SUPPORTING INFORMATION

A New Cross-Coupling Based Synthesis of Carpanone

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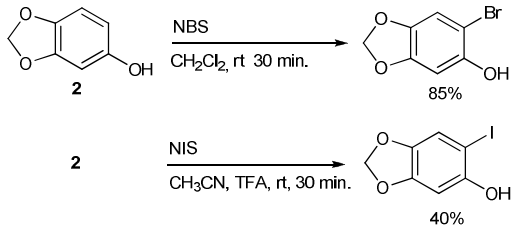
General experimental procedures: All reactions were carried out under a N_2 atmosphere, unless otherwise stated. NMR spectra were recorded (BRUKER 400 MHz, ^{1}H, and 100 MHz, ^{13}C) in $CDCl_3$ (which also provided the lock signal at δ = 7.26 for ^{1}H and δ = 77.16 ppm and ^{13}C). IR spectra were recorded on a Brüker Tensor 27 (pike) instrument and only the strongest or structurally most important peaks were listed. Silica gel (40-63 μm) was used for column chromatography. TLC plates were visualized under UV light and sprayed with $KMnO_4$ (5% in water). Dichloromethane and THF were purified by passing through an alumina column. High resolution mass spectra were recorded with a Nermag R30-10 apparatus. Melting points were measured with a Stuart Scientific SMP3 melting point apparatus and are uncorrected.

Regioselective halogenation of sesamol

Sesamol was reacted with either NBS or NIS to yield the corresponding expected compound regioselectively (Scheme **1**).[1] The iodo compound was very sensitive and partly decomposed during chromatography, even when protected from light.



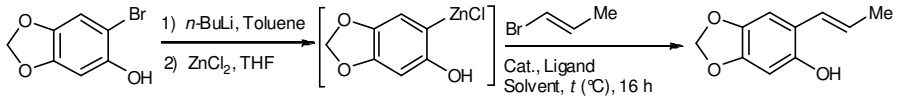
Scheme 1. Regioselective halogenation of sesamol.

Cross-coupling reactions involving halogenated sesamol

As 6-iodosesamol was extremely sensitive, we used its brominated analogue for cross-coupling reactions. We first tried Negishi cross-coupling. All attempts failed (Table 1). Only unidentified degradation products were obtained.

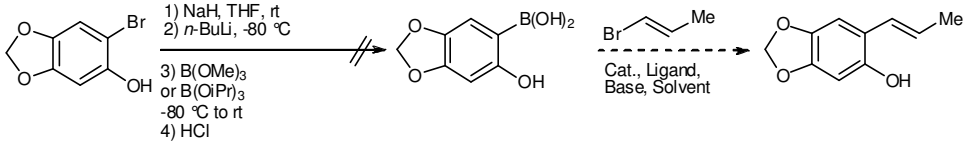
[1] Carreno, M. C.; Garcia Ruano, J. L.; Sanz, G.; Toledo, M. A.; Urbano, A. *J. Org. Chem.* **1995**, *60*, 5328.

Table 1: Failed Negishi cross-coupling.



Entry	Catalyst	Ligand	Solvent	Temperature (°C)	Yield (%)
1	$PdCl_2(PPh_3)_2$	--	THF	60	0
2	$Pd(dba)_2$	tfp	THF	60	0
3	$PdCl_2(dppf)$	--	THF	60	0
4	$Pd(dba)_2$	$P(tBu)_3$	DMF	rt	0

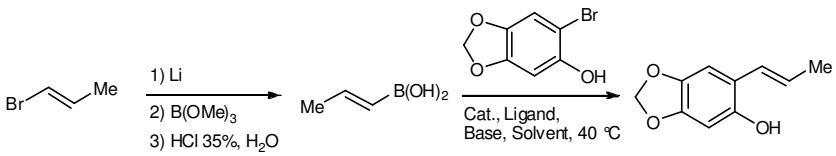
We then focused on the Suzuki-Miyaura cross-coupling. Borylation of bromosesamol failed (Scheme 2).



Scheme 2 : Failed borylation of unprotected 6-bromosesamol

We also tried the "Umpoled" Suzuki-Miyaura cross-coupling. The reaction between 6-bromosesamol and propenyl boronic acid failed whatever the conditions (Table 2).

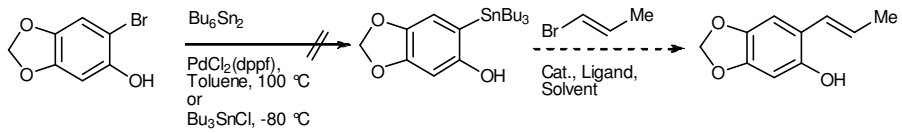
Table 2 : Failed Suzuki-Miyaura cross-coupling with bromosesamol.



Entry	Catalyst	Ligand	Base	Solvent	Yield (%)
1	$Pd(OAc)_2$	--	K_2CO_3, n-Bu_4NBr	DMF/H_2O	0
2	$Pd(OAc)_2$	--	NaF	THF	0
3	$Pd(dba)_2$	PPh_3	K_2CO_3	Toluene	0
4[a]	$Pd(OAc)_2$	X-Phos	NaF	THF	0
5	$Pd(dba)_2$	$P(o\text{-tol})_3$	NaF	THF	0

[a]/ Reaction carried out at 60 °C.

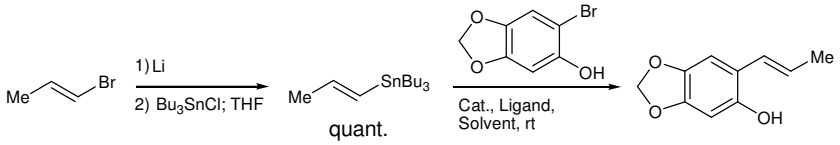
We finally studied Stille cross-coupling. Stannylation of bromosesamol failed (Scheme 3).



Scheme 3 : Failed stannylation of bromosesamol.

We then envisaged the cross-coupling reaction between bromosesamol and tributylpropenylstannane. This strategy also led to a failure (Table 3).

Table 3: Failed Stille cross-coupling with bromosesamol.



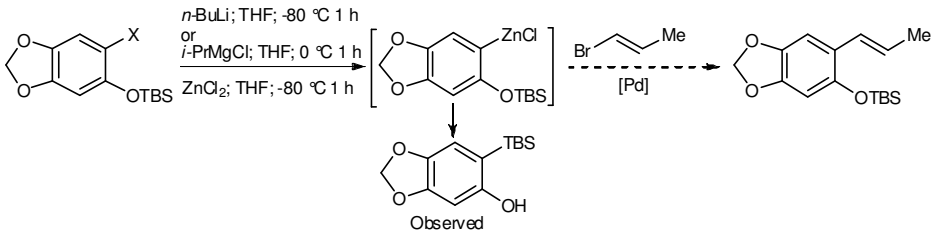
Entry	Catalyst	Ligand	Solvent	Yield (%)
1	$PdCl_2(AsPh_3)_2$/CuCl	--	DMSO	0
2	$PdCl_2(AsPh_3)_2$/CuI	--	DMSO	0
3	$PdCl_2(MeCN)_2$/CuCl	--	DMSO	0
4	$PdCl_2(MeCN)_2$/CuI	--	DMSO	0
5	$PdCl_2(PPh_3)_2$/CuCl	--	DMSO	0
6	$PdCl_2(PPh_3)_2$/CuI	--	DMSO	0
7	$Pd(dba)_2$/CuI	$P(tBu)_3$	DMSO	0
8	$Pd(dba)_2$/CuCl	$P(tBu)_3$	DMSO	0
9	$Pd(dba)_2$	$P(tBu)_3$	Toluene	0
10	$Pd(dba)_2$/CsF	$P(tBu)_3$	DMF	0
11[a]	$Pd(dba)_2$/CsF	$P(tBu)_3$	Toluene	0
12	$Pd(dba)_2$/CsF	$P(tBu)_3$	Toluene	0
13[a]	$Pd(dba)_2$	$P(tBu)_3$	DMF	0
14[a]	$Pd(dba)_2$/CuCl	$P(tBu)_3$	DMF	0

[a]/ Reaction carried out at 40 °C.

Therefore, we decided to protect sesamol as a TBS ether.

Cross-coupling reactions with TBS protected sesamol

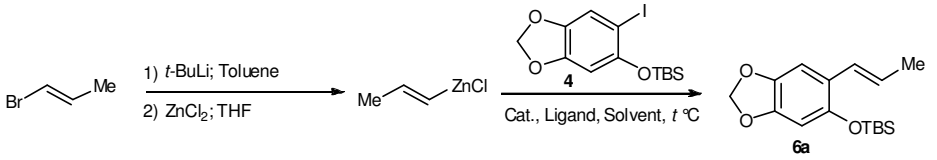
We tried to prepare the zincated sesamol *via* metal/halogen exchange with *n*-BuLi or *i*-PrMgCl and transmetallation with $ZnCl_2$. Unfortunately, we observed only retro-Brook rearrangement and no zincated sesamol was observed (Scheme 4).



Scheme 4 : Attempted Negishi cross-coupling with TBS-protected zincated sesamol.

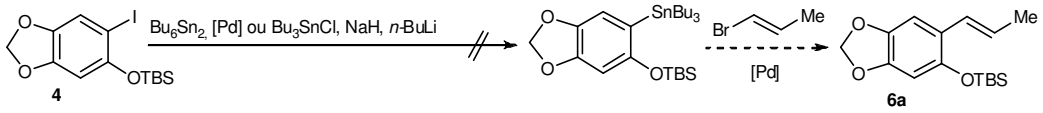
The "Umpoled" reaction between propenylzinc chloride and protected iodosesamol led to the formation of some desired product (Table 4). The best result was obtained with tri(*tert*-butylphosphine) as ligand (entry 6). However, yields remained modest and the experimental conditions were too drastic in view to design a diversity-oriented synthesis.

Table 4 : Negishi coupling with protected 6-iodosesamol



Entry	Catalyst	Ligand	Solvent	Temperature (°C)	Yield (%)
1	$PdCl_2(dppf)$	--	THF	50	0
2	$PdCl_2(PPh_3)_2$	--	THF	50	7
3	$Pd(dba)_2$	tfp	THF	50	7
4	$Pd(dba)_2$	P(*t*Bu)$_3$	THF	50	18
5	$Pd(dba)_2$	X-Phos	THF	50	0
6	$Pd(dba)_2$	P(*t*Bu)$_3$	DMF	80	46

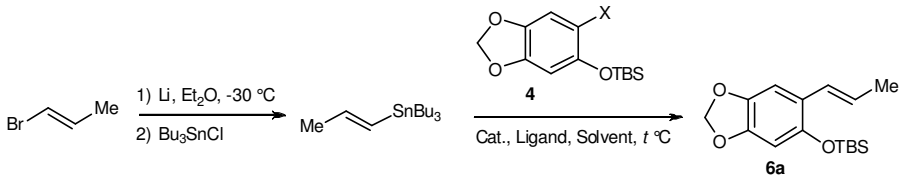
We then focused on the Stille cross-coupling. We first tried to stannylate the protected iodosesamol. This strategy remained unsuccessful (Scheme 5).



Scheme 5 : Attempted stannylation of TBS-protected 6-iodosesamol.

The "Umpoled" cross-coupling between propenyltributylstannane and protected iodosesamol with $PdCl_2(AsPh_3)_2$ as a catalyst led to the expected compound. The yield remained modest and operating conditions were not suitable for a diversity-oriented synthesis. (Table 5).

Table 5 : Stille cross-coupling between propenyltributylstannane and protected halosesamol.



Entry	X	Catalyst	Ligand	Solvent	Temperature (°C)	Yield (%)
1	Br	$Pd(dba)_2$	PPh_3	HMPA	100	0
2	I	$Pd(dba)_2$	PPh_3	DMSO	80	13
3	I	$PdCl_2(AsPh_3)_2$	--	DMSO	80	24
4	I	$PdCl_2(AsPh_3)_2$/CuCl	--	THF	80[a]	34

[a]/ Reaction carried out in a sealed tube.

We then studied in detail the Suzuki-Miyaura cross-coupling between bromopropene and borylated, protected sesamol. See the Letter for details.

Carpanization with $PhI(OAc)_2$

Although Lindsley reported that $PhI(OAc)_2$ was effective only to produce carpanone analogs deriving from precursors less electron rich than 2-propenylsesamol,[2] the mechanism associated to this reagent proposed by Shair[3] deals with carpanization of 2-propenylsesamol itself. In our hands reaction of deprotected **6a** with $PhI(OAc)_2$ did lead to carpanone, although in a moderate yield.

