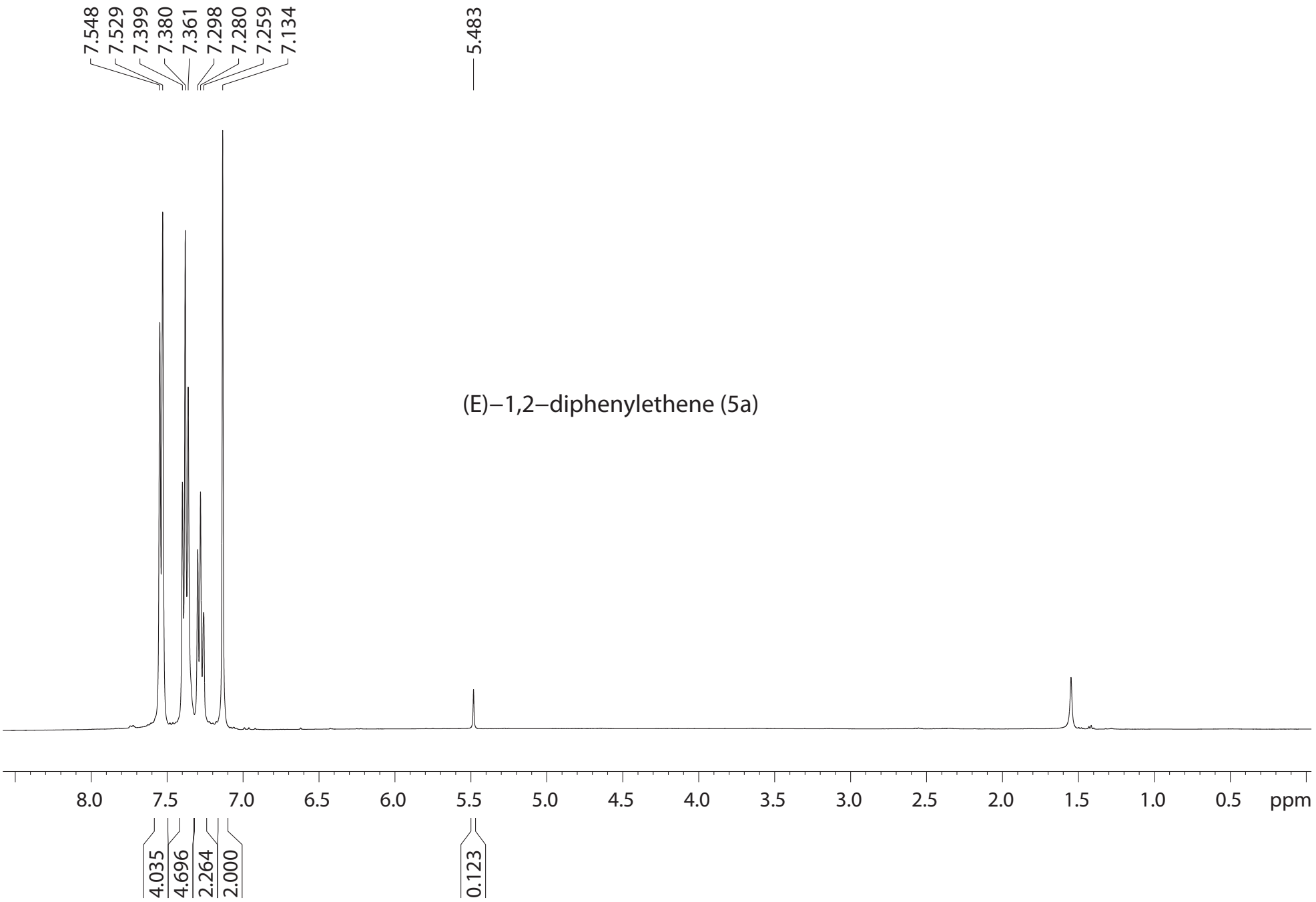

7.977
7.956
7.847
7.827
7.663
7.623
6.692
6.652
2.591
2.499
(E)–3–(4–acetylphenyl)acrylic acid (3k)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
2.000
2.032
1.072
1.006
3.008

