

## Supporting Information

*Org. Commun.* 17:2 (2024) 115-122

### Two efficient methods for the total synthesis of the natural diarylheptanoid 7-(4-hydroxyphenyl)-1-phenylheptan-3-one

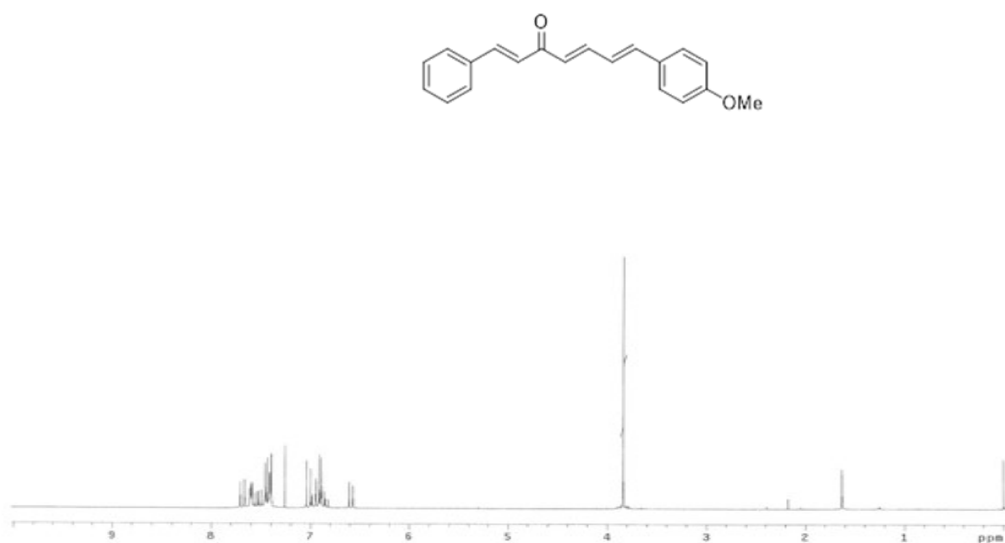
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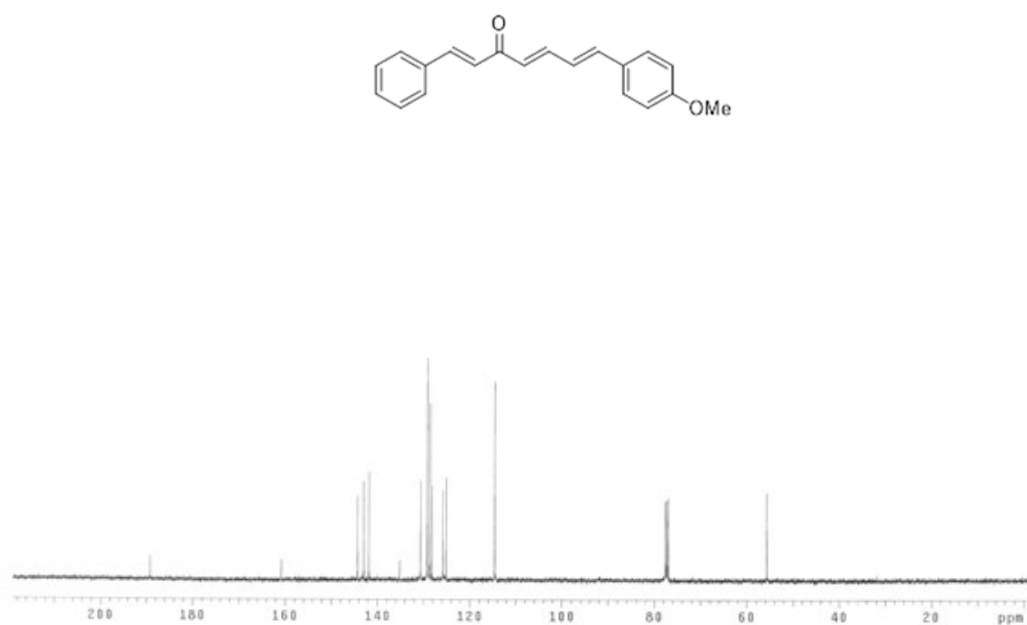
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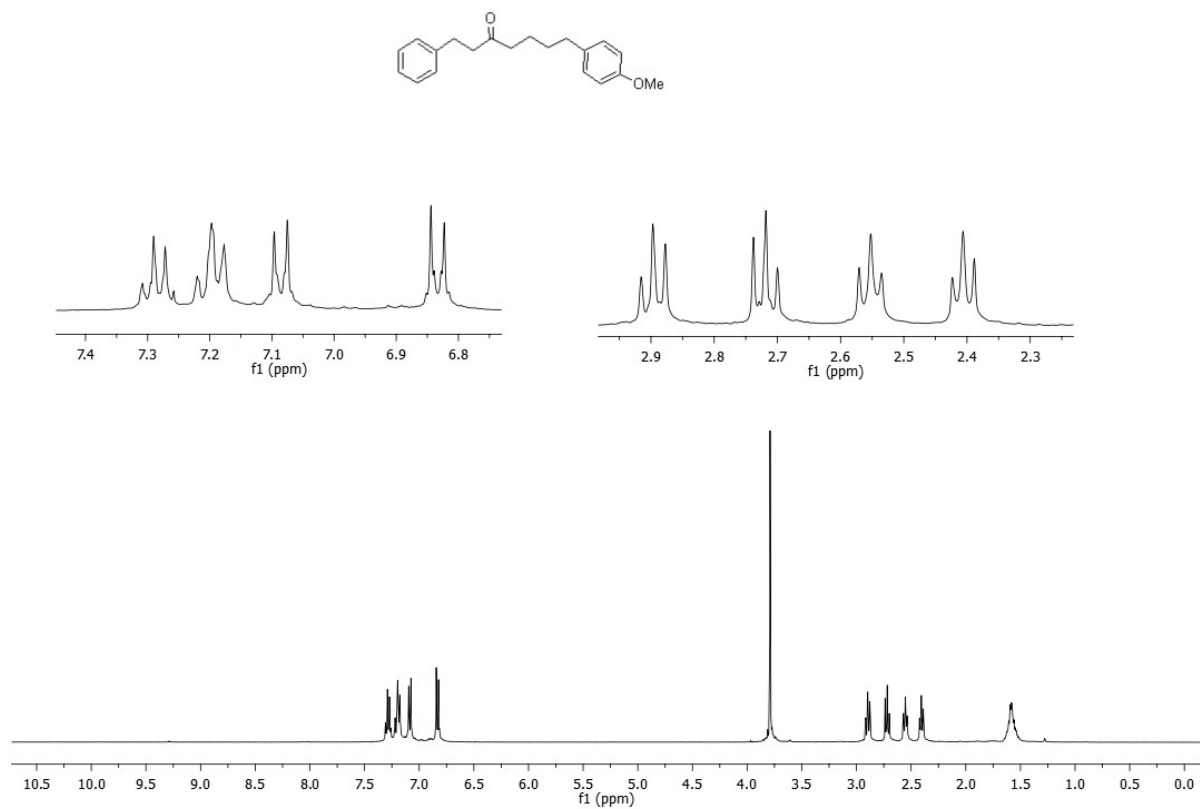
Table of Contents	Page
<b>Figure S1:</b> <sup>1</sup> H-NMR (400 MHz, CDCl <sub>3</sub> ) Spectrum of <b>8</b> (1 <i>E</i> ,4 <i>E</i> ,6 <i>E</i> )-7-(4-methoxyphenyl)-1-phenylhepta-1,4,6-trien-3-one	2
<b>Figure S2:</b> <sup>13</sup> C-NMR (100 MHz, CDCl <sub>3</sub> ) Spectrum of <b>8</b> (1 <i>E</i> ,4 <i>E</i> ,6 <i>E</i> )-7-(4-methoxyphenyl)-1-phenylhepta-1,4,6-trien-3-one	3
<b>Figure S3:</b> <sup>1</sup> H-NMR (400 MHz, CDCl <sub>3</sub> ) Spectrum of <b>9</b> 7-(4-methoxyphenyl)-1-phenylheptan-3-one	4
<b>Figure S4:</b> <sup>13</sup> C-NMR (100 MHz, CDCl <sub>3</sub> ) Spectrum of <b>9</b> 7-(4-methoxyphenyl)-1-phenylheptan-3-one	5
