

## **Preferential Mitochondrial Localization of a Goniotalamin Fluorescent Derivative**

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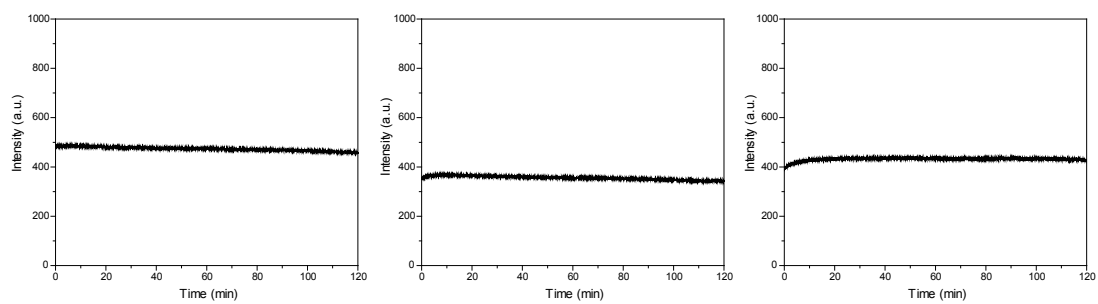
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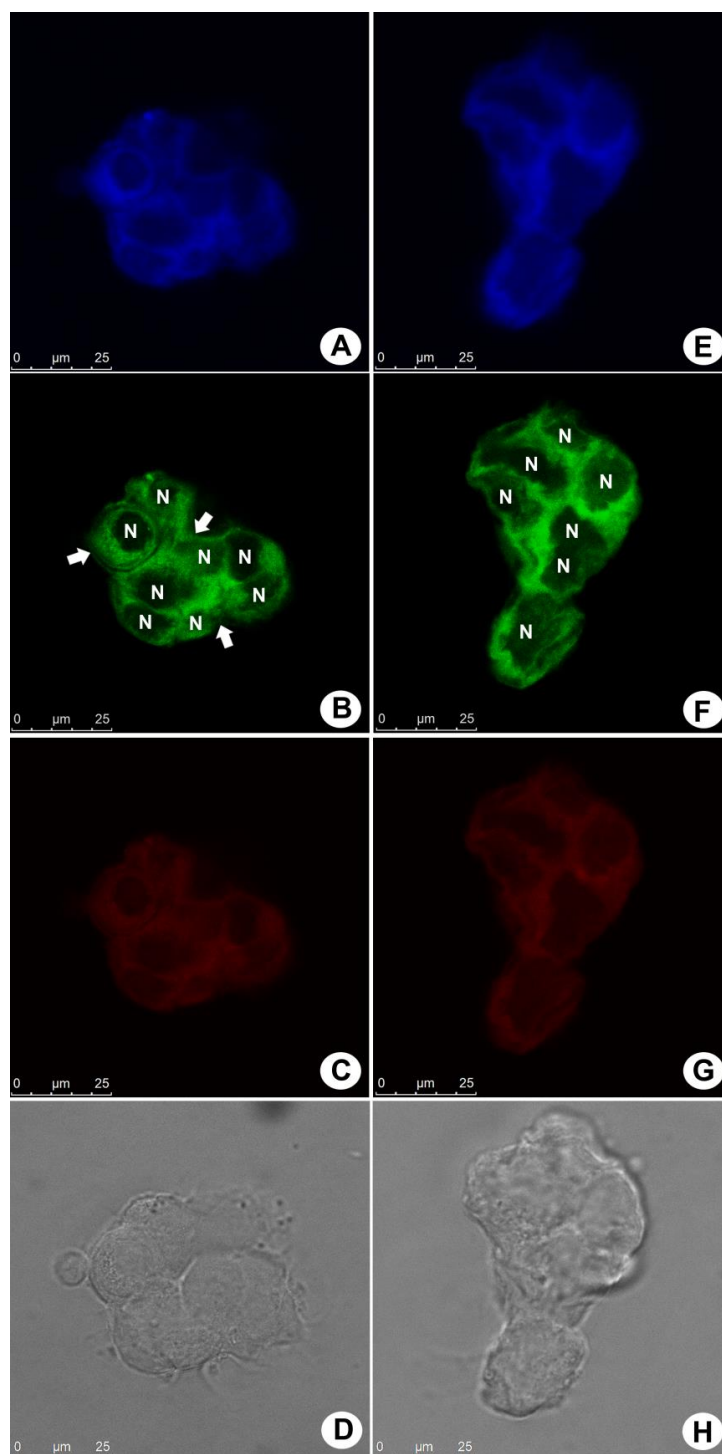
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## Summary

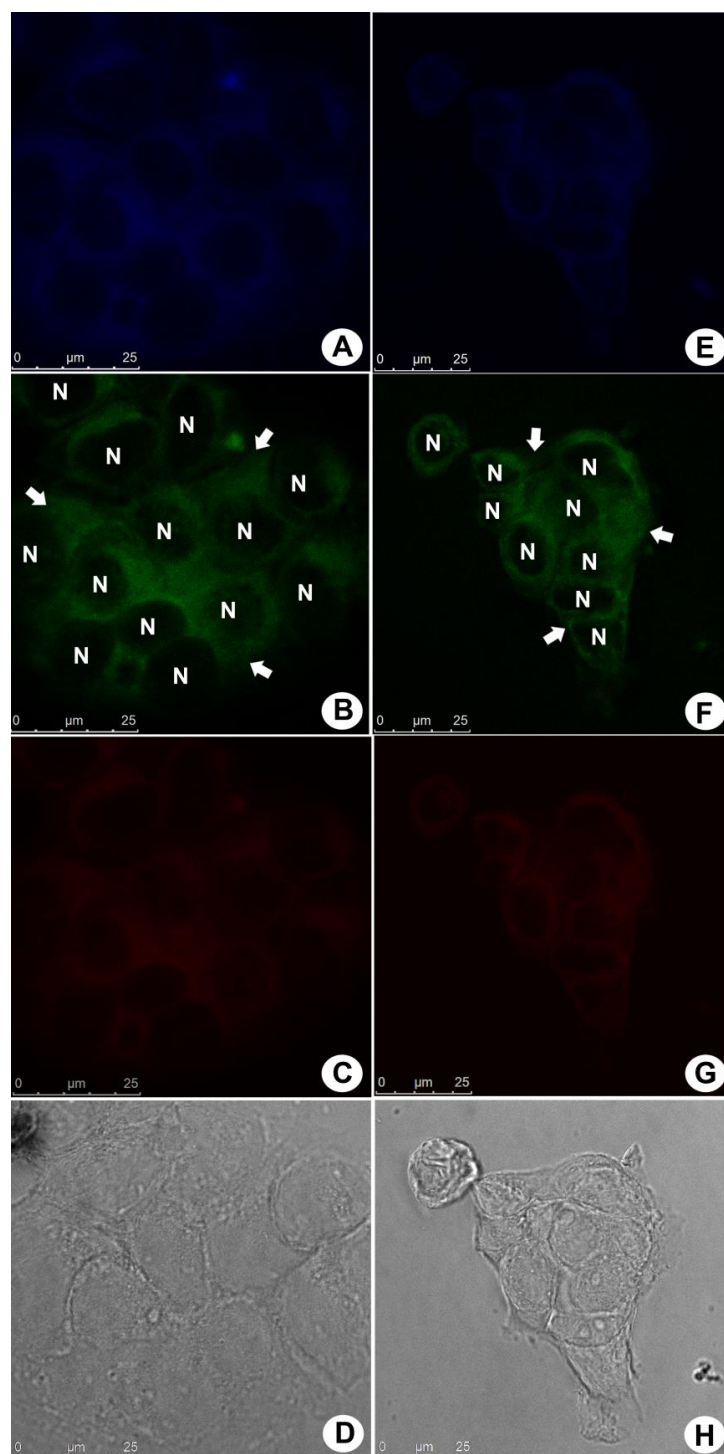
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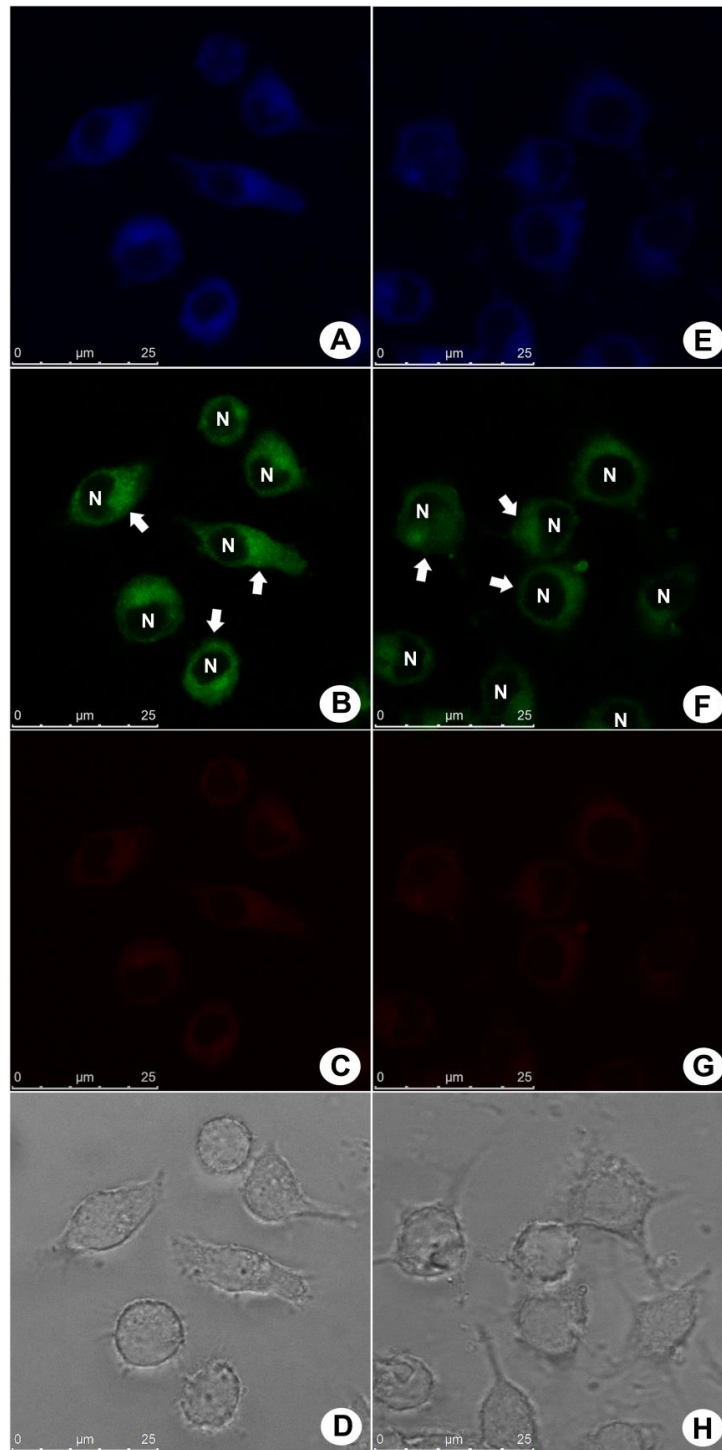
**Figure S1.** Photostability of BTD-GTN (**1**) acquired at room temperature upon excitation at 405, 366 and 254 nm (respectively) while monitoring the emission at 558 nm. Time-dependence of photoluminescence intensity was carried out with a Xe lamp (400 W).



