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Supplementary Information

Solventless and Mild Procedure to Prepare Organotellurium(IV) Compounds under Microwave Irradiation

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General procedures and characterization data

Preparation of tellurium tetrachloride[1] (**1**)

$TeCl_4$ **1**

Reaction under conventional heating

In a 500 mL round bottomed flask equiped with reflux condenser, drying tube and a magnetic stirring bar, were placed elemental tellurium (200 mesh) previously dried overnight in an oven at 100 °C (63.8 g, 0.5 mol) and SO_2Cl_2 (250 mL, 3.0 mol). The mixture was refluxed for 72 h until all the tellurium powder was consumed. After this time, the excess of SO_2Cl_2 was removed by distillation under vacuum. A white solid was obtained, which was submitted to high vacuum under a water bath heating to remove any trace of SO_2Cl_2 and then used without further purification. Yield: 119.8 g (89%); white solid.

Reaction under microwave irradiation

In a 50 mL round bottomed flask equipped with a vigreux column (25 cm), a reflux condenser and a drying tube, were placed elemental tellurium (200 mesh) previously dryed overnight in an oven at 100 °C (3.82 g, 30 mmol) and SO_2Cl_2 (7.5 mL, 90 mmol). The system was placed into the oven of a microwave apparatus and then it was irradiated for 4 h at 65 ºC and at 100 W. After this time all the tellurium powder was consumed and the excess of SO_2Cl_2 was removed by distillation under vacuum, leaving behind a white solid which was submitted to high vacuum and heating as described above and then used for further reactions without purification. Yield: 7.59 g (94%); white solid.

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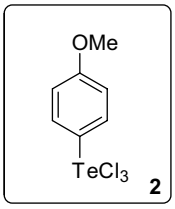
Preparation of *p*-methoxyphenyltellurium trichloride (**2**)



2

Reaction under conventional heating

The procedure described by Cunha *et al.*[2] was employed, using the tellurium tetrachloride prepared as described for **1** (26.9 g, 100 mmol) and neat anisole (10.8 mL, 100 mmol). The yellow solid obtained was recrystallized from acetic acid. Yield: 24.2 g (71%); yellow solid; m.p.: 181-182 °C; literature:[3] 182 °C.

Reaction under microwave irradiation

In a glass pressure resistant tube (35 mL) equipped with a magnetic stirring bar were placed tellurium tetrachloride prepared as described for **1** (1.02 g, 8 mmol) and neat anisole (0.87 mL, 8 mmol). The tube was closed and placed in the oven of a microwave apparatus and then irradiated for 3 min at 50 °C and at 100 W, after cooling to room temperature. The solid was washed with ethyl acetate (3 × 2 mL) and dried under reduced pressure. Yield: 2.34 g (86%); yellow solid.

Addition of *p*-methoxyphenyltellurium trichloride to alkynes, typical procedure (**3**)

Dichloro (*Z*)-(2-chloro-2-phenylvinyl)(4-metoxyphenyl) tellanyl (**3a**)

Reaction under conventional heating

To a 100 mL round bottomed flask equipped with reflux condenser and a magnetic stirring bar were added *p*-methoxyphenyltellurium trichloride prepared as described for **2** (5.11 g, 15 mmol), ethynylbenzene (1.53 g, 15 mmol) and benzene (50 mL). The mixture was heated under reflux for 10 h and the reaction was

monitored by thin-layer chromatography (TLC) eluting with a mixture of hexane:ethyl acetate (4:1). After all the alkyne was consumed, the mixture was treated with methanol:water (1:1) (3 × 30 mL) and extracted with ethyl acetate (3 × 25 mL). The organic phases were dried with $MgSO_4$ and the solvent was evaporated. The residue was filtered through silica gel eluting with ethyl acetate. After drying, filtering and evaporating the solvent, the residue was dissolved in chloroform and precipitated with hexane. Yield: 4.19 g (74%); colorless crystalline solid.

Reaction under microwave irradiation

To a glass pressure resistant tube (10 mL) equipped with a magnetic stirring bar were added ethynylbenzene (102 mg, 1 mmol) and *p*-methoxyphenyltellurium trichloride (341 mg, 1 mmol). The tube was then placed in the oven of a microwave apparatus and irradiated for 10 min at 75 °C and 100 W. After that, the tube was opened and the residue was dissolved in chloroform and precipitated with hexane. Yield: 363 mg (82%); colorless crystalline solid.

Dichloro (*E*)-1-(1-chloro-2-(4-methoxyphenyltellanyl)vinyl) cyclohexanol (**3b**)

Reaction under conventional heating

To a 100 mL round bottomed flask equipped with reflux condenser and a magnetic stirring bar were added *p*-methoxyphenyltellurium trichloride prepared as described for **2** (5.11 g, 15 mmol), 1-ethyncyclohexanol (1.86 g, 15 mmol) and benzene (50 mL). The mixture was heated under reflux for 8 h and the reaction was monitored by TLC eluting with a mixture of hexane: ethyl acetate (4:1). After all the alkyne was consumed, the mixture was treated with methanol:water (1:1) (3 × 30 mL) and extracted with ethyl acetate (3 × 25 mL). The organic phases were dried with $MgSO_4$ and the solvent was evaporated. The residue was filtered through silica gel eluting with ethyl acetate. After drying, filtering and evaporating the solvent, the residue was dissolved in chloroform and precipitated with hexane. Yield: 4.39 g (63%); colorless crystalline solid.

Reaction under microwave irradiation

To a glass pressure resistant tube (10 mL) equipped with a magnetic stirring bar were added ethynylbenzene (124 mg, 1 mmol) and *p*-methoxyphenyltellurium trichloride (341 mg, 1 mmol). The tube was then placed in the oven of a microwave apparatus and irradiated for 15 min at 70 °C and 100 W. After that, the tube was opened and the residue was dissolved in chloroform and precipitated with hexane. Yield: 367 mg (79%); colorless crystalline solid.

Dichloro (*E*)-1-(1-chloro-2-(4-metoxyphenyltellanyl)vinyl) cyclopentanol (**3c**)

Reaction under conventional heating

To a 100 mL round bottomed flask equipped with reflux condenser and a magnetic stirring bar were added *p*-methoxyphenyltellurium trichloride prepared as described for **2** (5.11 g, 15 mmol), 1-ethyncyclopentanol (1.65 g, 15 mmol) and benzene (50 mL). The mixture was heated under reflux for 8 h and the reaction was monitored by TLC eluting with a mixture of hexane:ethyl acetate (4:1). After all the alkyne was consumed, the mixture was treated with methanol:water (1:1) (3 × 30 mL) and extracted with ethyl acetate (3 × 25 mL). The organic phases were dried with $MgSO_4$ and the solvent was evaporated. The residue was filtered through silica gel eluting with ethyl acetate. After drying, filtering and evaporating the solvent, the residue was dissolved in chloroform and precipitated with hexane. Yield: 3.92 g (58%); colorless crystalline solid.

Reaction under microwave irradiation

To a glass pressure resistant tube (10 mL) equipped with a magnetic stirring bar were added 1-ethyncyclopentanol (110 mg, 1 mmol) and *p*-methoxyphenyltellurium trichloride (341 mg, 1 mmol). The tube was then placed in the oven of a microwave apparatus and irradiated for 15 min at 70 °C and 100 W. After that, the tube was opened and the residue was dissolved in chloroform and precipitated with hexane. Yield: 324 mg (72%); colorless crystalline solid.

Dichloro (*E*)-3-chloro-4-(4-metoxyphenyltellanyl)but-3-en-2-ol (**3f**)

Reaction under conventional heating

To a 100 mL round bottomed flask equipped with reflux condenser and a magnetic stirring bar were added *p*-methoxyphenyltellurium trichloride prepared as described for **2** (5.11 g, 15 mmol), but-3-yn-2-ol (1.05 g, 15 mmol) and benzene (50 mL). The mixture was heated under reflux for 10 h and the reaction was monitored by TLC eluting with a mixture of hexane:ethyl acetate (3:1). After all the alkyne was consumed, the mixture was treated with methanol:water (1:1) (3 × 30 mL) and extracted with ethyl acetate (3 × 25 mL). The organic phases were dried with $MgSO_4$ and the solvent was evaporated. The residue was filtered through silica gel eluting with ethyl acetate. After drying, filtering and evaporating the solvent, the residue was dissolved in chloroform and precipitated with hexane. Yield: 3.39 g (55%); colorless crystalline solid.

Reaction under microwave irradiation

To a glass pressure resistant tube (10 mL) equipped with a magnetic stirring bar were added but-3-yn-2-ol (70 mg, 1 mmol) and *p*-methoxyphenyltellurium trichloride (341 mg, 1 mmol). The tube was then placed in the oven of a microwave apparatus and irradiated for 15 min at 75 °C and 100 W. After that, the tube was opened and the residue was dissolved in chloroform and precipitated with hexane. Yield: 279 mg (68%); colorless crystalline solid.

Dichloro (*Z*)-3-chloro-4-(4-metoxyphenyltellanyl)-2 methylbut-3-en-2-ol (**3g**)

Reaction under conventional heating

To a 100 mL round bottomed flask equipped with reflux condenser and a magnetic stirring bar were added *p*-methoxyphenyltellurium trichloride prepared as described for **2** (5.11 g, 15 mmol), 2-methylbut-3-yn-2-ol (1.26 g, 15 mmol) and benzene (50 mL). The mixture was heated under reflux for 6 h and the reaction was monitored by TLC eluting with a mixture of hexane:ethyl acetate (3:1). After all the alkyne was consumed, the mixture was treated with methanol:water (1:1) (3 × 30 mL) and extracted with ethyl acetate (3 × 25 mL). The organic phases were dried with $MgSO_4$ and the solvent was evaporated. The residue was filtered through silica gel eluting with ethyl acetate. After drying, filtering and evaporating the solvent, the residue was dissolved in chloroform and precipitated with hexane. Yield: 3.82 g (60%); colorless crystalline solid.

Reaction under microwave irradiation

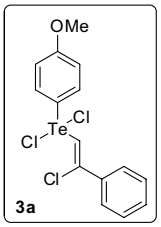
To a glass pressure resistant tube (10 mL) equipped with a magnetic stirring bar were added 2-methylbut-3-yn-2-ol (84 mg, 1 mmol) and *p*-methoxyphenyltellurium trichloride (341 mg, 1 mmol). The tube was then placed in the oven of a microwave apparatus and irradiated for 15 min at 75 °C and 100 W. After that, the tube was opened and the residue was dissolved in chloroform and precipitated with hexane. Yield: 361 mg (85%); colorless crystalline solid.

Reduction of Te(IV) compounds to Te(II) compounds (**4**)

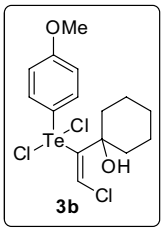
Typical procedure

To a solution of the Te(IV) compound (2 mmol) in ethyl acetate (10 mL) was added a saturated solution of sodium bisulfite (3 mL). The mixture was stirred for 10 min and then it was added saturated solution of NaCl (5 mL). The phases were separated and the organic phase was dried with $MgSO_4$ and the solvent was evaporated. The residual oil was purified by silica gel column chromatography eluting with hexane:ethyl acetate (9:1).

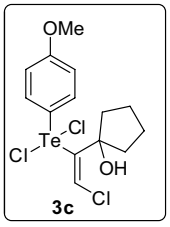
Spectroscopic data



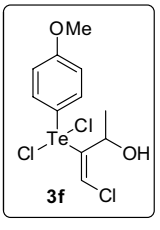
Dichloro (*Z*)-(2-chloro-2-phenylvinyl) (4-metoxyphenyl)tellanyl (**3a**): m.p.: 134-135 °C (Lit.:[13] 134-135 °C); ^{1}H NMR (200 MHz, $CDCl_3$) δ 8.20 (d, 2H, *J* 9.1 Hz, Ph–H), 7.77 (s, 1H, CH), 7.68 (d, 2H, *J* 9.7 Hz, Ph–H), 7.47 (m, 3H, Ph–H), 7.09 (d, 2H, *J* 9.1 Hz, Ph–H), 3.89 (s, 3H, CH_3); ^{13}C NMR (50 MHz, $CDCl_3$) δ 162.3, 147.0, 134.0, 131.3, 128.7, 127.3, 125.9, 121.8, 116.2, 115.7, 55.6; ^{125}Te NMR (63 MHz, $CDCl_3$) δ 819.82; IR (ATR) ν_{max}/cm^{-1} 3041, 2838, 1570, 1581, 1490, 1255, 1026, 737; CAS: 133040-43-4**.**



Dichloro (*E*)-1-(1-chloro-2-(4-methoxyphenyltellanyl)vinyl)cyclohexanol (**3b**): m.p.: 138-139 °C; ^{1}H NMR (200 MHz, $CDCl_3$) δ 8.28 (d, 2H, *J* 9.1 Hz, Ph–H), 7.12 (d, 2H, *J* 9.1 Hz, Ph–H), 6.45 (s, 1H, CH), 3.90 (s, 3H, CH_3), 2.57-2.24 (m, 2H, CH_2), 2.14-1.90 (m, 2H, CH_2), 1.83-1.15 (m, 6H, CH_2); ^{13}C NMR (50 MHz, $CDCl_3$) δ 162.4, 159.1, 137.0, 125.2, 118.6, 116.0, 76.6, 55.6, 46.7, 34.6, 24.6, 21.6; ^{125}Te NMR (63 MHz, $CDCl_3$) δ 966.23; IR (ATR) ν_{max}/cm^{-1} 3488, 3066, 3017, 2964, 2864, 1294, 1052, 789, 743, 489; anal. calcd. for $C_{15}H_{19}Cl_3O_2Te$ (465.2692): C, 38.72,H, 4.12; found: C, 39.02, H, 4.11.