<b>Figure S5:</b> <sup>1</sup> H-NMR (400 MHz, CDCl <sub>3</sub> ) Spectrum of <b>5</b> 7-(4-hydroxyphenyl)-1-phenylheptan-3-one	6
<b>Figure S6:</b> <sup>13</sup> C-NMR (100 MHz, CDCl <sub>3</sub> ) Spectrum of <b>5</b> 7-(4-hydroxyphenyl)-1-phenylheptan-3-one	7
<b>Figure S7:</b> <sup>1</sup> H-NMR (400 MHz, CDCl <sub>3</sub> ) Spectrum of <b>11</b> (4 <i>E</i> ,6 <i>E</i> )-7-(4-methoxyphenyl)-1-phenylhepta-4,6-dien-3-one	8
<b>Figure S8:</b> <sup>13</sup> C-NMR (100 MHz, CDCl <sub>3</sub> ) Spectrum of <b>11</b> (4 <i>E</i> ,6 <i>E</i> )-7-(4-methoxyphenyl)-1-phenylhepta-4,6-dien-3-one	9
<b>Figure S9:</b> <sup>1</sup> H-NMR (400 MHz, CDCl <sub>3</sub> ) Spectrum of <b>12</b> (4 <i>E</i> ,6 <i>E</i> )-7-(4-methoxyphenyl)-1-phenylhepta-4,6-dien-3-ol	10
<b>Figure S10:</b> <sup>13</sup> C-NMR (100 MHz, CDCl <sub>3</sub> ) Spectrum of <b>12</b> (4 <i>E</i> ,6 <i>E</i> )-7-(4-methoxyphenyl)-1-phenylhepta-4,6-dien-3-ol	11