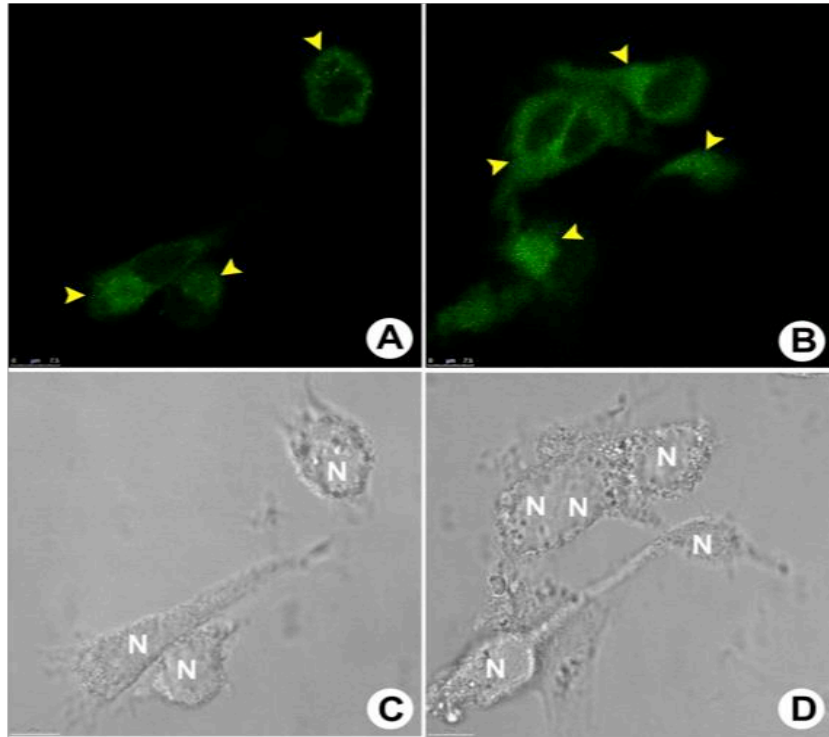
**Figure S2.** Fluorescent profile of A549 (human lung carcinoma) cells treated with BTD-GTN (**1**) visualised at the blue, green and red channels. Images (A), (B), (C) and (D) show live cells whereas (E), (F), (G) and (H) show fixed cells. (D) and (H) show the morphological aspects of the samples by phase contrast microscopy. Arrows show the cytoplasm distribution of BTD-GTN (**1**) and the nuclei are showed as black voids identified by "N" letters. Reference scale bar 25  $\mu\text{m}$ .



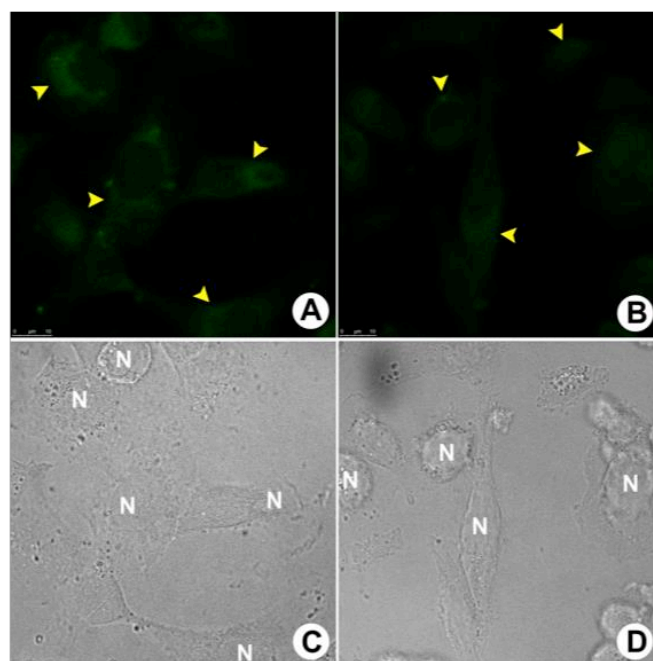
**Figure S3.** Fluorescent profile of MCF-7 (breast cancer cell line) cells treated with BTD-GTN (**1**) visualised at the blue, green and red channels. Images (A), (B), (C) and (D) show live cells whereas (E), (F), (G) and (H) show fixed cells. (D) and (H) show the morphological aspects of the samples by phase contrast microscopy. Arrows show the cytoplasm distribution of BTD-GTN (**1**) and the nuclei are showed as black voids identified by "N" letters. Reference scale bar 25  $\mu\text{m}$ .



**Figure S4.** Fluorescent profile of RAW 264.7 (murine macrophage cell line) cells treated with BTD-GTN (**1**) visualised at the blue, green and red channels. Images (A), (B), (C) and (D) show live cells whereas (E), (F), (G) and (H) show fixed cells. (D) and (H) show the morphological aspects of the samples by phase contrast microscopy. Arrows show the cytoplasm distribution of BTD-GTN (**1**) and the nuclei are shown as black voids identified by “N” letters. Reference scale bar = 25  $\mu\text{m}$ .

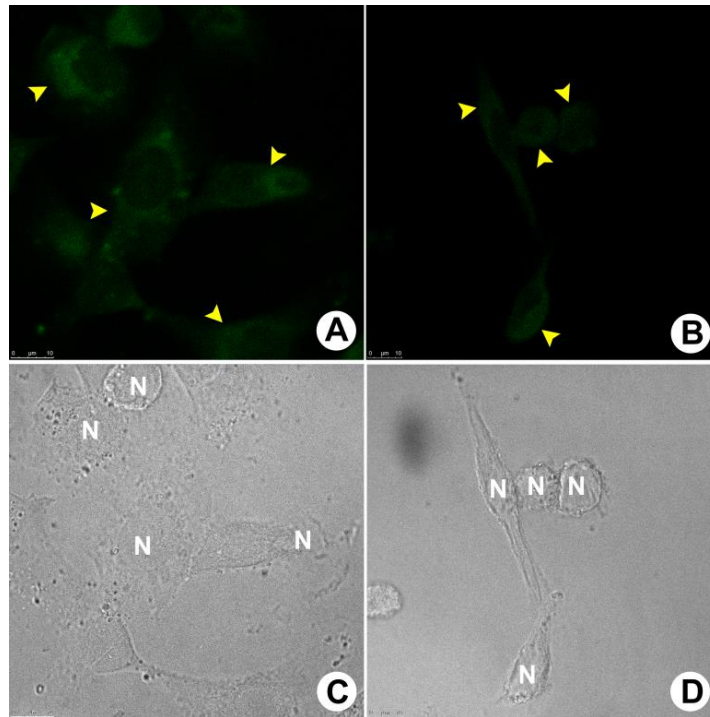


**Figure S5.** BTD-GTN (1) and Rhodamine 1,2,3 staining profile. The images A and B show the cytoplasmic distribution of fluorescence signal. The yellow arrowheads indicate the perinuclear accumulation for both markers. Images C and D show the normal morphological aspects of the cell samples by phase contrast microscopy. The nuclei are indicating by "N" letters. Reference scale bar = 7.5  $\mu\text{m}$ .

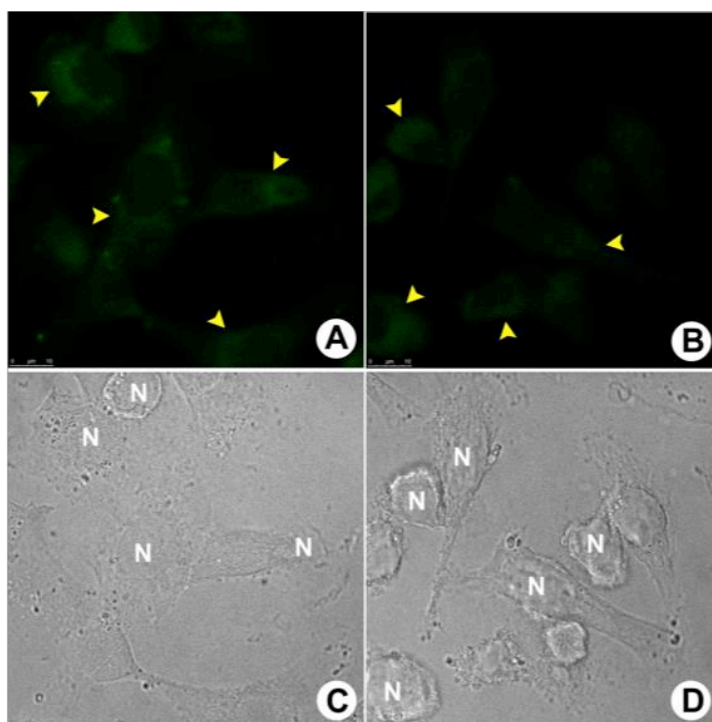


**Figure S6.** Fluorescence dislodge assay (GTN x BTD-GTN). Image A shows the intensity of fluorescence emission from control sample incubated only with BTD-GTN (**1**). Image B shows the intensity of fluorescence emission from sample pre-incubated with GTN solution at 2.5  $\mu\text{M}$ , followed by incubation with BTD-GTN (**1**) solution 10  $\mu\text{M}$ . Images C and D show the normal morphological aspects of the cell samples by phase contrast microscopy. The cell nuclei are indicated by "N" letters. Reference scale bar = 10  $\mu\text{m}$ .