[2] a) Daniels, R. N.; Fadeyi, O. O.; Lindsley, C. W. *Org. Lett.* **2008**, *10*, 4097-4100; b) Fadeyi, O. O.; Daniels, R. N.; DeGuire, S. M.; Lindsley, C. W. *Tetrahedron Lett.* **2009**, *50*, 3084-3087.

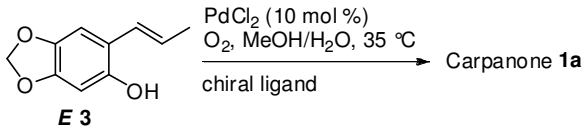
[3] Goess, B. C.; Hannoush, R. N.; Chan, L. K.; Kirchhausen, T.; Shair, M. D. *J. Am. Chem. Soc.* **2006**, *128*, 5391-5403.

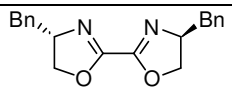
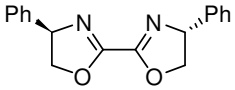
Treatment of 2-allylsesamol **7** with 1.0 equiv. of $PhI(OAc)_2$ afforded acetate **8** in 32% yield. When 0.5 equiv. of $PhI(OAc)_2$ was used, the yield of isolated **8** dropped to 13%.

Enantioselective attempts toward carpanone

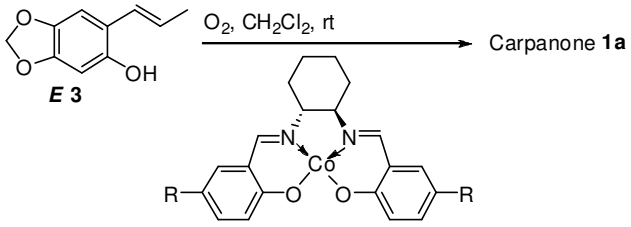
An enantioselective approach to carpanone was attempted from propenyl sesamol ***E* 3** using either chiral non racemic bisoxazoline ligands (Table 6) or Co(salen) catalysts (Scheme 6)[4]. Both approaches led to racemic mixtures.

Table 6: Attempted enantioselective access to carpanone using bisoxazoline ligands.



Entry	Chiral ligand	Ee (%)[a]	Yield (%)
1		0	70
2		0	97

[a]/ Determined by ^{1}H-NMR spectroscopy using (+)-Eu(hfc)$_3$ as the chiral shift reagent.

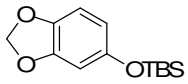


R = H: 91%, 0% ee
R = C_8F_{17}: 83%, 0% ee

Scheme 6: Attempted enantioselective access to carpanone using chiral Co(salen) catalysts.

[4] Matsumoto, M.; Kuroda, K. *Tetrahedron Lett.* **1981**, *22*, 4437-4440.

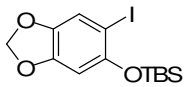
***tert*-Butyl(6-iodobenzo[*d*][1,3]dioxol-5-yloxy)dimethylsilane (4)**



Benzo[*d*][1,3]dioxol-5-yloxy)(*tert*-butyl)dimethylsilane (**TBS-2**)

A flame-dried flask was charged with sesamol (2.79 g, 20.2 mmol, 1 equiv.), imidazole (2.08 g, 30.6 mmol, 1.51 equiv.) and DMF (20 mL). *tert*-Butyldimethylchlorosilane (3.25 g, 21.6 mmol, 1.07 equiv.) in DMF (15 mL) was added. The reaction mixture was stirred at rt for 1 h, then hydrolyzed (50 mL) and extracted with Et_2O (3x30 mL). The combined organic layers were dried over $MgSO_4$ and concentrated *in vacuo*. The residue was purified by column chromatography (cyclohexane/AcOEt 85/15), affording the expected product (5.01 g, 98%) as a colorless viscous oil.

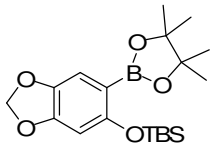
^{1}H NMR (400 MHz, $CDCl_3$) δ_H: 6.65 (d, J = 8.3 Hz, 1H), 6.40 (d, J = 2.4 Hz, 1H), 6.28 (dd, J = 2.4, 8.3Hz, 1H), 5.90 (s, 2H), 0.99 (s, 9H), 0.18 (s, 6H); ^{13}C NMR (100 MHz, $CDCl_3$) δ_C: 150.6, 148.1, 142.0, 111.7, 108.0, 102.6, 101.2, 25.8, 18.3, -4.4; IR (film): 2926, 2856, 1484, 1252, 1186 cm^{-1}; HRMS for $C_{13}H_{21}O_3Si$ calcd 253.12545, found 253.12493.



tert-Butyl(6-iodobenzo[*d*][1,3]dioxol-5-yloxy)dimethymsilane (**4**)

A flame-dried flask was charged with the protected sesamol (2.53 g, 10.0 mmol, 1 equiv.) and acetonitrile (20 mL). The solution was protected from light and *N*-iodosuccinimide (2.475 g, 11.0 mmol, 1.10 equiv.) dissolved in acetonitrile (20 mL) was added. Trifluoroacetic acid (112 µL, 1.508 mmol, 0.15 equiv.) was added and the reaction mixture was heated to 50 °C for 90 minutes. After cooling to rt, the reaction was hydrolyzed with aqueous $Na_2S_2O_3$ (20 mL) and extracted with AcOEt (3x10 mL). The combined organic layers were dried over $MgSO_4$ and concentrated *in vacuo*. The residue was purified by column chromatography (cyclohexane/ CH_2Cl_2, 90/10), affording the title compound (3.54 g, 94%) as a yellow solid.

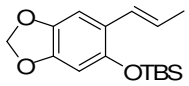
m.p.:: 36 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ_H: 7.14 (s, 1H), 6.44 (s, 1H), 5.93 (s, 2H), 1.05 (s, 9H), 0.26 (s, 6H); ^{13}C NMR (100 MHz, $CDCl_3$) δ_C: 150.1, 148.8, 142.8, 117.5, 101.8, 100.9, 77.4, 26.1, 18.5, -3.8; IR (solid): 2928, 2856, 1503, 1180, 1080, 1037, 932, 865, 778; HRMS for $C_{13}H_{19}IO_3Si$ cald 378.01427, found 378.01414.



***tert*-Butyldimethyl(6-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)benzo[*d*][1,3]dioxo-5-yloxy)silane (5)**

A flame-dried flask was charged with iodide **4** (1.47 g, 3.88 mmol, 1 equiv.) and $PdCl_2$dppf (293 mg, 0.4 mmol, 0.10 equiv.), toluene (18 mL), pinacol borane (952 µL, 6.56 mmol, 1.69 equiv.) and Et_3N (4.4 mL, 31.5 mmol, 8.12 equiv.). The flask was sealed and heated to 110 °C for 20 h. After cooling to rt, the reaction mixture was hydrolyzed with aqueous saturated NH_4Cl (50 mL) and extracted with AcOEt (3x15 mL). The combined organic layers were dried over $MgSO_4$ and concentrated *in vacuo*. The residue was purified by column chromatography (cyclohexane/CH_2Cl_2, 80/20), affording the expected compound (1.25 g, 85%) as an orange solid.

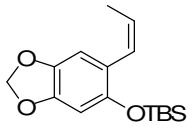
m.p.: 80-81 °C; ^{1}H NMR (400 MHz, $CDCl_3$) δ_H: 7.09 (s, 1H), 6.35 (s, 1H), 5.90 (s, 2H), 1.30 (s, 12H), 1.02 (s, 9H), 0.21 (s, 6H); ^{13}C NMR (100 MHz, $CDCl_3$) δ_C: 156.9, 150.9, 141.7, 114.4, 102.0, 101.3, 83.2, 26.1, 25.1, 18.5, -4.1; IR (solid): 2977, 2930, 2856, 1618, 1143, 1112, 880, 834, 777; HRMS for $C_{19}H_{31}BO_5NaSi$ calcd 401.19260, found 401.19289.



(*E*)-*tert*-butyldimethyl(6-(prop-1-enyl)benzo[*d*][1,3]dioxol-5-yloxy)silane (6a)

A flame-dried flask was charged with boronate **5** (180 mg, 0.5 mmol, 1 equiv.), $PdCl_2(PPh_3)_2$ (35 mg, 0.05 mmol, 0.10 equiv.), potassium *tert*butylate (168.3 mg, 1.5 mmol, 3 equiv.), toluene (1.5 mL) and *trans*-bromopropene (73 µL, 0.85 mmol, 1.70 equiv.). The reaction mixture was stirred at rt for 2 h, hydrolyzed (30 mL) and extracted with AcOEt (3x15 mL). The combined organic layers were dried over $MgSO_4$ and concentrated *in vacuo*. The residue was purified by column chromatography (cyclohexane/CH_2Cl_2, 80/20), affording the expected compound (75 mg, 60%) as a slightly yellow oil.

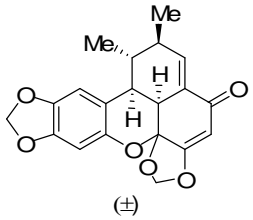
^{1}H NMR (400 MHz, $CDCl_3$) δ_H: 6.87 (s, 1H), 6.61 (dq, J = 1.5, 15.8 Hz, 1H), 6.34 (s, 1H), 5.94 (dq, J = 6.5, 15.7 Hz, 1H), 5.88 (s, 2H), 1.85 (dd, J = 1.7, 6.6 Hz, 3H), 1.02 (s, 9H), 0.17 (s, 6H); ^{13}C NMR (100 MHz, $CDCl_3$) δ_C: 147.0, 146.8, 142.3, 126.2, 123.4, 111.8, 104.8, 101.8, 101.1, 25.9, 18.8, 18.4, -4.2; IR (film): 2928, 2857, 1502, 1253, 1175, 1072, 939, 836, 778; HRMS for $C_{16}H_{25}O_3Si$ calcd 293.15675, found 293.15636.



(*Z*)-*tert*-butyldimethyl(6-(prop-1-enyl)benzo[*d*][1,3]dioxol-5-yloxy)silane (6b)

A flame-dried flask was charged with boronate **5** (1.05 g, 2.778 mmol, 1 equiv.), $PdCl_2(PPh_3)_2$ (187.0 mg, 0.266 mmol, 0.09 equiv.), 1*N* aqueous potassium hydroxide (9 mL, 9 mmol, 3.24 equiv.), toluene (8 mL) and *cis*-bromopropene (350 µL, 4.117 mmol, 1.48 equiv.). The reaction mixture was stirred at rt for 24 h, hydrolyzed (50 mL) and extracted with AcOEt (3x30 mL). The combined organic layers were dried over $MgSO_4$ and concentrated *in vacuo*. The residue was purified by column chromatography (cyclohexane/CH_2Cl_2, 90/10), affording the expected compound (690 mg, 85%) as a slightly yellow oil.

^{1}H NMR (400 MHz, $CDCl_3$) δ_H: 6.75 (s, 1H), 6.41 (dq, *J* = 1.5, 11.4 Hz, 1H), 6.39 (s, 1H), 5.91 (s, 2H), 5.68 (dq, *J* = 7.0, 11.6 Hz, 1H), 1.81 (dd, *J* = 1.9, 7.2 Hz, 3H), 0.98 (s, 9H), 0.14 (s, 6H); ^{13}C NMR (100 MHz, $CDCl_3$) δ_C: 148.2, 146.7, 141.4, 126.4, 125.3, 121.4, 109.3, 101.9, 101.1, 25.9, 18.4, 14.7, -4.2; IR (film): 2929, 2857, 1503, 1176, 1039, 835, 778; HRMS for $C_{16}H_{25}O_3Si$ calcd 293.15675, found 293.15666.



Carpanone (1a)

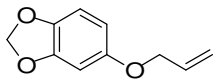
A flame-dried flask was charged with alkene **6a** (83 mg, 0.284 mmol, 1 equiv.), THF (0.5 mL) and TBAF (364 µL, 0.364 mmol, 1.28 equiv.). After 30 minutes, $CuCl_2$ (6.9 mg, 0.05 mmol, 0.17 equiv.), NaOAc (60 mg, 0.44 mmol, 1.55 equiv.), MeOH (0.3 mL) and water (0.3 mL) were added. The flask was purged with O_2 and heated to 50 °C for 4 h. After cooling to rt, the reaction mixture was hydrolyzed (10 mL) and extracted with AcOEt (3x10 mL).The combined organic layers were dried over $MgSO_4$ and concentrated *in vacuo*. The residue was purified by column chromatography (cyclohexane/ AcOEt, 90:10), affording the target (39 mg, 73%) as a white solid.