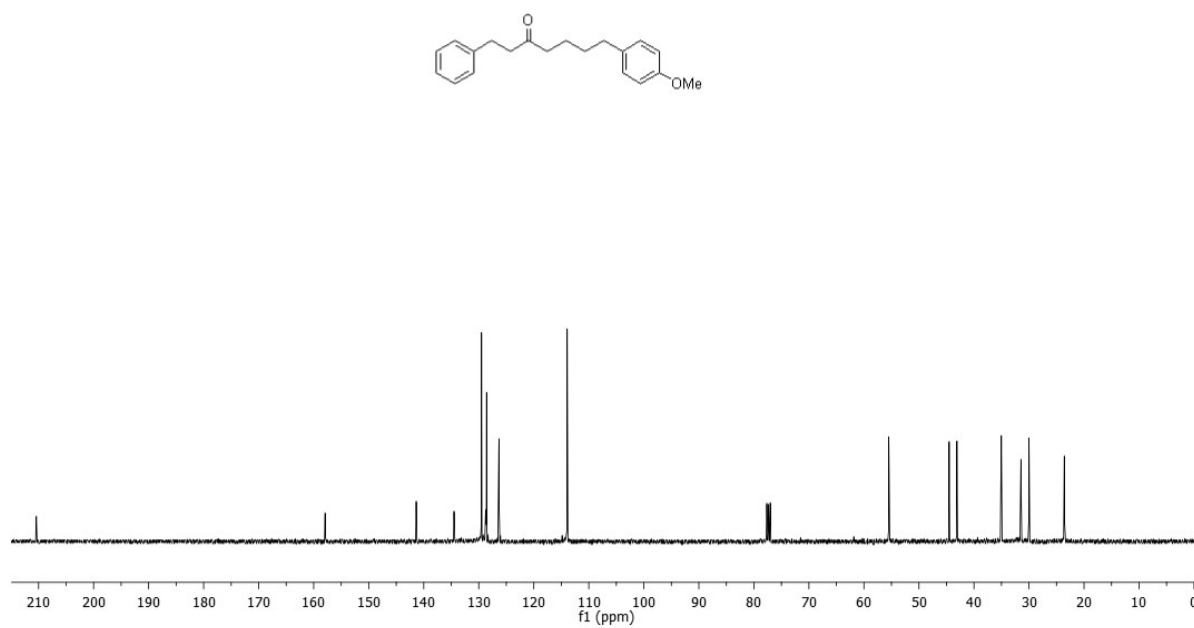
**Figure S1:** <sup>1</sup>H-NMR (400 MHz, CDCl<sub>3</sub>) Spectrum of **8** (1*E*,4*E*,6*E*)-7-(4-methoxyphenyl)-1-phenylhepta-1,4,6-trien-3-one