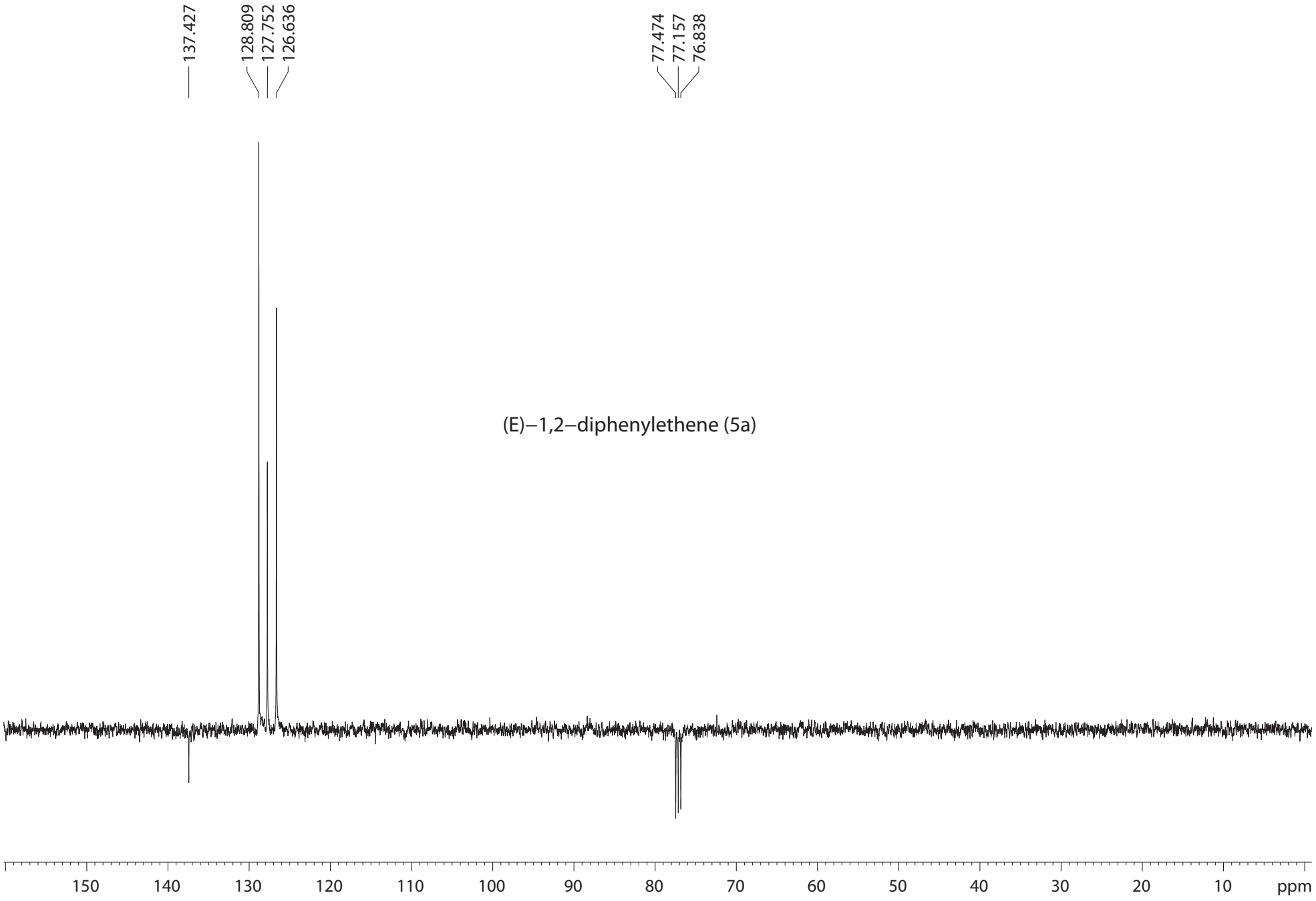


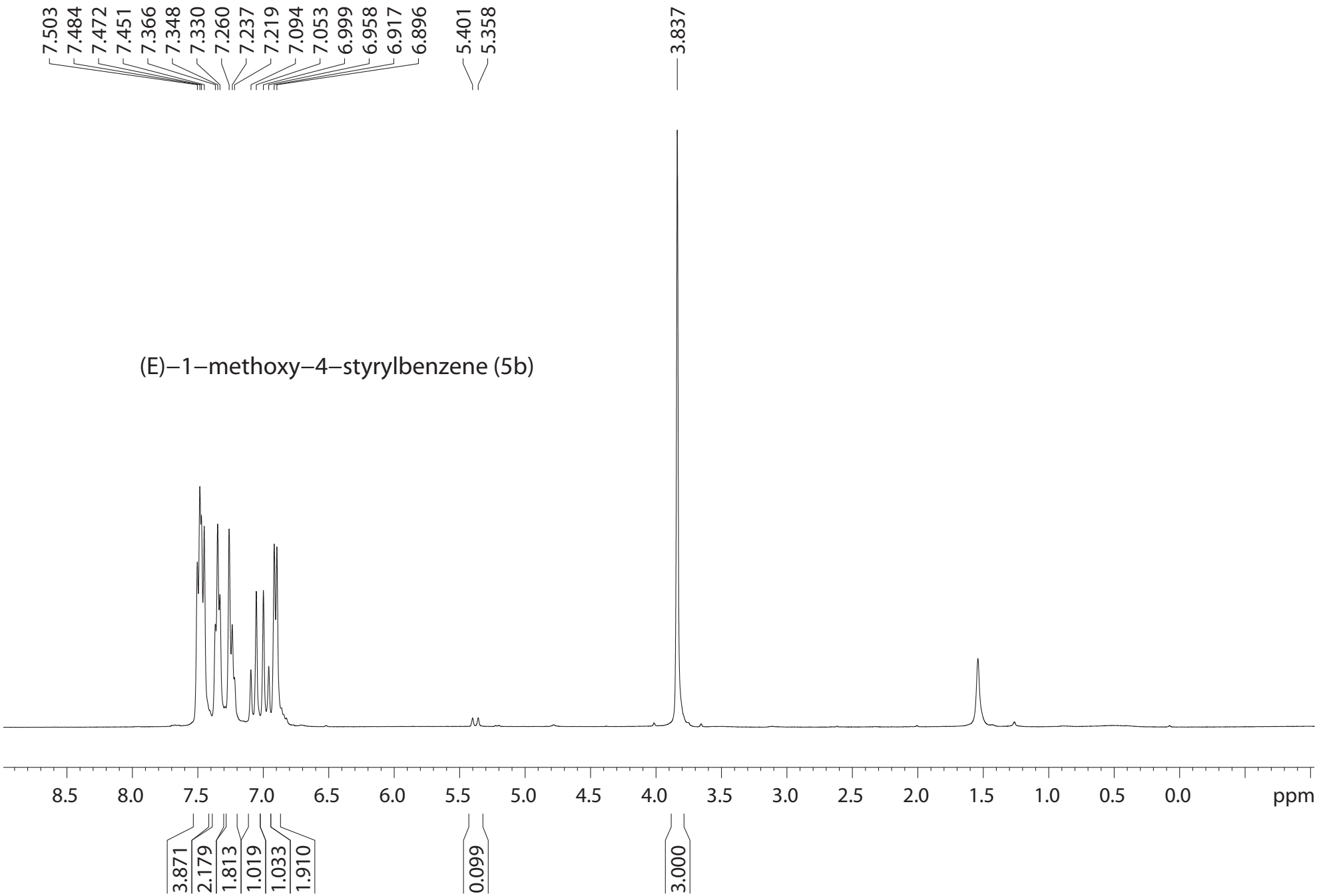
(E)-methyl 3-(4-acetylphenyl) acrylic acid (3k)

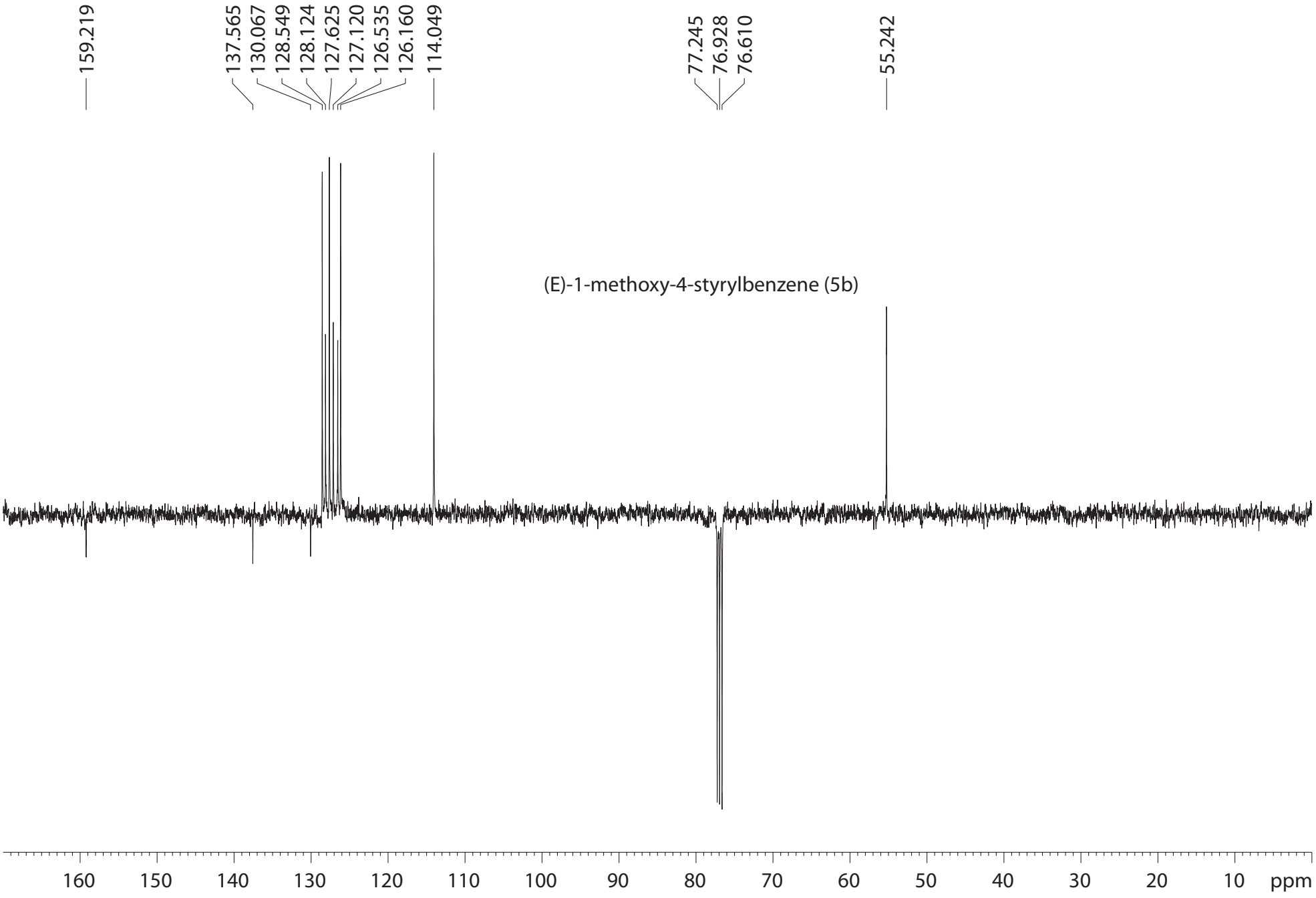

8.237
8.216
8.037
8.020
7.981
7.960
7.766
7.749
7.707
6.835
6.816
6.761
2.500
(E)–3–(4–nitrophenyl)acrylic acid (3l)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
2.000
2.053
1.008
0.980