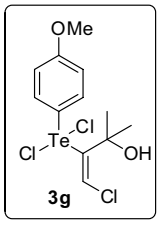


Dichloro (*E*)-1-(1-chloro-2-(4-metoxyphenyltellanyl)vinyl)cyclopentanol (**3c**): m.p.: 148-149 °C; ^{1}H NMR (200 MHz, $CDCl_3$) δ 8.28 (d, 2H, *J* 9.1 Hz, Ph–H), 7.13 (d, 2H, *J* 9.1 Hz, Ph–H), 6.43 (s, 1H, CH), 3.89 (s, 3H, CH_3), 2.64-2.37 (m, 2H, CH_2), 2.14-1.79 (m, 6H, CH_2); ^{13}C NMR (50 MHz, $CDCl_3$) δ 162.5, 158.2, 137.0, 129.4, 124.9, 118.3, 116.3, 83.9, 55.6, 40.4; ^{125}Te NMR (63 MHz, $CDCl_3$) δ 957.13; IR (ATR) ν_{max}/cm^{-1} 3473, 3070, 3022, 2970, 2939, 1294, 1048; anal. calcd. for $C_{14}H_{17}Cl_3O_2Te$ (451.2426): C, 37.26, H, 3.80; found: C, 37.15, H, 3.79.

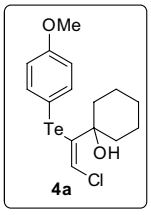


Dichloro (*E*)-3-chloro-4-(4-metoxyphenyltellanyl)but-3-en-2-ol (**3f**): m.p.: 100-101 °C; ^{1}H NMR (200 MHz, $CDCl_3$) δ 8.29 (d, 2H, *J* 9.2 Hz, Ph–H), 7.14 (d, 2H, *J* 9.2 Hz, Ph–H), 6.44 (d, 1H, *J* 2.2 Hz, CH), 5.23 (qdd, 1H, *J* 6.5, 4.4, 2.2 Hz, CH), 3.90 (s, 3H, CH_3), 3.42 (d, 1H, *J* 4.3 Hz, CH), 1.71 (d, 3H, *J* 6.5 Hz, CH_3); ^{13}C NMR (50 MHz, $CDCl_3$) δ 162.6, 153.9, 137.0, 133.3, 126.4,

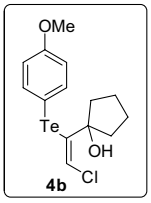
116.0, 67.3, 55.6, 22.0; ^{125}Te NMR (63 MHz, $CDCl_3$) δ 923.07; IR (ATR) ν_{max}/cm^{-1} 3455, 3078, 2980, 1443, 1587, 1255, 1026, 812; anal. calcd. for $C_{11}H_{13}Cl_3O_2Te$ (411,1787): C, 32.13, H, 3.19; found: C, 32.52, H, 3.16.



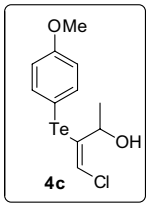
Dichloro (*Z*)-3-chloro-4-(4-metoxyphenyltellanyl)-2 methylbut-3-en-2-ol (**3g**): m.p.: 153-155 °C; ^{1}H NMR (200 MHz, DMSO) δ 8.19 (d, 2H, *J* 9.0 Hz, Ph–H), 7.24 (d, 2H, *J* 9.1 Hz, Ph–H), 6.30 (s, 1H, CH), 3.86 (s, 3H, CH_3), 1.65 (s, 6H, CH_3); ^{13}C NMR (50 MHz, DMSO) δ 161.9, 159.4, 137.5, 122.7, 121.4, 115.8, 73.1, 55.9, 28.9; ^{125}Te NMR (63 MHz, DMSO) δ 996.77; IR (ATR) ν_{max}/cm^{-1} 3427, 3073, 2970, 1583, 1492, 1255, 1182, 823; CAS: 244214-20-8.



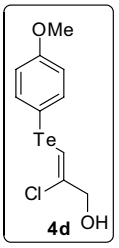
(*E*)-1-(1-Chloro-2-(4-methoxyphenyltellanyl)vinyl)cyclohexanol (**4a**): m.p.: 78-79 °C; ^{1}H NMR (200 MHz, $CDCl_3$) δ 7.75 (d, 2H, *J* 8.7 Hz, Ph–H), 6.83 (d, 2H, *J* 8.7 Hz, Ph–—H), 5.16 (s, 1H, CH), 3.82 (s, 3H, CH_3), 2.49-2.30 (m, 2H, CH_2), 1.84-1.18 (m, 8H, CH_2); ^{13}C NMR (50 MHz, $CDCl_3$) δ 160.3, 143.1, 137.0, 115.8, 106.7, 103.8, 76.9, 55.1, 33.1, 24.5, 21.6; ^{125}Te NMR (63 MHz, $CDCl_3$) δ 633.64; IR (ATR) ν_{max}/cm^{-1} 3376, 3002, 2916, 2857, 1490, 1248, 789; CAS: 133040-55-8; yield: 686 mg (87%); colorless crystalline solid.



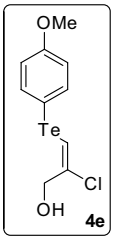
(*E*)-1-(1-Chloro-2-(4-methoxyphenyltellanyl)vinyl)cyclopentanol (**4b**): m.p.: 81-82 °C; ^{1}H NMR (200 MHz, $CDCl_3$) δ 7.75 (d, 2H, *J* 8.7 Hz, Ph–H), 6.83 (d, 2H, *J* 8.7 Hz, Ph–H), 5.32 (s, 1H, CH), 3.82 (s, 3H, CH_3), 2.46-2.34 (m, 2H, CH_2), 1.94-1.77 (m, 6H, CH_2); ^{13}C NMR (50 MHz, $CDCl_3$) δ 160.4, 142.8, 133.4, 115.8, 108.8, 103.5, 85.6, 55.1, 39.5, 24.2; ^{125}Te NMR (63 MHz, $CDCl_3$) δ 674.32; IR (ATR) ν_{max}/cm^{-1} 3439, 2995, 2954, 1582, 1562, 1248, 821; anal. calcd. for $C_{14}H_{17}ClO_2Te$ (380.3366): C, 44.21, H, 4.51; found: C, 43.55, H, 4.41; yield: 623 mg (82%); yellow solid.



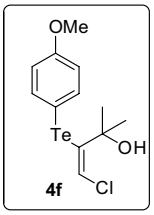
(*E*)-3-Chloro-4-(4-metoxyphenyltellanyl) but-3-en-2-ol (**4c**): ^{1}H NMR (200 MHz, $CDCl_3$) δ 7.74 (d, 2H, *J* 8.4 Hz, Ph–H), 6.81 (d, 2H, *J* 8.5 Hz, Ph–H), 5.64 (s, 1H, CH), 4.79 (d, 1H, *J* 5.9 Hz, CH), 3.81 (s, 3H, CH_3), 2.40 (s, 1H, OH), 1.34 (d, 3H, *J* 6.3 Hz, CH_3); ^{13}C NMR (50 MHz, $CDCl_3$) δ 160.3, 142.4, 131.8, 115.7, 114.4, 101.2, 69.6, 68.1, 55.1, 21.9; ^{125}Te NMR (63 MHz, $CDCl_3$) δ 580.47; IR (ATR) ν_{max}/cm^{-1} 3378, 2975, 2934, 1585, 1488, 1245, 823; anal. calcd. for $C_{11}H_{13}ClO_2Te$ (340.2727): C, 38.83, H, 3.85; found: C, 38.74, H, 3.85; yield: 537 mg (79%); yellow oil.



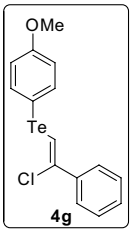
(*Z*)-2-Chloro-3-(4-metoxyphenyltellanyl) prop-2-en-1-ol (**4d**): ^{1}H NMR (200 MHz, $CDCl_3$) δ 7.74 (d, 2H, *J* 8.7 Hz, Ph–H), 7.02 (s, 1H, CH), 6.81 (d, 2H, *J* 8.7 Hz, Ph–H), 4.25 (d, 2H, *J* 5.4 Hz, CH_2), 3.81 (s, 3H, CH_3), 1.90 (t, 1H, *J* 6.1 Hz, OH); ^{13}C NMR (50 MHz, $CDCl_3$) δ 160.1, 141.0, 137.6, 115.5, 107.2, 102.0, 66.9, 55.2; ^{125}Te NMR (63 MHz, $CDCl_3$) δ 573.84; IR (ATR) ν_{max}/cm^{-1} 3370, 2936, 2858, 1586, 1489; CAS 220580-69-8; yield: 332 mg (51%); yellow oil.



(*E*)-2-Chloro-3-(4-metoxyphenyltellanyl) prop-2-en-1-ol (**4e**): ^{1}H NMR (200 MHz, $CDCl_3$) δ 7.74 (d, 2H, *J* 8.7 Hz, Ph–H), 6.82 (d, 2H, *J* 8.8 Hz, Ph–H), 5.92 (t, 1H, *J* 1.7 Hz, CH), 4.43 (d, 2H, *J* 4.4 Hz, CH_2), 3.81 (s, 3H, CH_3), 2.12 (t, 1H, *J* 6.1 Hz, OH); ^{13}C NMR (50 MHz, $CDCl_3$) δ 160.3, 142.1, 124.8, 116.9, 115.9, 101.3, 62.9, 55.2;. ^{125}Te NMR (63 MHz, $CDCl_3$) δ 628.41; IR (ATR) ν_{max}/cm^{-1} 3363, 2928, 3839, 1585, 1490; CAS 133070-99-2; yield: 182 mg (28%); yellow oil.



(*Z*)-3-Chloro-4-(4-metoxyphenyltellanyl)-2 methylbut-3-en-2-ol (**4f**): m.p.: 84-85 °C; ^{1}H NMR (200 MHz, $CDCl_3$) δ 7.76 (d, 2H, *J* 8.7 Hz, Ph–H), 6.83 (d, 2H, *J* 8.6 Hz, Ph–H), 5.17 (s, 1H, CH), 3.82 (s, 3H, CH_3), 1.64 (s, 6H, CH_3); ^{13}C NMR (50 MHz, $CDCl_3$) δ 160.4, 143.1, 136.0, 115.8, 107.4, 103.3, 75.4, 55.1, 27.2; ^{125} Te NMR (63 MHz, $CDCl_3$) δ 650.53; IR (ATR) ν_{max}/cm^{-1} 3384, 2529, 2369, 1587, 1491, 1249, 820; anal. calcd. for $C_{12}H_{15}ClO_2Te$ (354.2993): C, 40.68, H, 4.27; found: C, 40.82, H, 4.31; yield: 602 mg (85%); yellow solid.



(*Z*)-(2-Chloro-2-phenylvinyl) (4-metoxyfenyl)tellanyl (**4g**): ^{1}H NMR (200 MHz, $CDCl_3$) δ 7.78 (d, 2H, *J* 8.8 Hz, Ph–H), 7.54-7.45 (m, 2H, Ph–H), 7.37 (s, 1H, CH), 7.33-7.22 (m, 3H, Ph–H), 6.81 (d, 2H, *J* 8.8 Hz, Ph–H), 3.79 (s, 3H, CH_3).; ^{13}C NMR (50 MHz, $CDCl_3$) δ 160.2, 141.1, 137.4, 136.3, 128.2, 125.9, 115.5, 109.1, 102.9, 55.2; ^{125}Te NMR (63 MHz, $CDCl_3$) δ 613.77; IR (ATR) ν_{max}/cm^{-1} 3032, 2950, 2927, 2833, 1584, 1487, 1246, 825.; CAS 133040-52-5; yield: 625 mg (84%); yellow oil.

References

1. Petragnani, N.; Mendes, S. R.; Silveira, C.; *Tetrahedron Lett.* **2008**, *49*, 2371.
2. Cunha, R. L. R. O.; Omori, A. T.; Castelani, P.; Toledo, F. T.; Comasseto, J. V.; *J. Organomet. Chem*. **2004**, *689*, 3631.
3. Reichel, L.; Kirschbaum, E.; *Liebigs Ann. Chem.* **1936**, *523*, 211.

NMR spectroscopy

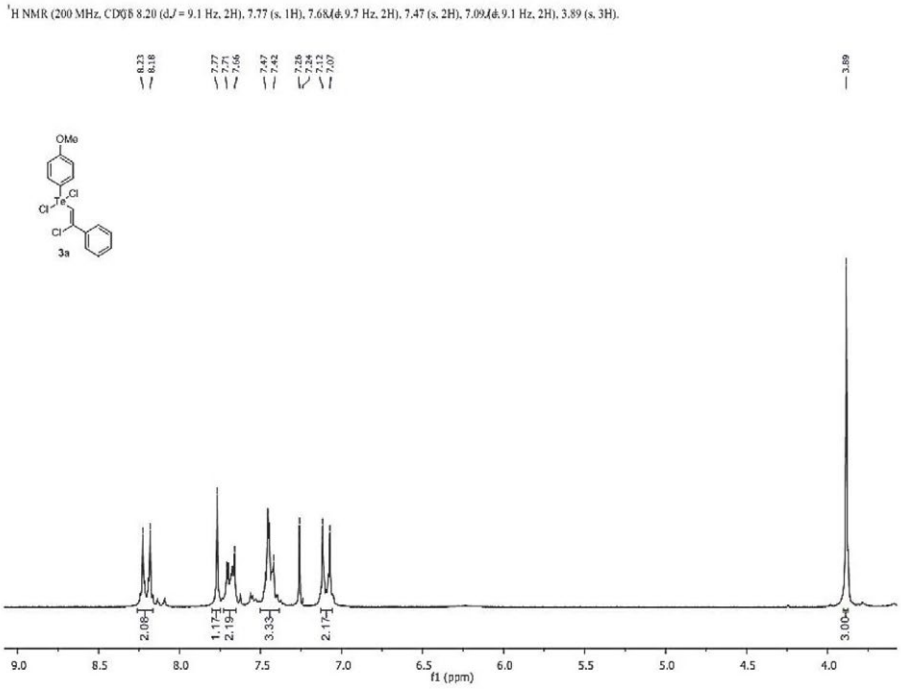


Figure S1. ^{1}H NMR spectrum (200 MHz, $CDCl_3$) of dichloro (*Z*)-(2-chloro-2-phenylvinyl)(4-metoxyphenyl)tellanyl (**3a**).

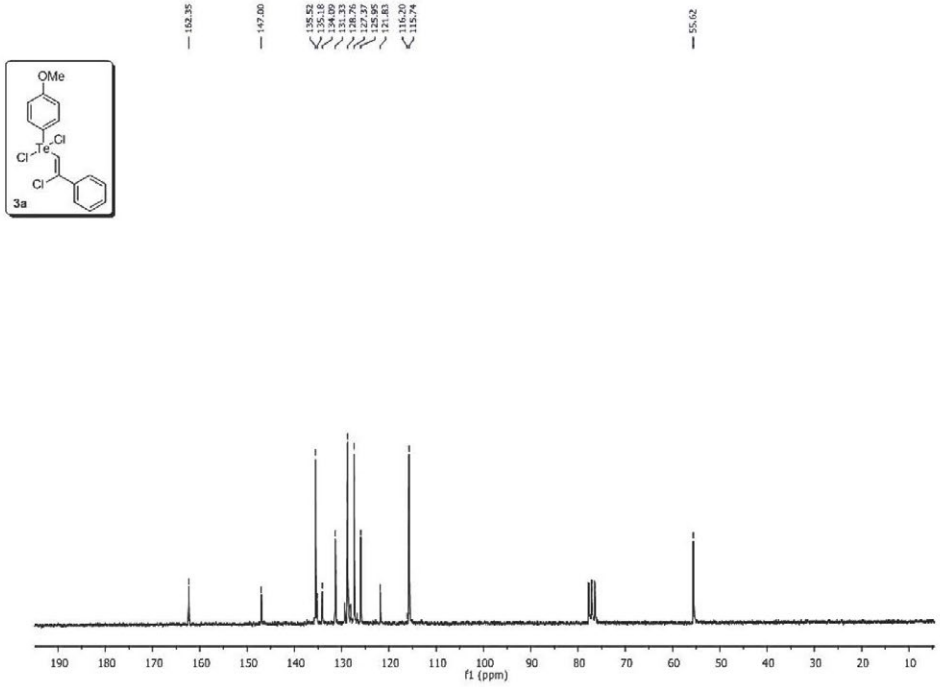


Figure S2. ^{13}C NMR spectrum (50 MHz, $CDCl_3$) of dichloro (*Z*)-(2-chloro-2-phenylvinyl)(4-metoxyphenyl)tellanyl (**3a**).

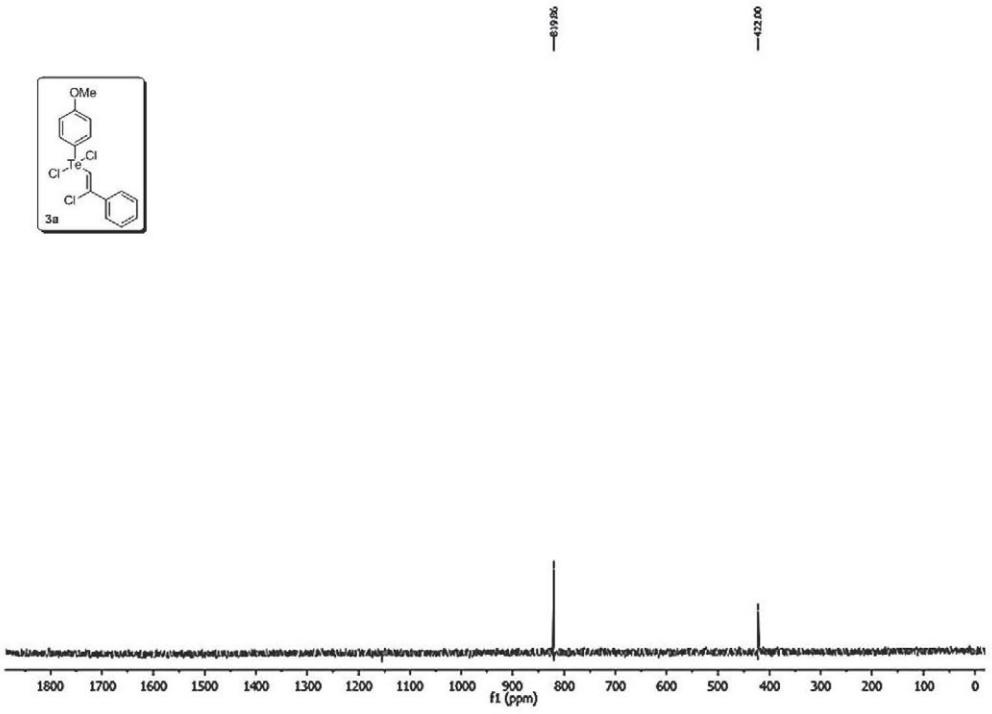


Figure S3. ^{125}Te NMR spectrum (63 MHz, $CDCl_3$) of dichloro (*Z*)-(2-chloro-2-phenylvinyl)(4-metoxyphenyl)tellanyl (**3a**).

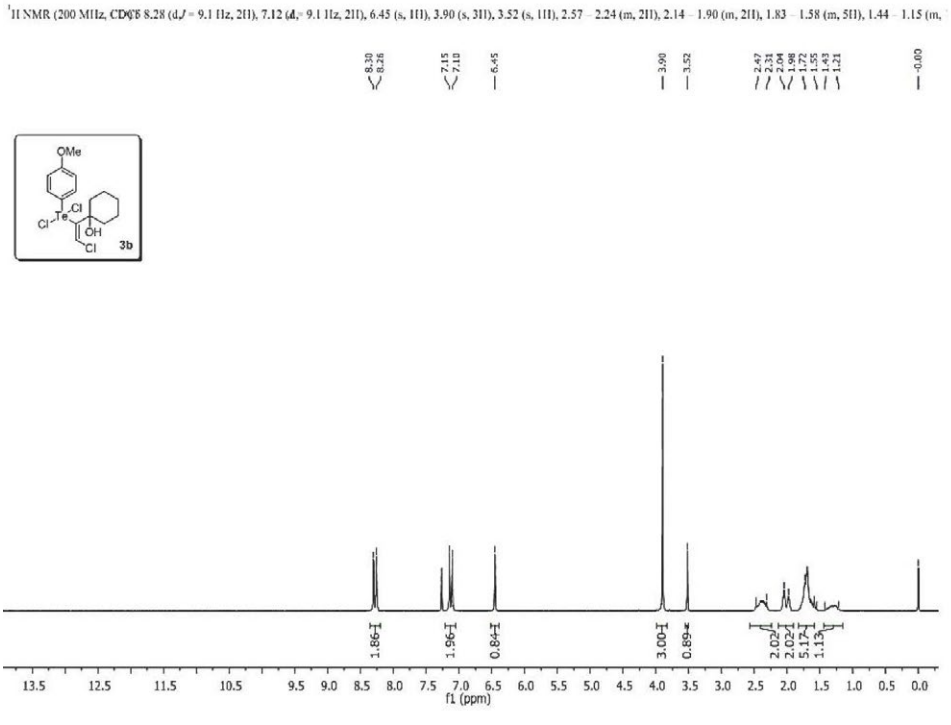


Figure S4. ^{1}H NMR spectrum (200 MHz, $CDCl_3$) of dichloro (*E*)-1-(1-chloro-2-(4-methoxyphenyltellanyl)vinyl)cyclohexanol (**3b**).

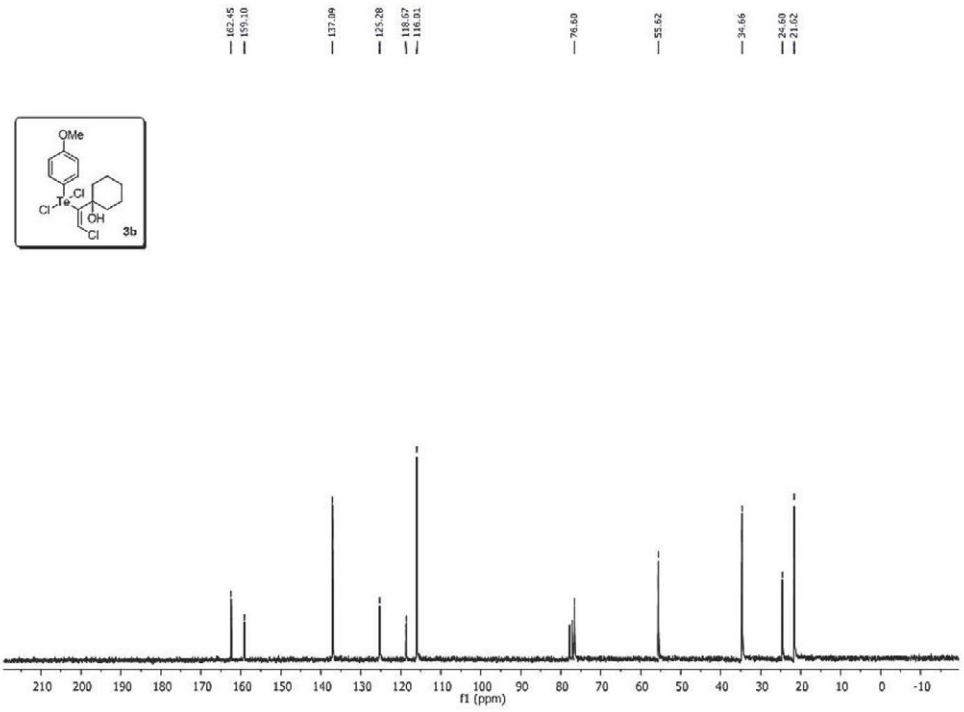


Figure S5. ^{13}C NMR spectrum (50 MHz, $CDCl_3$) of dichloro (*E*)-1-(1-chloro-2-(4-methoxyphenyltellanyl)vinyl)cyclohexanol (**3b**).

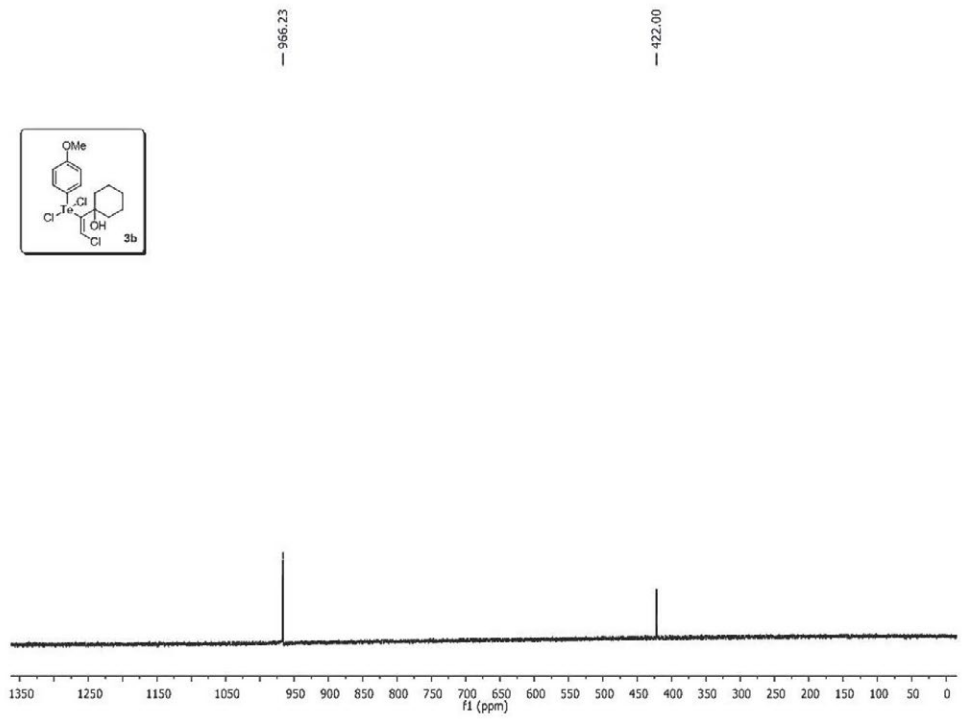


Figure S6. ^{125}Te NMR spectrum (63 MHz, $CDCl_3$) of dichloro (*E*)-1-(1-chloro-2-(4-methoxyphenyltellanyl)vinyl)cyclohexanol (**3b**).

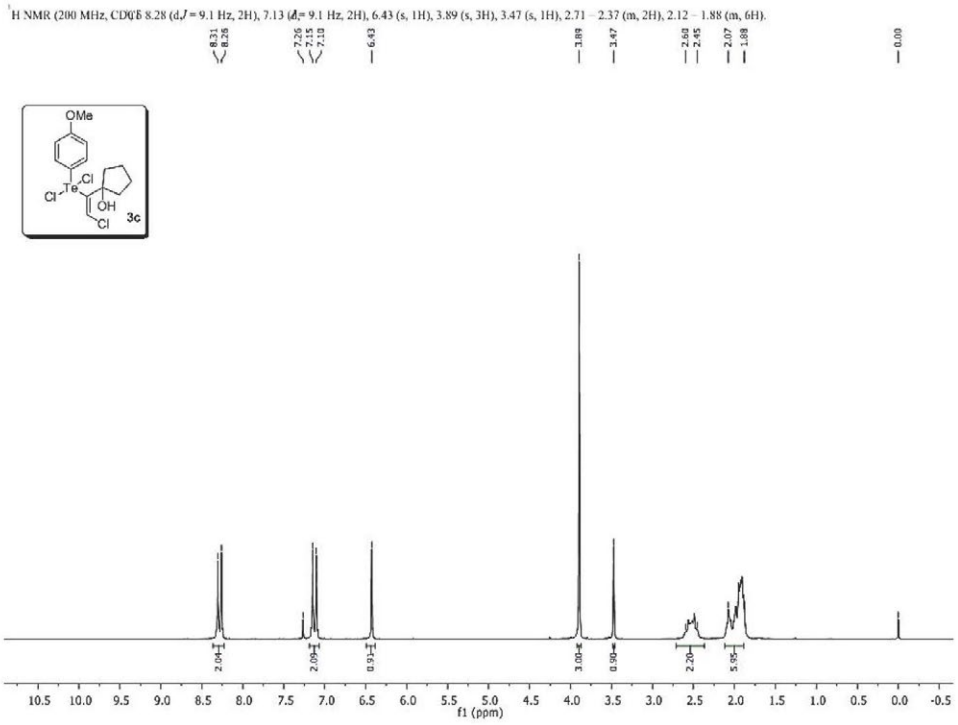


Figure S7. [1]H NMR spectrum (200 MHz, $CDCl_3$) of dichloro (*E*)-1-(1-chloro-2-(4-metoxyphenyltellanyl)vinyl)cyclopentanol (**3c**).

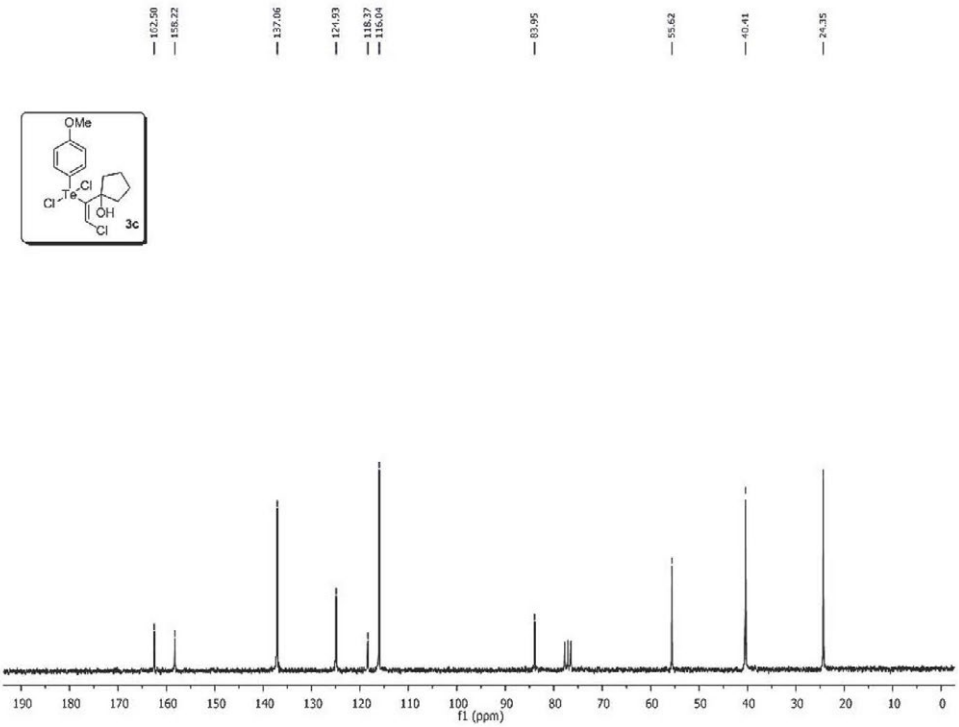


Figure S8. [13]C NMR spectrum (50 MHz, $CDCl_3$) of dichloro (*E*)-1-(1-chloro-2-(4-metoxyphenyltellanyl)vinyl)cyclopentanol (**3c**).

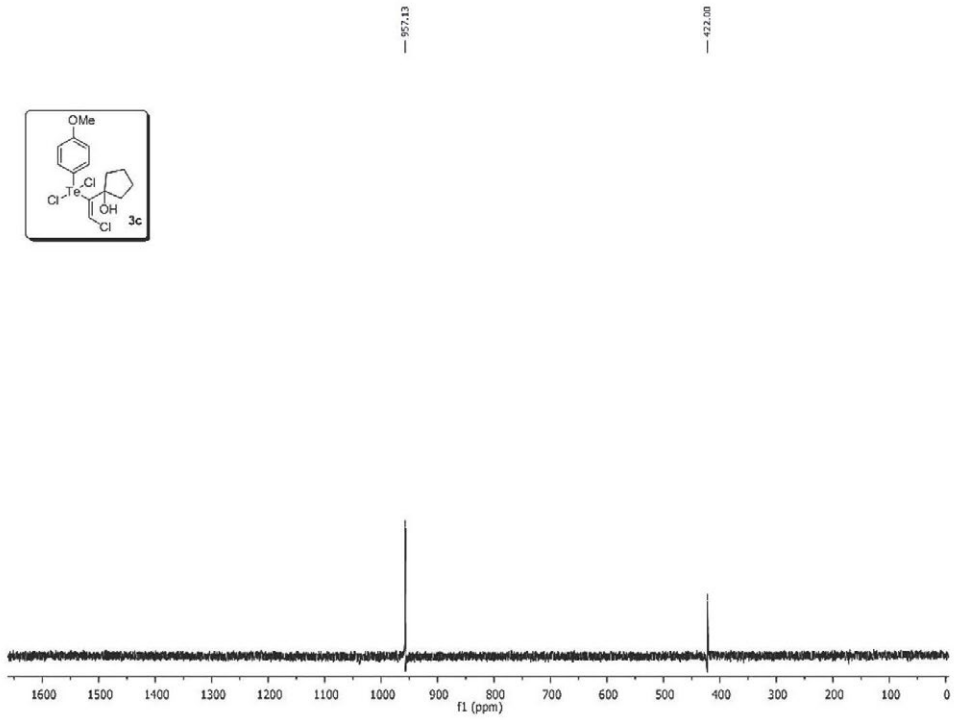


Figure S9. ^{125}Te NMR spectrum (63 MHz, $CDCl_3$) of dichloro (*E*)-1-(1-chloro-2-(4-metoxyphenyltellanyl)vinyl)cyclopentanol (**3c**).

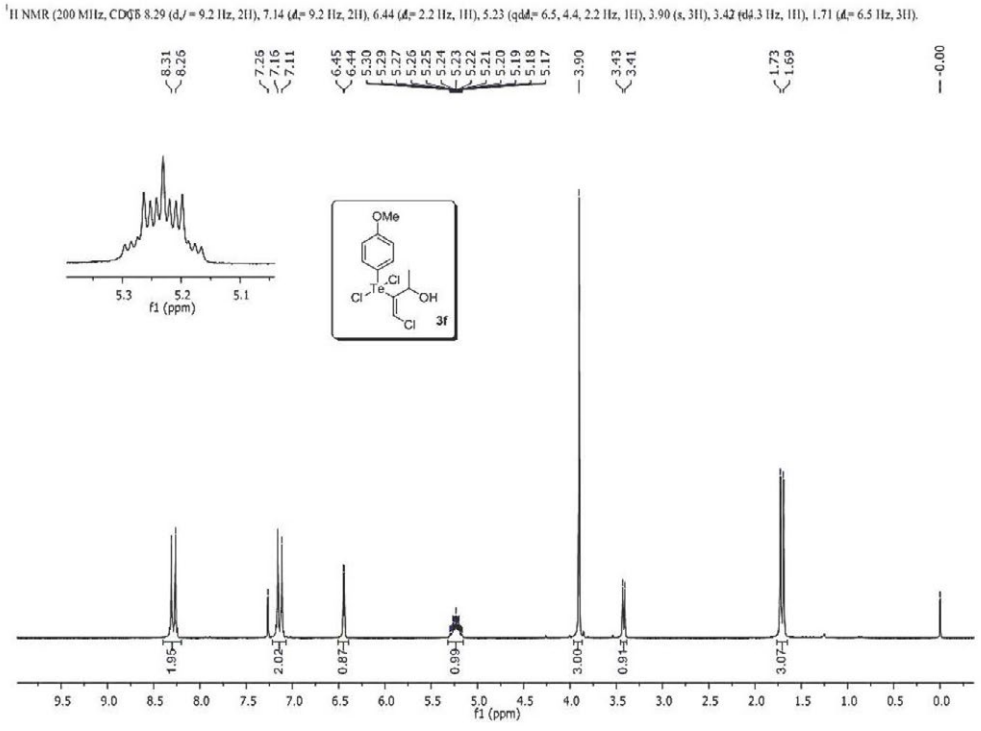


Figure S10. ^{1}H NMR spectrum (200 MHz, $CDCl_3$) of dichloro (*E*)-3-chloro-4-(4-metoxyphenyltellanyl)but-3-en-2-ol (**3f**).

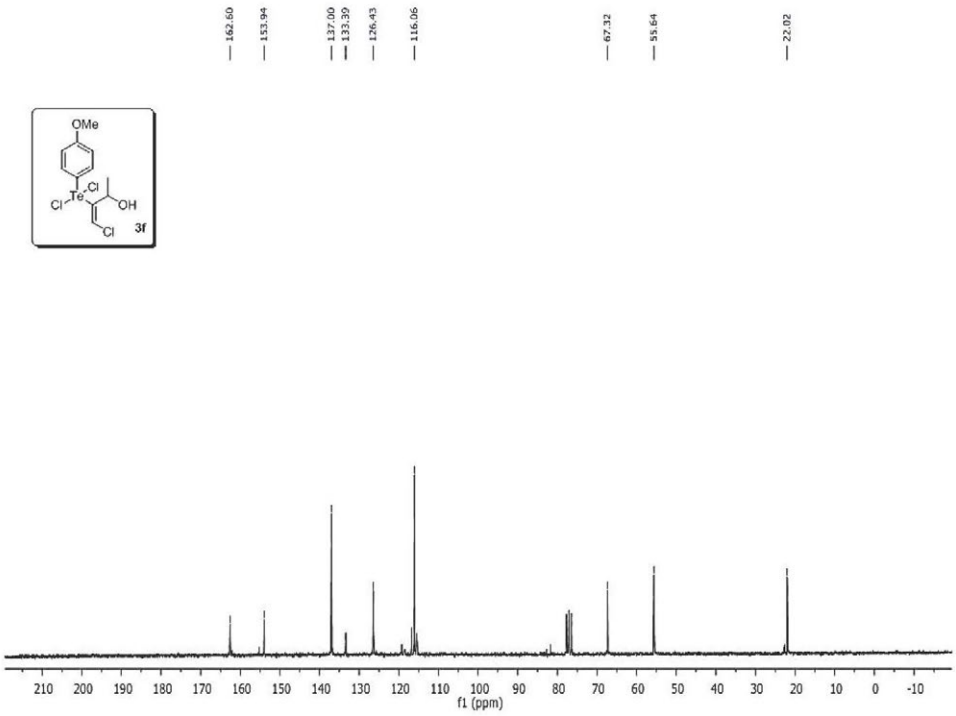


Figure S11. ^{13}C NMR spectrum (50 MHz, $CDCl_3$) of dichloro (*E*)-3-chloro-4-(4-metoxyphenyltellanyl)but-3-en-2-ol (**3f**).

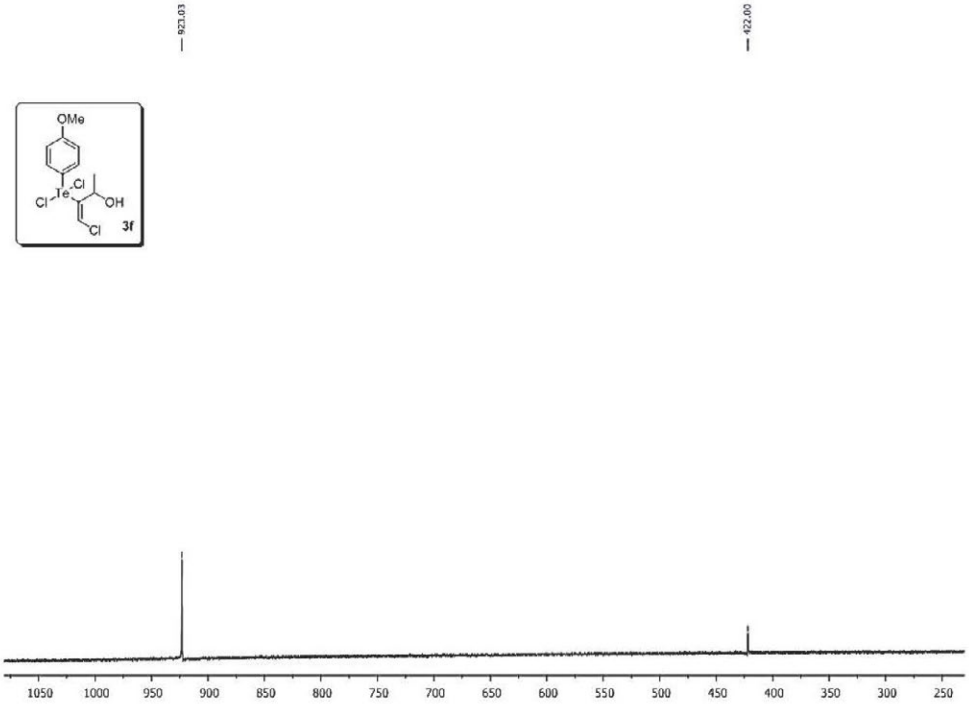


Figure S12. ^{125}Te NMR spectrum (63 MHz, $CDCl_3$) of dichloro (*E*)-3-chloro-4-(4-metoxyphenyltellanyl)but-3-en-2-ol (**3f**).

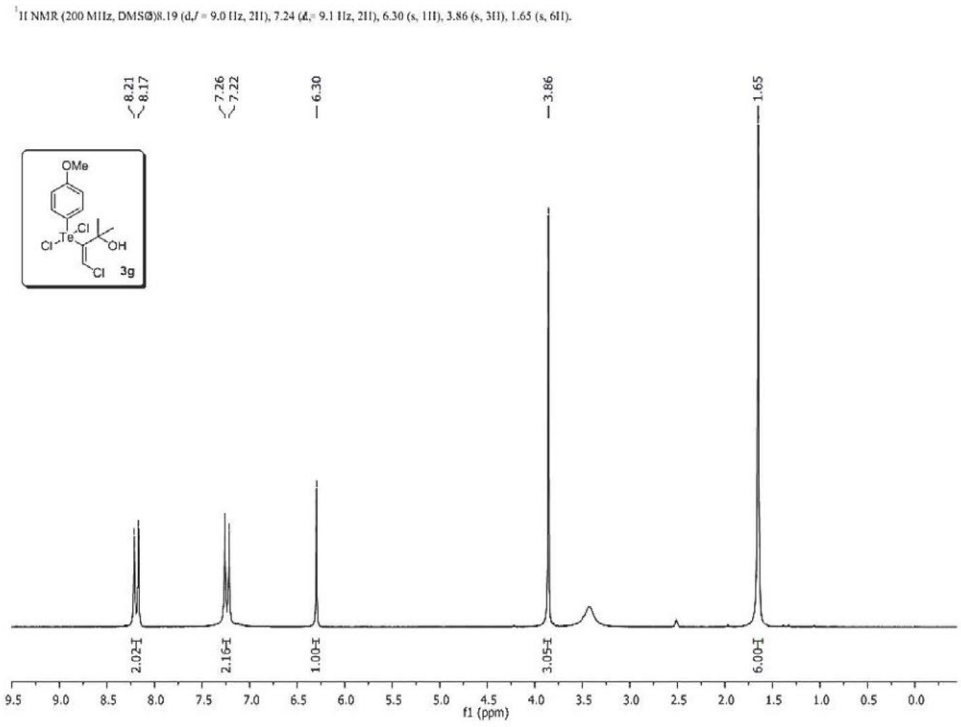


Figure S13. [1]H NMR spectrum (200 MHz, DMSO) of dichloro (*Z*)-3-chloro-4-(4-metoxyphenyltellanyl)-2 methylbut-3-en-2-ol (**3g**).

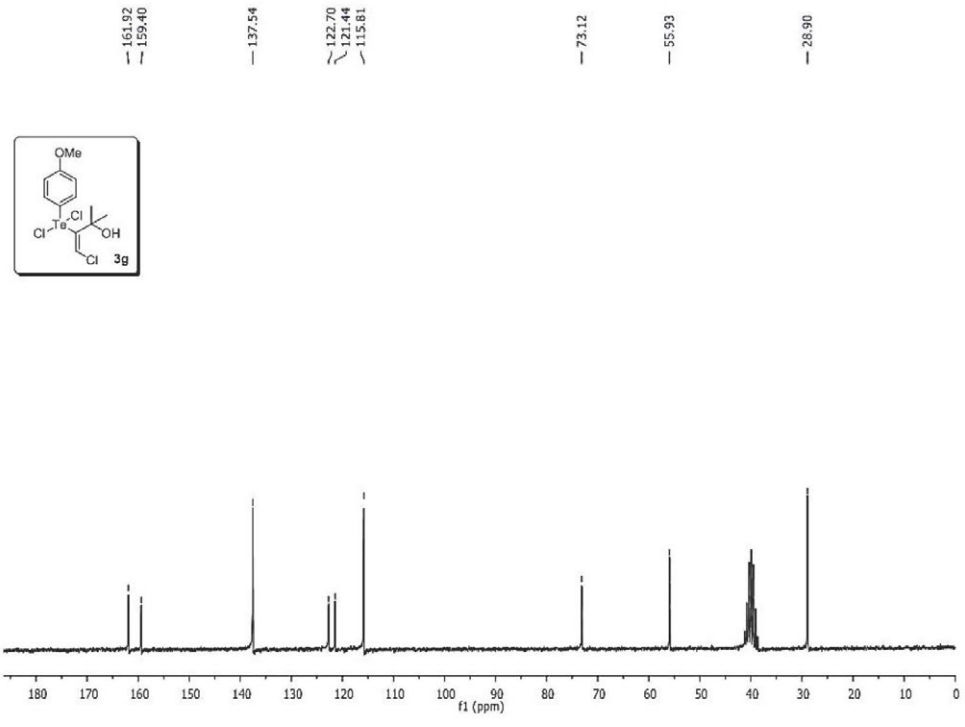


Figure S14. [13]C NMR spectrum (50 MHz, DMSO) of dichloro (*Z*)-3-chloro-4-(4-metoxyphenyltellanyl)-2 methylbut-3-en-2-ol (**3g**).

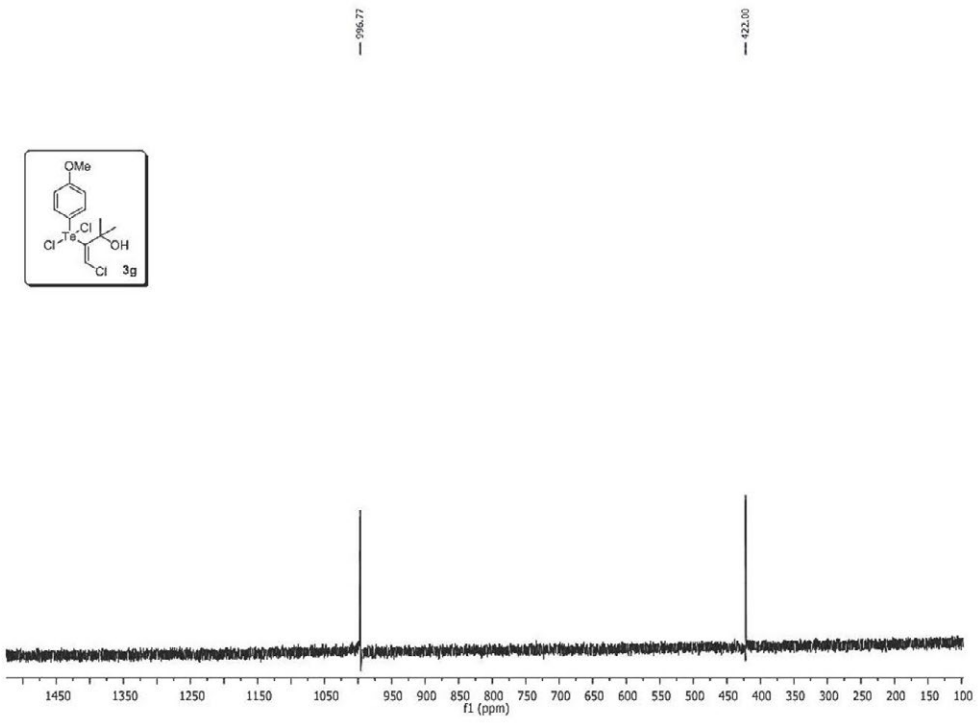


Figure S15. ^{125}Te NMR spectrum (63 MHz, DMSO) of dichloro (*Z*)-3-chloro-4-(4-metoxyphenyltellanyl)-2 methylbut-3-en-2-ol (**3g**).

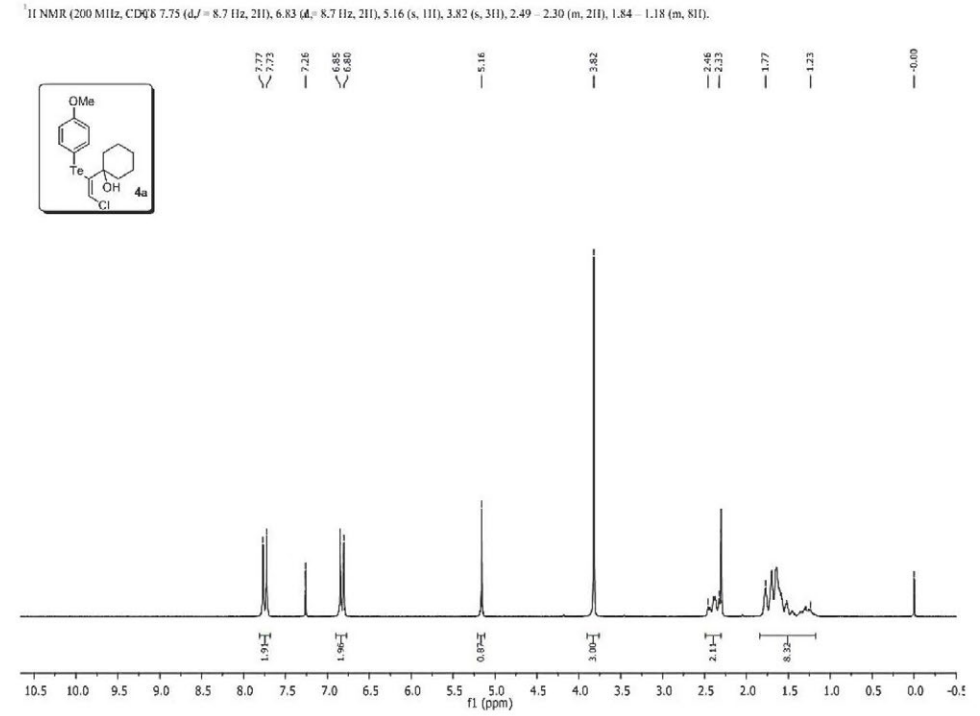


Figure S16. ^{1}H NMR spectrum (200 MHz, $CDCl_3$) of (*E*)-1-(1-chloro-2-(4-methoxyphenyltellanyl)vinyl)cyclohexanol (**4a**).

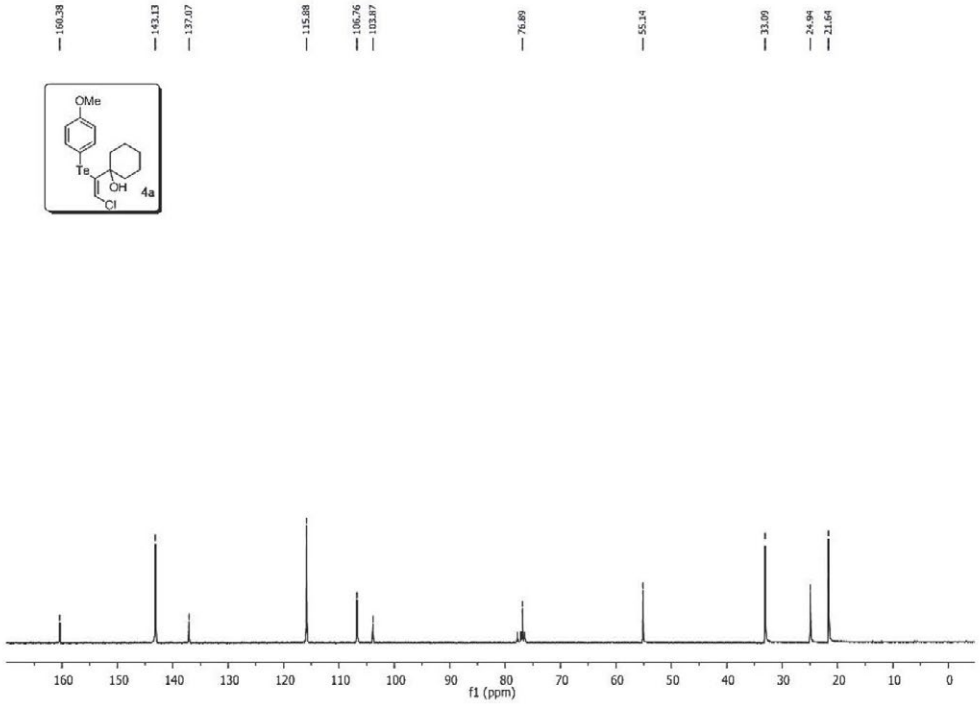


Figure S17. ^{13}C NMR spectrum (50 MHz, $CDCl_3$) of (*E*)-1-(1-chloro-2-(4-methoxyphenyltellanyl)vinyl)cyclohexanol (**4a**).

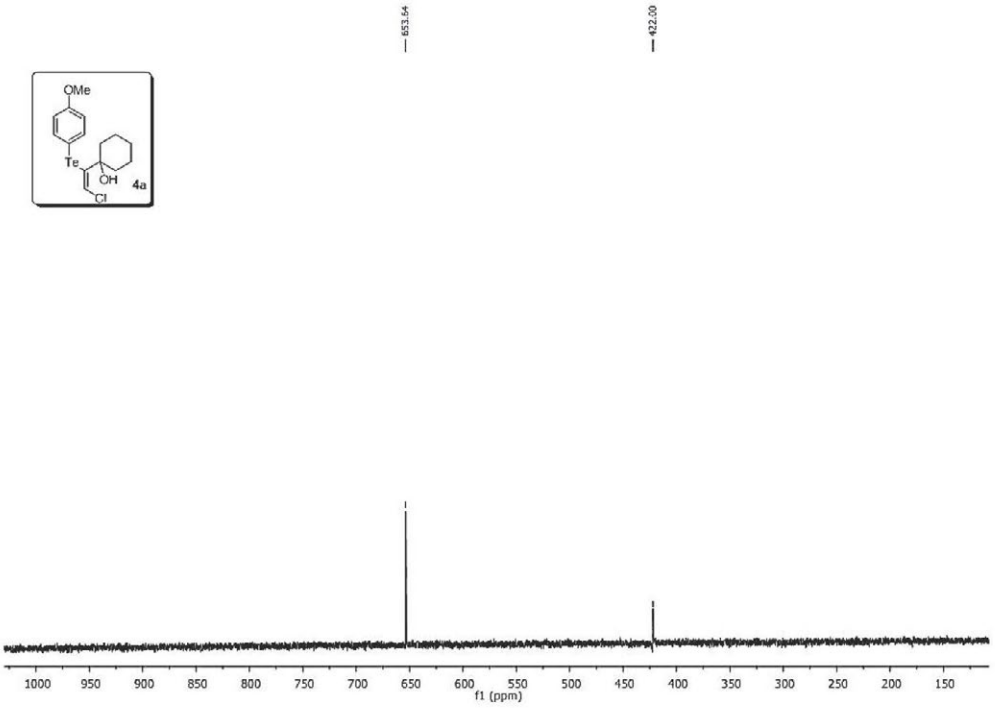


Figure S18. ^{125}Te NMR spectrum (63 MHz, $CDCl_3$) of (*E*)-1-(1-chloro-2-(4-methoxyphenyltellanyl)vinyl)cyclohexanol (**4a**).

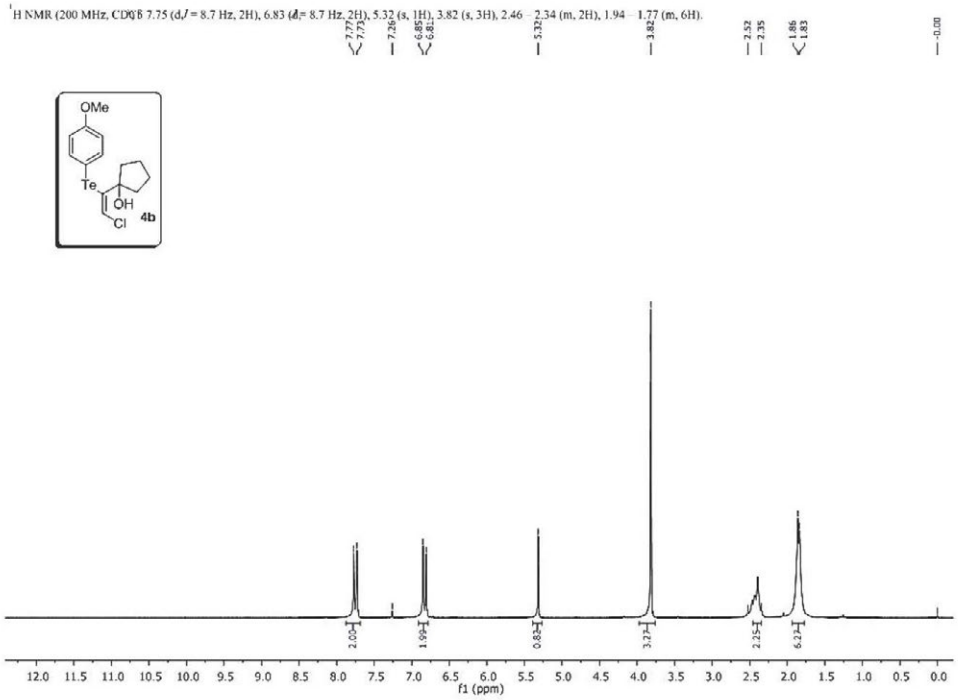


Figure S19. ^{1}H NMR spectrum (200 MHz, $CDCl_3$) of (*E*)-1-(1-chloro-2-(4-metoxyphenyltellanyl)vinyl)cyclopentanol (**4b**).

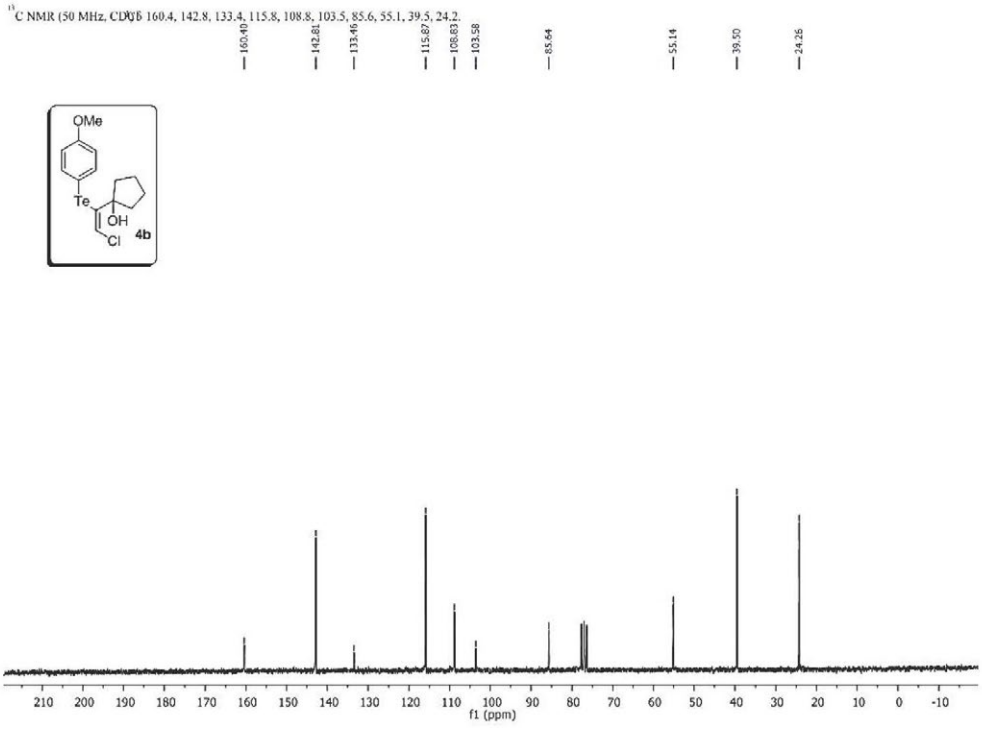


Figure S20. ^{13}C NMR spectrum (50 MHz, $CDCl_3$) of (*E*)-1-(1-chloro-2-(4-metoxyphenyltellanyl)vinyl)cyclopentanol (**4b**).

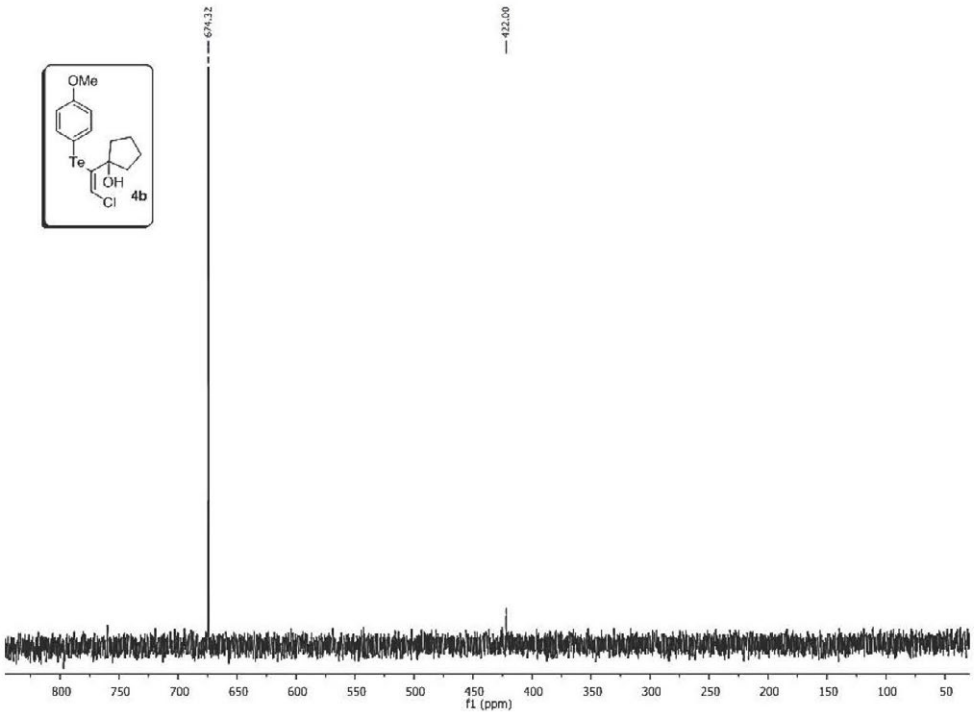


Figure S21. ^{125}Te NMR spectrum (63 MHz, $CDCl_3$) of (*E*)-1-(1-chloro-2-(4-metoxyphenyltellanyl)vinyl)cyclopentanol (**4b**).

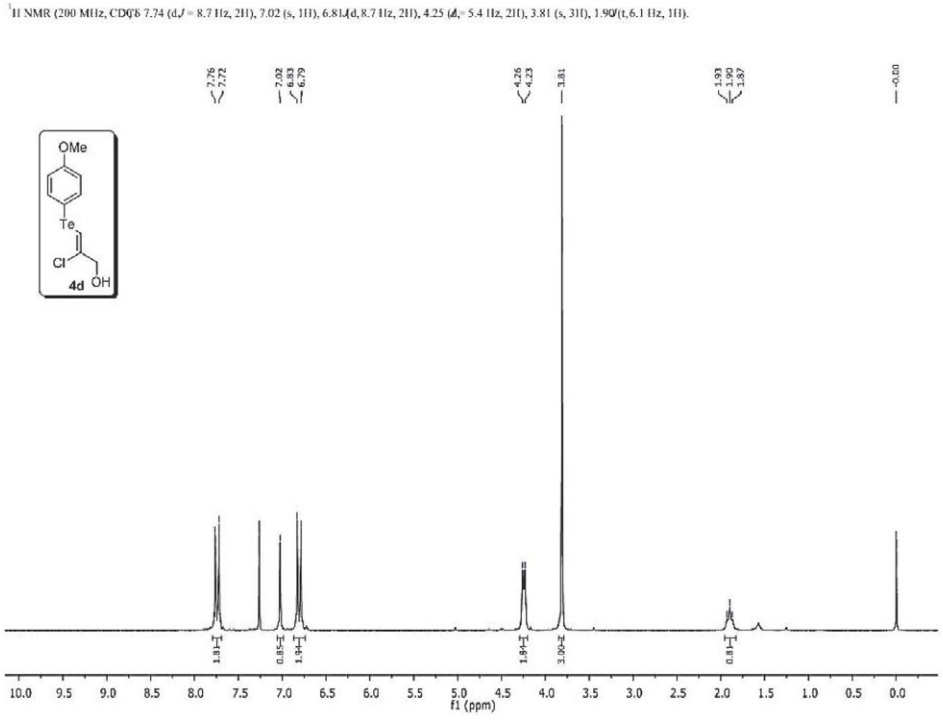


Figure S22. ^{1}H NMR spectrum (200 MHz, $CDCl_3$) of (*Z*)-2-chloro-3-(4-metoxyphenyltellanyl)prop-2-en-1-ol (**4d**).

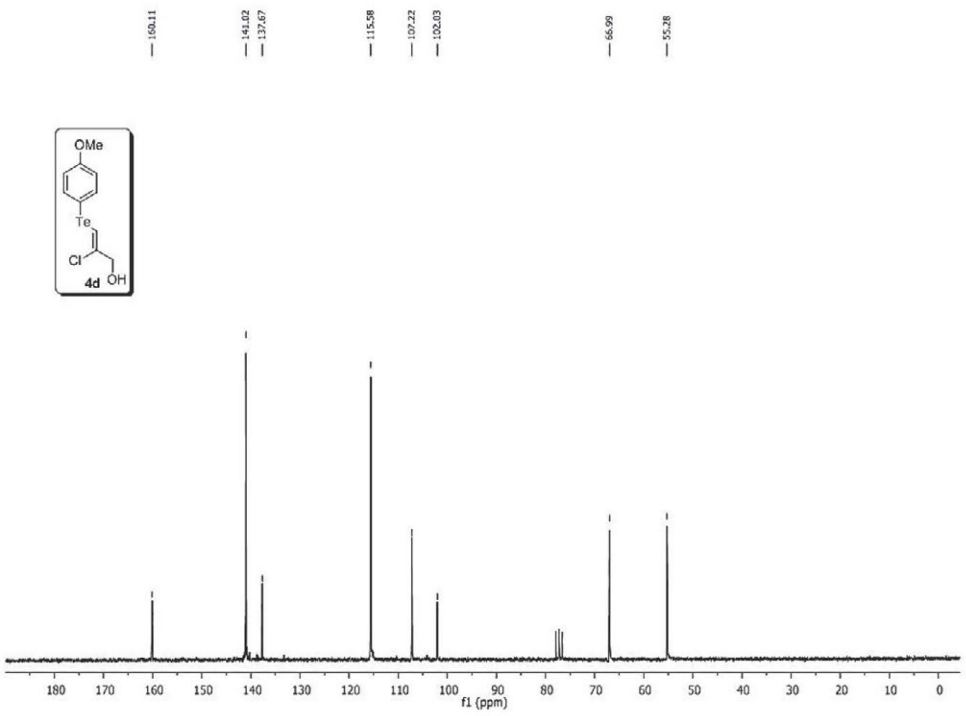


Figure S23. ^{13}C NMR spectrum (50 MHz, $CDCl_3$) of (*Z*)-2-chloro-3-(4-metoxyphenyltellanyl)prop-2-en-1-ol (**4d**).

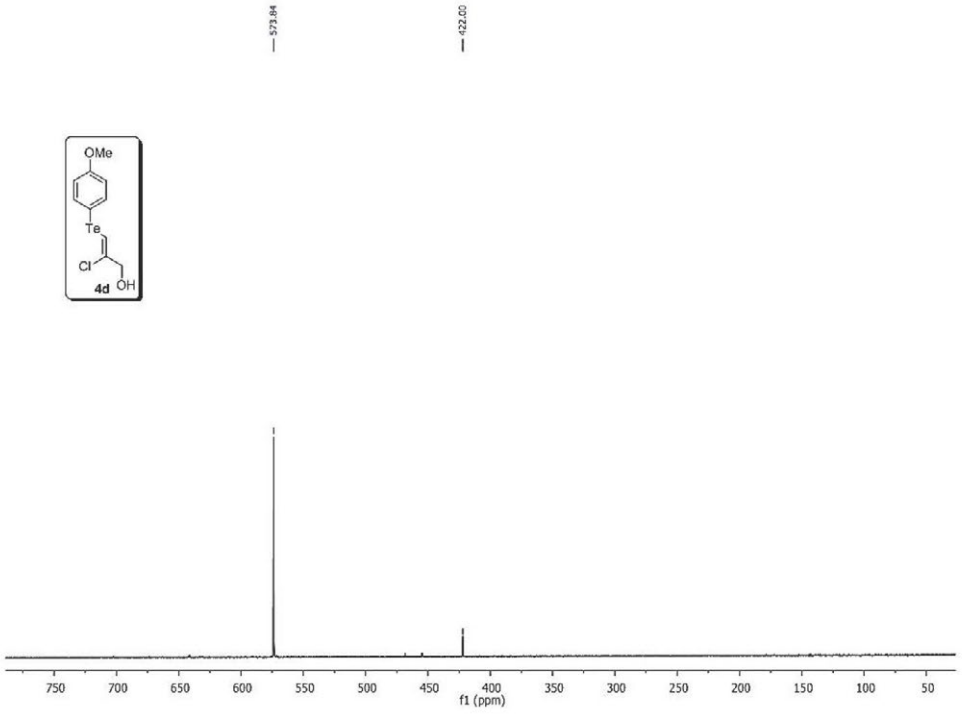


Figure S24. ^{125}Te NMR spectrum (63 MHz, $CDCl_3$) of (*Z*)-2-chloro-3-(4-metoxyphenyltellanyl)prop-2-en-1-ol (**4d**).

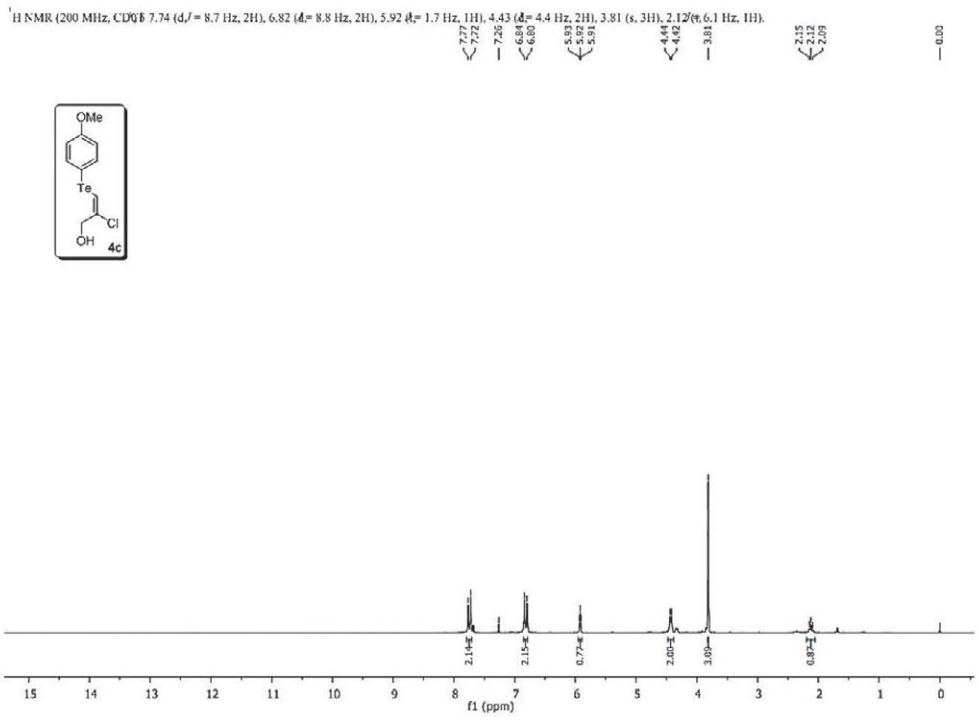


Figure S25. ^{1}H NMR spectrum (200 MHz, $CDCl_3$) of (*E*)-2-chloro-3-(4-metoxyphenyltellanyl)prop-2-en-1-ol (**4c**).

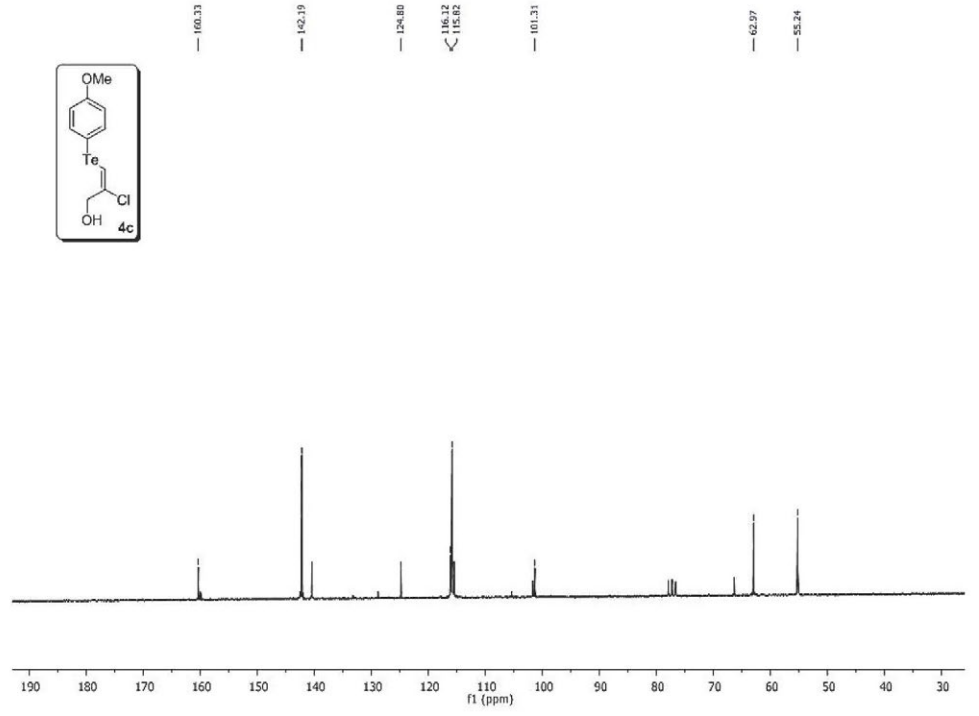


Figure S26. ^{13}C NMR spectrum (50 MHz, $CDCl_3$) of (*E*)-2-chloro-3-(4-metoxyphenyltellanyl)prop-2-en-1-ol (**4c**).

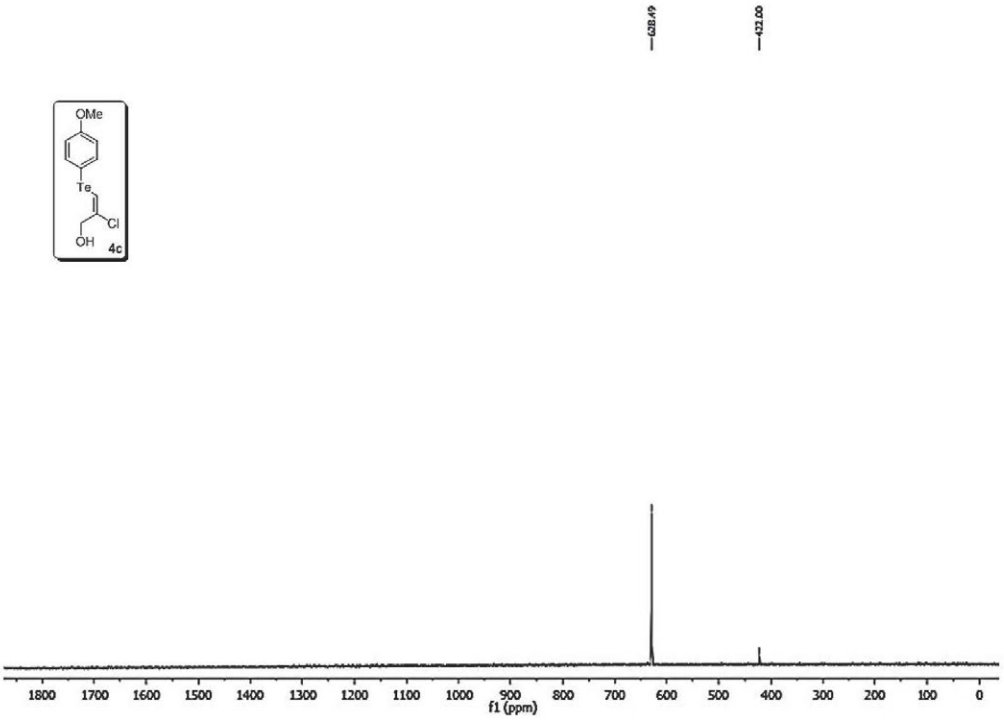


Figure S27. ^{125}Te NMR spectrum (63 MHz, $CDCl_3$) of (*E*)-2-chloro-3-(4-metoxyphenyltellanyl)prop-2-en-1-ol (**4c**).

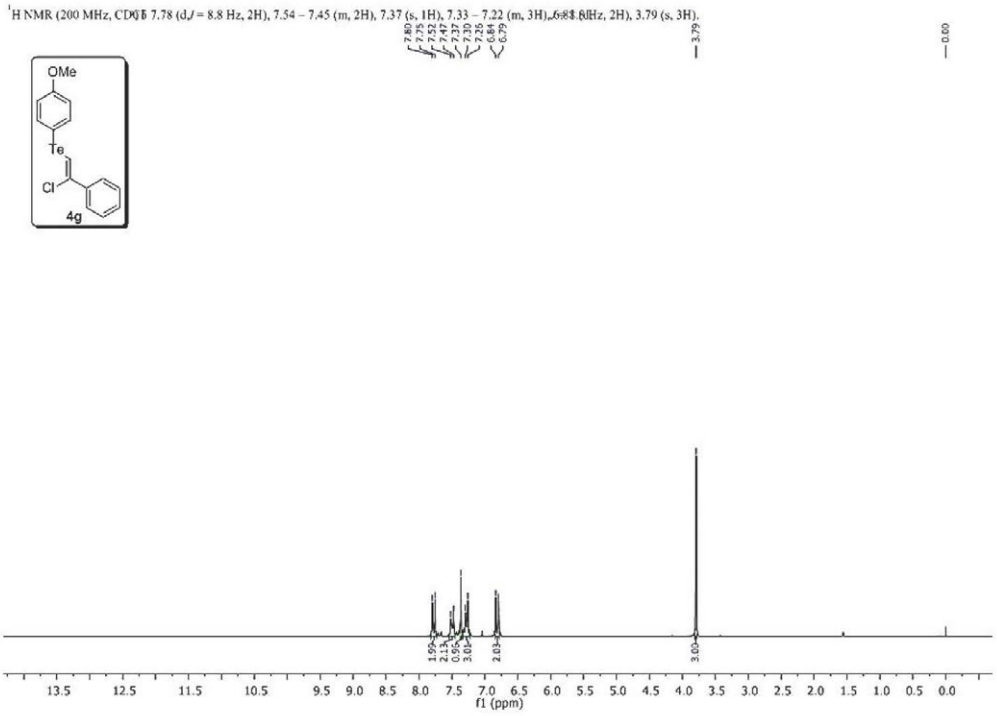


Figure S28. ^{1}H NMR spectrum (200 MHz, $CDCl_3$) of (*Z*)-(2-chloro-2-phenylvinyl)(4-metoxyphenyl)tellanyl (**4g**).

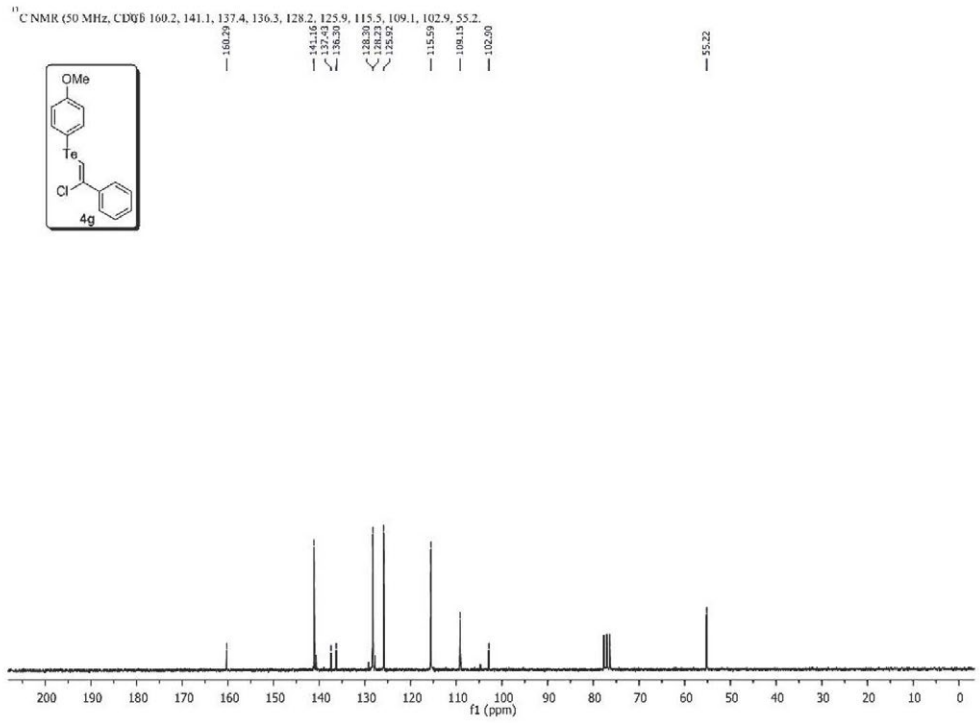


Figure S29. ^{13}C NMR spectrum (50 MHz, $CDCl_3$) of (*Z*)-(2-chloro-2-phenylvinyl)(4-metoxyphenyl)tellanyl (**4g**).

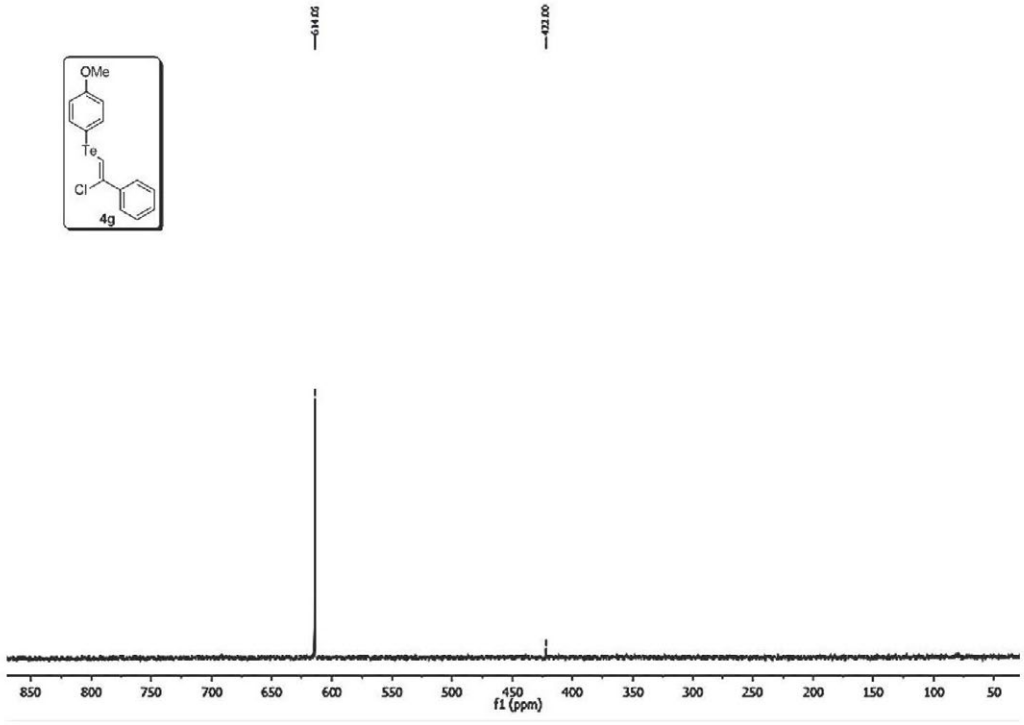


Figure S30. ^{125}Te NMR spectrum (63 MHz, $CDCl_3$) of (*Z*)-(2-chloro-2-phenylvinyl)(4-metoxyphenyl)tellanyl (**4g**).

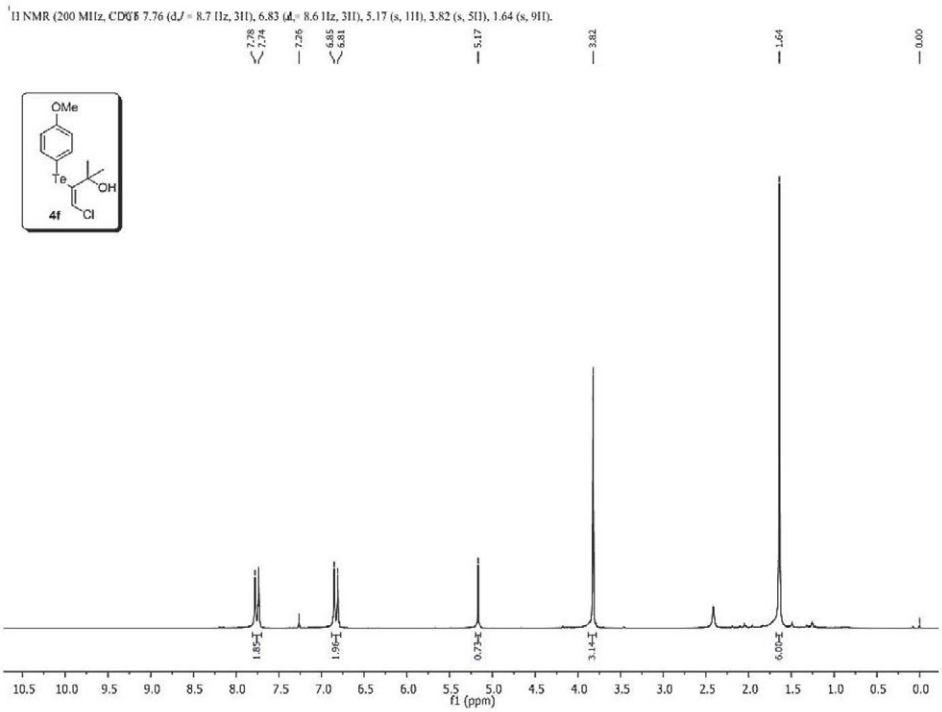


Figure S31. ^{1}H NMR spectrum (200 MHz, $CDCl_3$) of (*Z*)-3-chloro-4-(4-metoxyphenyltellanyl)-2 methylbut-3-en-2-ol (**4f**).

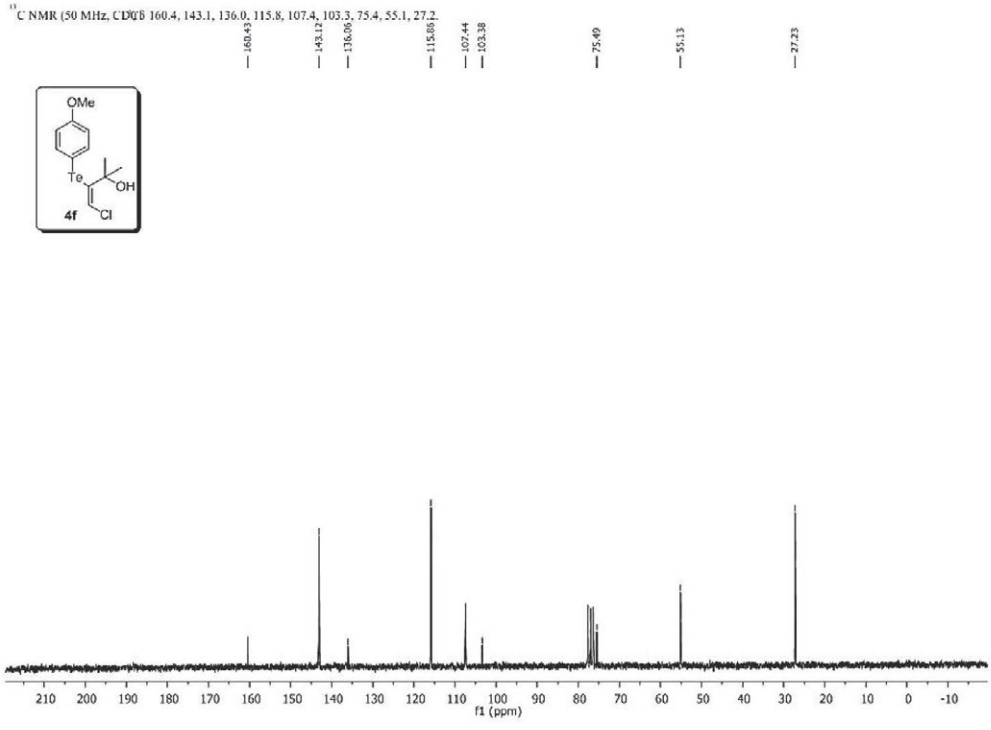


Figure S32. ^{13}C NMR spectrum ($CDCl_3$) of (*Z*)-3-chloro-4-(4-metoxyphenyltellanyl)-2 methylbut-3-en-2-ol (**4f**).

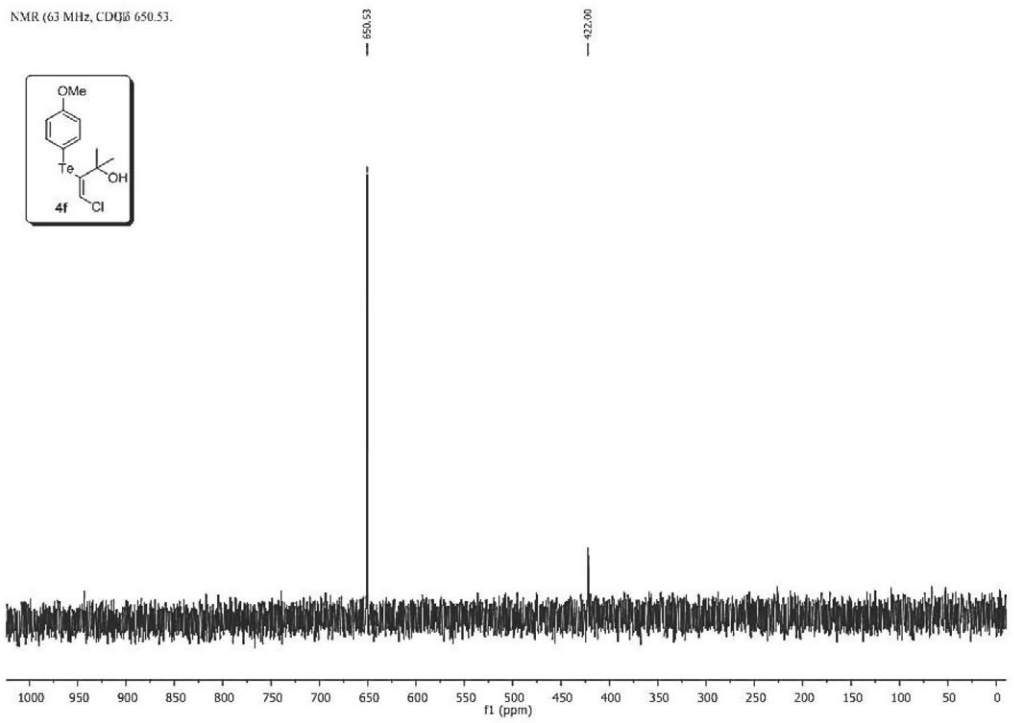


Figure S33. ^{125}Te NMR spectrum (63 MHz, $CDCl_3$) of (*Z*)-3-chloro-4-(4-metoxyphenyltellanyl)-2 methylbut-3-en-2-ol (**4f**).

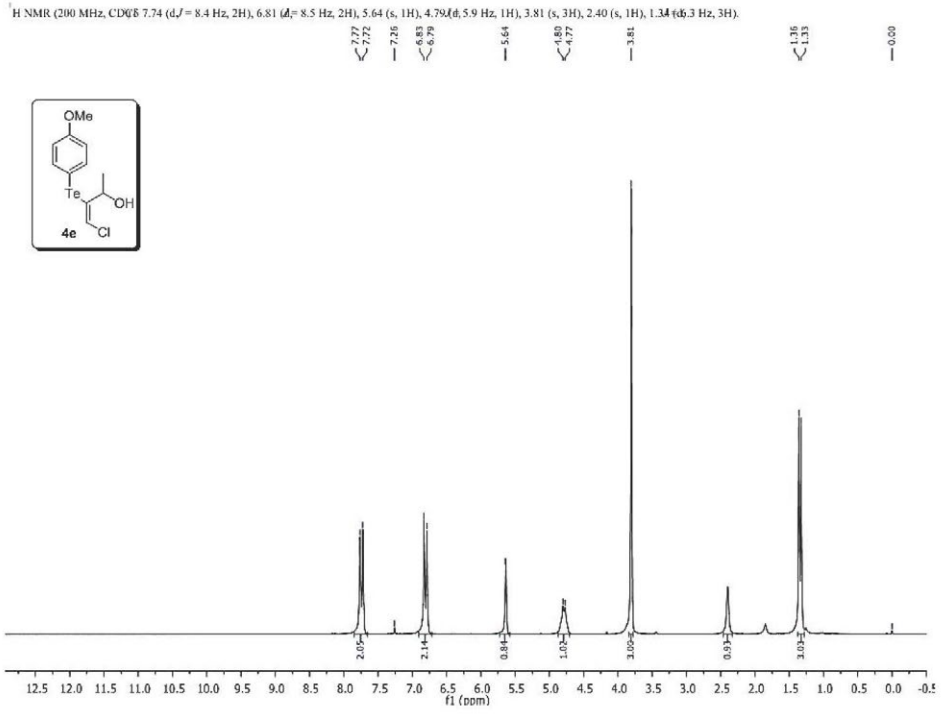


Figure S34. ^{1}H NMR (200 MHz, $CDCl_3$) of (*E*)-3-chloro-4-(4-metoxyphenyltellanyl)but-3-en-2-ol (**4e**).

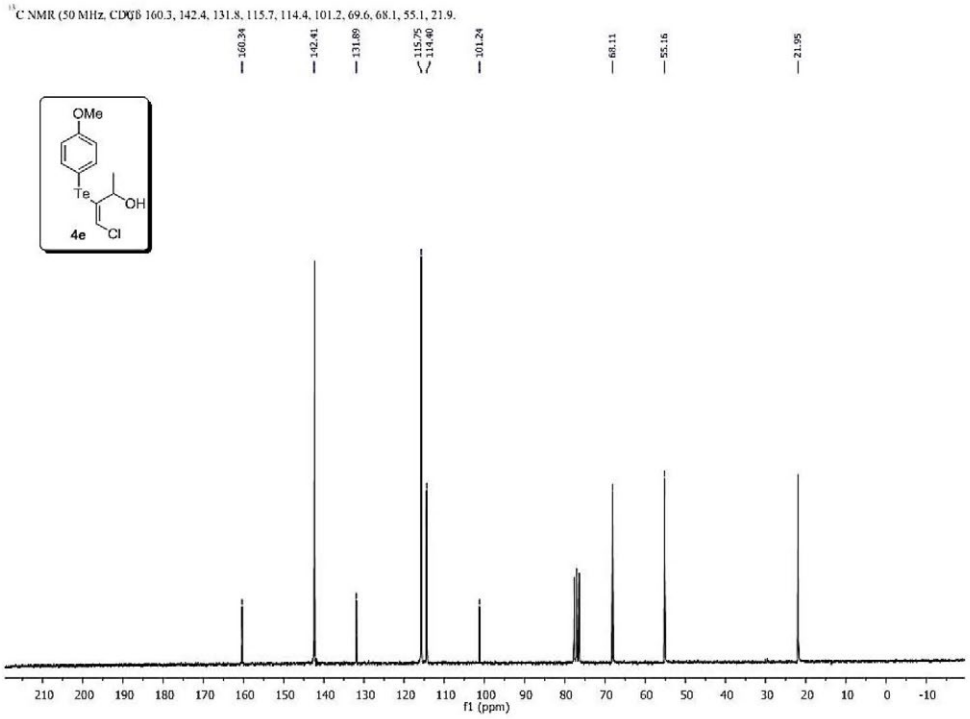


Figure S35. ^{13}C NMR spectrum (50 MHz, $CDCl_3$) of (*E*)-3-chloro-4-(4-metoxyphenyltellanyl)but-3-en-2-ol (**4e**).

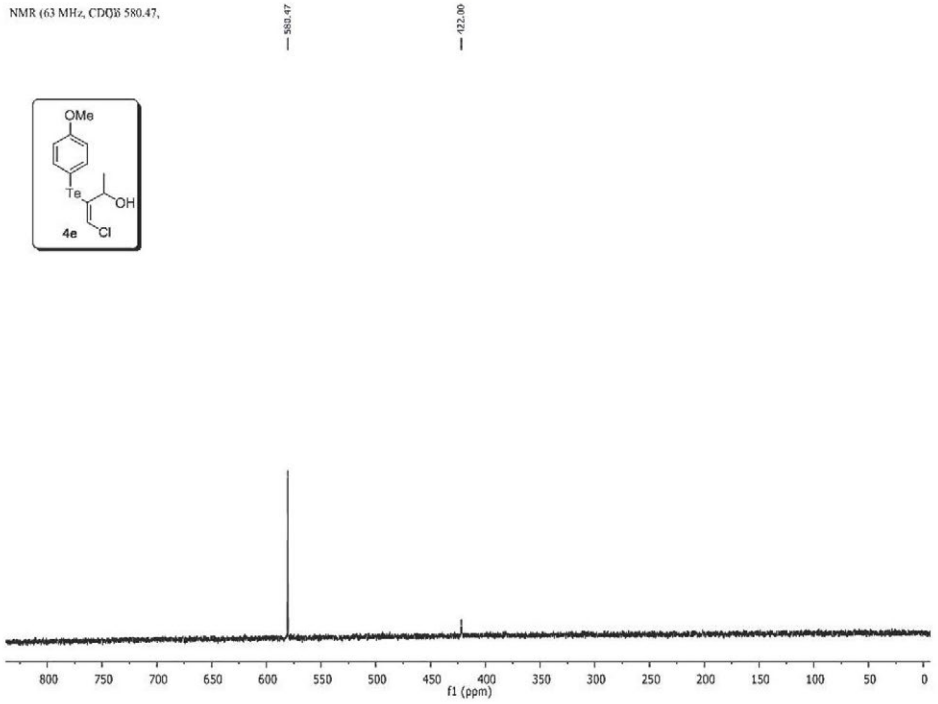


Figure S36. ^{13}C NMR spectrum (63 MHz, $CDCl_3$) of (*E*)-3-chloro-4-(4-methoxyphenyltellanyl)but-3-en-2-ol (**4e**).