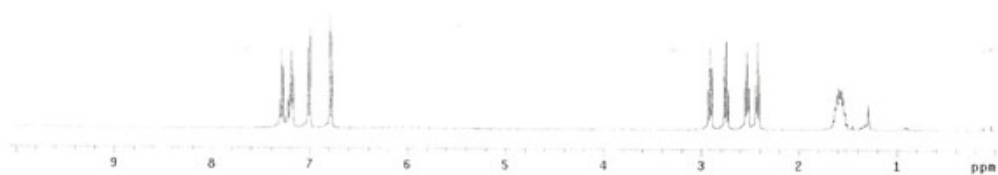
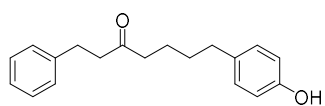
**Figure S2:** <sup>13</sup>C-NMR (100 MHz, CDCl<sub>3</sub>) Spectrum of **8** (1*E*,4*E*,6*E*)-7-(4-methoxyphenyl)-1-phenylhepta-1,4,6-trien-3-one



**Figure S3:** <sup>1</sup>H-NMR (400 MHz, CDCl<sub>3</sub>) Spectrum of **9** 7-(4-methoxyphenyl)-1-phenylheptan-3-one



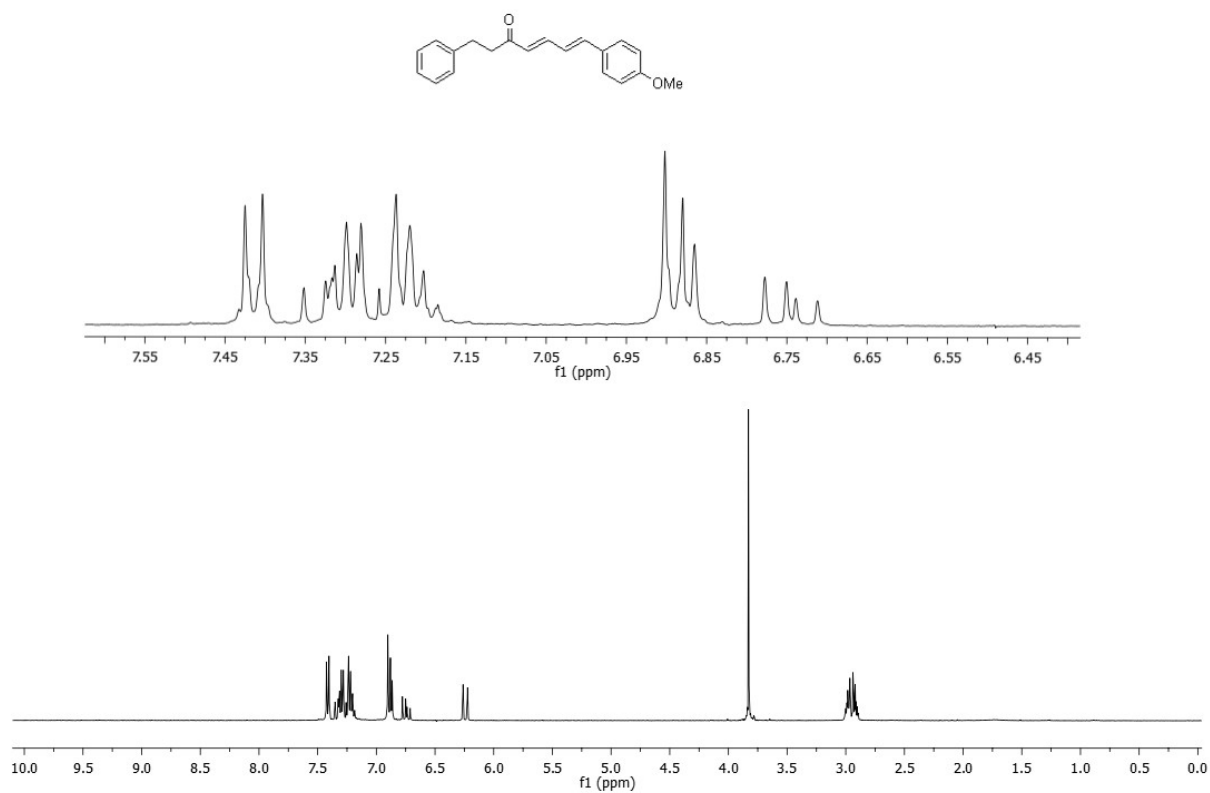
**Figure S4:**  $^{13}\text{C}$ -NMR (100 MHz,  $\text{CDCl}_3$ ) Spectrum of **9** 7-(4-methoxyphenyl)-1-phenylheptan-3-one