^{1}H NMR (400 MHz, $CDCl_3$) δ_H: 7.01 (ddd, *J* = 2.3, 0.9, 5.0 Hz, 1H), 6.80 (s, 1H) 6.33 (s, 1H), 5.90 (d, *J* = 1.5 Hz, 1H), 5.87 (d, *J* = 1.5, 1H), 5.70 (s, 1H), 5.67 (s, 1H), 5.64 (s, 1H), 3.28 (dd, *J* = 7.4, 2.1 Hz), 3.17 (ddd, *J* = 7.4, 2.3, 2.3 Hz), 2.52 (m, 1H), 2.23 (m, 1H), 1.14 (d, *J* = 7.2 Hz), 0.71 (d, *J* = 7.6, 3H); ^{13}C NMR (100 MHz, $CDCl_3$) δ_C: 187.1, 168.5, 146.8,

145.3, 143.3, 142.8, 126.4, 115.4, 107.2, 101.3, 100.5, 99.4, 98.9, 36.3, 35.6, 35.3, 33.6, 21.6, 21.3

These spectral data are in good agreement with those from the literature.[5]

6-Allylbenzo[1,3]dioxol-5-ol (7)

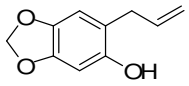


5-allyloxybenzo[1,3]dioxole

A flame-dried flask was charged with sesamol (1.38 g, 10 mmol, 1 equiv.), K_2CO_3 (2.76 g (20 mmol, 2 equiv.) and acetone (10 mL). Allylbromide (1.45 g, 12 mmol, 1.2 equiv.) was added. The reaction mixture was heated at 50 °C for 3 h. After cooling to rt, the salts were filtered off. The mother liquor was concentrated *in vacuo*. It afforded 1.70 g (95%) of the expected product as a colourless oil.

^{1}H NMR (400 MHz, $CDCl_3$) δ_H : 6.69 (d, *J* = 8.5 Hz, 1H), 6.51 (d, *J* = 2.5 Hz, 1H), 6.34 (dd, *J* = 2.5, 8.4 Hz, 1H), 6.03 (m, 1H), 5.91 (s, 2H), 5.38 (dq, *J* = 0.9, 18.7 Hz, 1H), 5.27 (dq, *J* = 0.6, 9.6 Hz, 1H), 4.46 (m, 2H).

These data are in good agreement with those from the literature.[2]



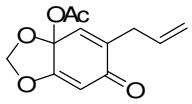
6-Allylbenzo[1,3]dioxol-5-ol (**7**)

A Schlenk tube was charged with 5-allyloxybenzo[1,3]dioxole (335.5 mg, 1.885 mmol, 1 equiv.) and DMF (2 mL). The tube was sealed and placed into a preheated oil bath (190 °C). The reaction mixture was stirred at this temperature for 3 h. After cooling to rt, the reaction mixture was hydrolyzed and extracted with AcOEt. The organic layer was dried over $MgSO_4$ and concentrated *in vacuo*. The residue was purified by column chromatography (cyclohexane/ AcOEt, 9/1). It yielded 280 mg (83%) of the expected compound as a white solid.

^{1}H NMR (400 MHz, $CDCl_3$) δ_H : 6.58 (s, 1H), 6.43 (s, 1H), 6.01-5.91 (m, 1H), 5.88 (s, 2H), 5.15 (m, 2H), 4.67 (br.s., 1H), 3.30 (d, J = 6.2 Hz, 2H).

These data are in good agreement with those from the literature.[2]

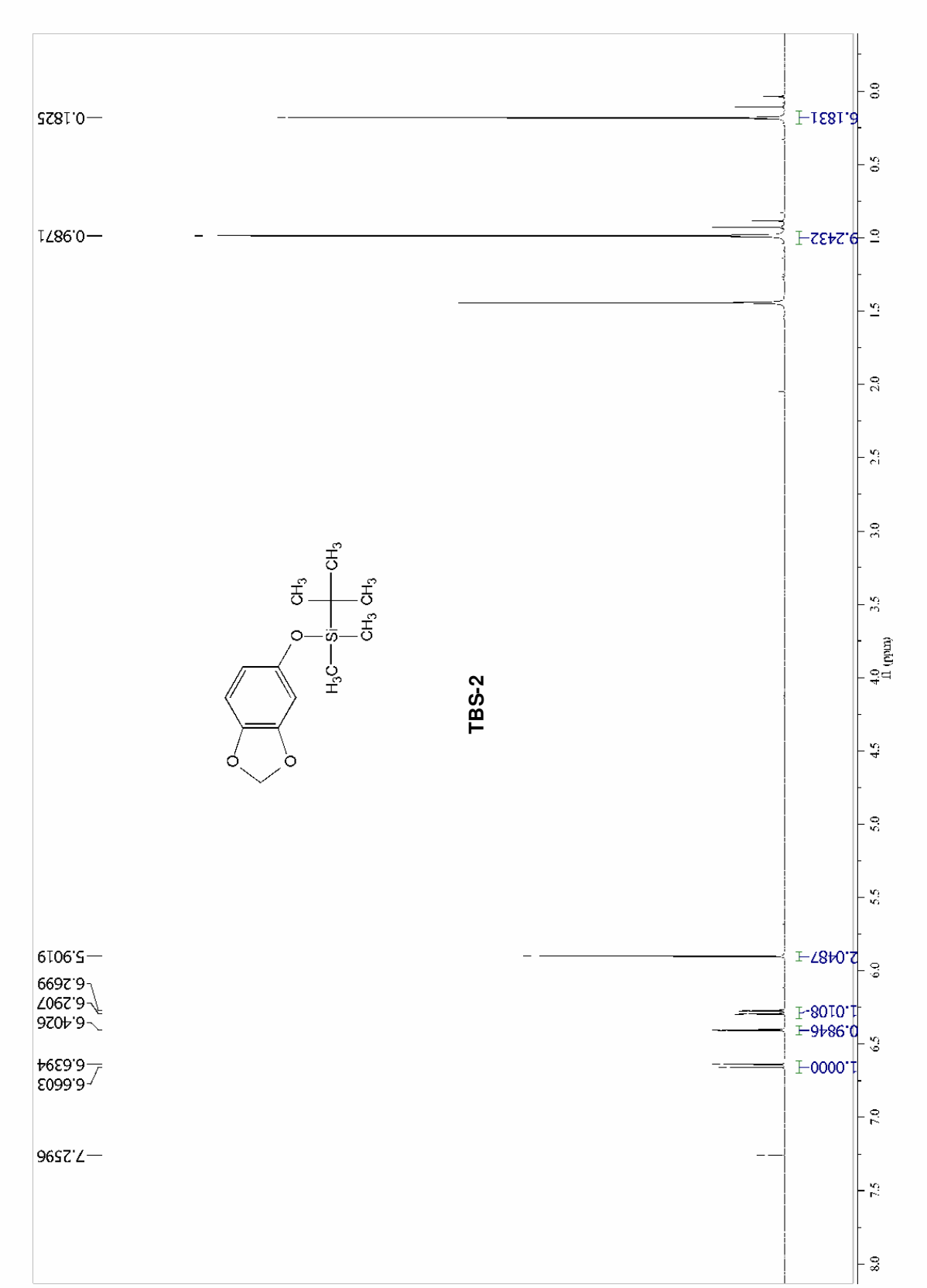
[5] Baxendale, R.; Lee, A. L.; Ley, S. V. *J. Chem. Soc, Perkin Trans. 1* **2002**, 1850.



Methyl 5-allyl-6-oxo-3a, 6-dihydrobenzo[*d*] [1,3]dioxole-3a-carboxylate (8)

A flame-dried flask was charged with 6-allylbenzo[1,3]dioxol-5-ol **7** (88.4 mg, 0.497 mmol, 1 equiv.) and CH_2Cl_2 (1 mL). The solution was cooled to 0 °C and iodobenzene diacetate (169.7 mg, 0.527 mmol, 1.06 equiv.) dissolved in CH_2Cl_2 (1 mL) was added dropwise. After 15 minutes, the solution was warmed to rt and stirred for 1 h. The reaction mixture was hydrolyzed (20 mL) and extracted with AcOEt (3x10 mL). The combined organic layers were dried over $MgSO_4$ and concentrated *in vacuo*. The residue was purified by column chromatography (cyclohexane/AcOEt, 80/20 to 70/30), affording the expected compound (38 mg, 32%) as a brown oil.