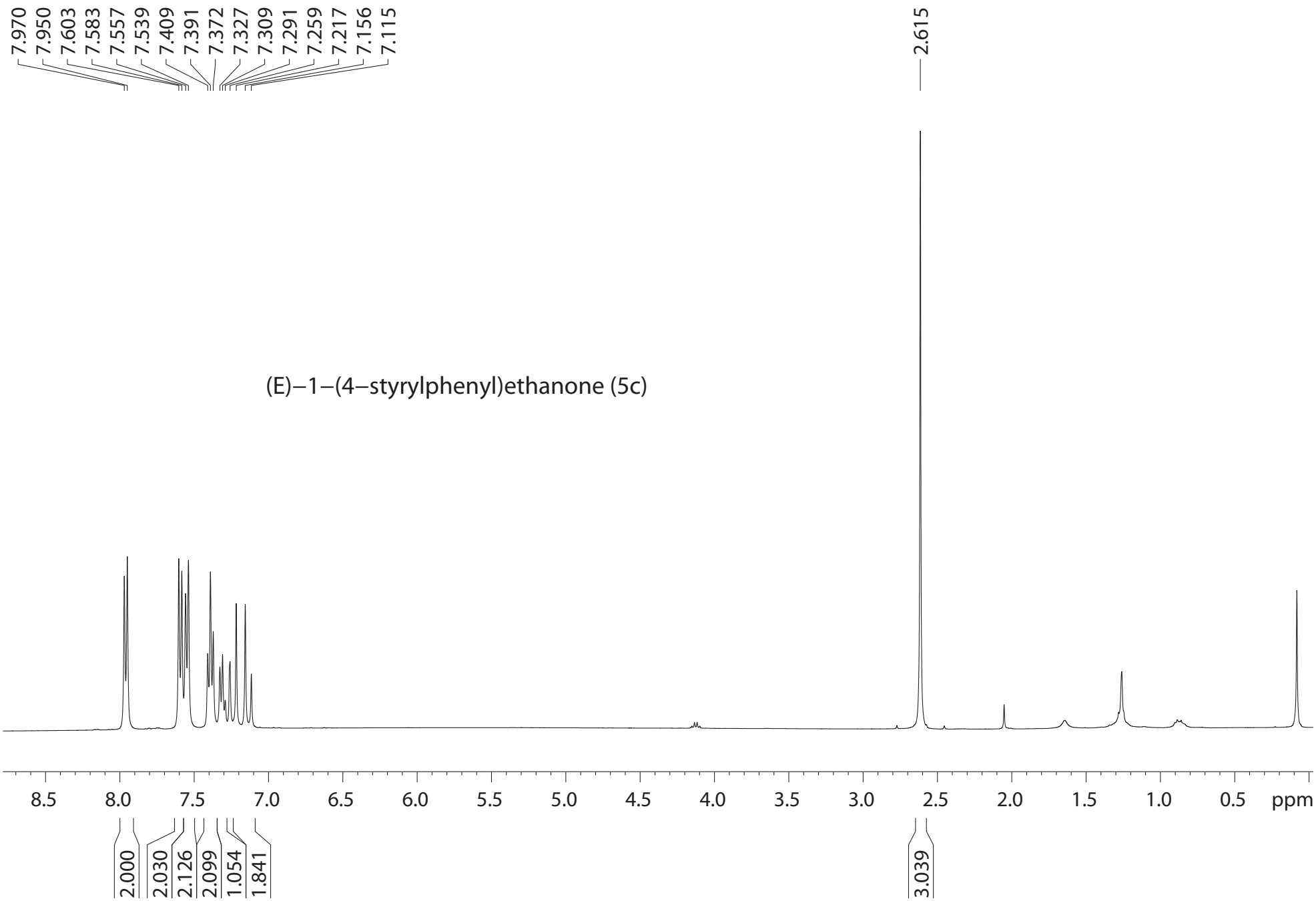

166.042
148.381
142.162
140.821
129.805
124.272
122.786
60.778
40.467
40.259
40.050
39.842
39.634
39.425
39.216
14.493
(E)-3-(4-nitrophenyl) acrylic acid (3l)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

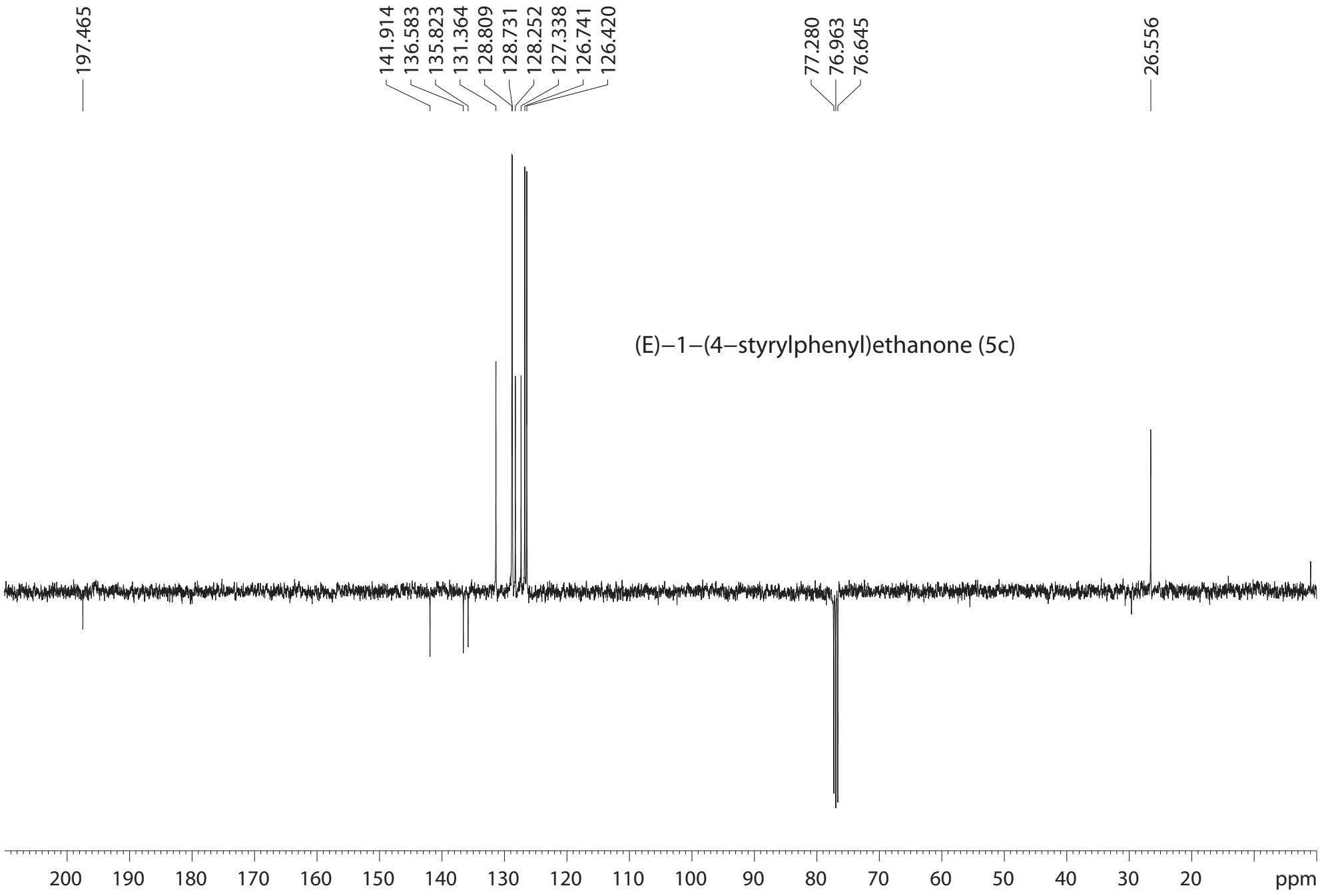

7.548
7.529
7.399
7.380
7.361
7.298
7.280
7.259
7.134
5.483
(E)–1,2–diphenylethene (5a)
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
4.035
4.696
2.264
2.000
0.123