**Figure S5:** <sup>1</sup>H-NMR (400 MHz, CDCl<sub>3</sub>) Spectrum of **5** 7-(4-hydroxyphenyl)-1-phenylheptan-3-one

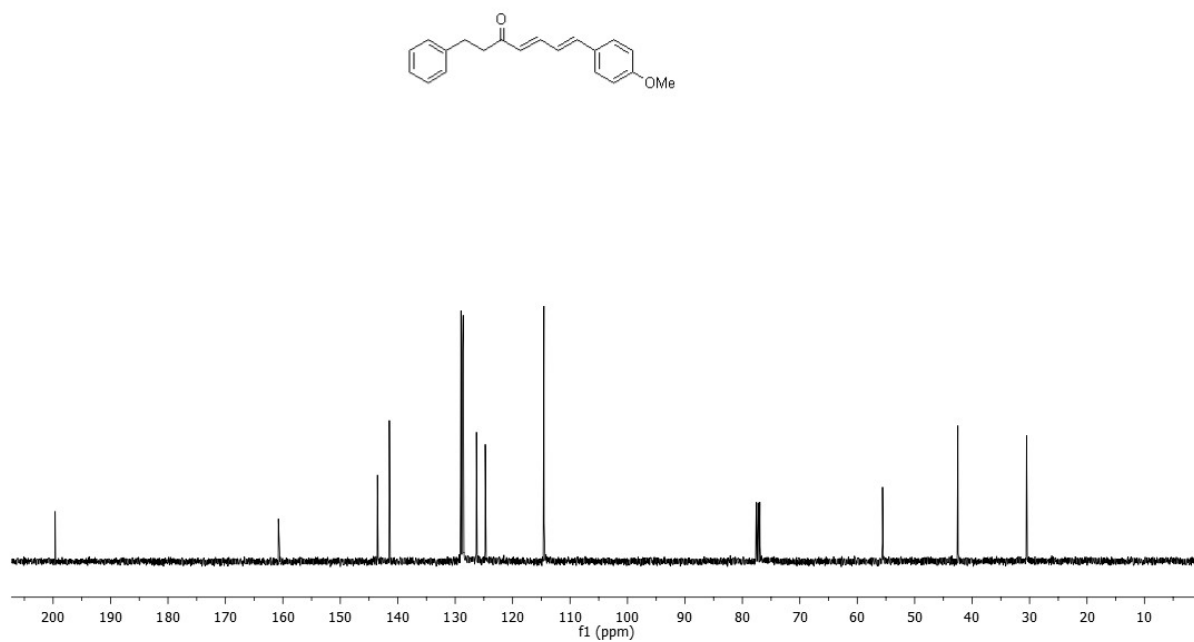


**Figure S6:**  $^{13}\text{C}$ -NMR (100 MHz,  $\text{CDCl}_3$ ) Spectrum of **5** 7-(4-hydroxyphenyl)-1-phenylheptan-3-one