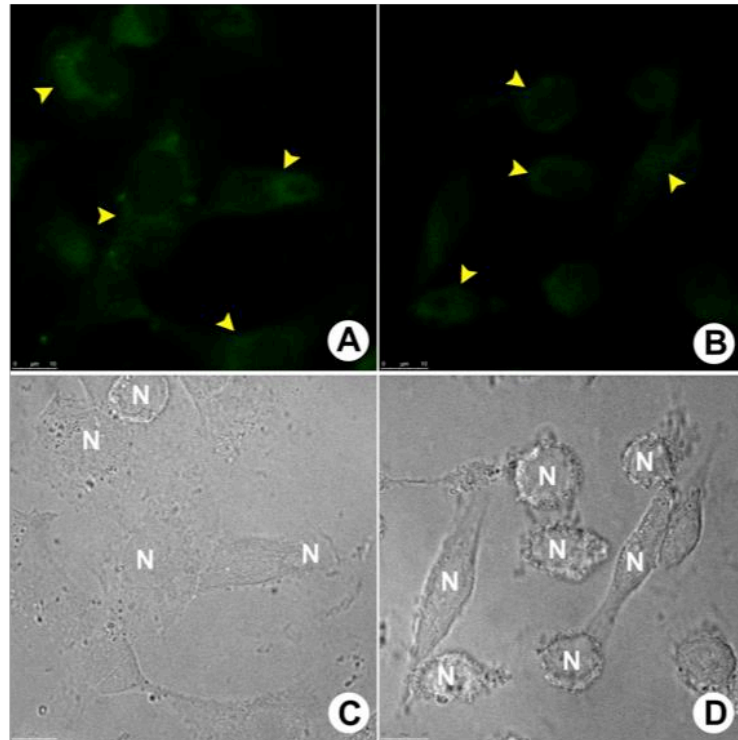




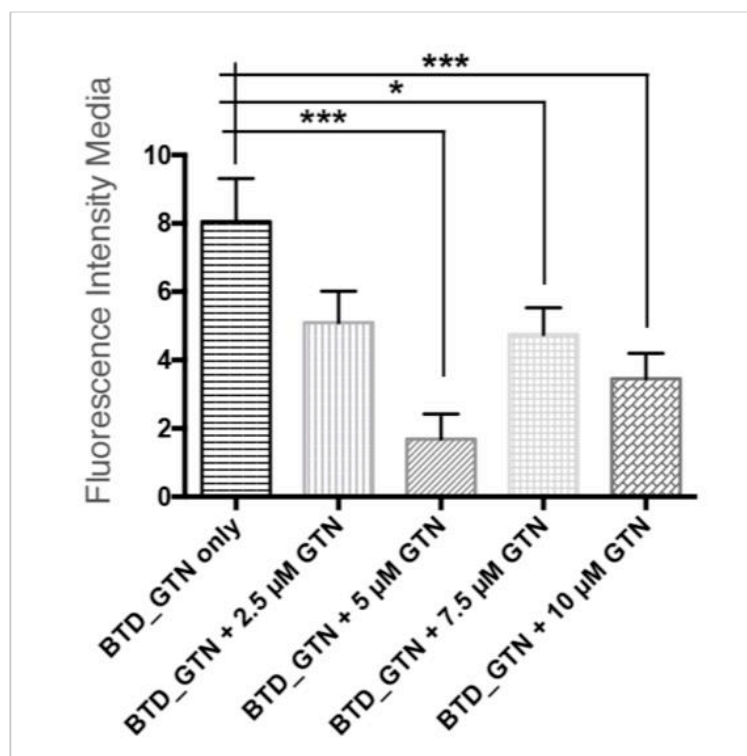
**Figure S7.** Fluorescence dislodge assay (GTN x BTD-GTN). Image A shows the intensity of fluorescence emission from control sample incubated only with BTD-GTN (**1**). Image B shows the intensity of fluorescence emission from sample pre-incubated with GTN solution at 5  $\mu\text{M}$ , followed by incubation with BTD-GTN (**1**) solution 10  $\mu\text{M}$ . Images C and D show the normal morphological aspects of the cell samples by phase contrast microscopy. The cell nuclei are indicated by "N" letters. Reference scale bar = 10  $\mu\text{m}$ .



**Figure S8.** Fluorescence dislodge assay (GTN x BTD-GTN). Image A shows the intensity of fluorescence emission from control sample incubated only with BTD-GTN (**1**). Image B shows the intensity of fluorescence emission from sample pre-incubated with GTN solution at 7.5  $\mu\text{M}$ , followed by incubation with BTD-GTN (**1**) 10  $\mu\text{M}$  solution. Images C and D show the normal morphological aspects of the cell samples by phase contrast microscopy. The cell nuclei are indicated by "N" letters. Reference scale bar = 10  $\mu\text{m}$ .



**Figure S9.** Fluorescence dislodge assay (GTN x BTD-GTN). The images A shows the intensity of fluorescence emission from control sample incubated only with BTD-GTN. The image B shows the intensity of fluorescence emission from sample pre-incubated with GTN solution at 10  $\mu$ M follow incubation with BTD-GTN solution 10  $\mu$ M. Images C and D show the normal morphological aspects of the cell samples by phase contrast microscopy. The cells nuclei are indicating by "N" letters. Reference scale bar = 10  $\mu$ m.



**Figure S10.** Quantitative analyses of fluorescence emission intensities from fluorescence dislodgee assay (GTN x BTD-GTN). The sample pre-incubated with GTN solution produces reduction of fluorescence emission intensities. Only the fluorescence emission reduction obtained from sample pre-incubated with GTN solution at 2.5  $\mu\text{M}$  showed no statistic significance. \* =  $p \leq 0.05$  - \*\*\* =  $p \leq 0.001$

Frequency (MHz)	250.13	Nucleus	<sup>1</sup> H	Number of Transients	16	Origin	spect
Original Points Count	16384	Owner	root	Points Count	32768	Pulse Sequence	zg30
Receiver Gain	512.00	SW(cyclical) (Hz)	5175.98	Solvent	CHLOROFORM-d		
Spectrum Offset (Hz)	1750.9110	Sweep Width (Hz)	5175.83	Temperature (degree C)	25.160		

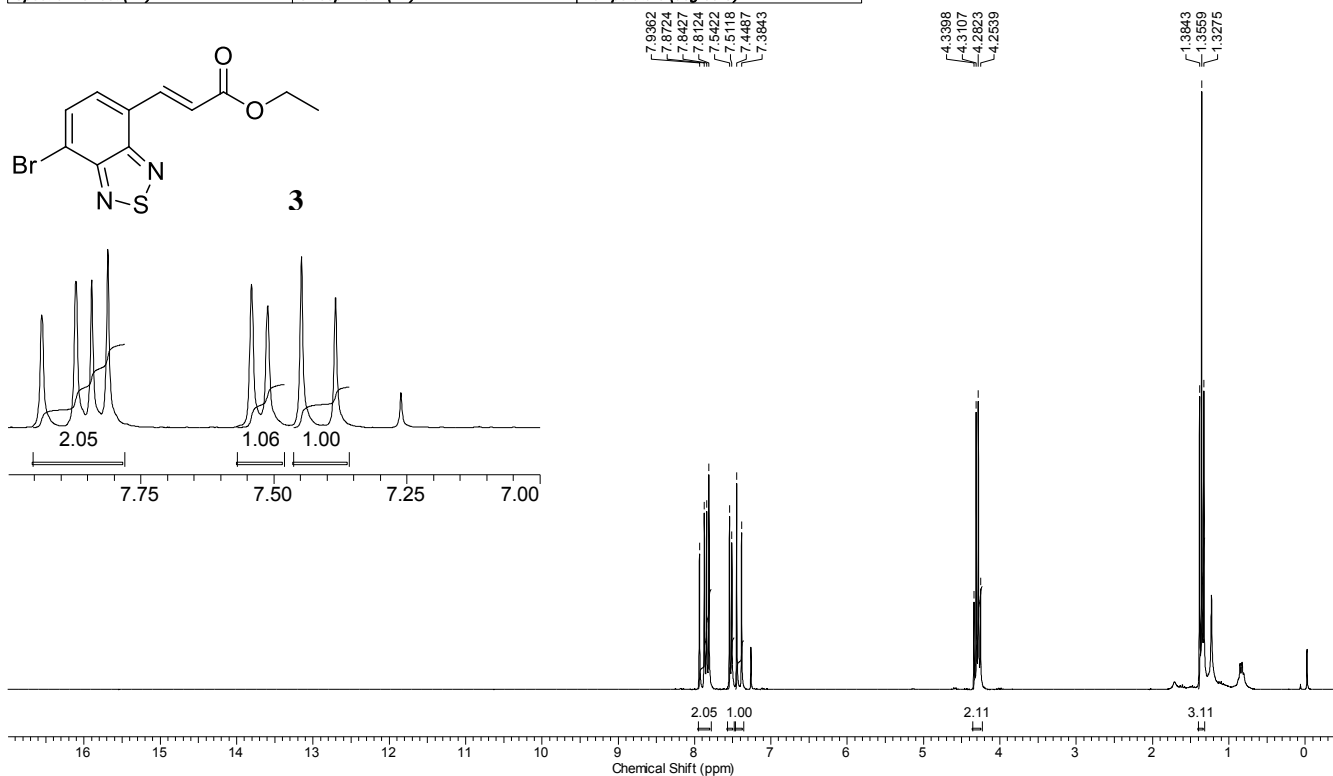


Figure S11: <sup>1</sup>H NMR spectrum (250 MHz, CDCl<sub>3</sub>) for compound 3.