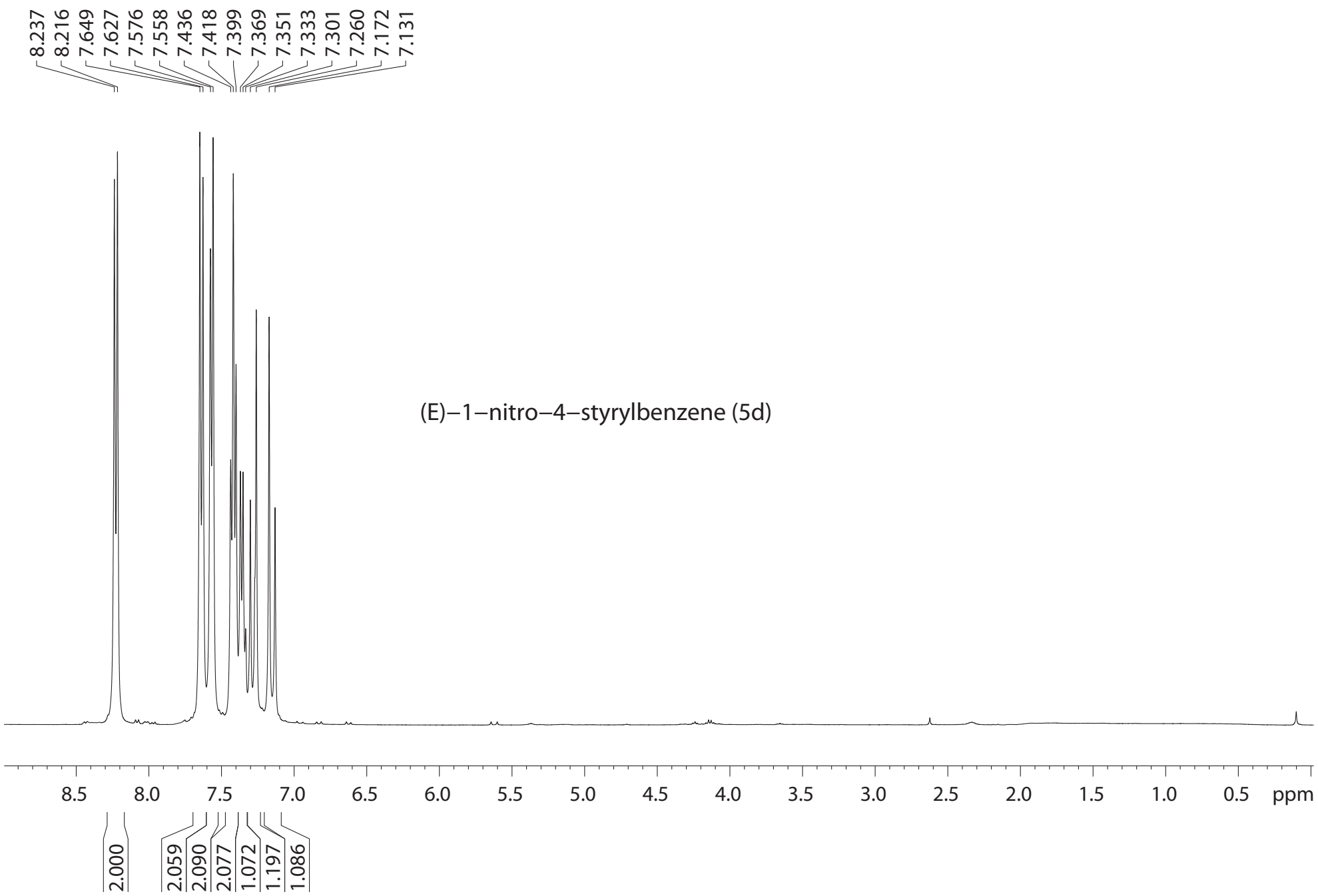

137.427
128.809
127.752
126.636
77.474
77.157
76.838
(E)–1,2–diphenylethene (5a)
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

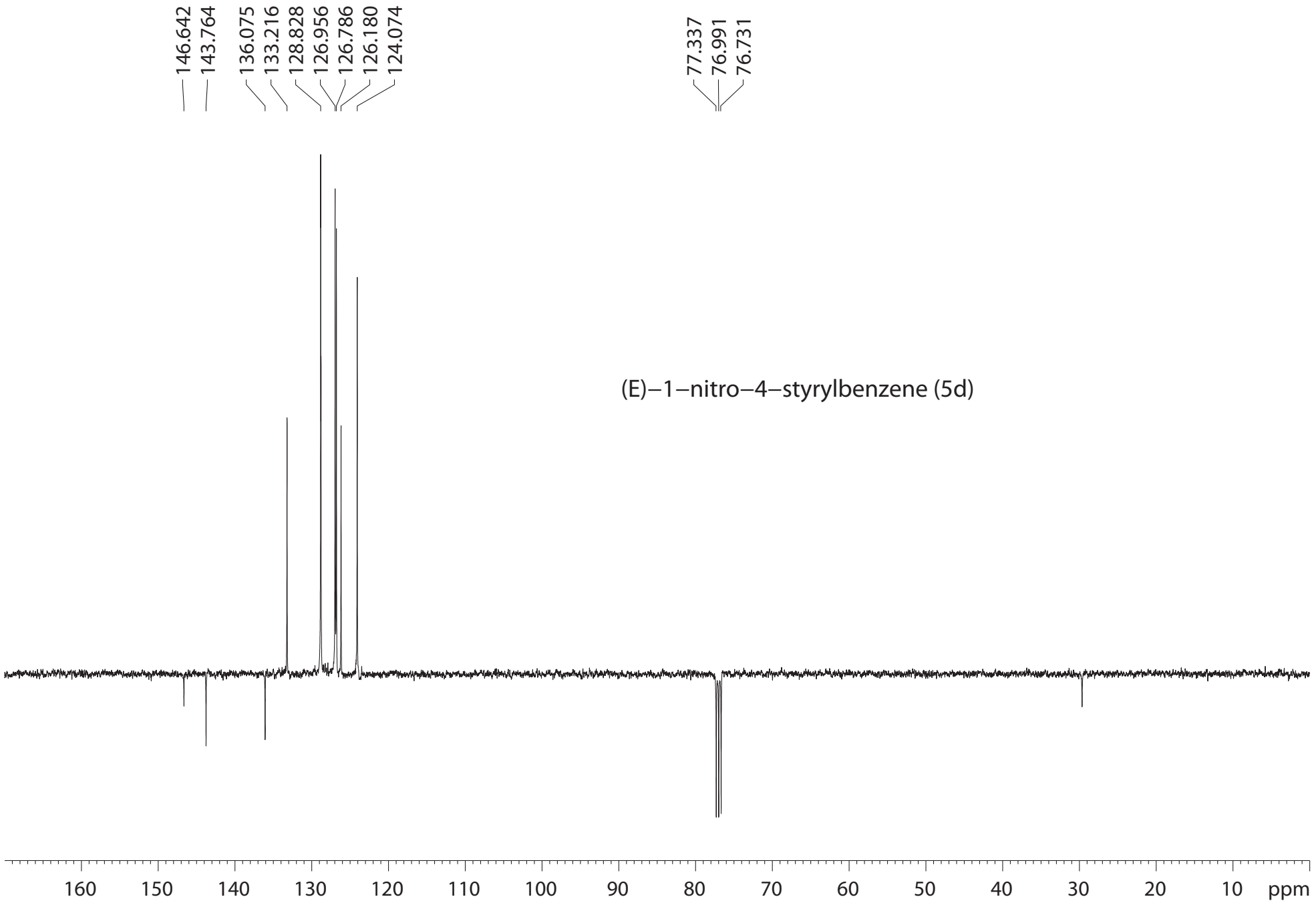

7.503
7.484
7.472
7.451
7.366
7.348
7.330
7.260
7.237
7.219
7.094
7.053
6.999
6.958
6.917
6.896
5.401
5.358
3.837
(E)–1–methoxy–4–styrylbenzene (5b)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
ppm
3.871
2.179
1.813
1.019
1.033
1.910
0.099
3.000