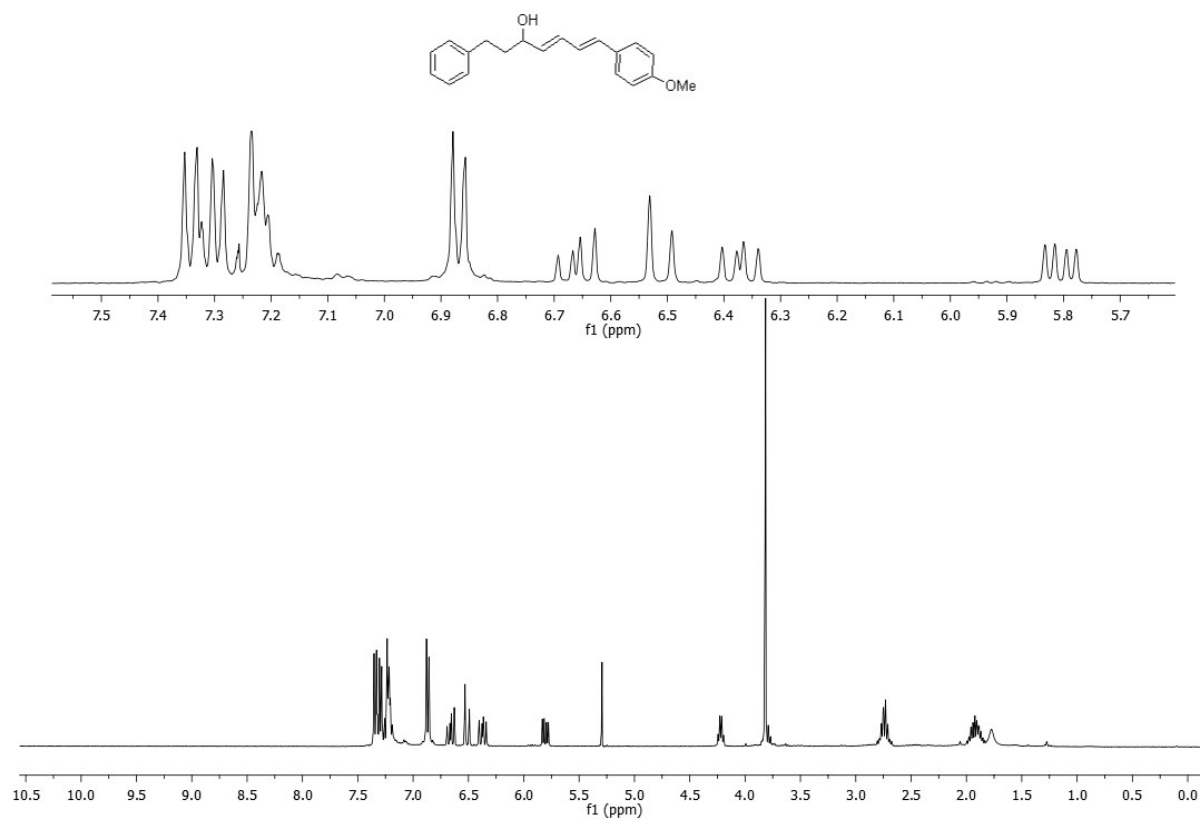


**Figure S7:** <sup>1</sup>H-NMR (400 MHz, CDCl<sub>3</sub>) Spectrum of **11** (*4E,6E*)-7-(4-methoxyphenyl)-1-phenylhepta-4,6-dien-3-one

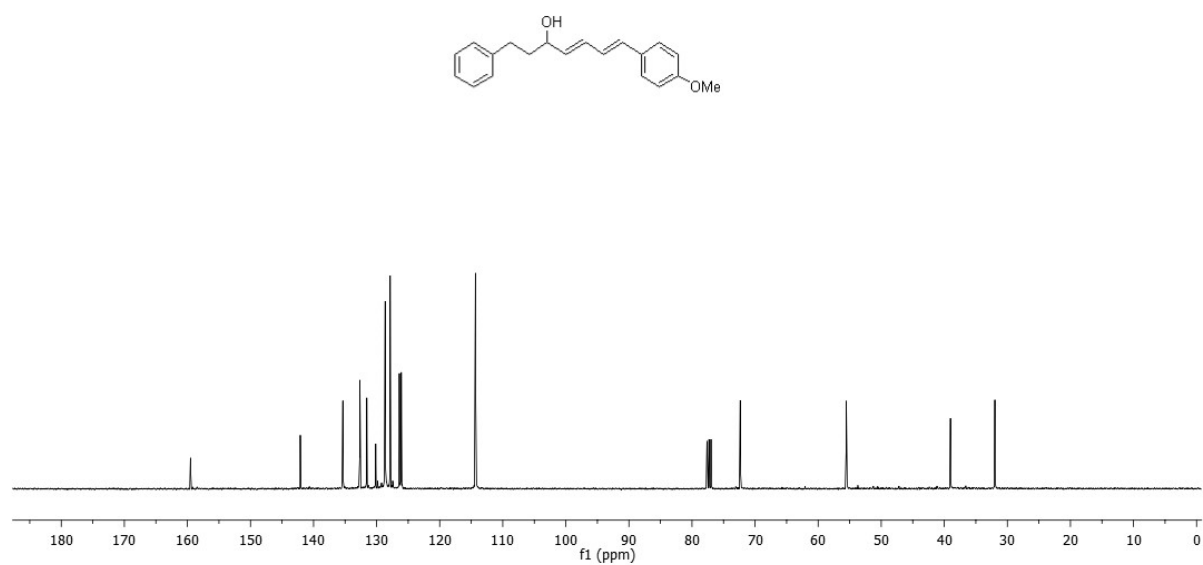




**Figure S8:** <sup>13</sup>C-NMR (100 MHz, CDCl<sub>3</sub>) Spectrum of **11** (4*E*,6*E*)-7-(4-methoxyphenyl)-1-phenylhepta-4,6-dien-3-one



**Figure S9:** <sup>1</sup>H-NMR (400 MHz, CDCl<sub>3</sub>) Spectrum of **12** (4*E*,6*E*)-7-(4-methoxyphenyl)-1-phenylhepta-4,6-dien-3-ol



**Figure 10:** <sup>13</sup>C-NMR (100 MHz, CDCl<sub>3</sub>) Spectrum of **12** (4*E*,6*E*)-7-(4-methoxyphenyl)-1-phenylhepta-4,6-dien-3-ol