Frequency (MHz)	62.90	Nucleus	<sup>13</sup> C	Number of Transients	1024	Origin	spect
Original Points Count	8192	Owner	root	Points Count	32768	Pulse Sequence	zgpg30
Receiver Gain	645.10	SW(cyclical) (Hz)	15060.24	Solvent	CHLOROFORM-d		
Spectrum Offset (Hz)	6289.0518	Sweep Width (Hz)	15059.78	Temperature (degree C)	25.160		

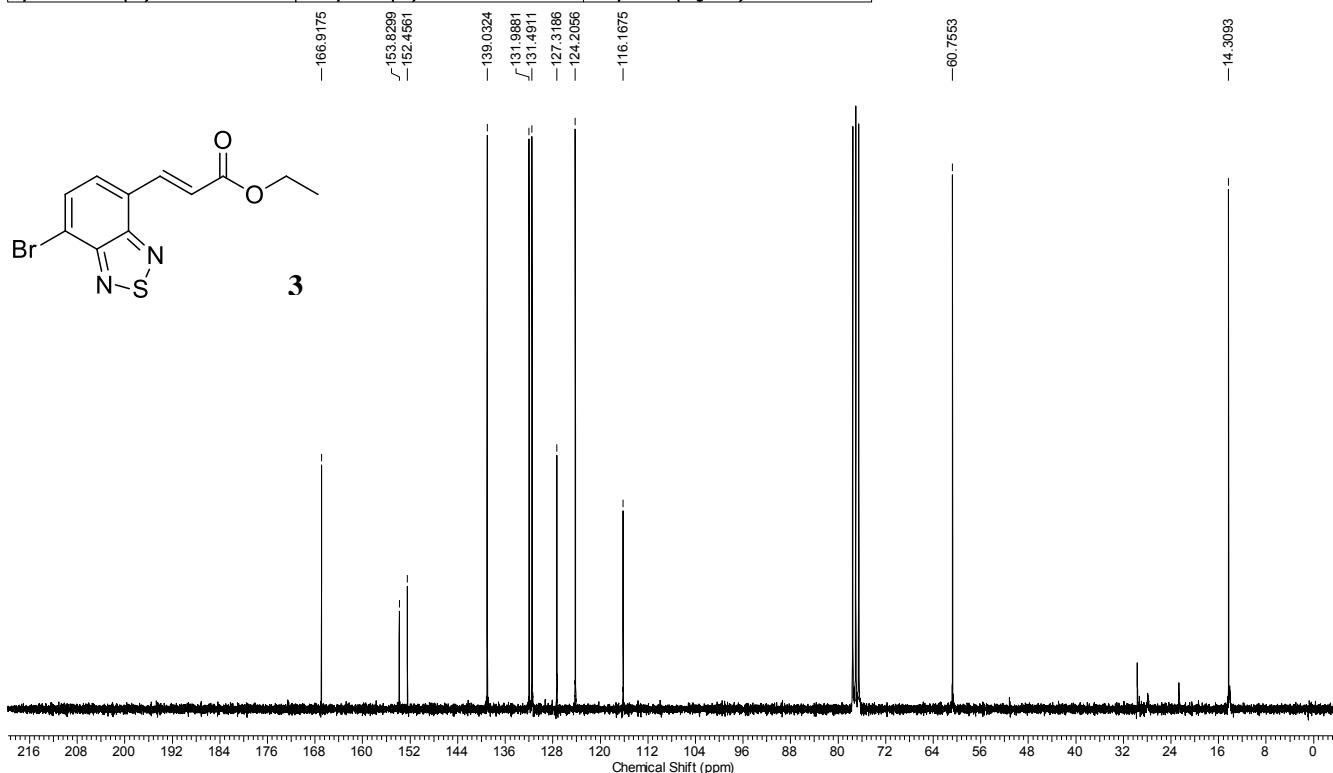


Figure S12: <sup>13</sup>C NMR spectrum (62,5 MHz, CDCl<sub>3</sub>) for compound 3.

Frequency (MHz)	250.13	Nucleus	<sup>1</sup> H	Number of Transients	16	Origin	spect
Original Points Count	16384	Owner	root	Points Count	32768	Pulse Sequence	zg30
Receiver Gain	645.10	SW(cyclical) (Hz)	5175.98	Solvent	CHLOROFORM-d		
Spectrum Offset (Hz)	1750.4702	Sweep Width (Hz)	5175.83	Temperature (degree C)	25.160		

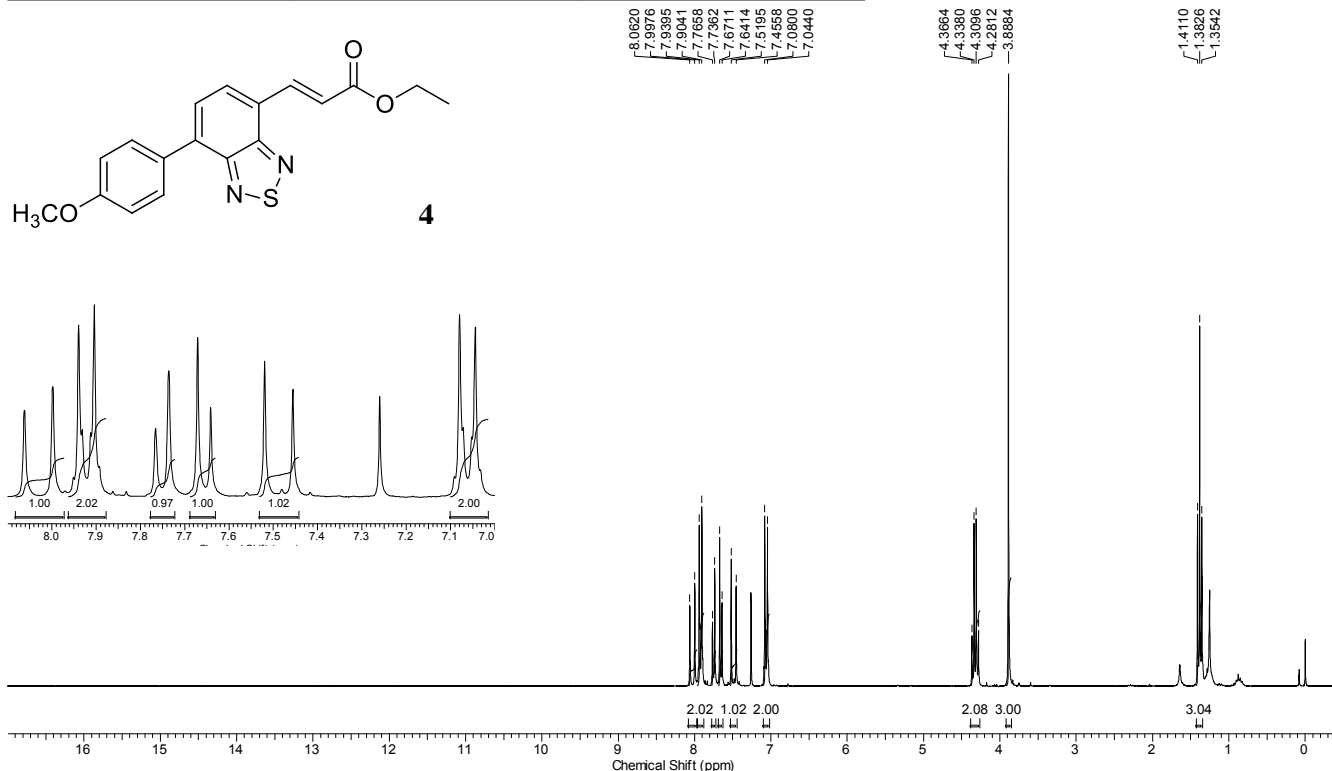


Figure S13: <sup>1</sup>H NMR spectrum (250 MHz, CDCl<sub>3</sub>) for compound 4.

Frequency (MHz)	62.90	Nucleus	<sup>13</sup> C	Number of Transients	803	Origin	spect
Original Points Count	8192	Owner	root	Points Count	32768	Pulse Sequence	zgpg30
Receiver Gain	724.10	SW(cyclical) (Hz)	15060.24	Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	6287.6929
Sweep Width (Hz)	15059.78	Temperature (degree C)	25.160				