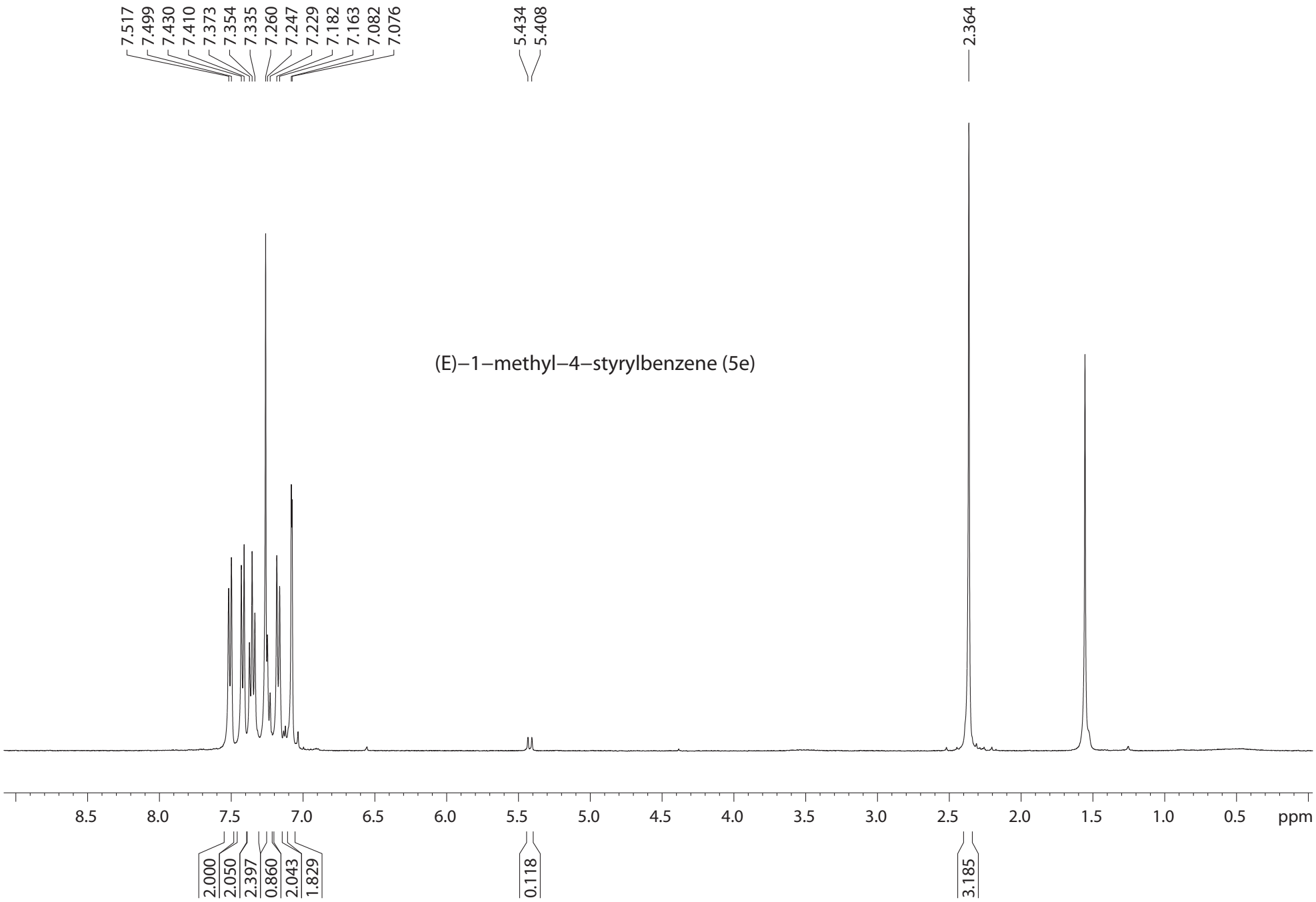

159.219
137.565
130.067
128.549
128.124
127.625
127.120
126.535
126.160
114.049
77.245
76.928
76.610
55.242
(E)-1-methoxy-4-styrylbenzene (5b)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

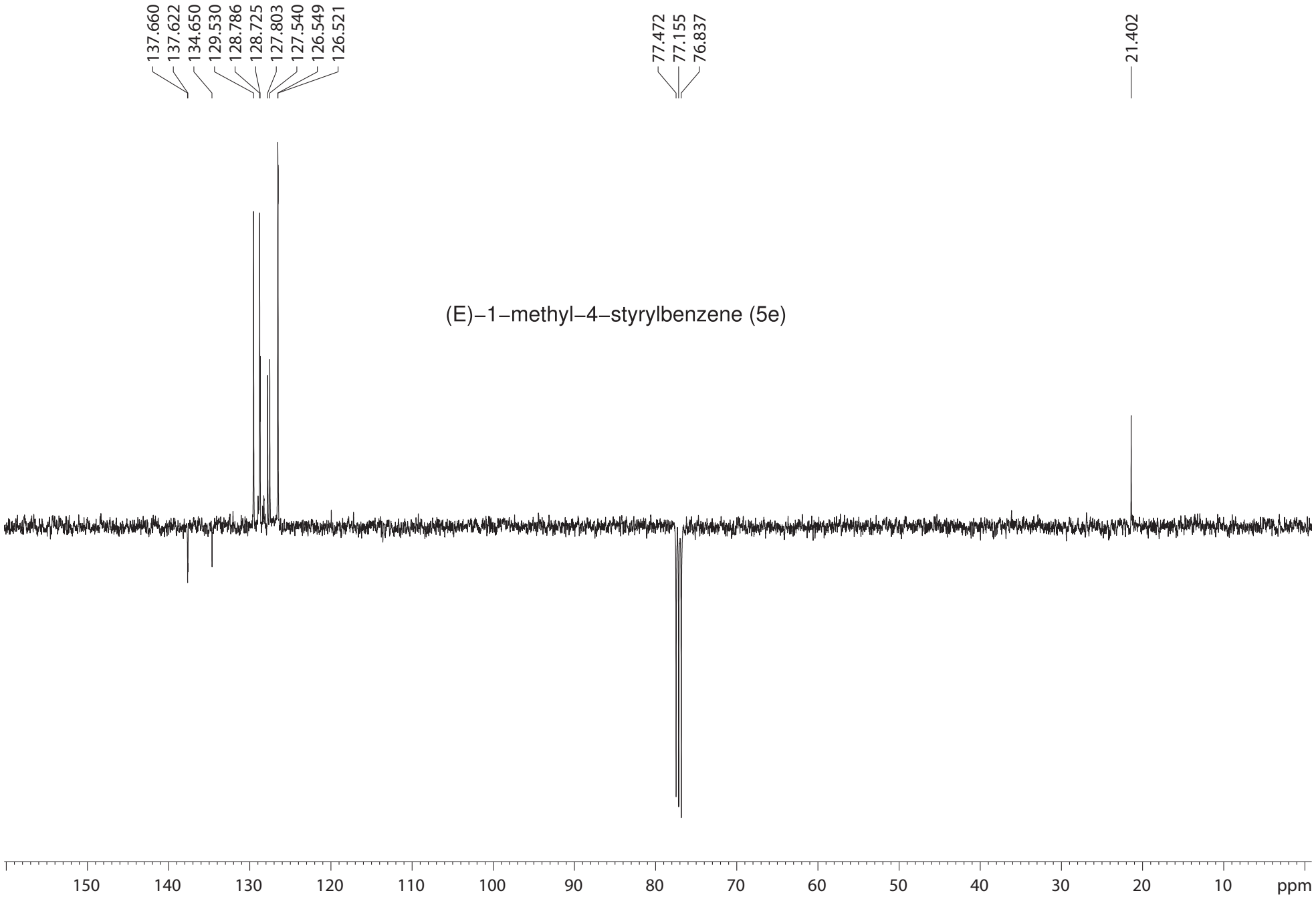

7.970
7.950
7.603
7.583
7.557
7.539
7.409
7.391
7.372
7.327
7.309
7.291
7.259
7.217
7.156
7.115
2.615
(E)−1−(4−styrylphenyl)ethanone (5c)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
2.000
2.030
2.126
2.099
1.054
1.841
3.039