^{1}H NMR (400 MHz, $CDCl_3$) δ_H: 5.84 (s, 1H), 5.83 (s, 1H), 5.73 (s, 1H), 5.70-5.66 (m, 1H), 5.42 (s, 1H), 5.14 (s, 1H), 5.10 (m, 1H), 2.57 (ddt, J = 1.1, 6.6, 13.4 Hz, 1H), 2.48 (dd, J = 7.9, 12.5 Hz, 1H), 2.05 (s, 3H); ^{13}C NMR (100 MHz, $CDCl_3$) δ_C: 195.8, 169.4, 162.9, 146.2, 130.0, 120.5, 103.9, 102.1, 99.0, 79.6, 44.4, 20.9; IR (film): 2930, 1743, 1640, 1385, 1223; HRMS for $C_{12}H_{12}O_5Na$ calcd 259.05769, found 259.05800.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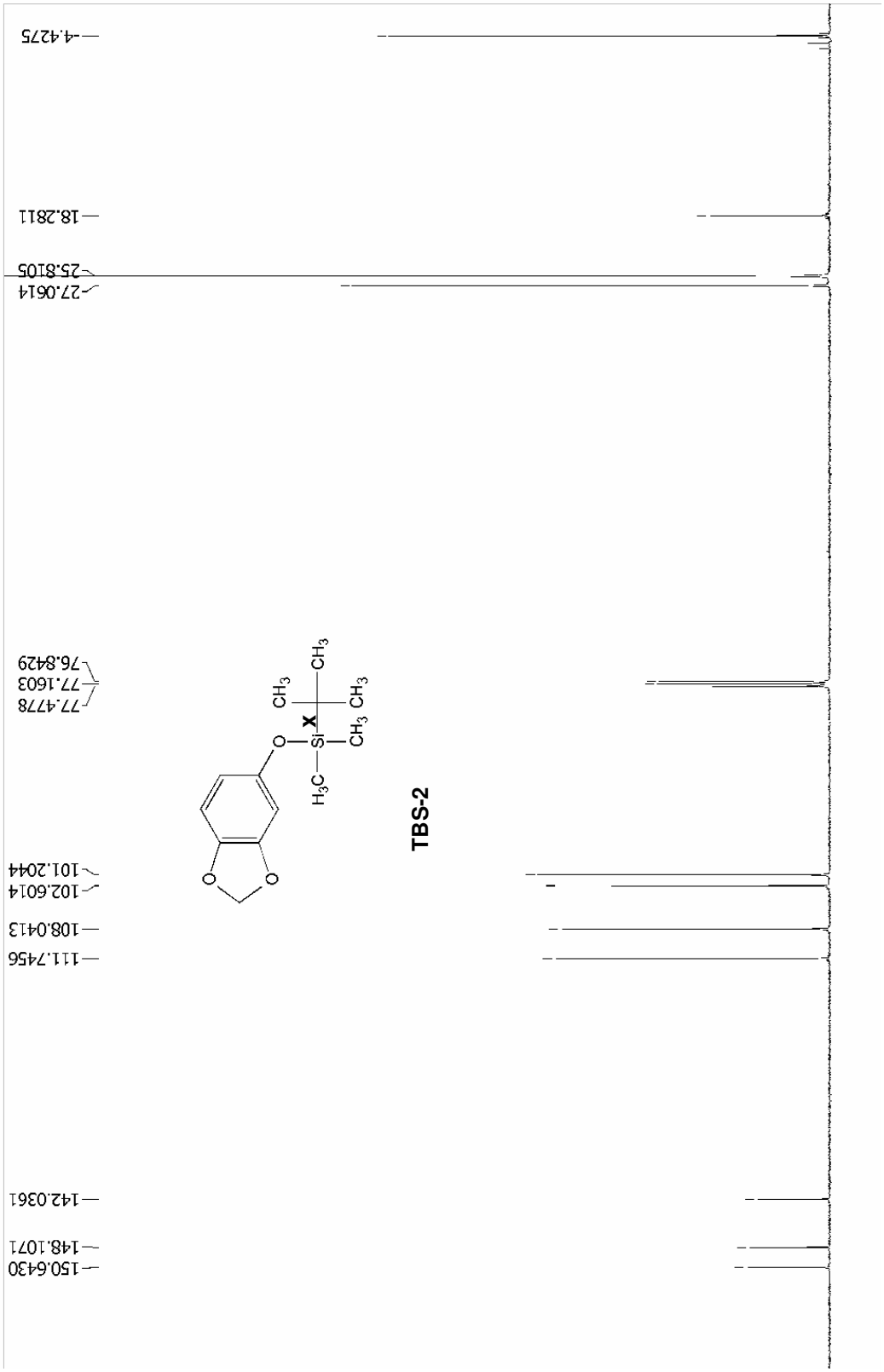
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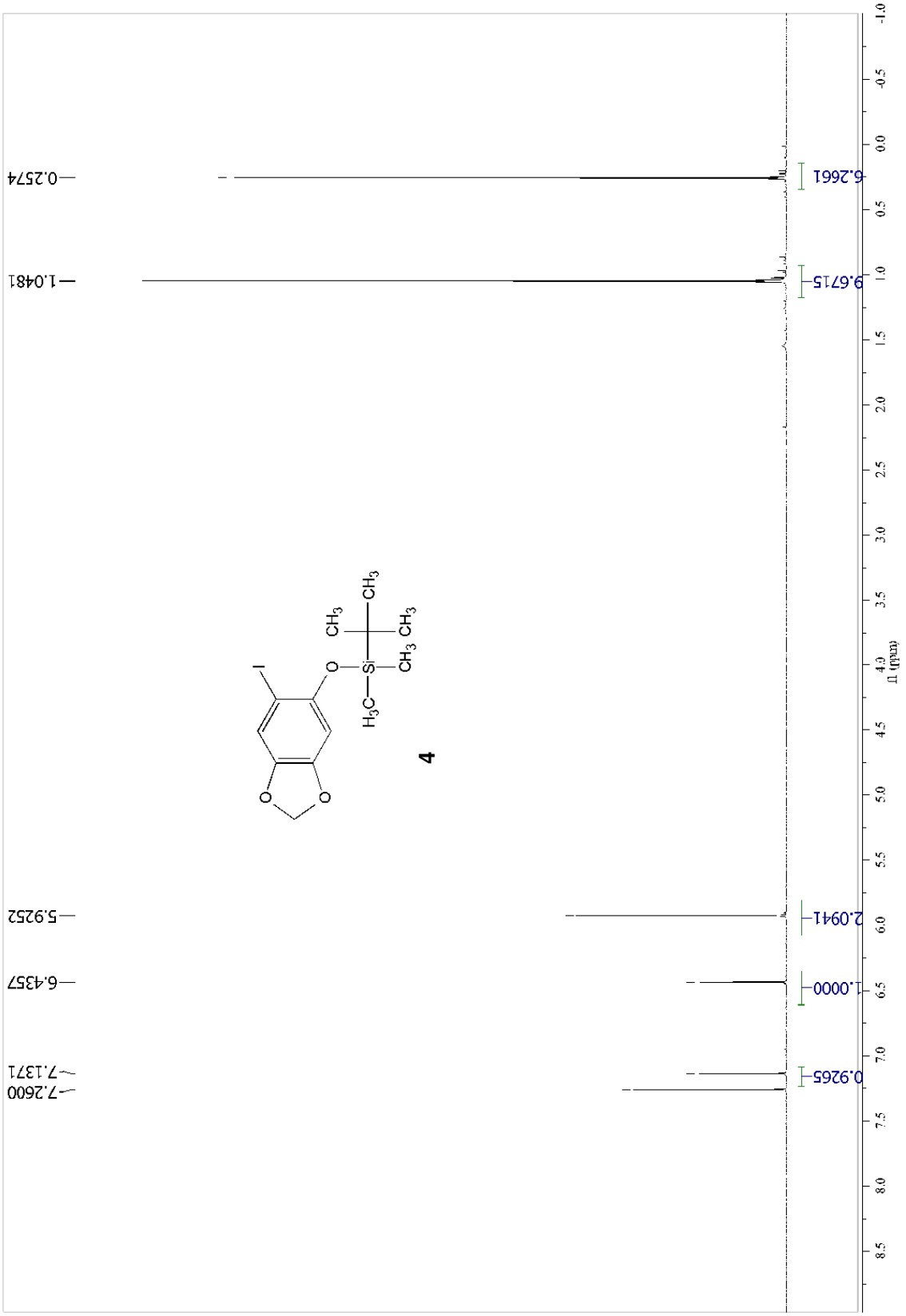
TBS-2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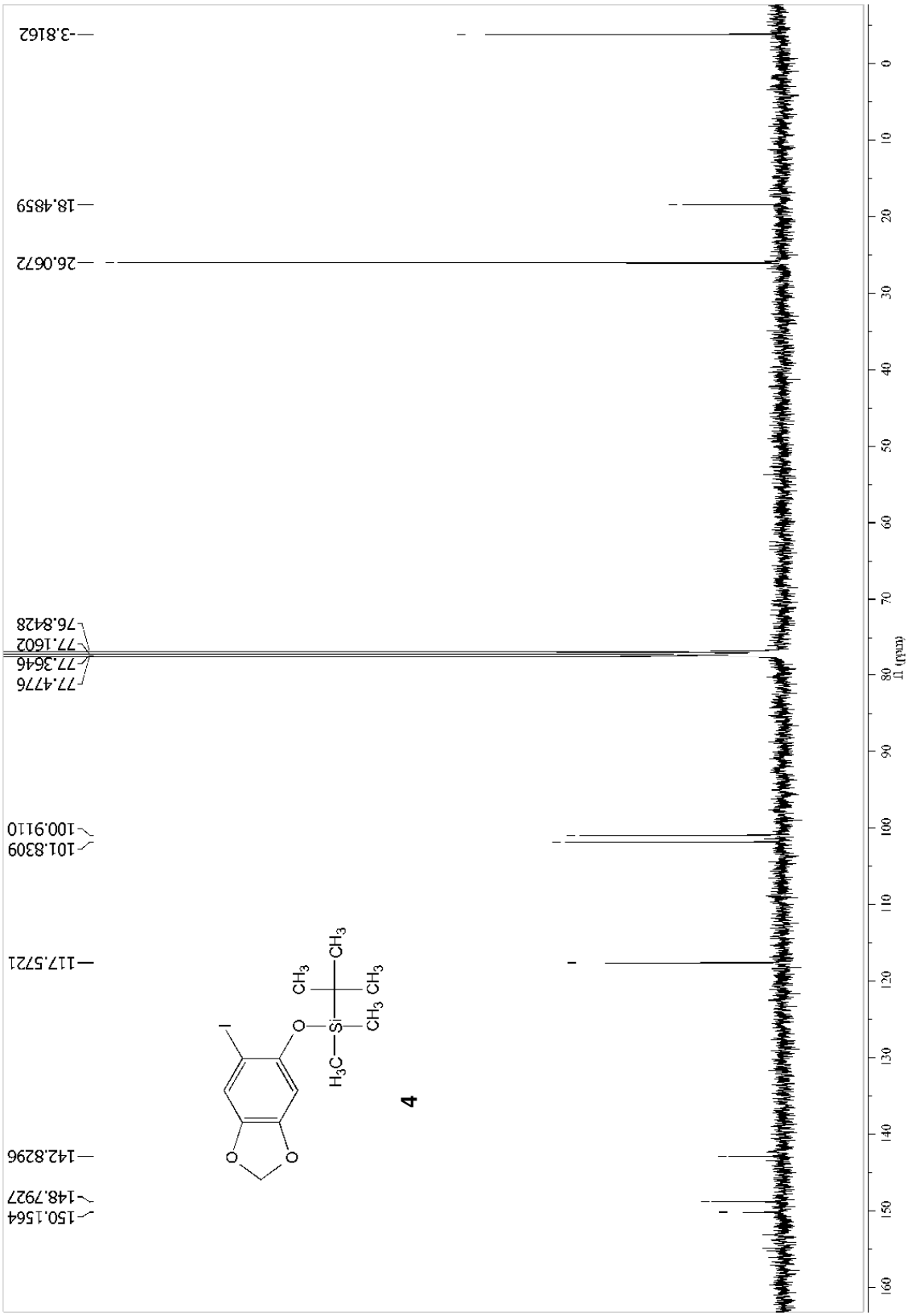
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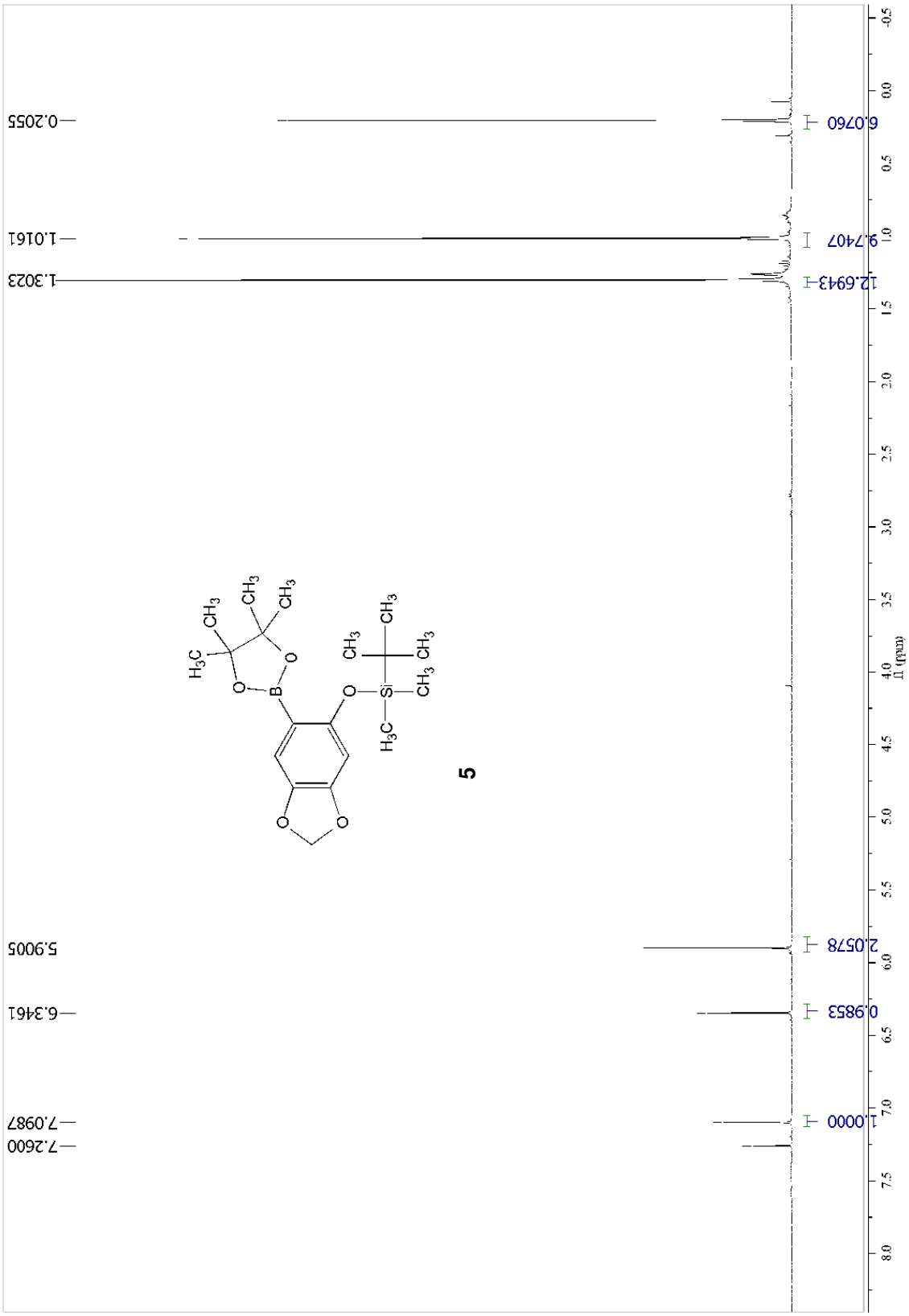
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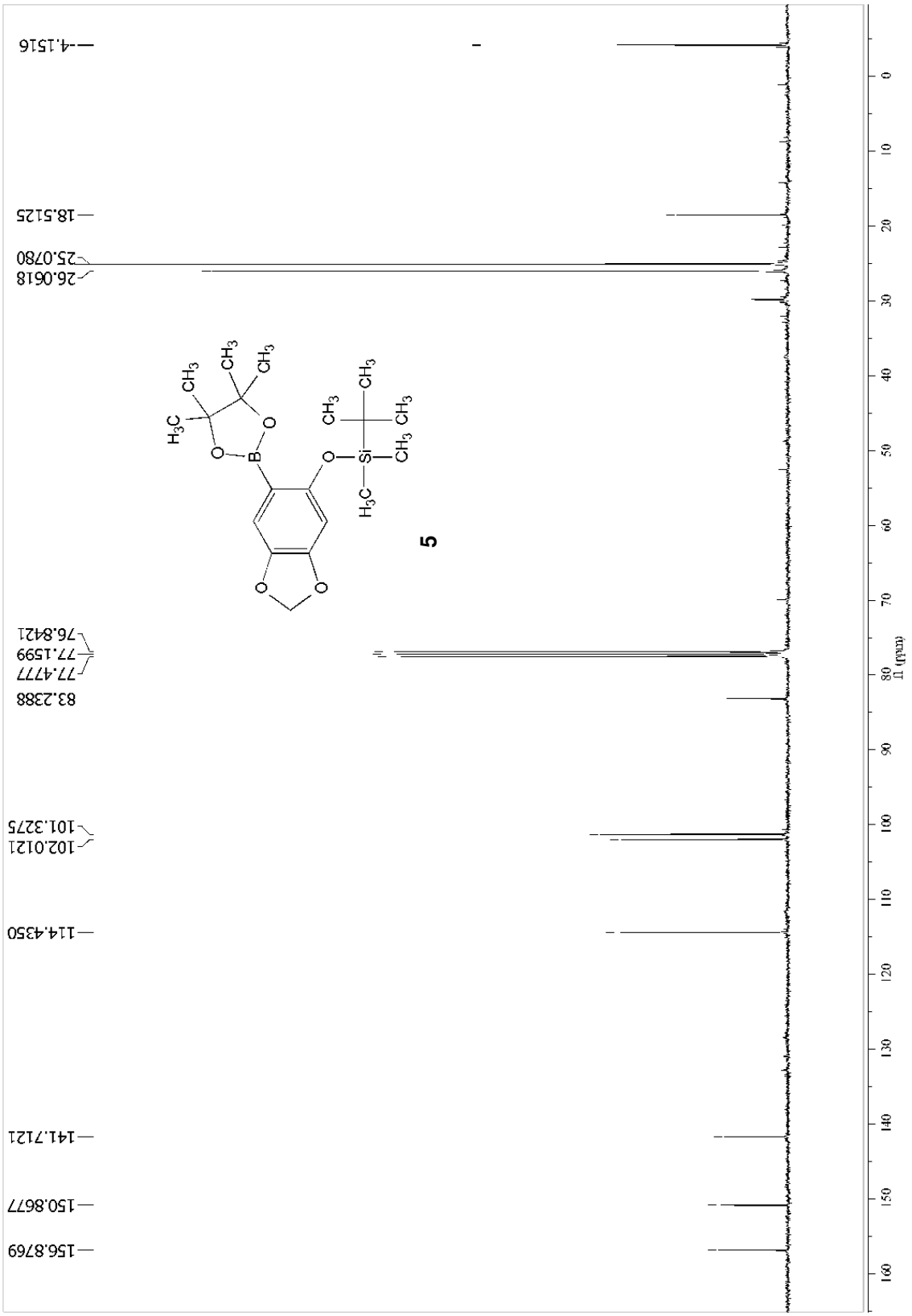
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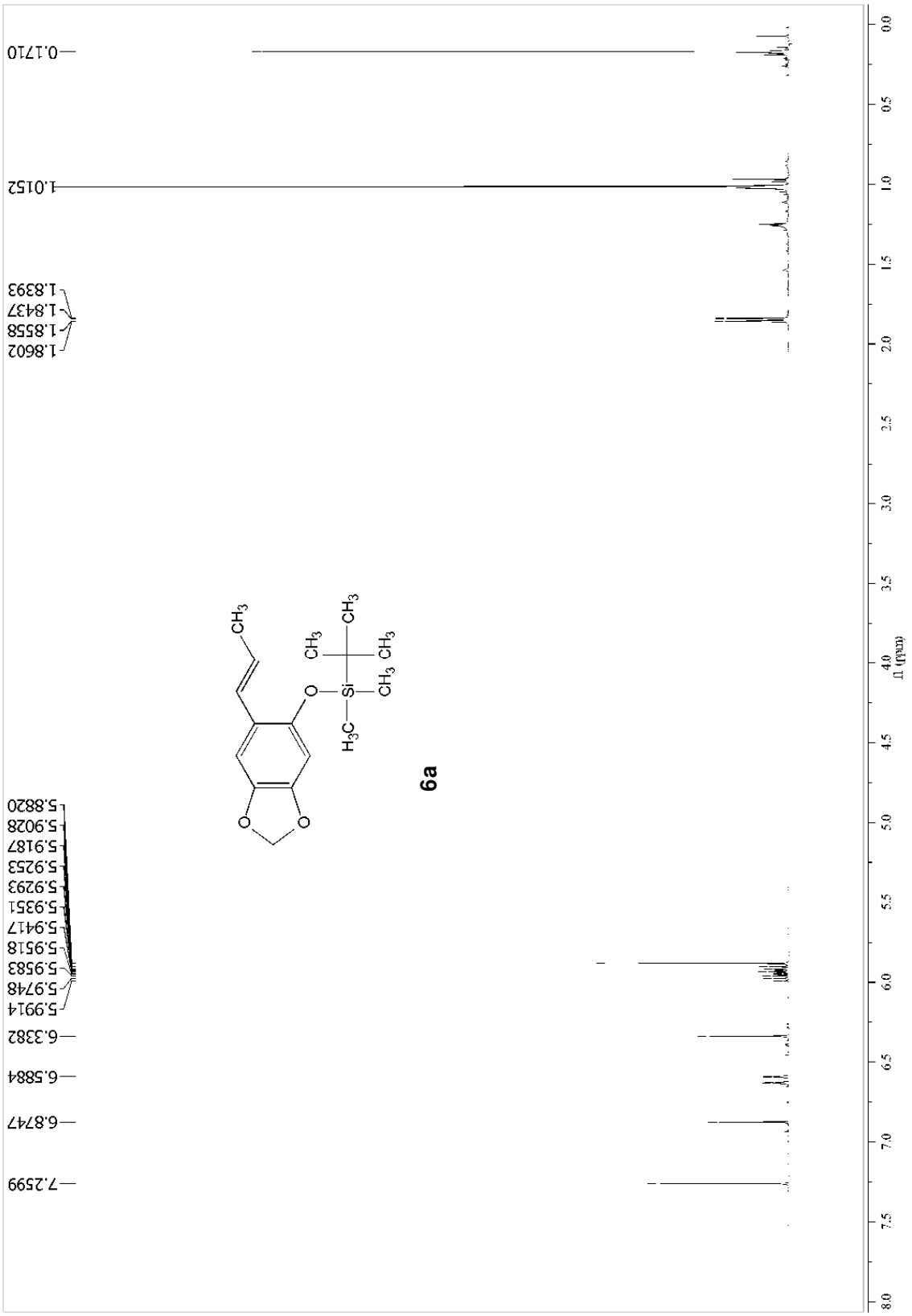
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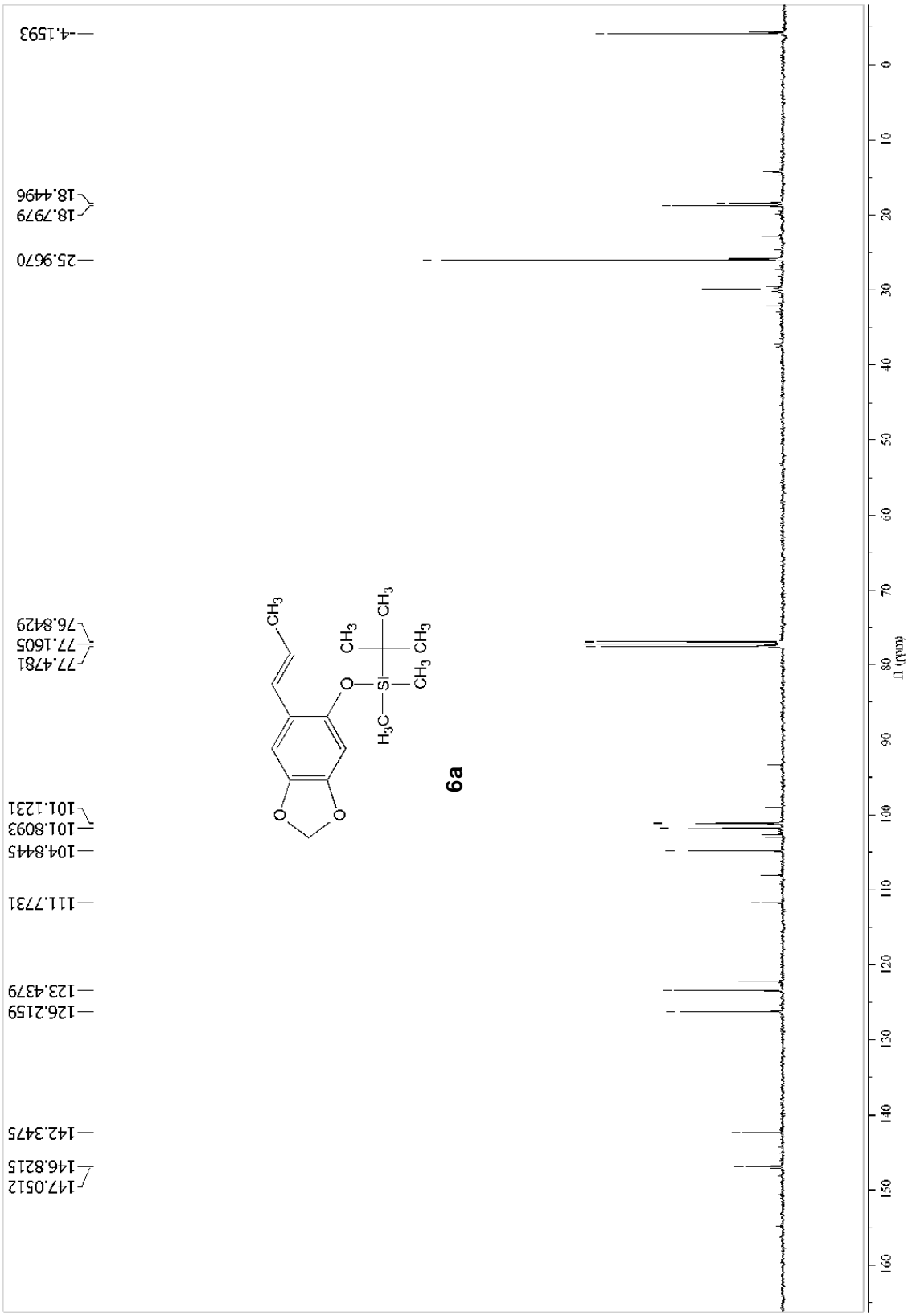
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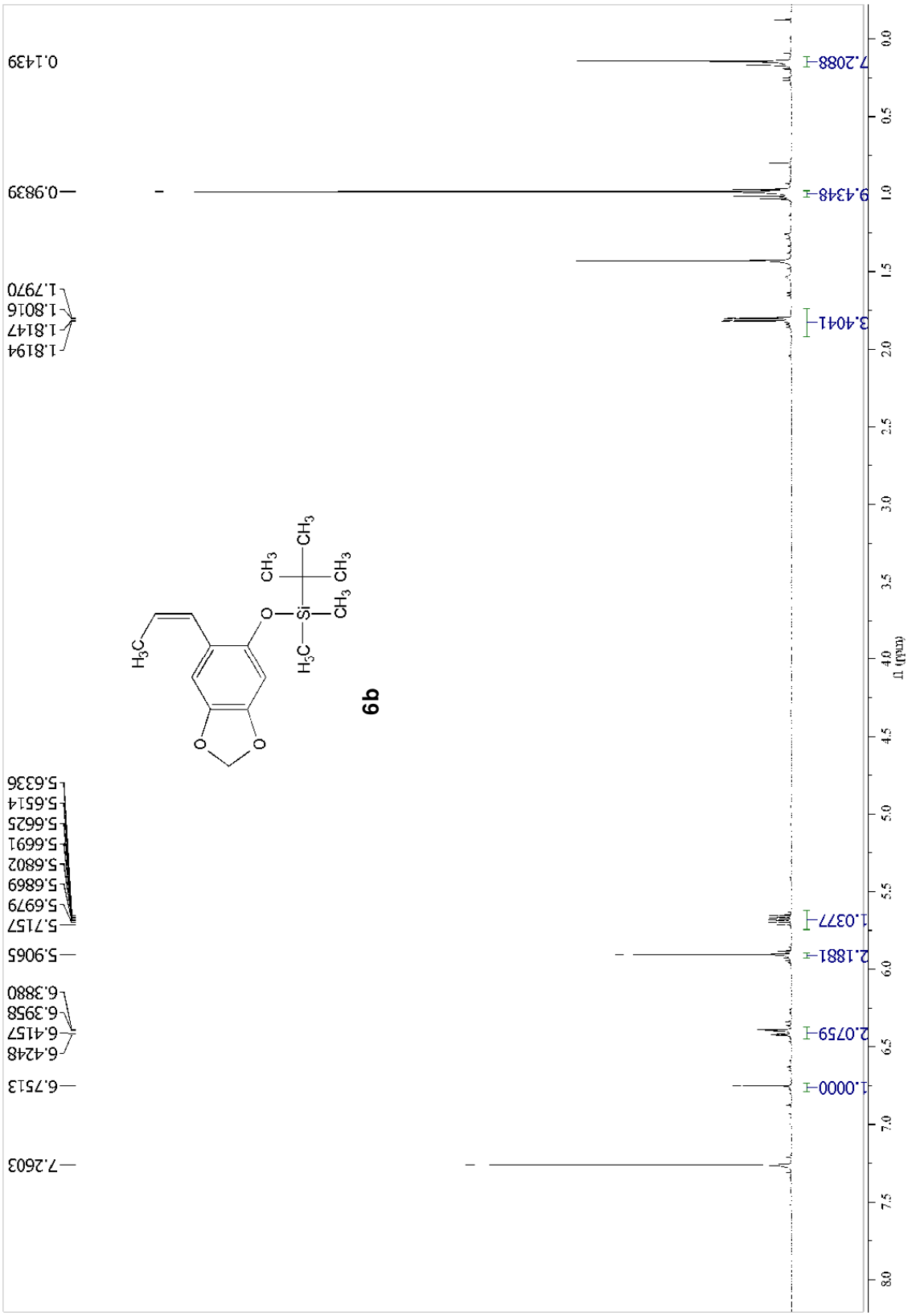
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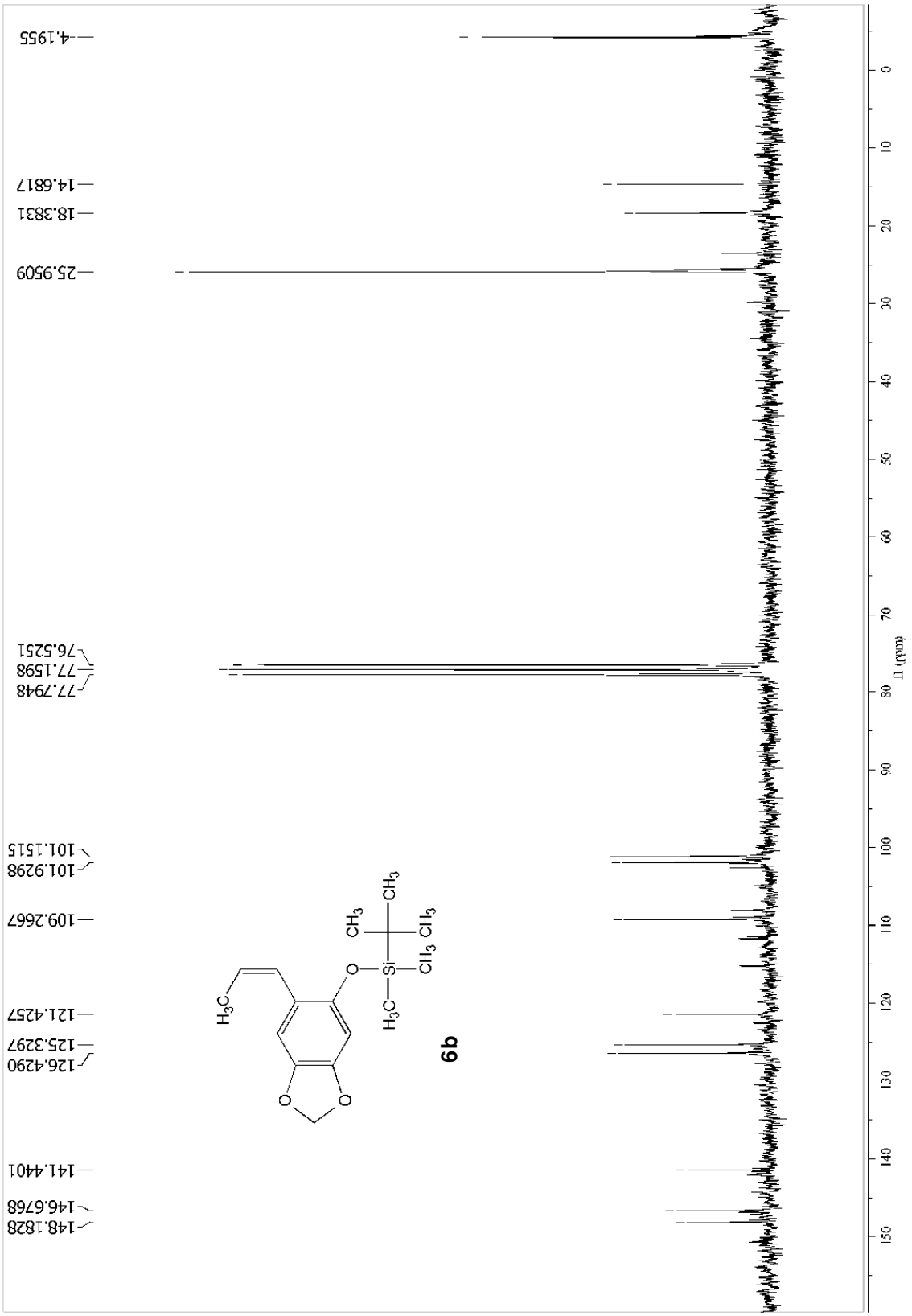
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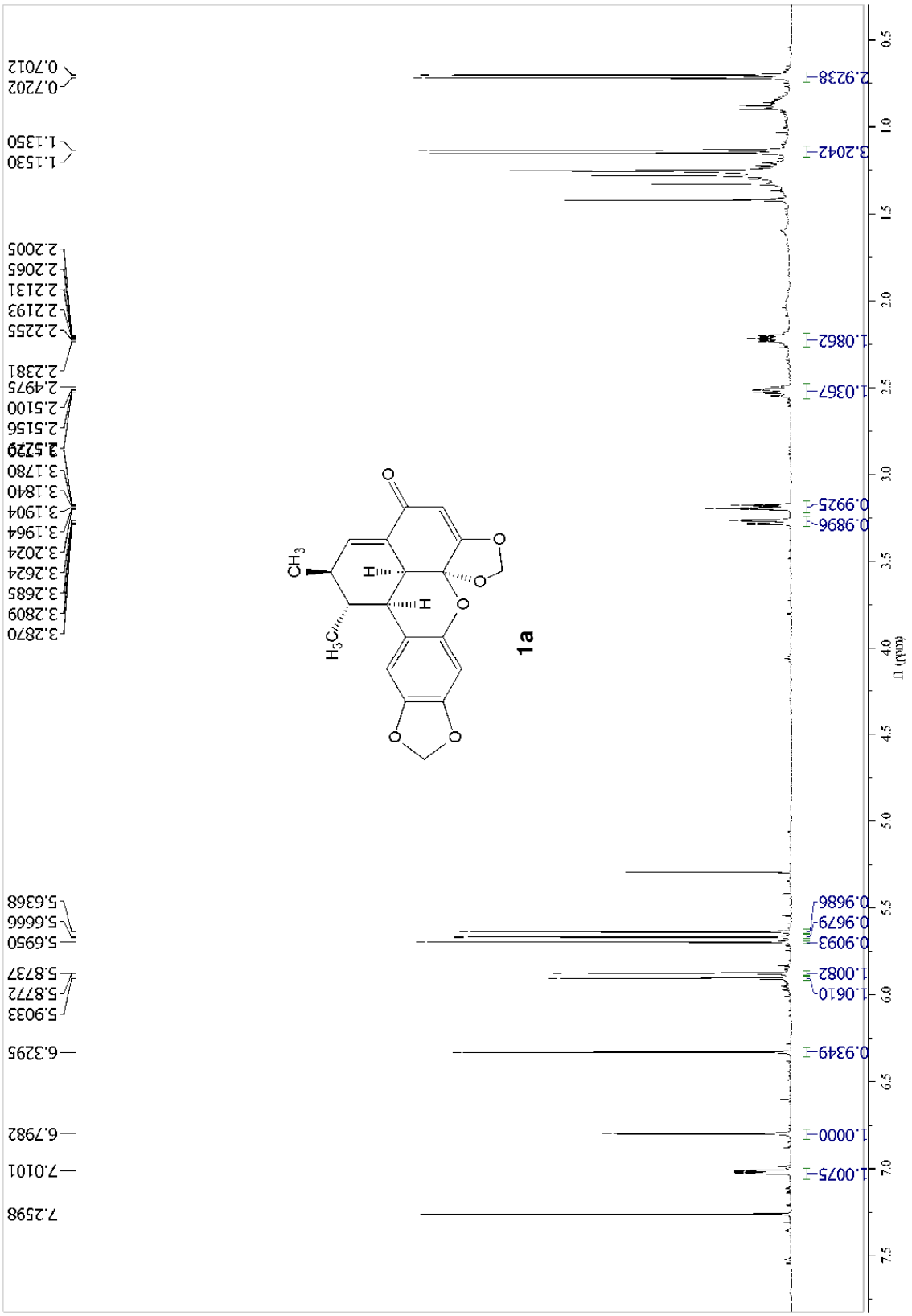
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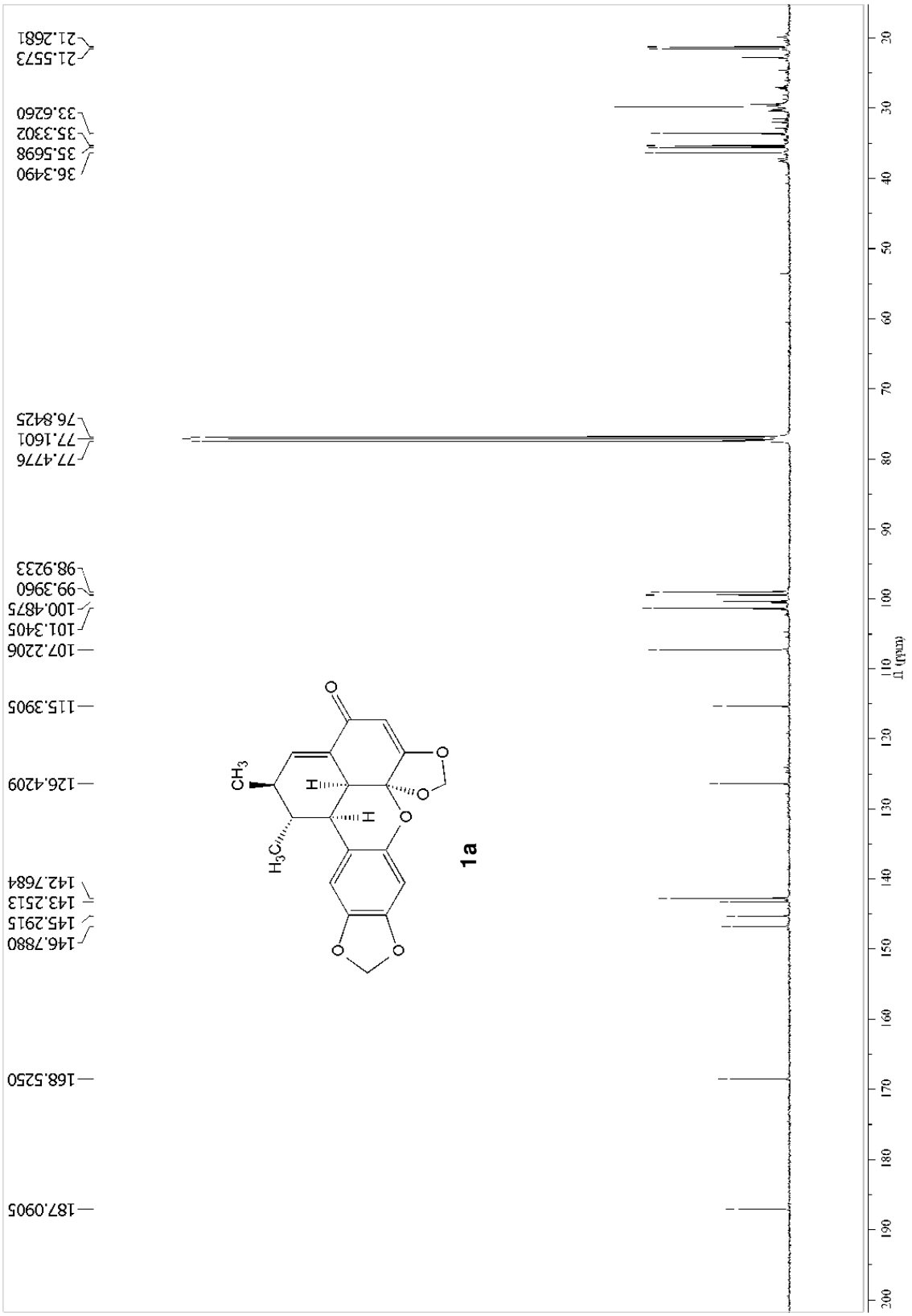
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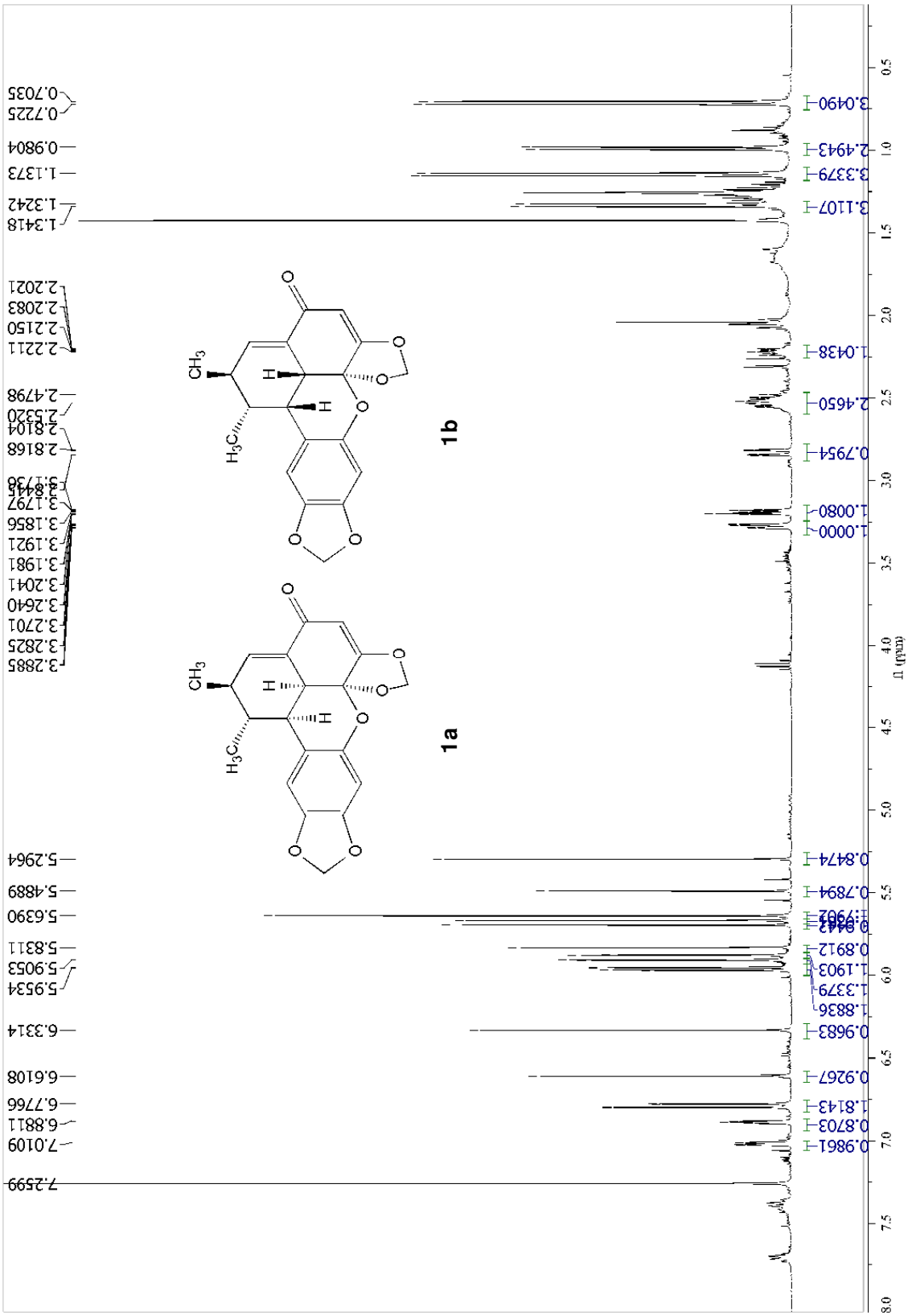
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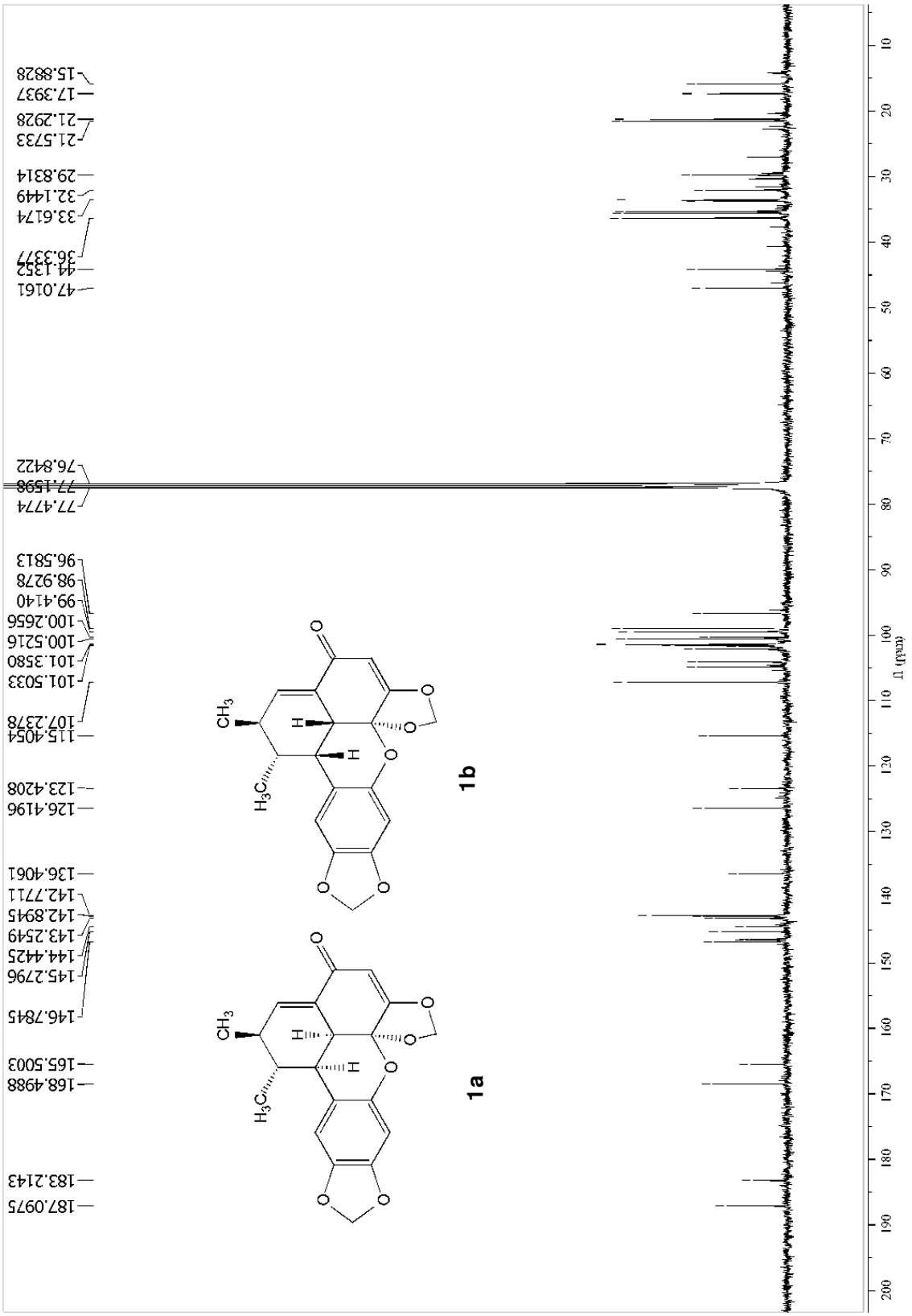
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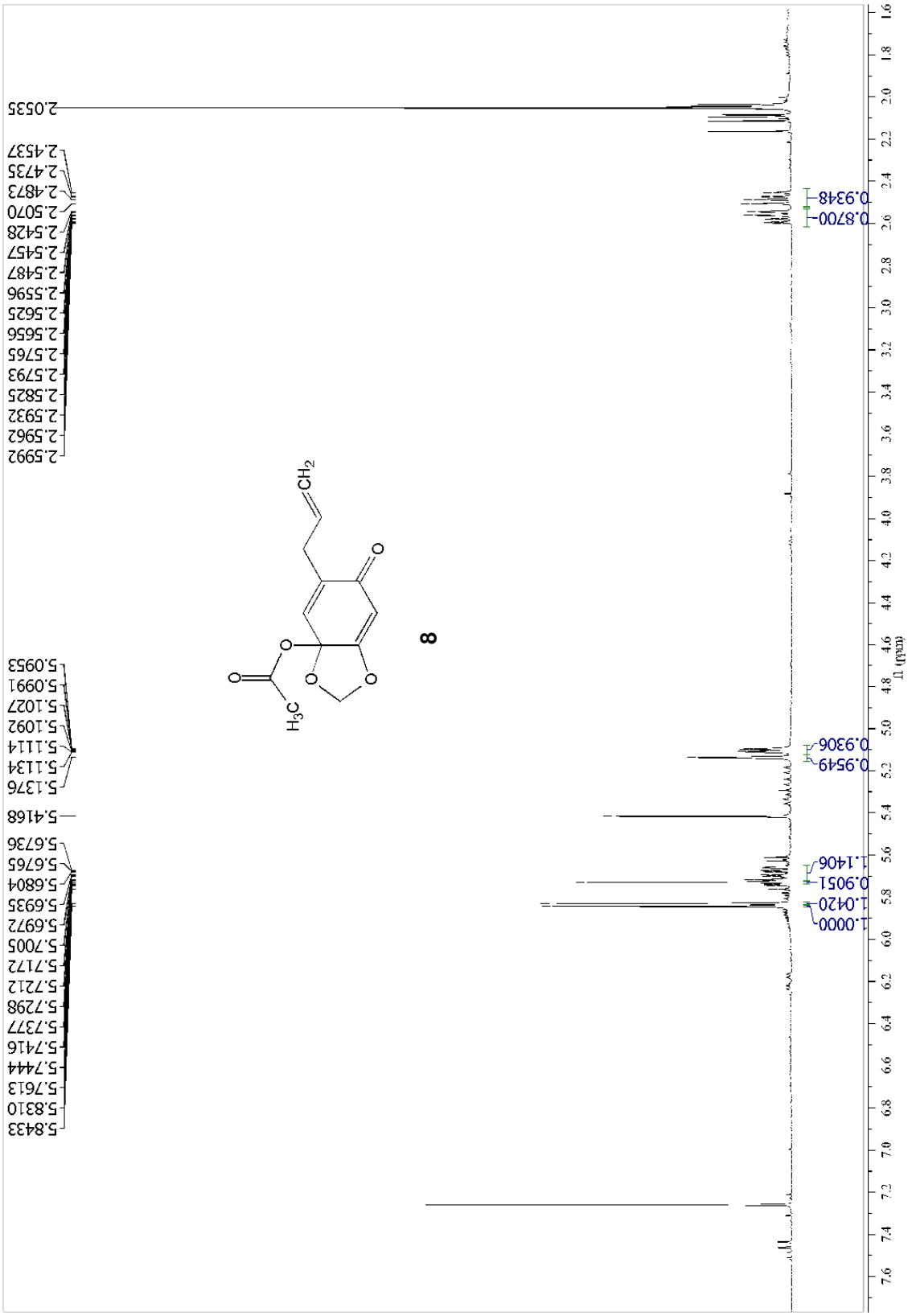
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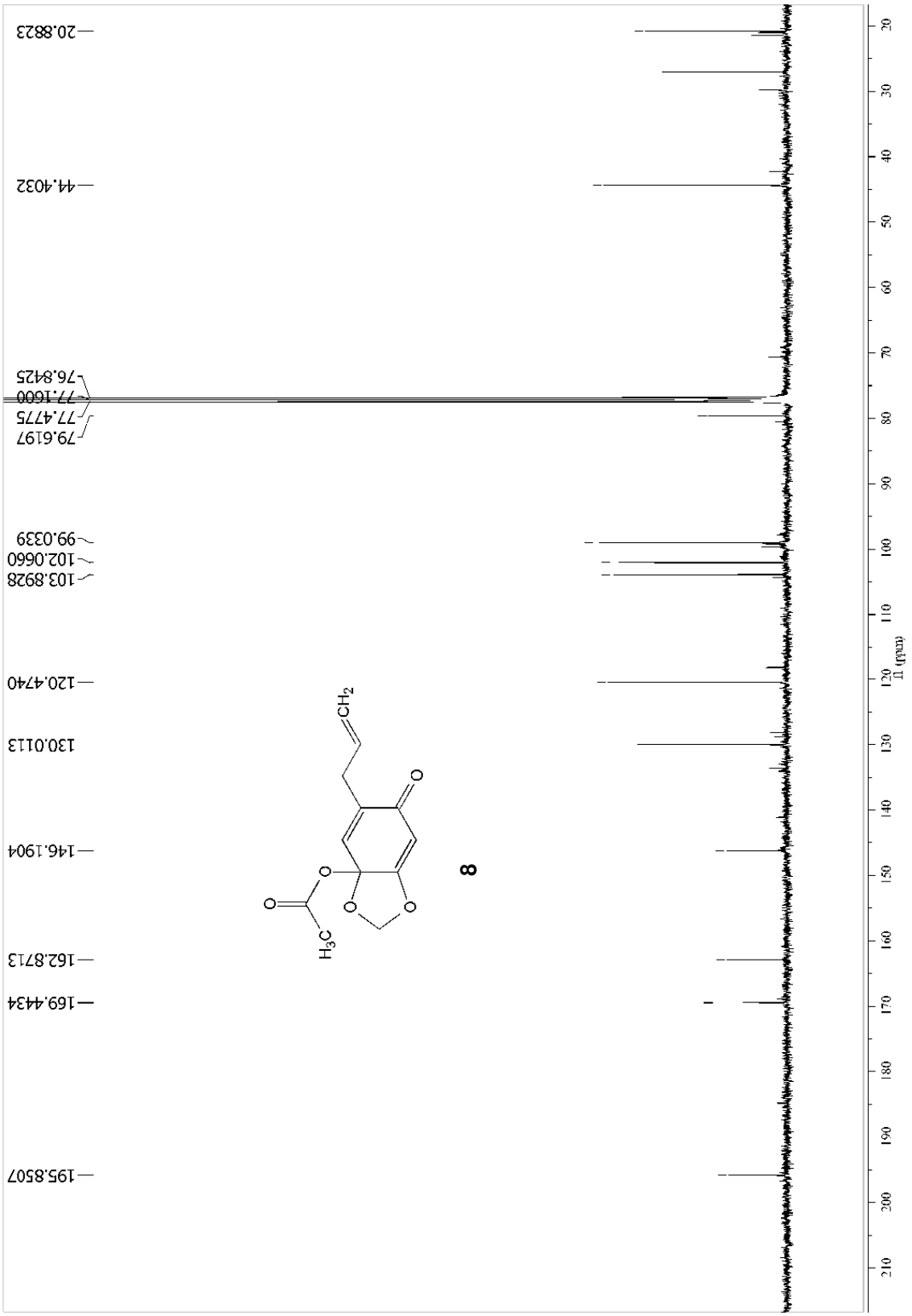
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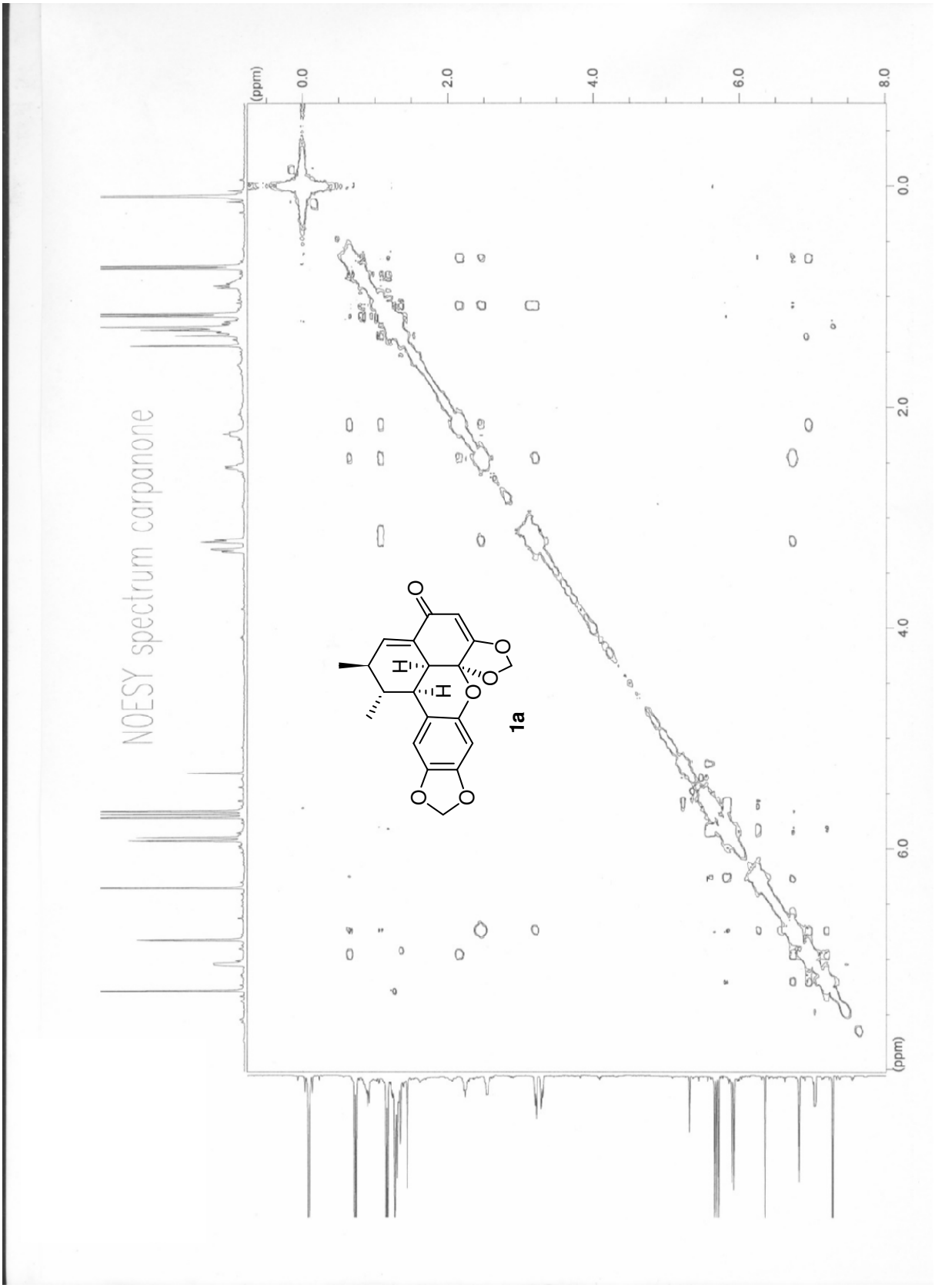
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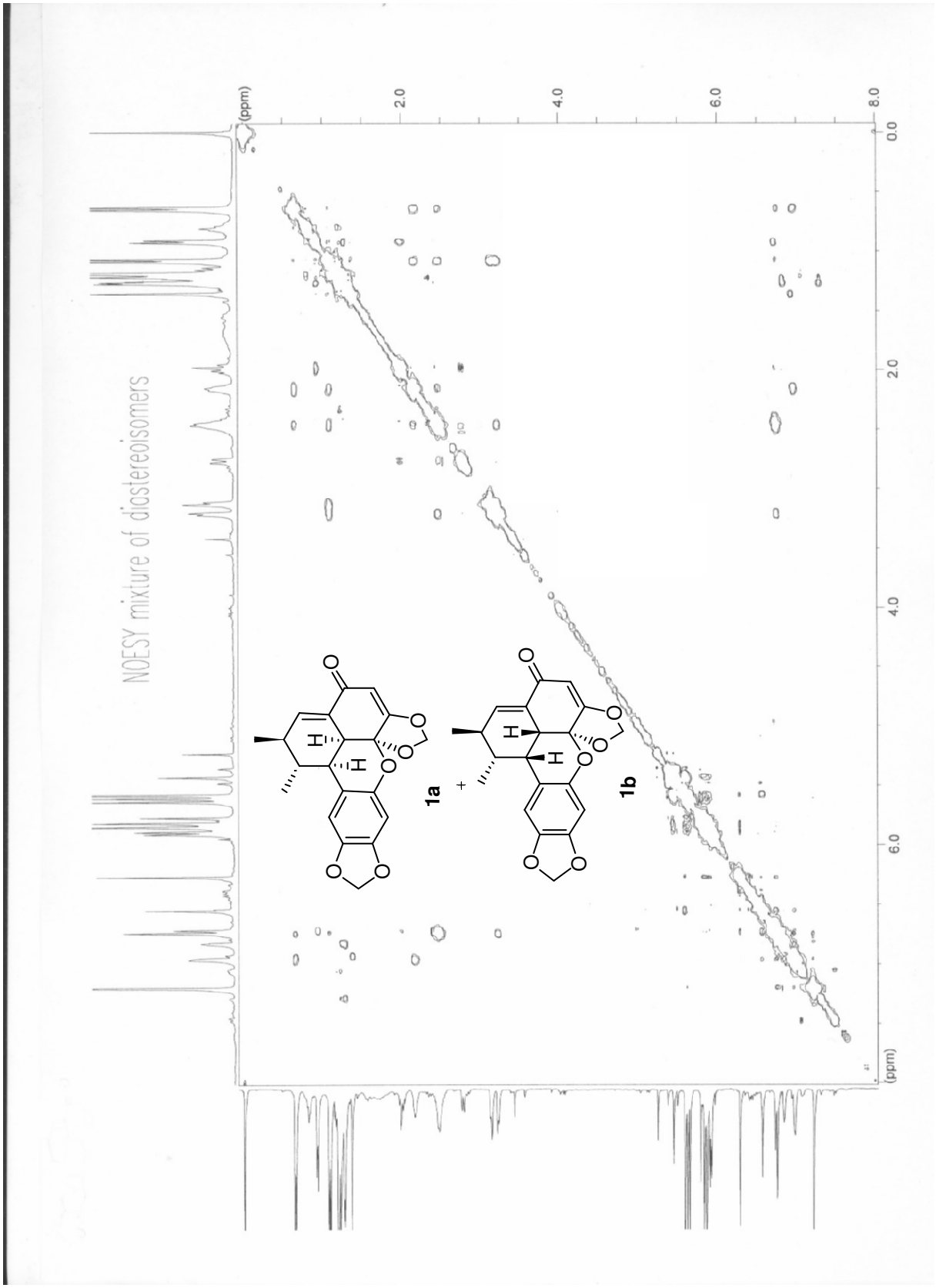
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(ppm)
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+
1b