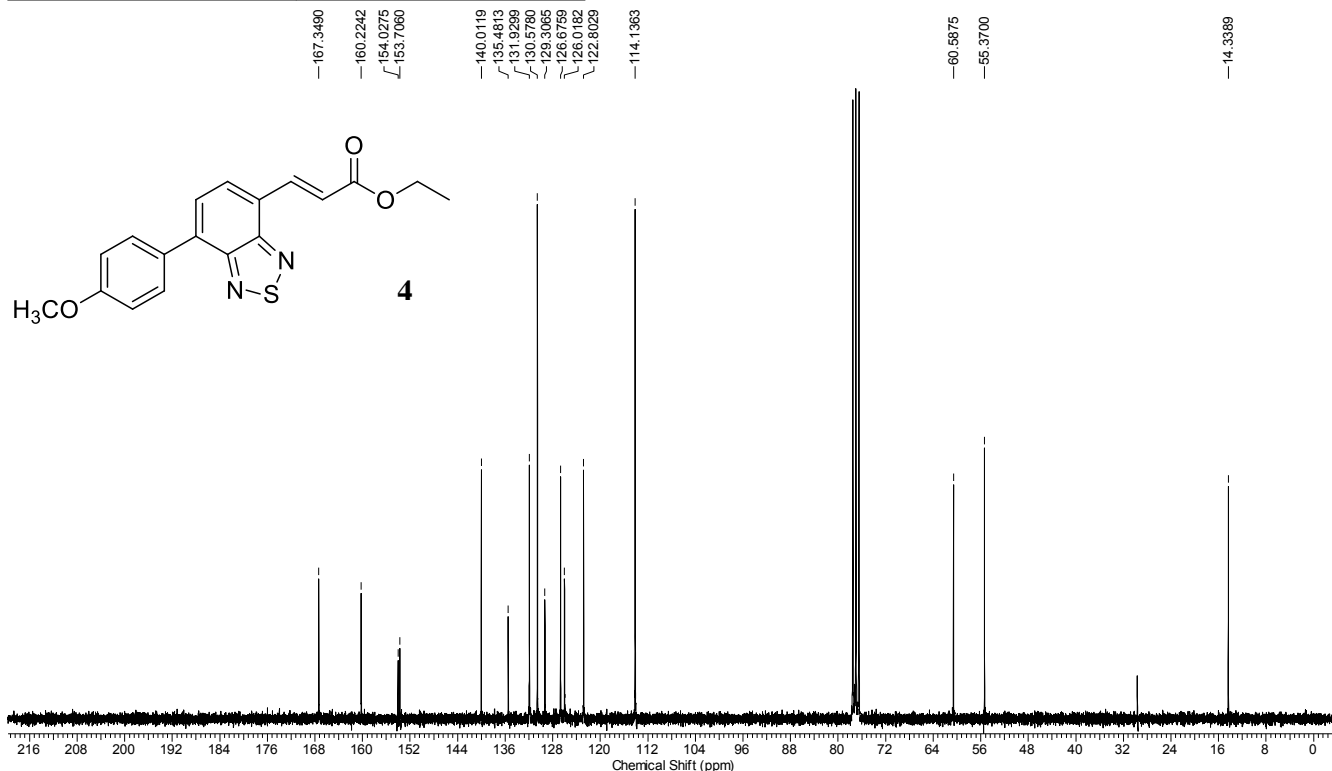
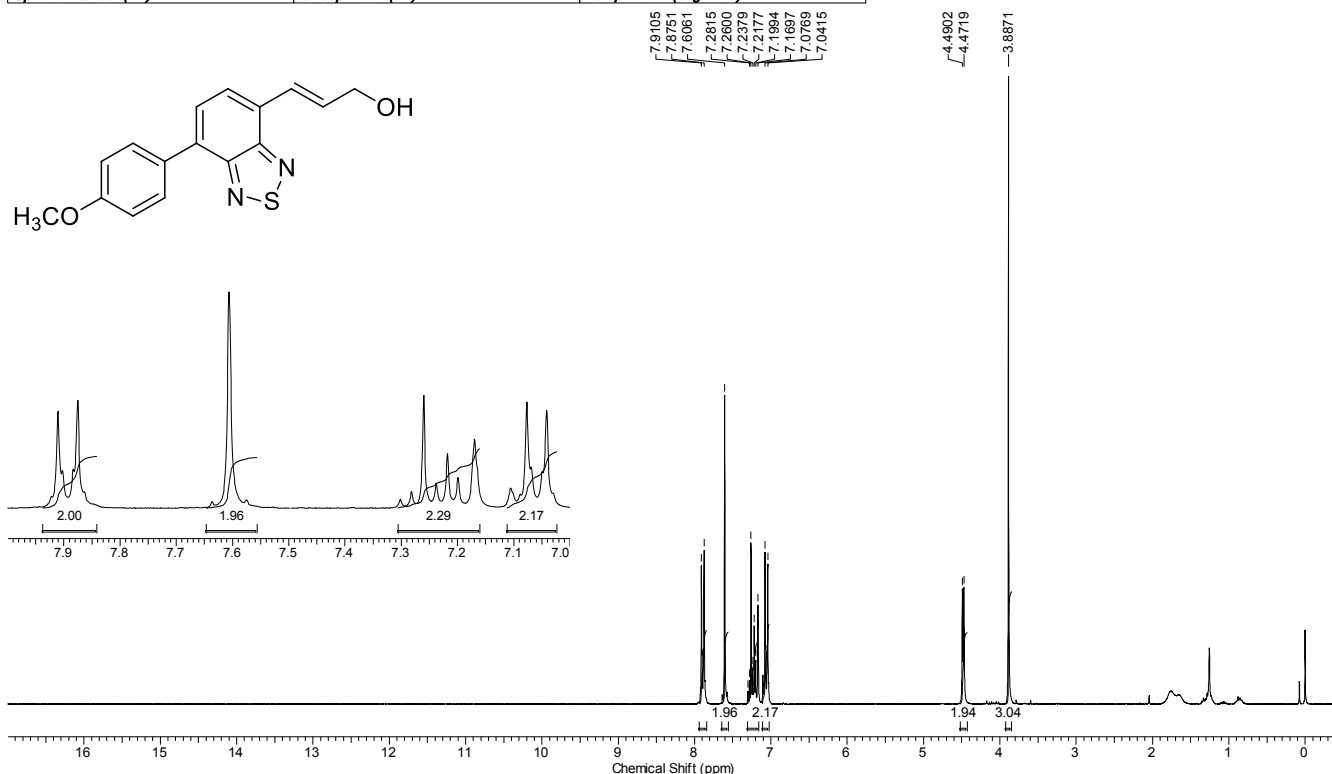


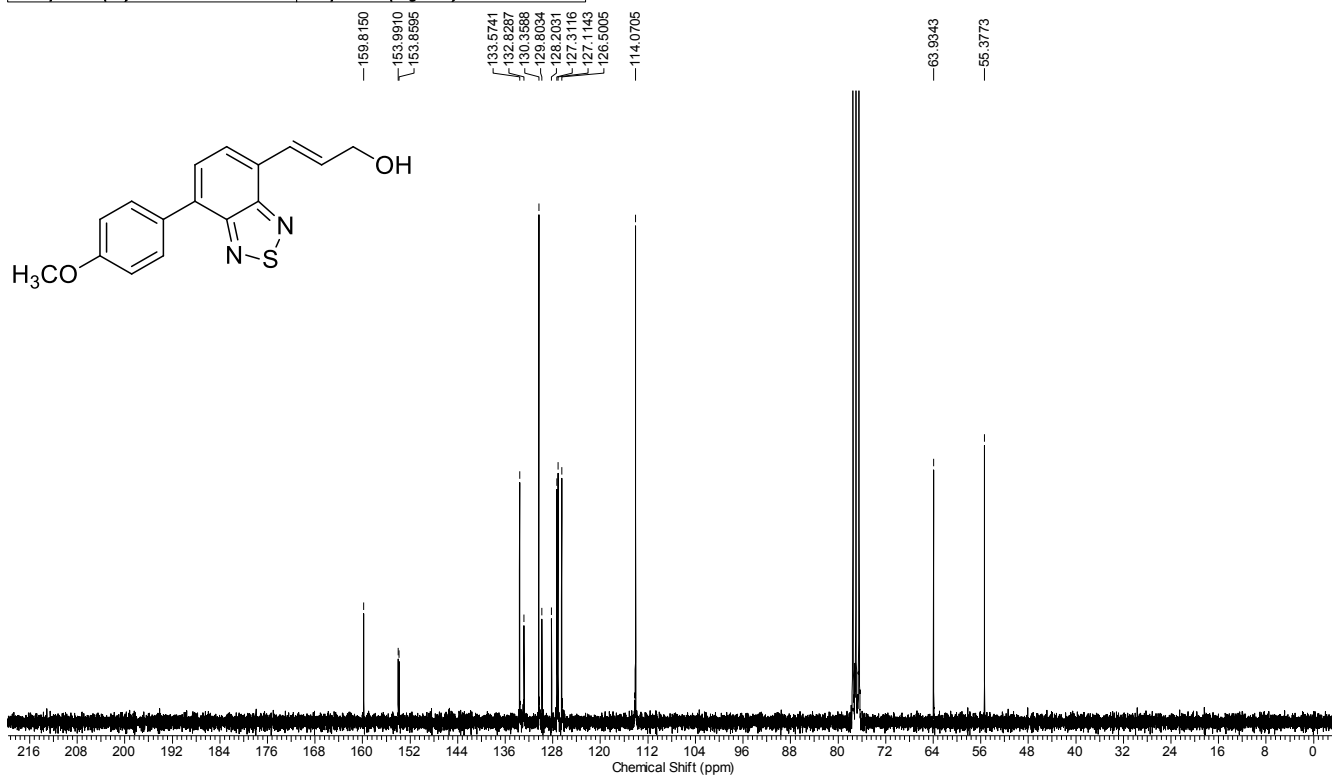
Figure S14: <sup>13</sup>C NMR spectrum (62,5 MHz, CDCl<sub>3</sub>) for compound 4.

Frequency (MHz)	250.13	Nucleus	<sup>1</sup> H	Number of Transients	16	Origin	spect
Original Points Count	16384	Owner	root	Points Count	32768	Pulse Sequence	zg30
Receiver Gain	1149.40	SW(cyclical) (Hz)	5175.98	Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	
Spectrum Offset (Hz)	1750.4702	Sweep Width (Hz)	5175.83	Temperature (degree C)	25.160		



**Figure S15:** <sup>1</sup>H NMR spectrum (250 MHz, CDCl<sub>3</sub>) for (*E*)-3-(7-(4-methoxyphenyl)benzo[*c*][1,2,5]thiadiazol-4-yl)prop-2-en-1-ol.

Frequency (MHz)	62.90	Nucleus	<sup>13</sup> C	Number of Transients	1024	Origin	spect
Original Points Count	8192	Owner	root	Points Count	32768	Pulse Sequence	zpgg30
Receiver Gain	287.40	SW(cyclical) (Hz)	15060.24	Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	6288.6118
Sweep Width (Hz)	15059.78	Temperature (degree C)	25.160				



**Figure S16:** <sup>13</sup>C NMR spectrum (62,5 MHz, CDCl<sub>3</sub>) for (*E*)-3-(7-(4-methoxyphenyl)benzo[*c*][1,2,5]thiadiazol-4-yl)prop-2-en-1-ol.

Frequency (MHz)	250.13	Nucleus	<sup>1</sup> H	Number of Transients	16	Origin	spect
Original Points Count	16384	Owner	root	Points Count	32768	Pulse Sequence	zg30
Receiver Gain	1625.50	SW(cyclical) (Hz)	5175.98	Solvent	CHLOROFORM-d		
Spectrum Offset (Hz)	1750.3121	Sweep Width (Hz)	5175.83	Temperature (degree C)	25.160		

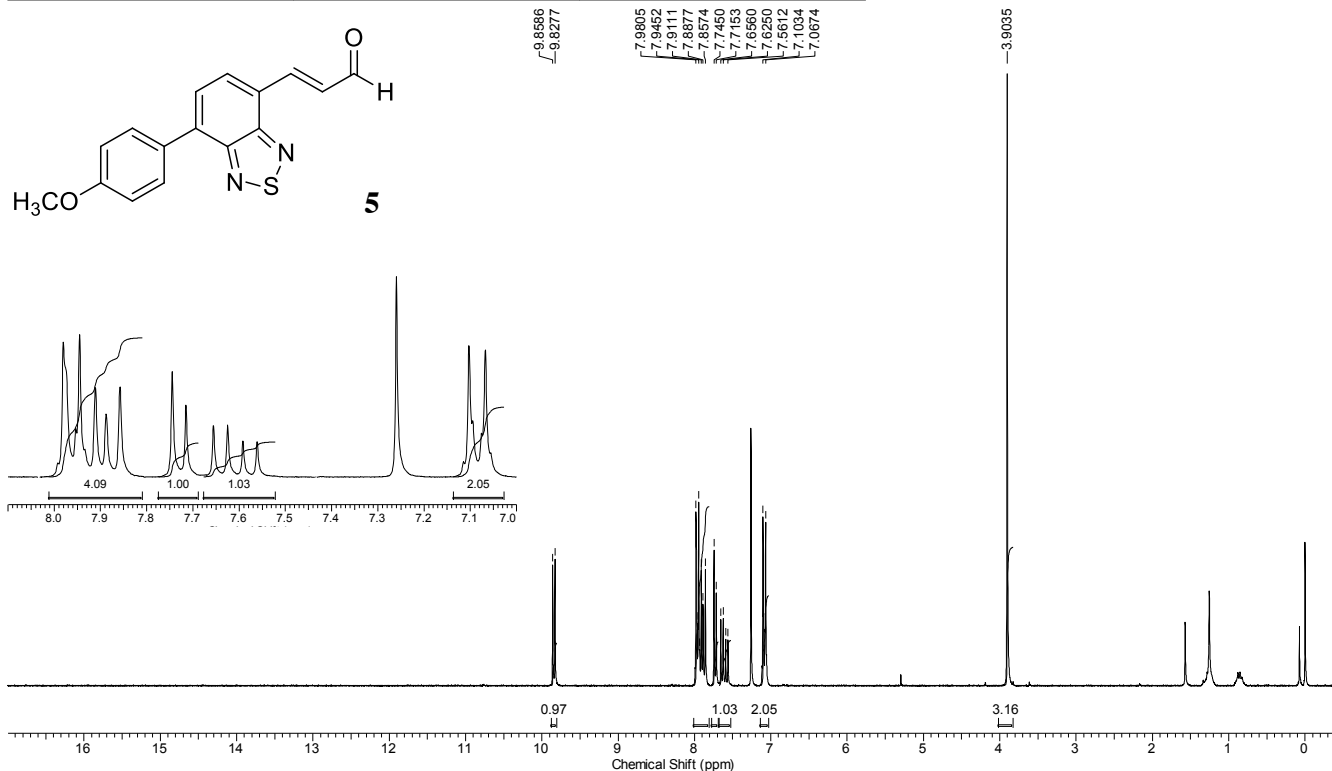


Figure S17: <sup>1</sup>H NMR spectrum (250 MHz, CDCl<sub>3</sub>) for compound 5.

Frequency (MHz)	62.90	Nucleus	<sup>13</sup> C	Number of Transients	604	Origin	spect
Original Points Count	8192	Owner	root	Points Count	32768	Pulse Sequence	zgpg30
Receiver Gain	912.30	SW(cyclical) (Hz)	15060.24	Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	6289.5313
Sweep Width (Hz)	15059.78	Temperature (degree C)	25.160				

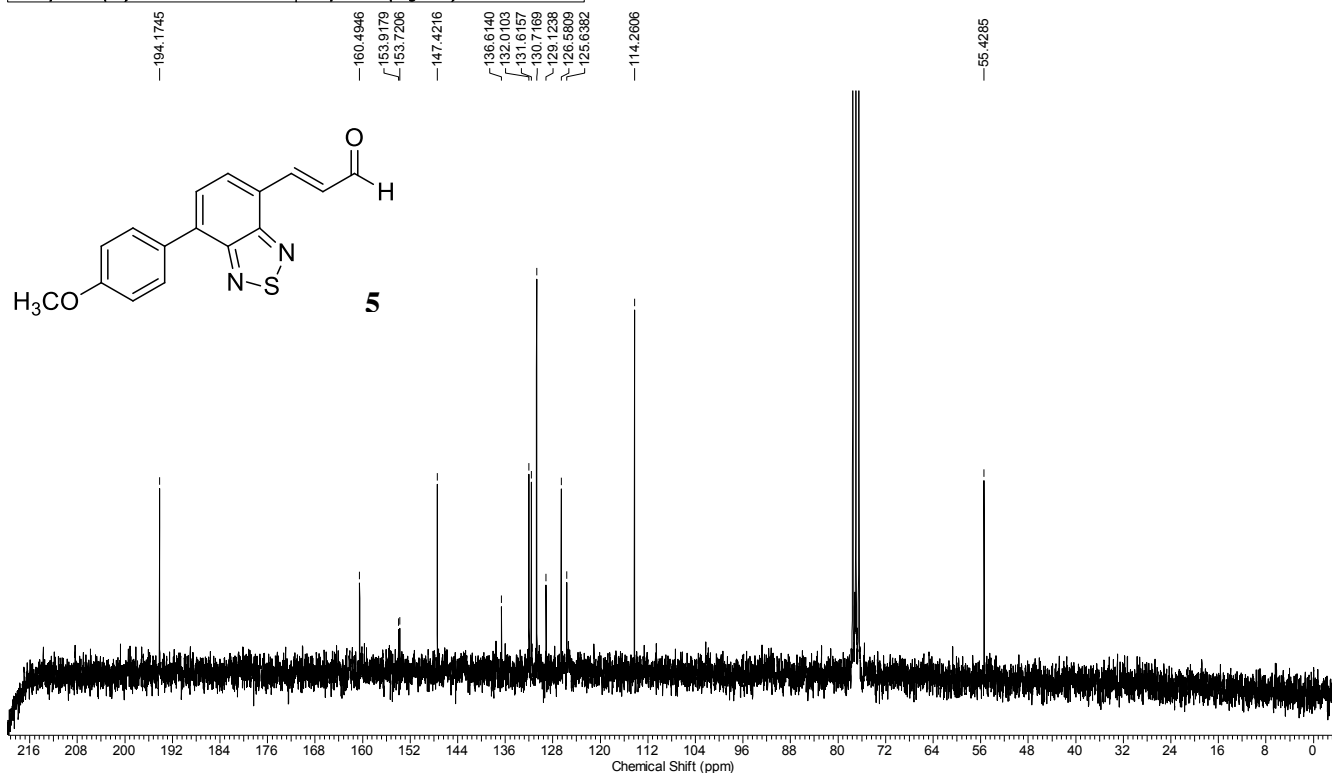


Figure S18: <sup>13</sup>C NMR spectrum (62,5 MHz, CDCl<sub>3</sub>) for compound 5.



Frequency (MHz)	250.13	Nucleus	<sup>1</sup> H	Number of Transients	16	Origin	spect
Original Points Count	16384	Owner	root	Points Count	32768	Pulse Sequence	zg30
Receiver Gain	1149.40	SW(cyclical) (Hz)	5175.98	Solvent	CHLOROFORM-d		
Spectrum Offset (Hz)	1750.4702	Sweep Width (Hz)	5175.83	Temperature (degree C)	25.160		

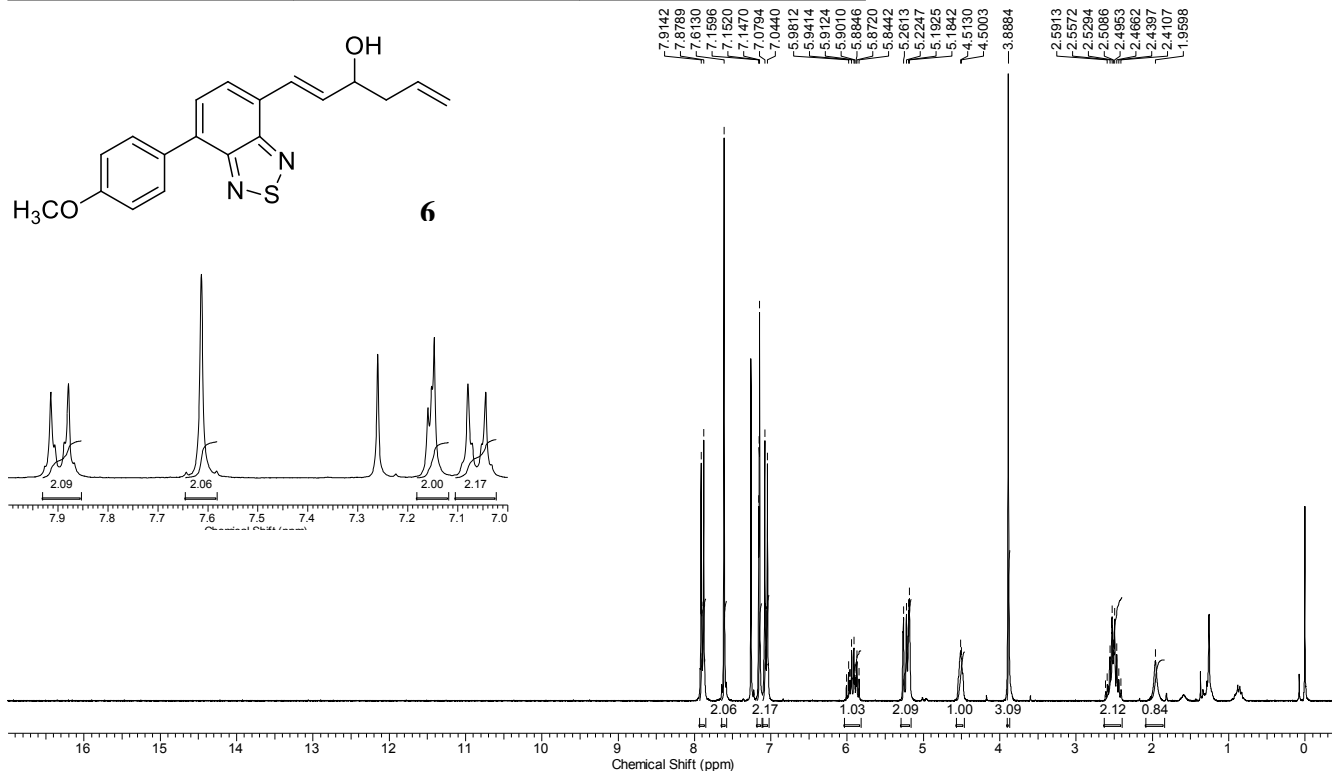


Figure S19: <sup>1</sup>H NMR spectrum (250 MHz, CDCl<sub>3</sub>) for compound 6.