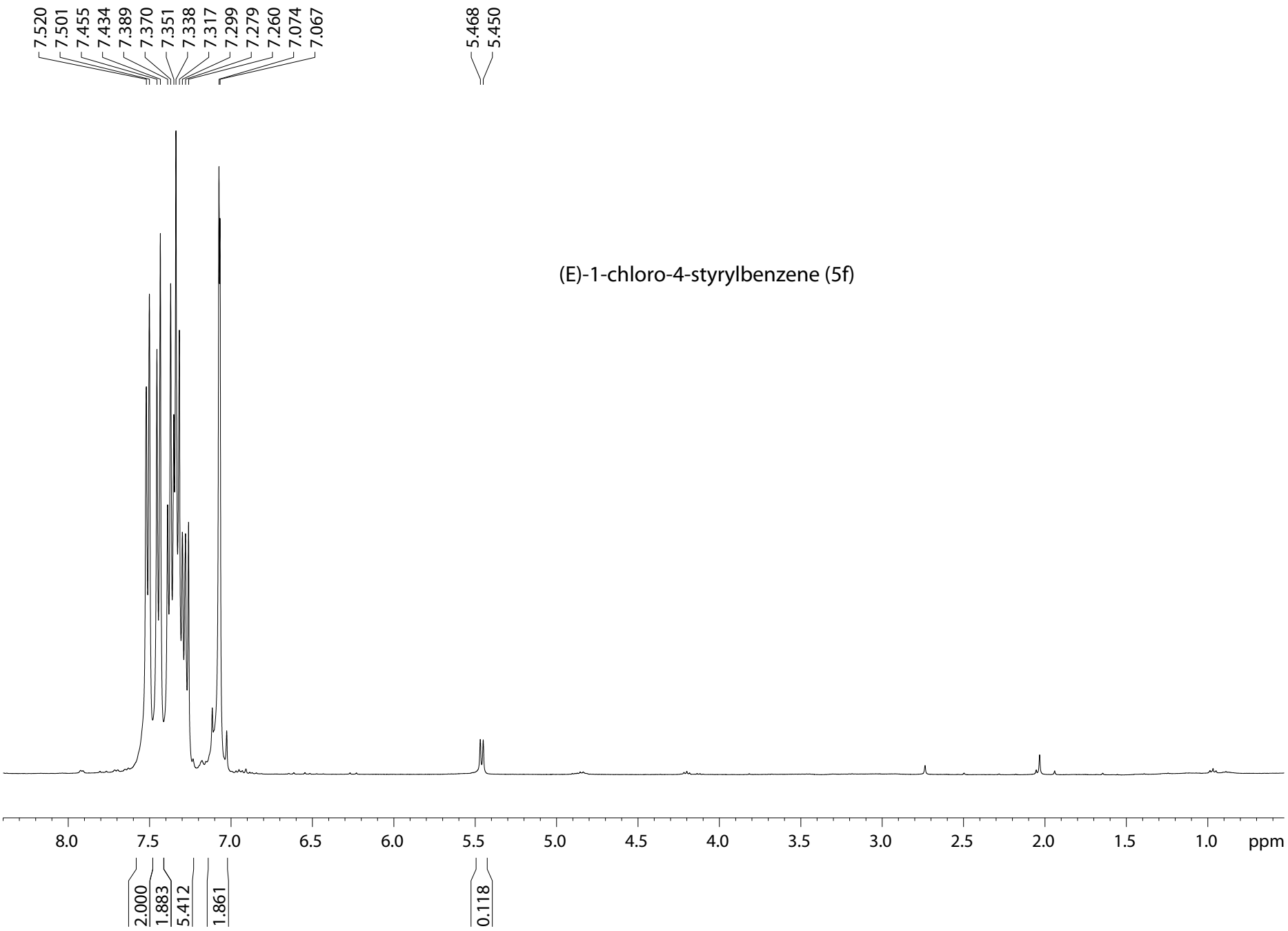

197.465
141.914
136.583
135.823
131.364
128.809
128.731
128.252
127.338
126.741
126.420
77.280
76.963
76.645
26.556
(E)−1−(4−styrylphenyl)ethanone (5c)
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
ppm

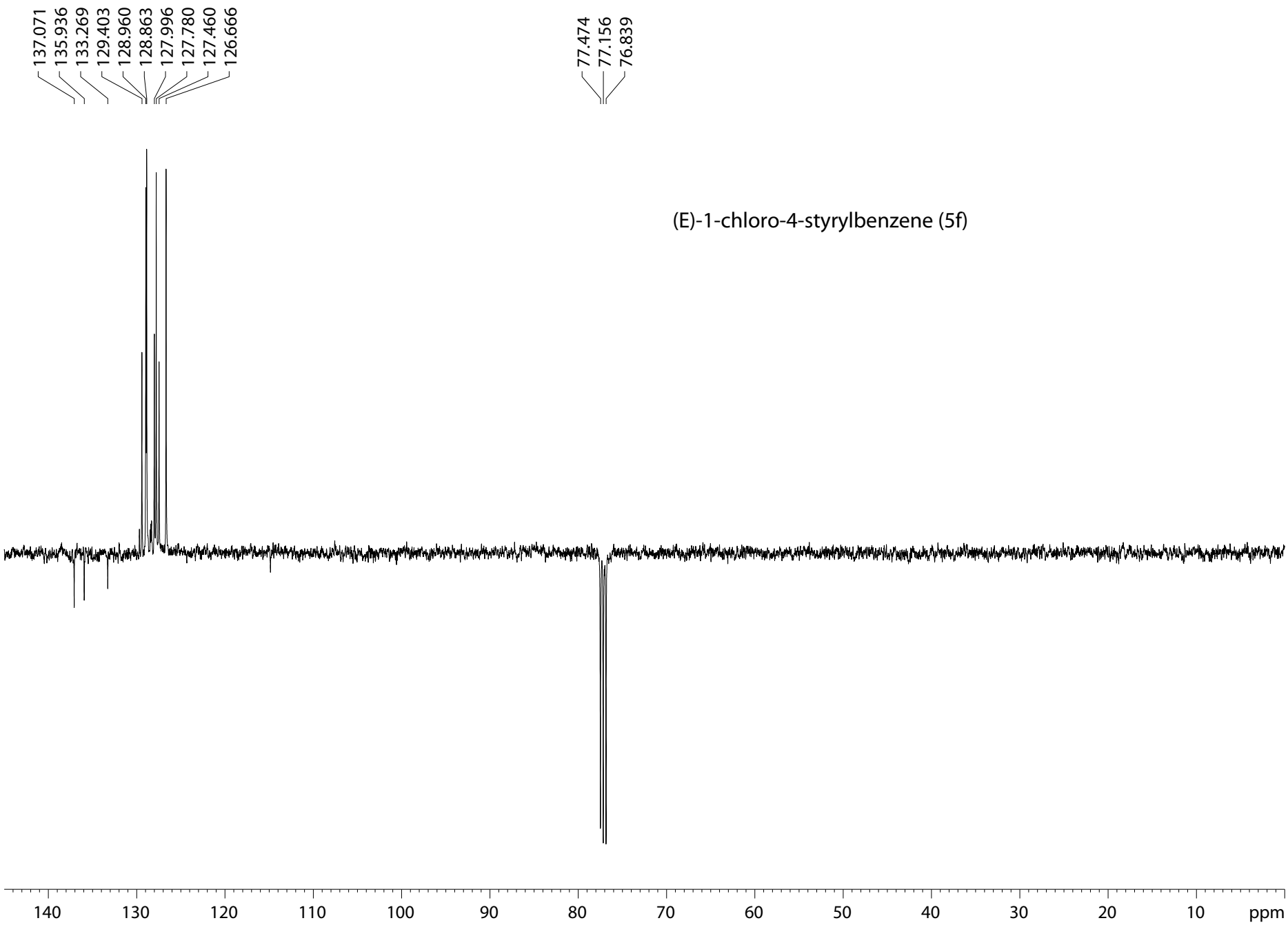

8.237
8.216
7.649
7.627
7.576
7.558
7.436
7.418
7.399
7.369
7.351
7.333
7.301
7.260
7.172
7.131
(E)–1–nitro–4–styrylbenzene (5d)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
2.000
2.059
2.090
2.077
1.072
1.197
1.086

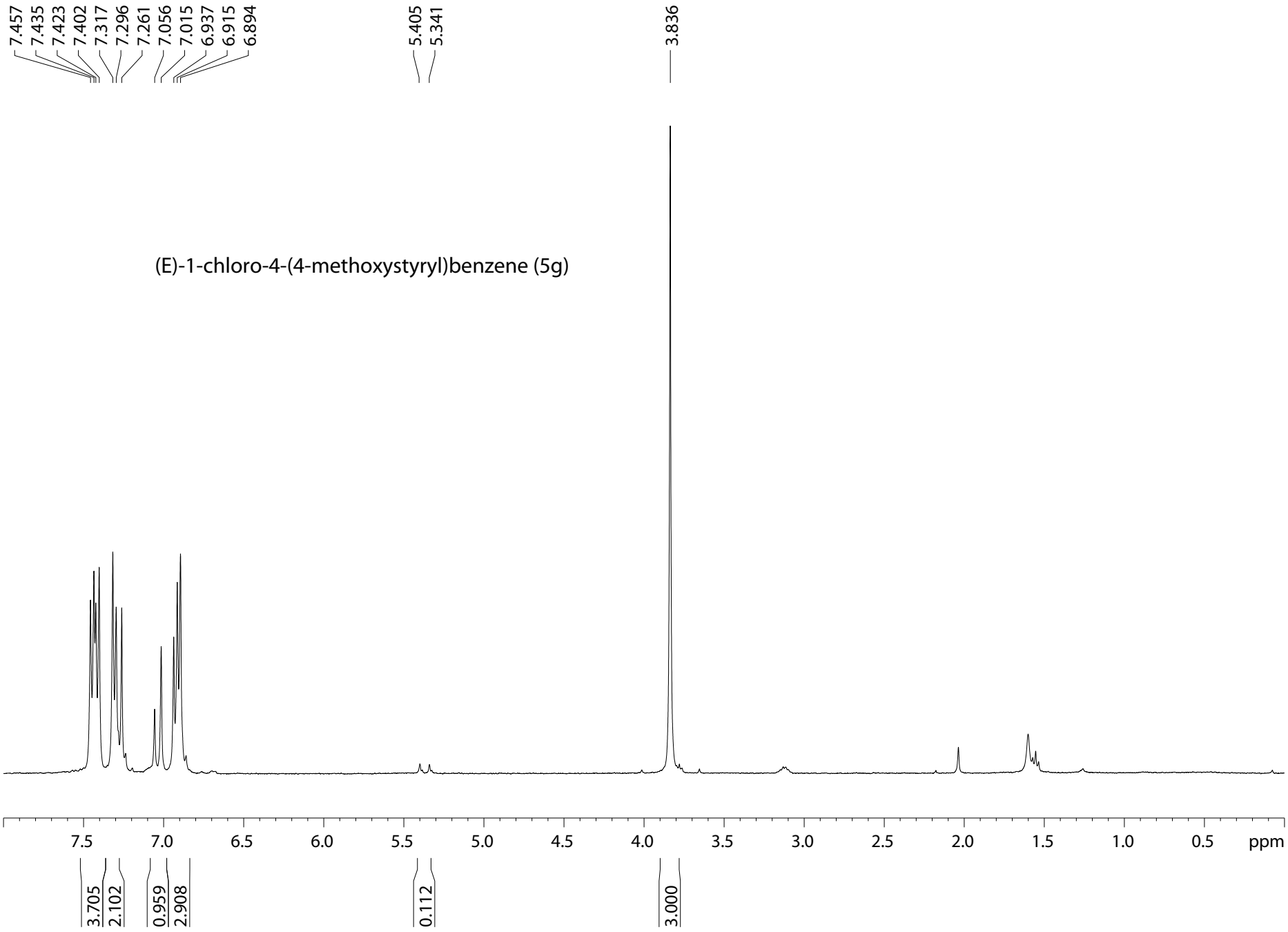

146.642
143.764
136.075
133.216
128.828
126.956
126.786
126.180
124.074
77.337
76.991
76.731
(E)–1–nitro–4–styrylbenzene (5d)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

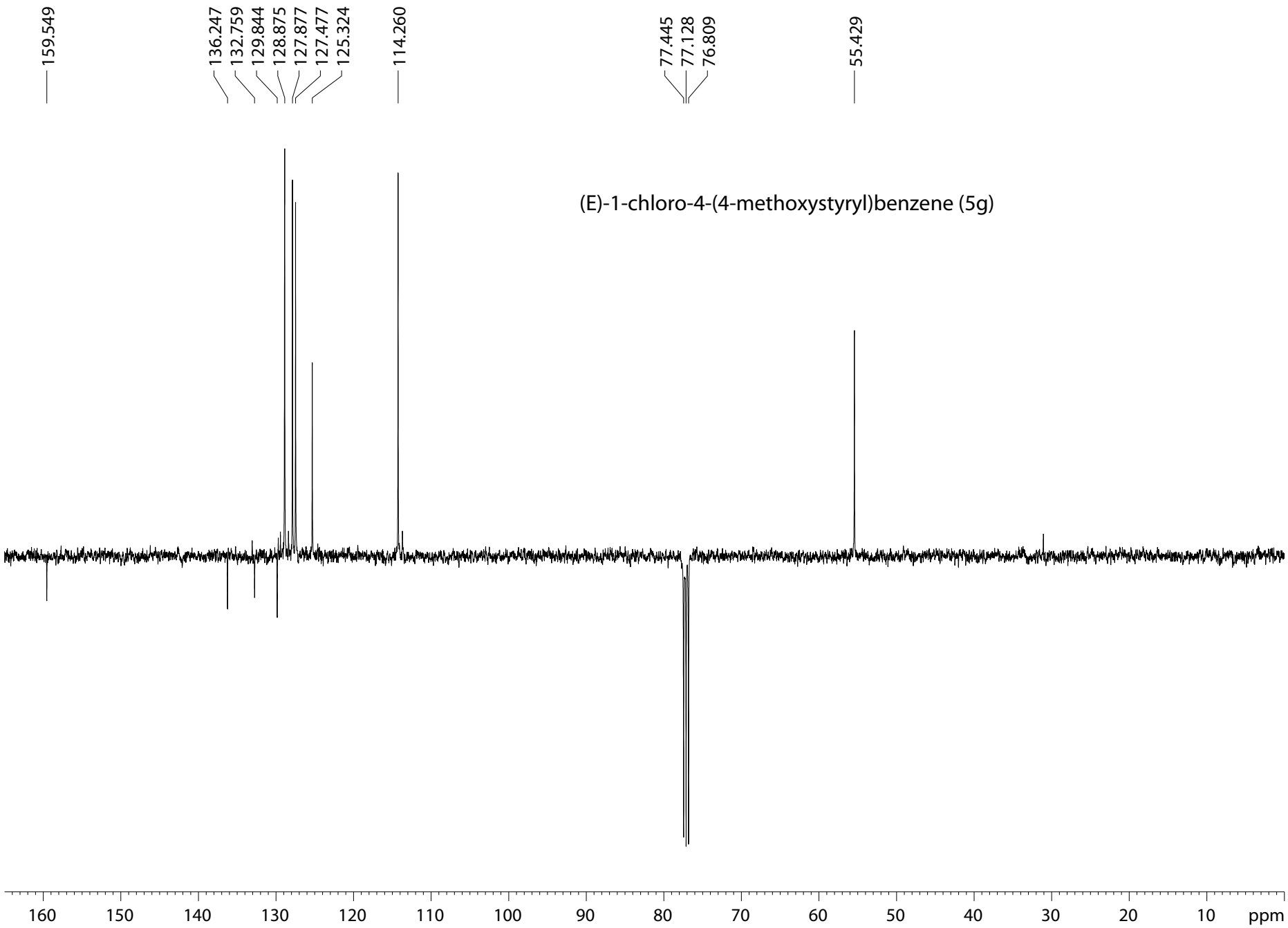

7.517
7.499
7.430
7.410
7.373
7.354
7.335
7.260
7.247
7.229
7.182
7.163
7.082
7.076
5.434
5.408
2.364
(E)–1–methyl–4–styrylbenzene (5e)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
2.000
2.050
2.397
0.860
2.043
1.829
0.118
3.185