Frequency (MHz)	62.90	Nucleus	<sup>13</sup> C	Number of Transients	1406	Origin	spect
Original Points Count	8192	Owner	root	Points Count	32768	Pulse Sequence	zgpg30
Receiver Gain	3649.10	SW(cyclical) (Hz)	15060.24	Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	6289.0713
Sweep Width (Hz)	15059.78	Temperature (degree C)	25.160				

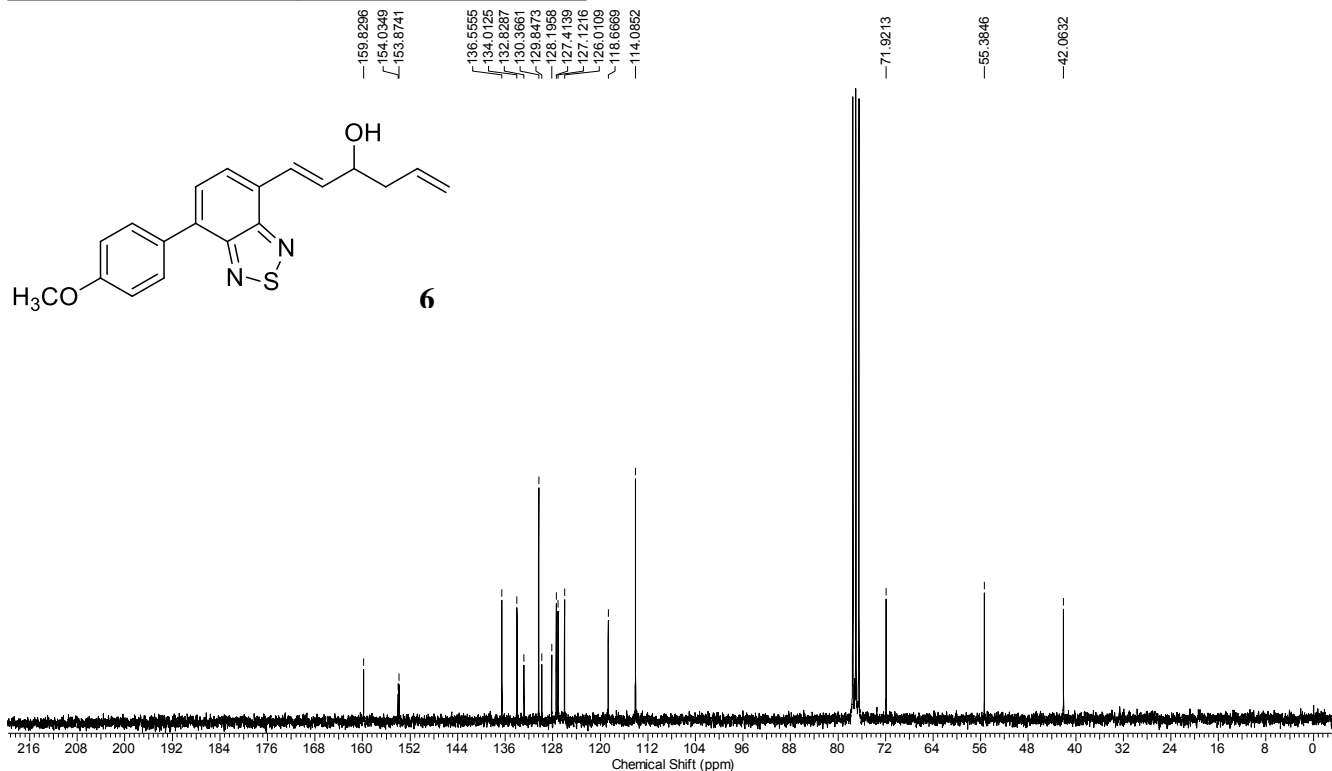


Figure S20: <sup>13</sup>C NMR spectrum (62,5 MHz, CDCl<sub>3</sub>) for compound 6.

Frequency (MHz)	250.13	Nucleus	<sup>1</sup> H	Number of Transients	16	Origin	spect
Original Points Count	16384	Owner	root	Points Count	32768	Pulse Sequence	zg30
Receiver Gain	1149.40	SW(cyclical) (Hz)	5175.98	Solvent	CHLOROFORM-d		
Spectrum Offset (Hz)	1750.3121	Sweep Width (Hz)	5175.83	Temperature (degree C)	25.160		

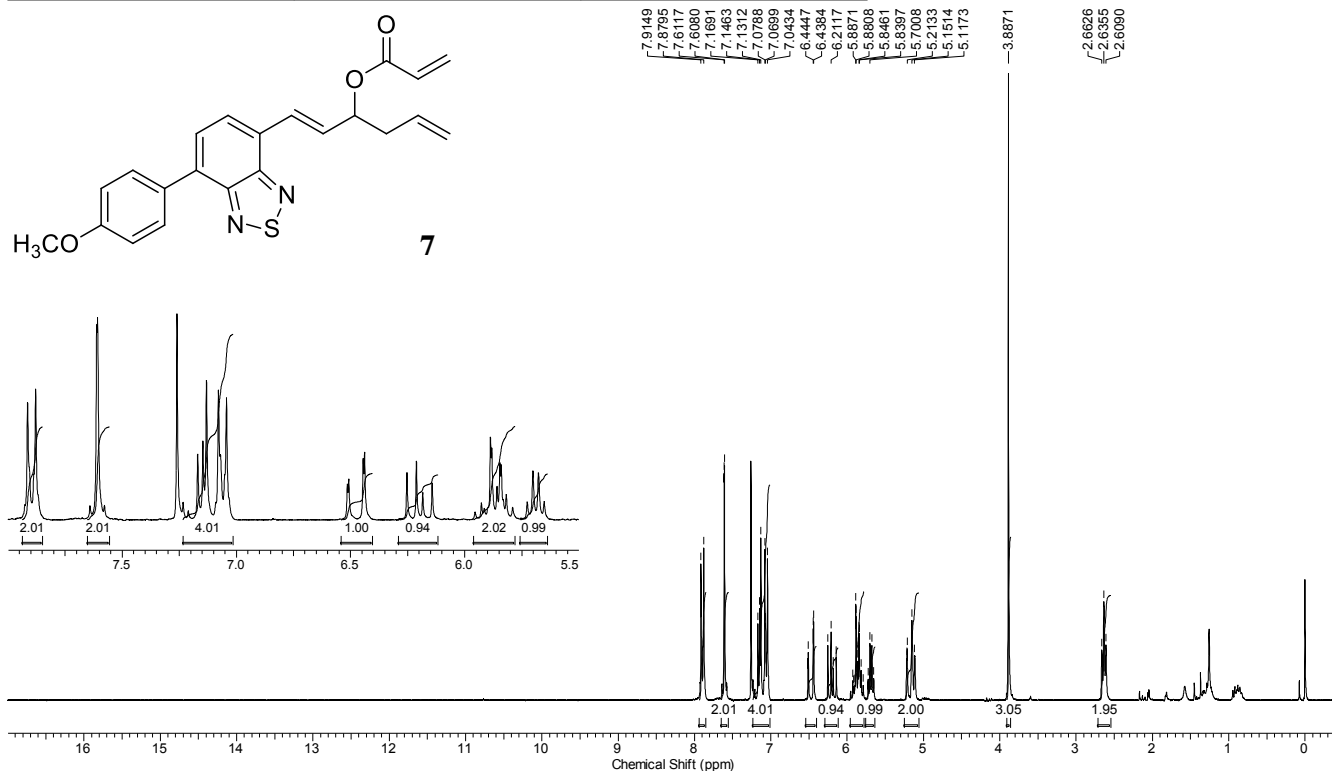


Figure S21: <sup>1</sup>H NMR spectrum (250 MHz, CDCl<sub>3</sub>) for compound 7.

Frequency (MHz)	62.90	Nucleus	<sup>13</sup> C	Number of Transients	1024	Origin	spect
Original Points Count	8192	Owner	root	Points Count	32768	Pulse Sequence	zgpg30
Receiver Gain	406.40	SW(cyclical) (Hz)	15060.24	Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	6289.0713
Sweep Width (Hz)	15059.78	Temperature (degree C)	25.160				

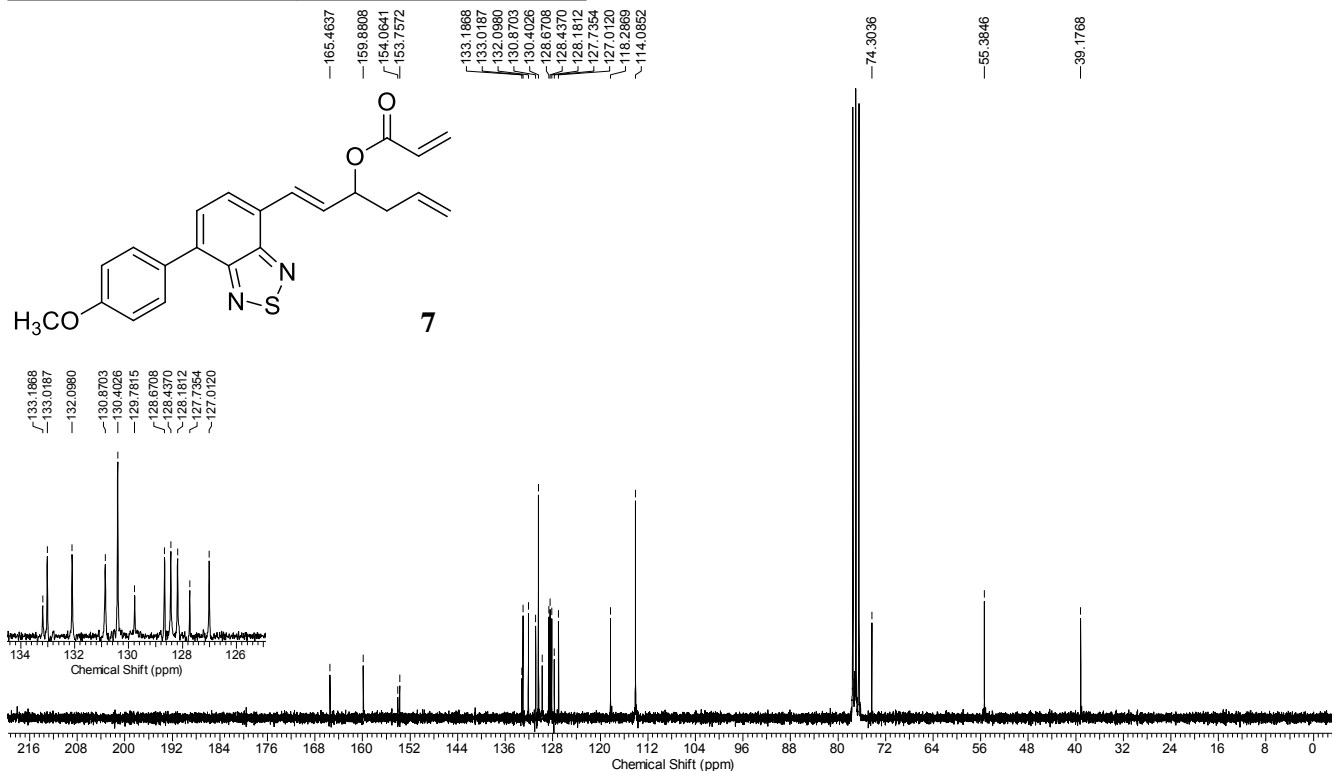


Figure S22: <sup>13</sup>C NMR spectrum (62,5 MHz, CDCl<sub>3</sub>) for compound 7.

Frequency (MHz)	499.87	Nucleus	<sup>1</sup> H	Number of Transients	16	Origin	spect
Original Points Count	16384	Owner	nmrsu	Points Count	65536	Pulse Sequence	zg30
Receiver Gain	144.00	SW(cyclical) (Hz)	10000.00	Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	3069.4399
Sweep Width (Hz)	9999.85	Temperature (degree C)	20.152				

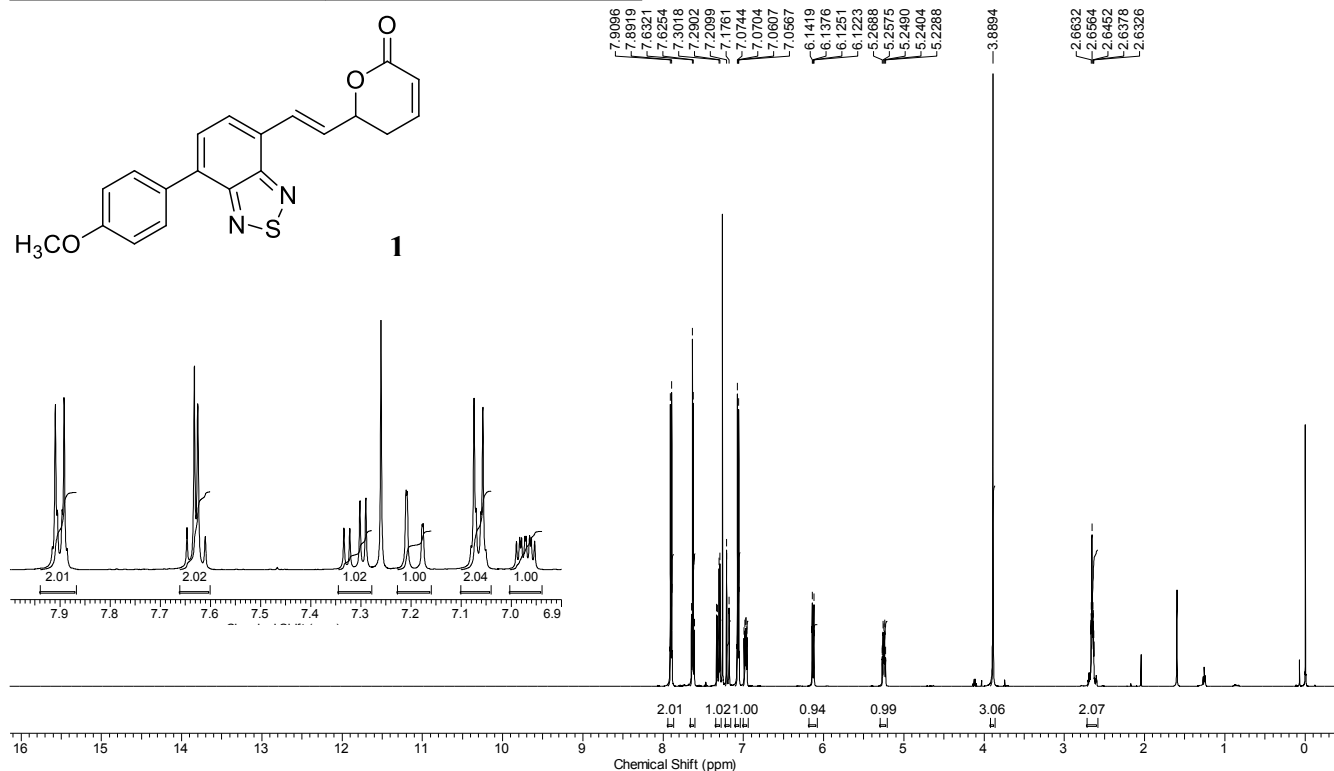


Figure S23: <sup>1</sup>H NMR spectrum (500 MHz, CDCl<sub>3</sub>) for compound 1.

Frequency (MHz)	125.69	Nucleus	<sup>13</sup> C	Number of Transients	512	Origin	spect
Original Points Count	16384	Owner	nmrsu	Points Count	32768	Pulse Sequence	zgpg30
Receiver Gain	2050.00	SW(cyclical) (Hz)	29761.90	Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	12560.6836
Sweep Width (Hz)	29761.00	Temperature (degree C)	20.151				

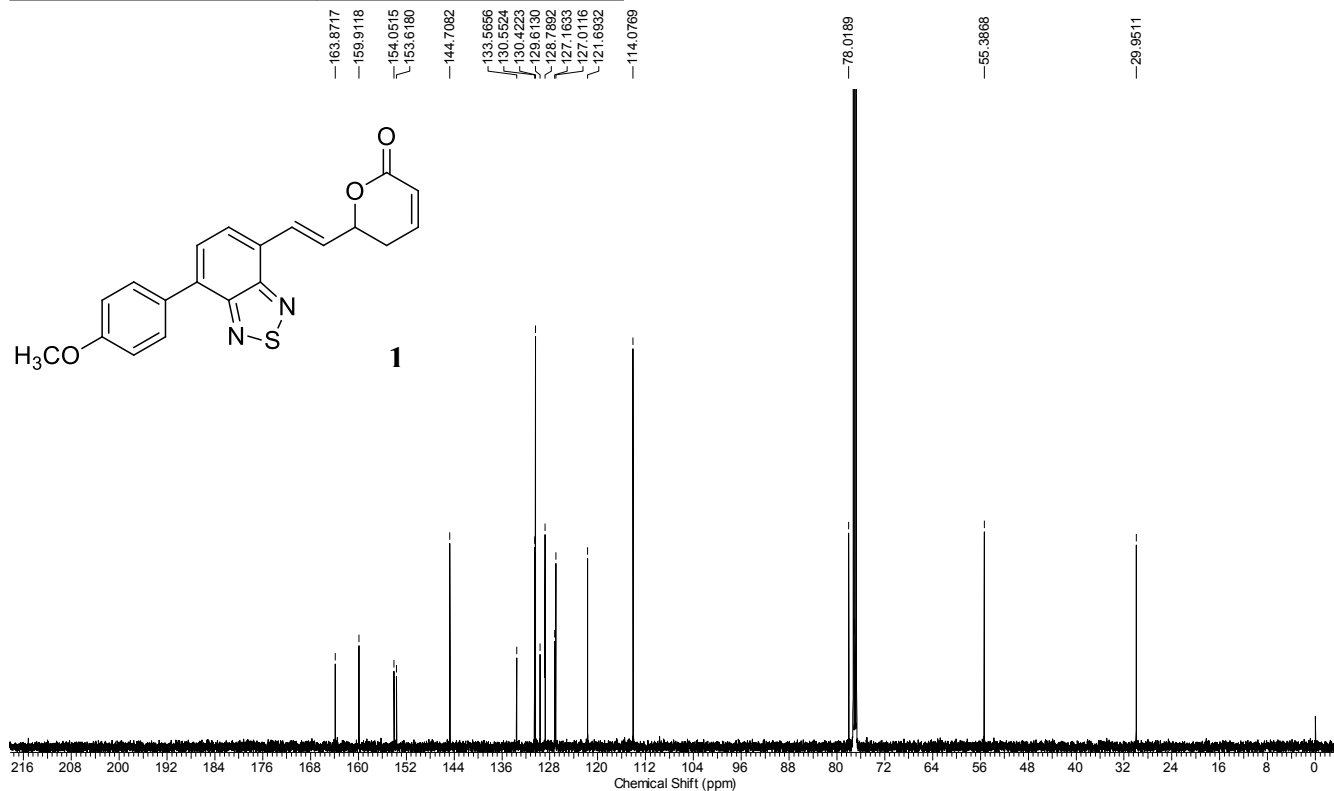


Figure S24: <sup>13</sup>C NMR spectrum (125 MHz, CDCl<sub>3</sub>) for compound 1.

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