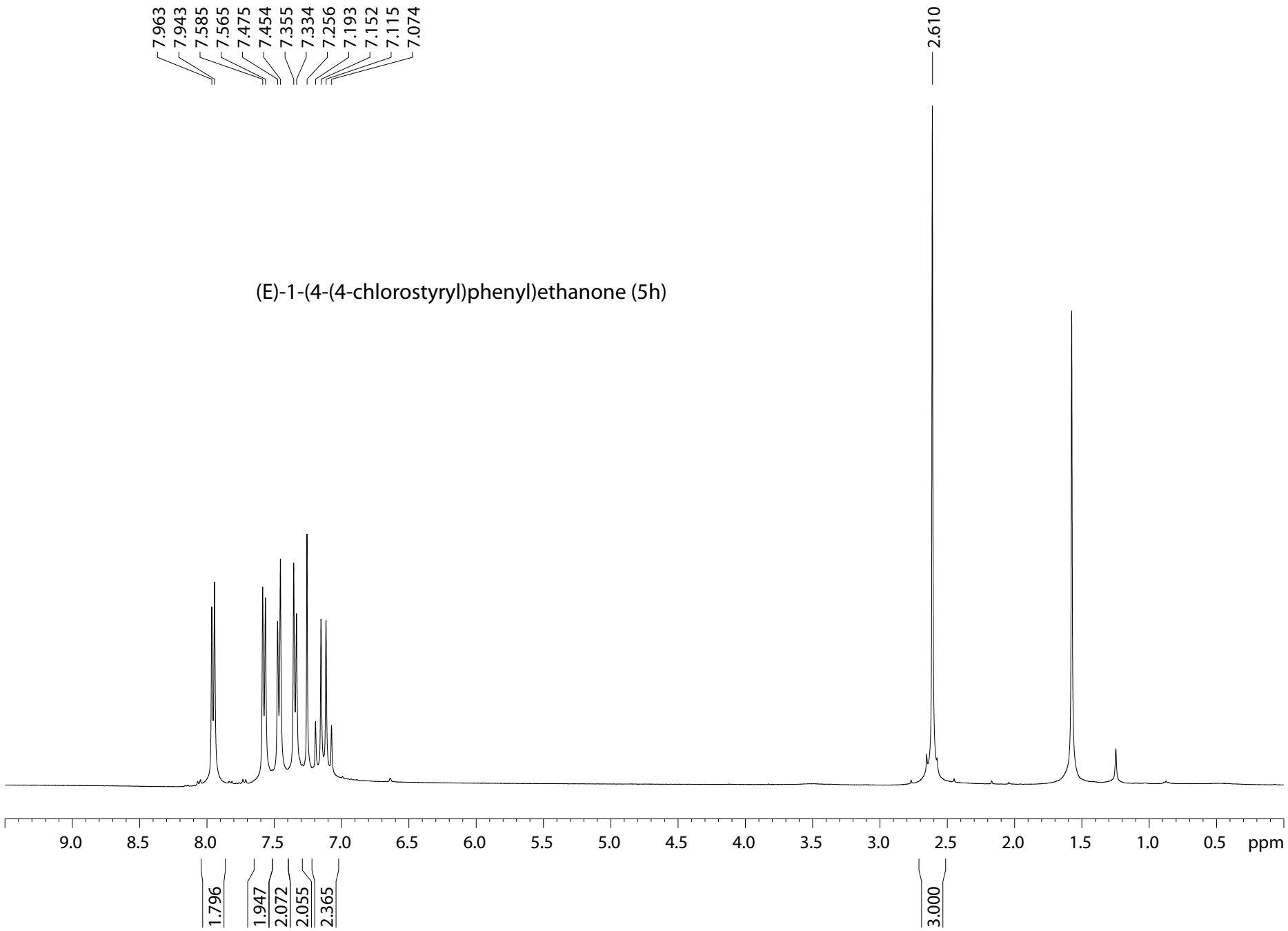

137.660
137.622
134.650
129.530
128.786
128.725
127.803
127.540
126.549
126.521
77.472
77.155
76.837
21.402
(E)−1−methyl−4−styrylbenzene (5e)
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

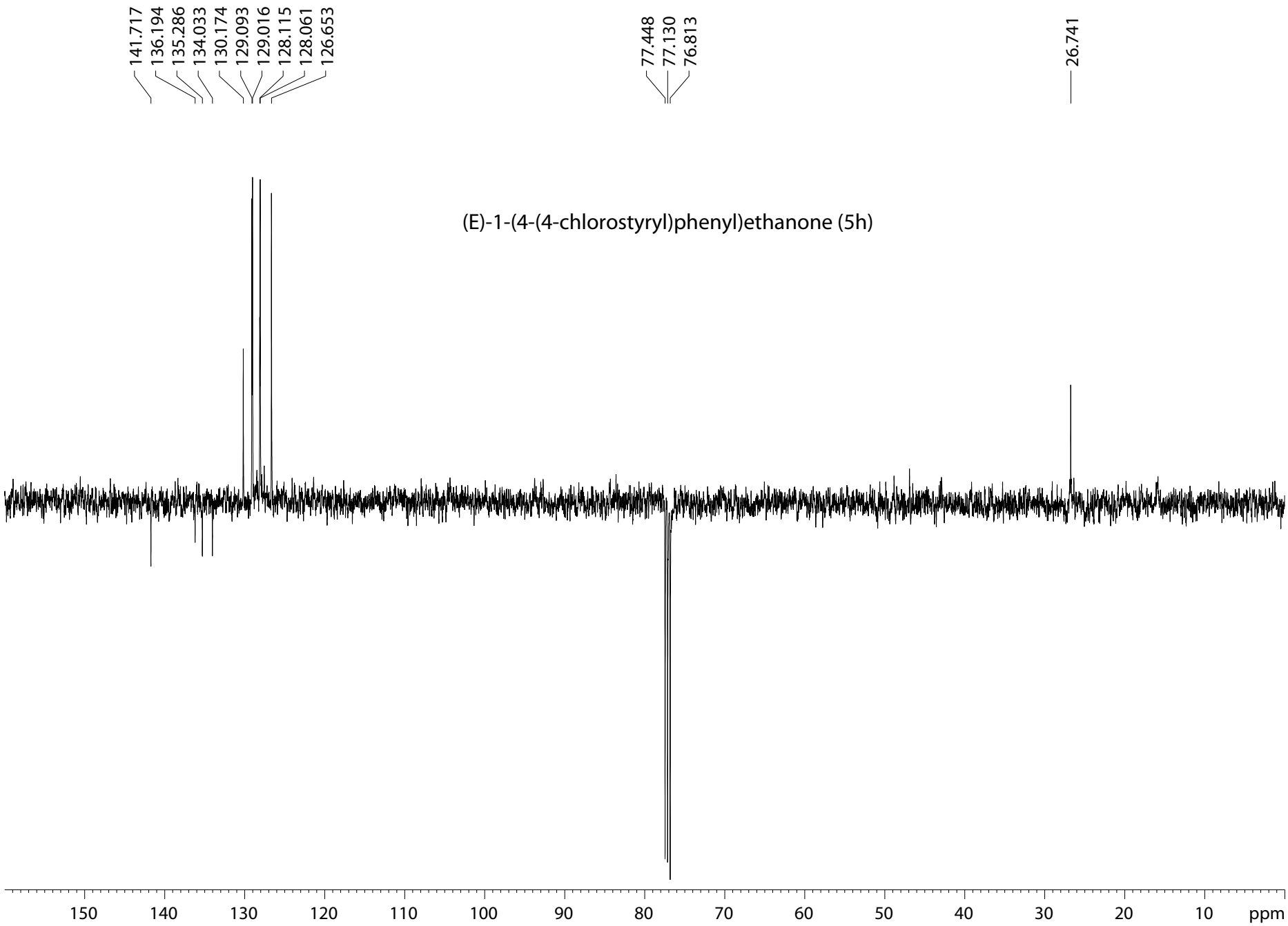

7.520
7.501
7.455
7.434
7.389
7.370
7.351
7.338
7.317
7.299
7.279
7.260
7.074
7.067
5.468
5.450
(E)-1-chloro-4-styrylbenzene (5f)
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
ppm
2.000
1.883
5.412
1.861
0.118


137.071
135.936
133.269
129.403
128.960
128.863
127.996
127.780
127.460
126.666
77.474
77.156
76.839
(E)-1-chloro-4-styrylbenzene (5f)
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm


7.457
7.435
7.423
7.402
7.317
7.296
7.261
7.056
7.015
6.937
6.915
6.894
5.405
5.341
3.836
(E)-1-chloro-4-(4-methoxystyryl)benzene (5g)
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
3.705
2.102
0.959
2.908
0.112
3.000


159.549
136.247
132.759
129.844
128.875
127.877
127.477
125.324
114.260
77.445
77.128
76.809
55.429
(E)-1-chloro-4-(4-methoxystyryl)benzene (5g)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm


7.963
7.943
7.585
7.565
7.475
7.454
7.355
7.334
7.256
7.193
7.152
7.115
7.074
2.610
(E)-1-(4-(4-chlorostyryl)phenyl)ethanone (5h)
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
1.796
1.947
2.072
2.055
2.365
3.000


141.717
136.194
135.286
134.033
130.174
129.093
129.016
128.115
128.061
126.653
77.448
77.130
76.813
26.741
(E)-1-(4-(4-chlorostyryl)phenyl)ethanone (5h)
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm