

**CHEMPLUSCHEM**

## Supporting Information

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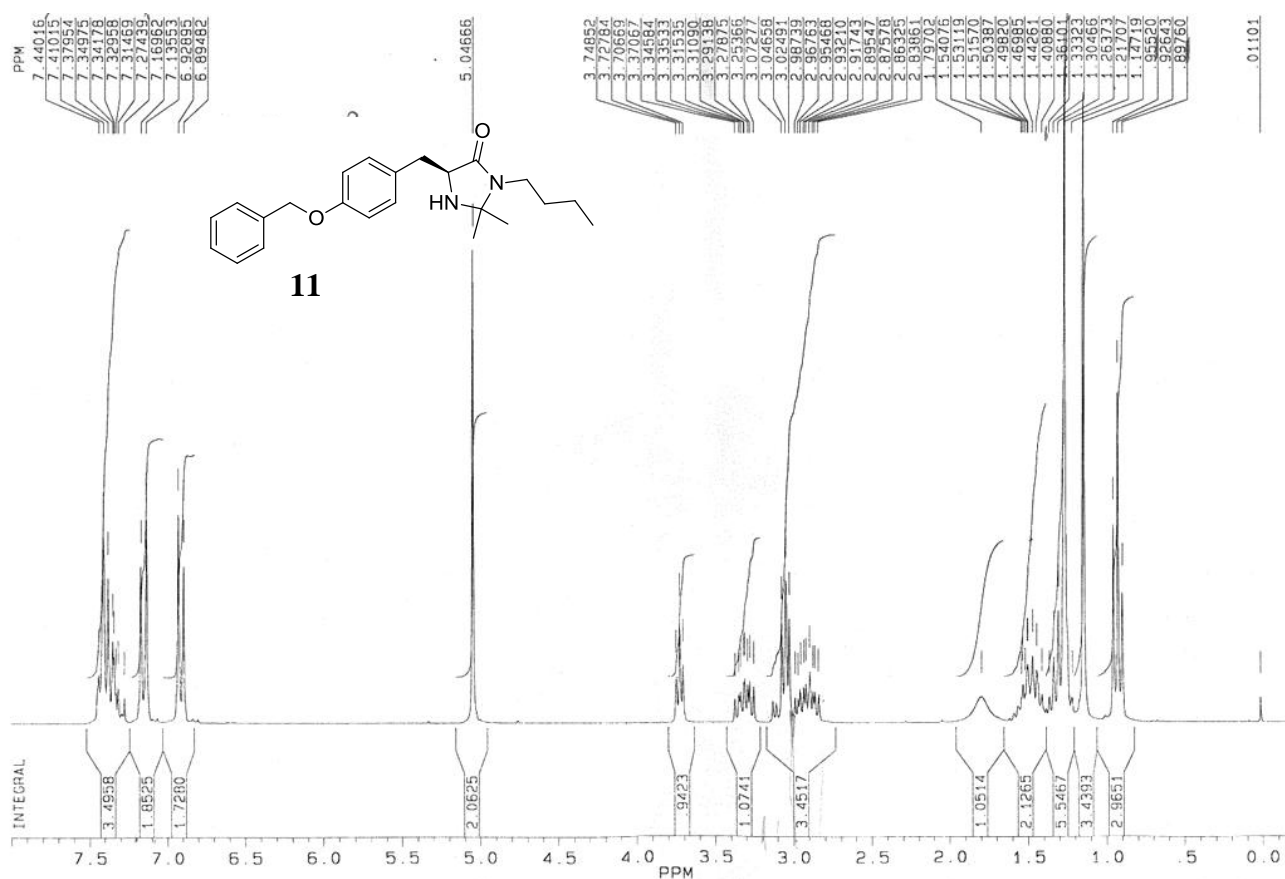
### **Recyclable Heterogeneous and Low-Loading Homogeneous Chiral Imidazolidinone Catalysts for $\alpha$ -Alkylation of Aldehydes**

Anna Maria Pia Salvo, Francesco Giacalone, Renato Noto, and Michelangelo Gruttadauria<sup>\*[a]</sup>

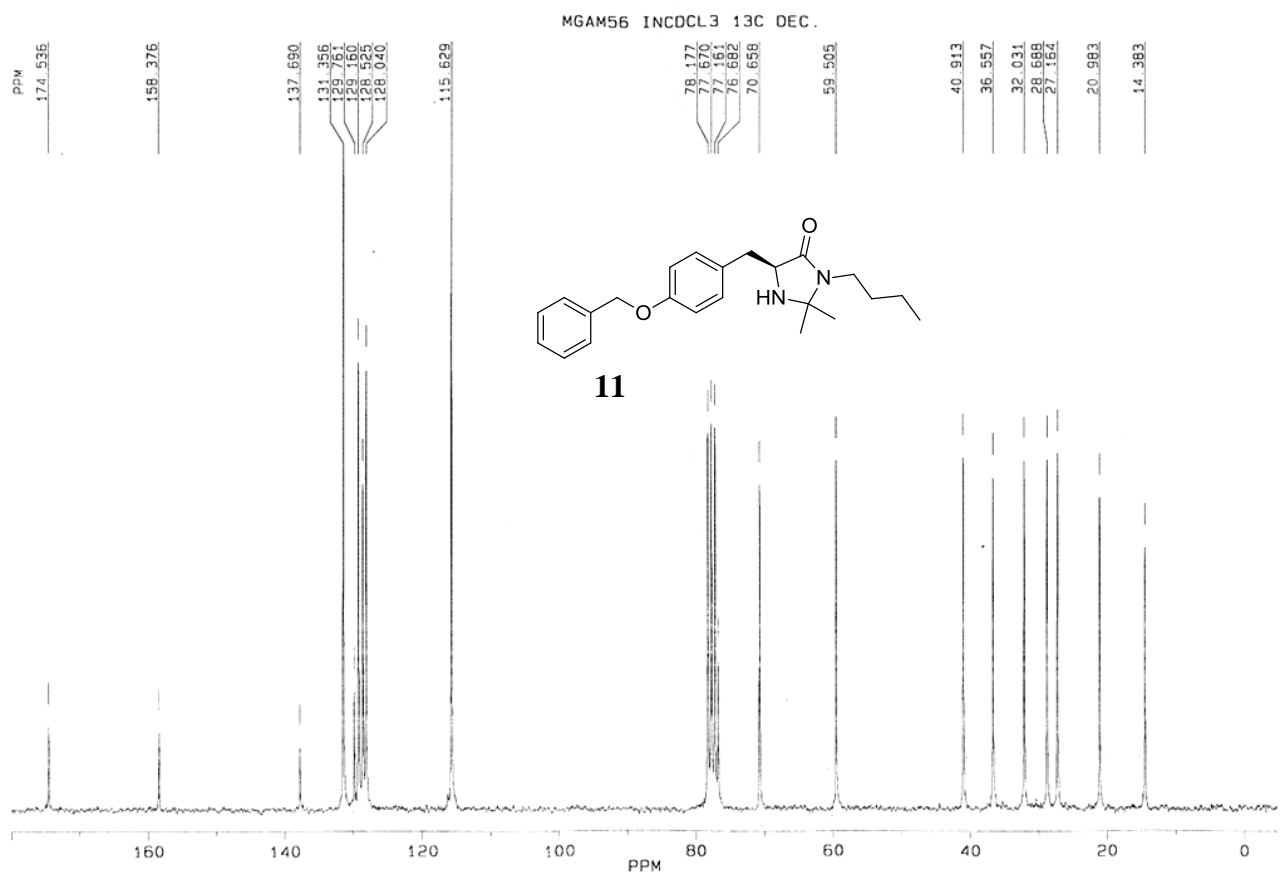
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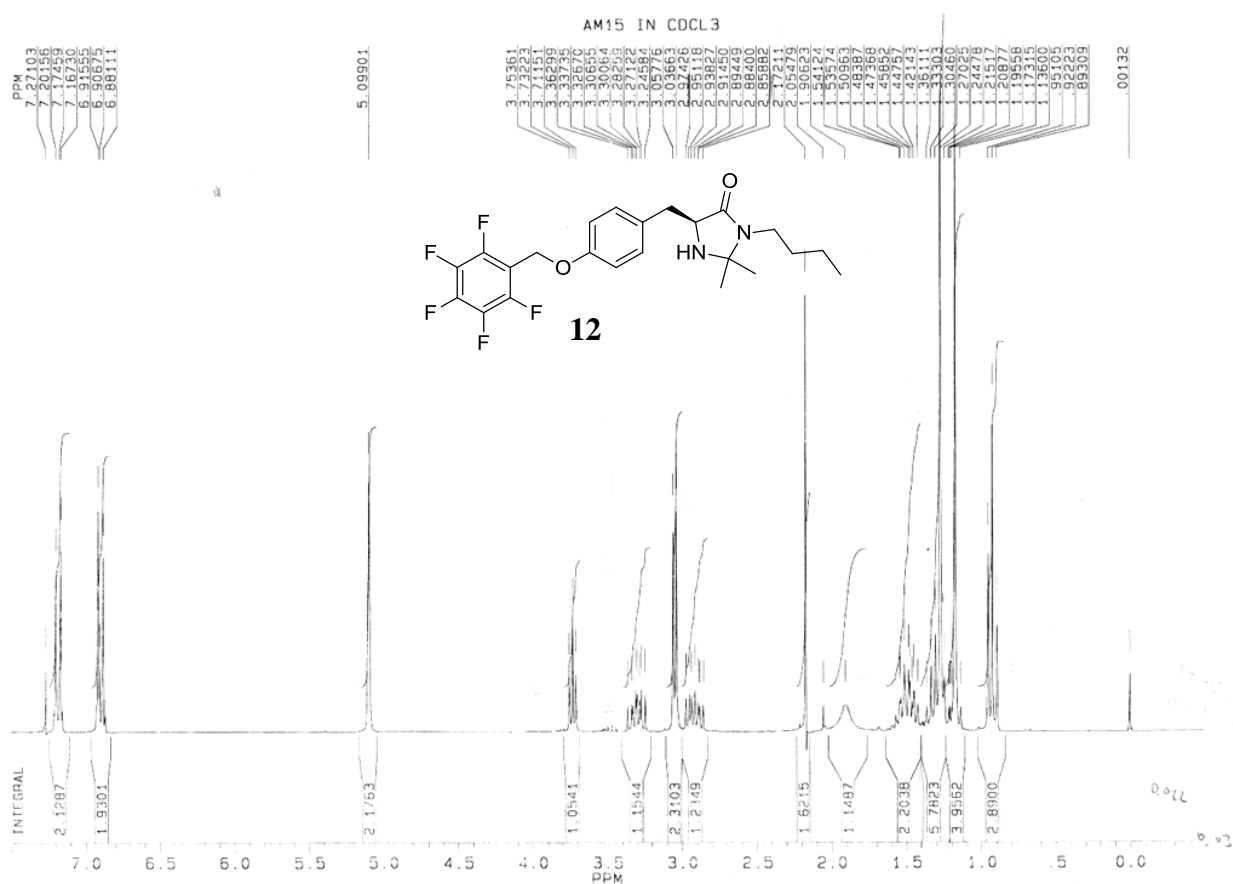
- $^1\text{H}$  and  $^{13}\text{C}$  NMR and IR spectra of catalysts **11-14**
- $^1\text{H}$  NMR spectra of known compounds **3** and **9**
- $^1\text{H}$  and  $^{13}\text{C}$  NMR and IR spectra of compound **8**
- HPLC of products **3, 8** and **9**



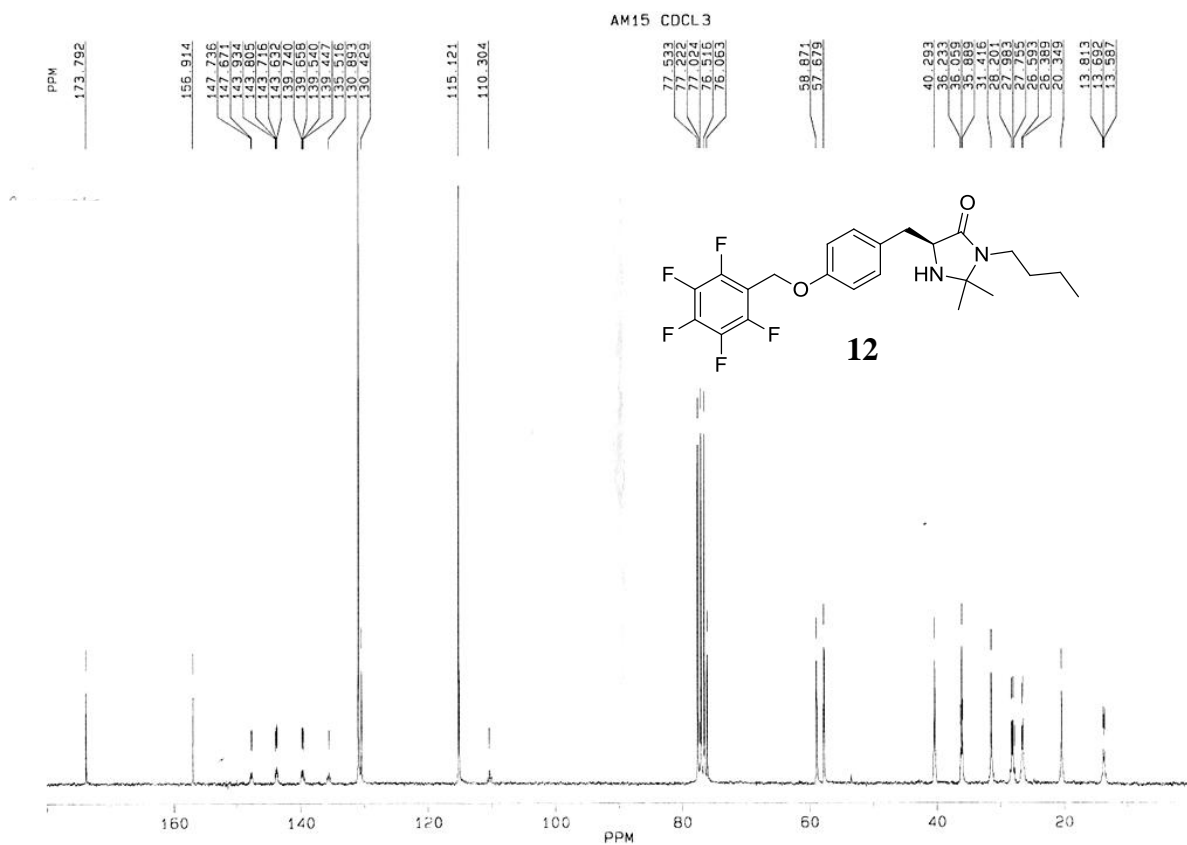
**Figure S1.** <sup>1</sup>H NMR spectrum of compound 11.

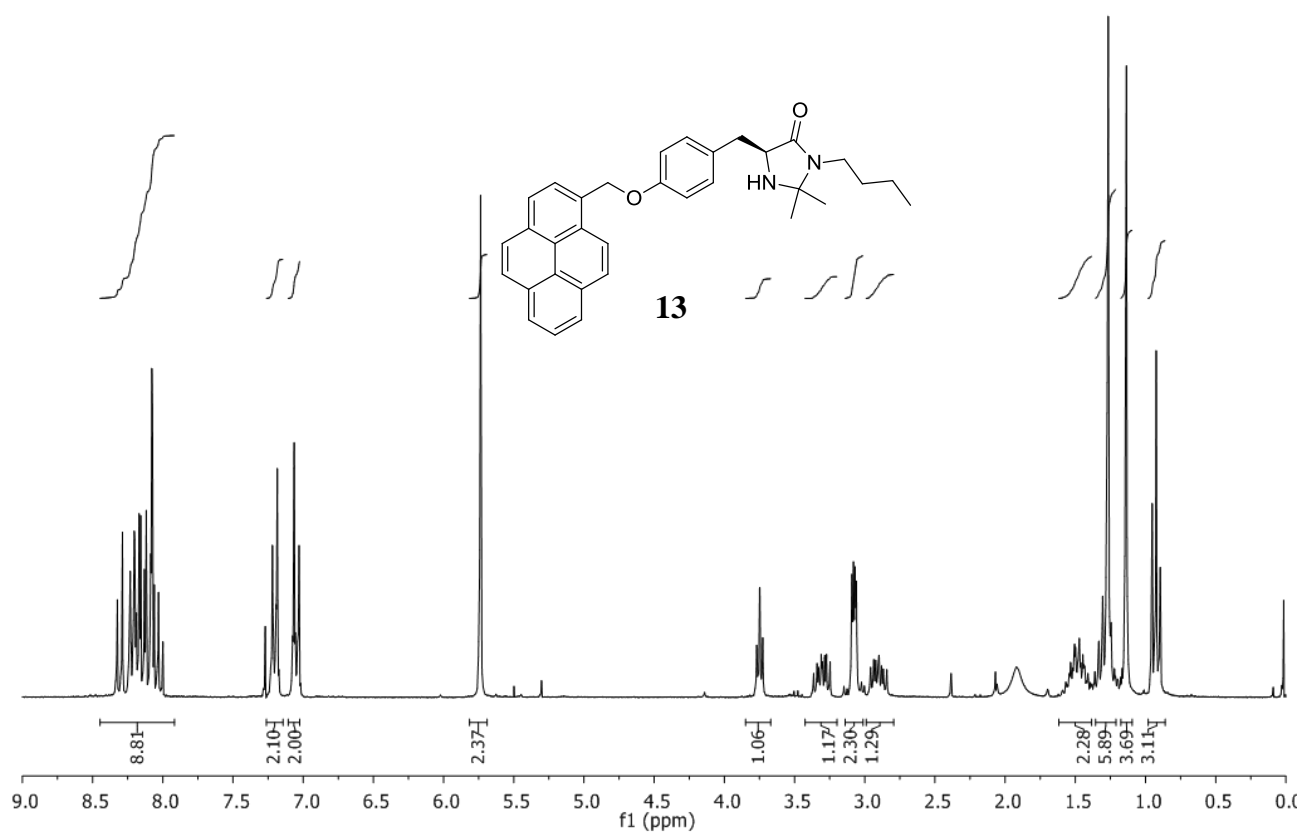


**Figure S2.** <sup>13</sup>C NMR spectrum of compound 11.

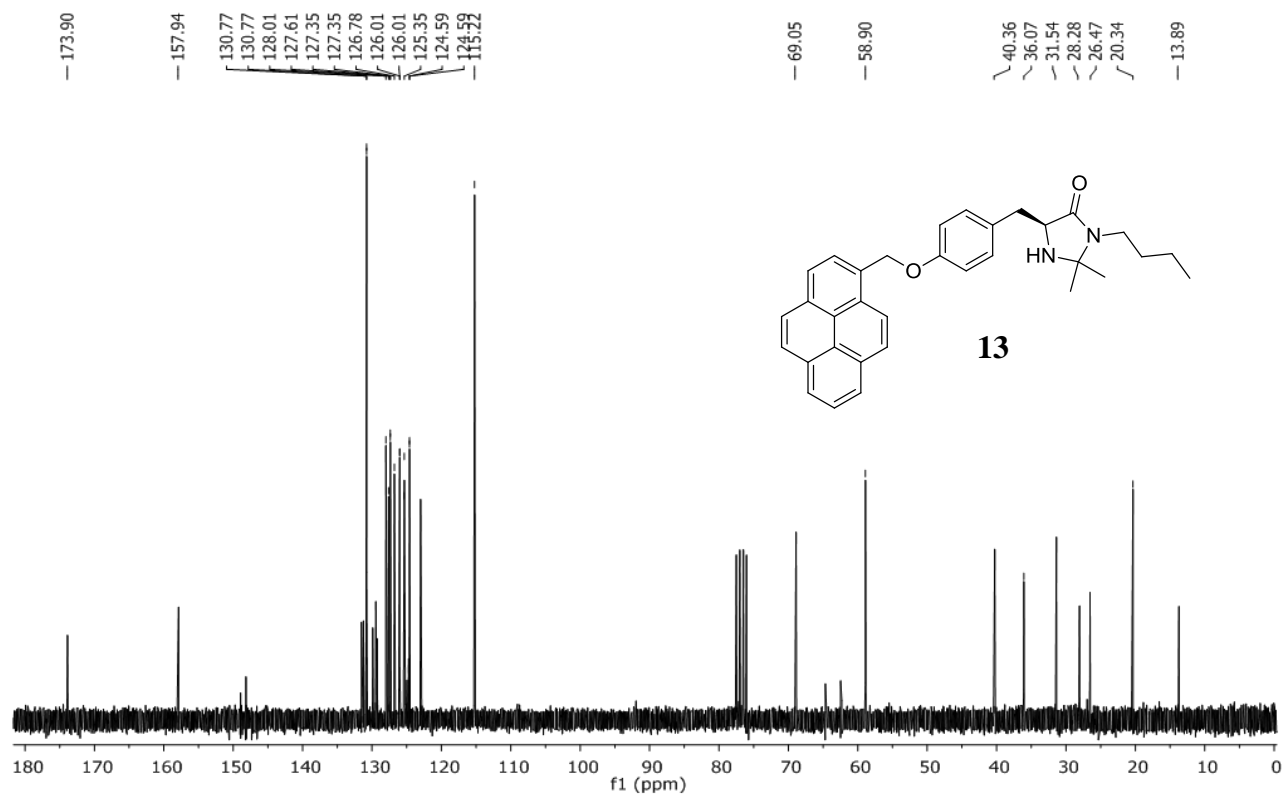


**Figure S3.** <sup>1</sup>H NMR spectrum of compound **12**.

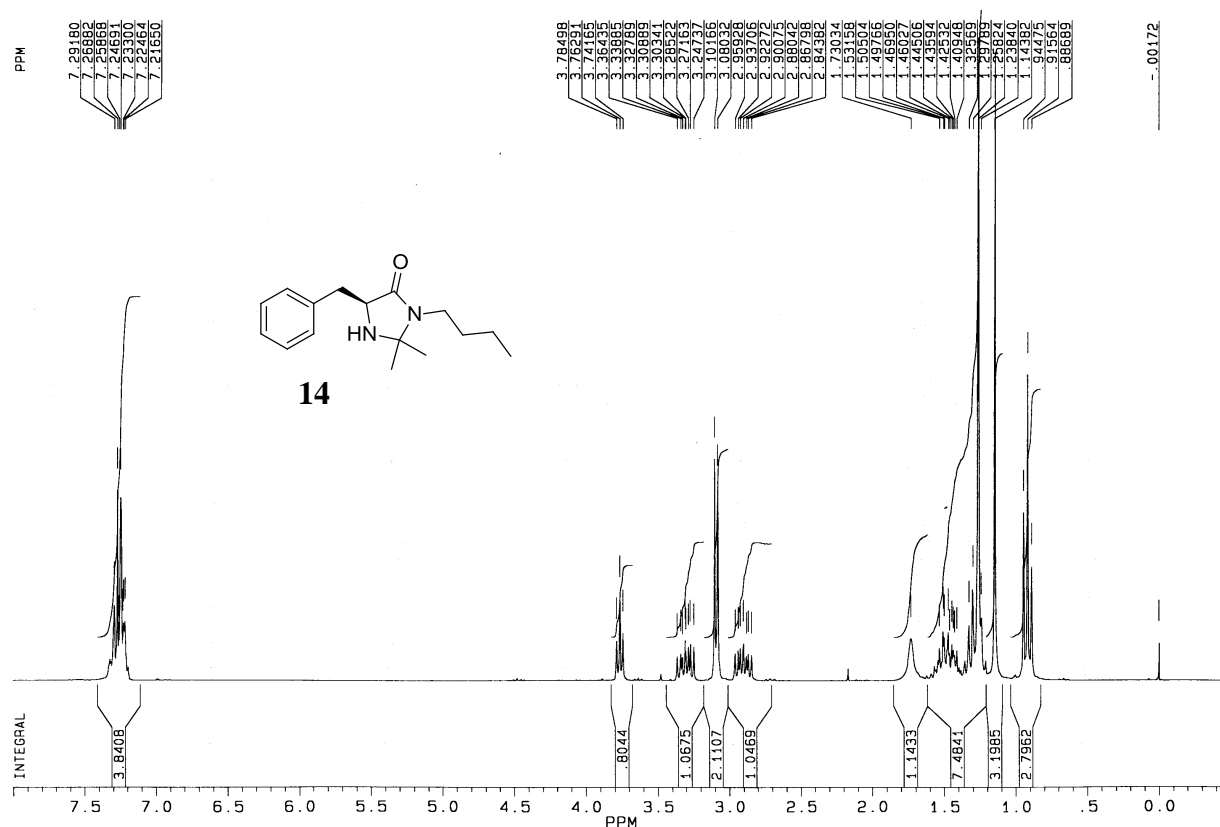


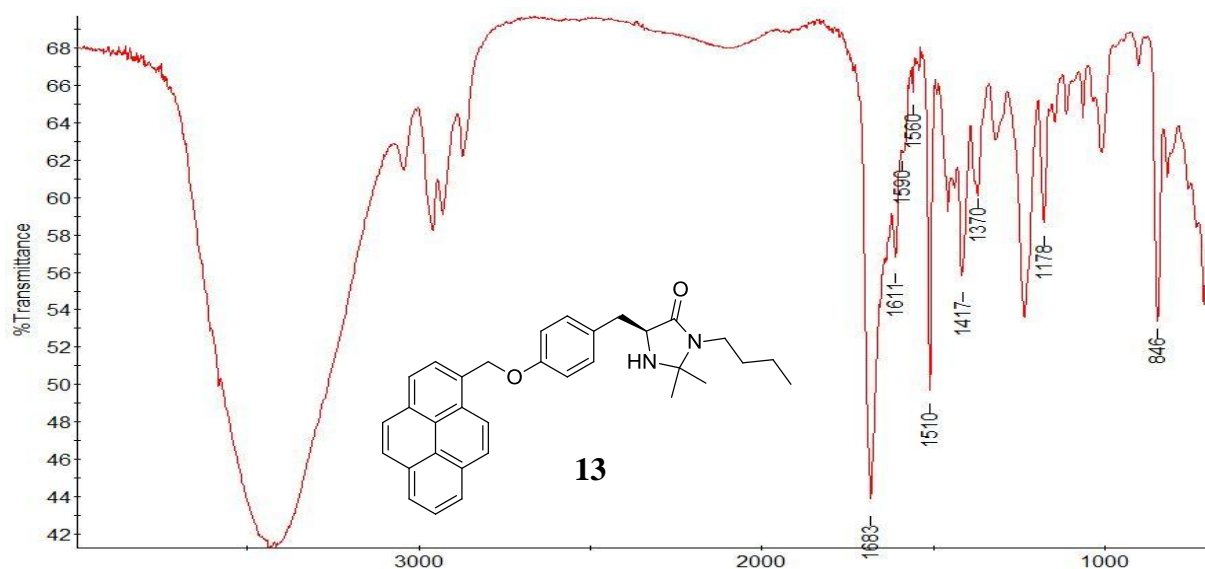
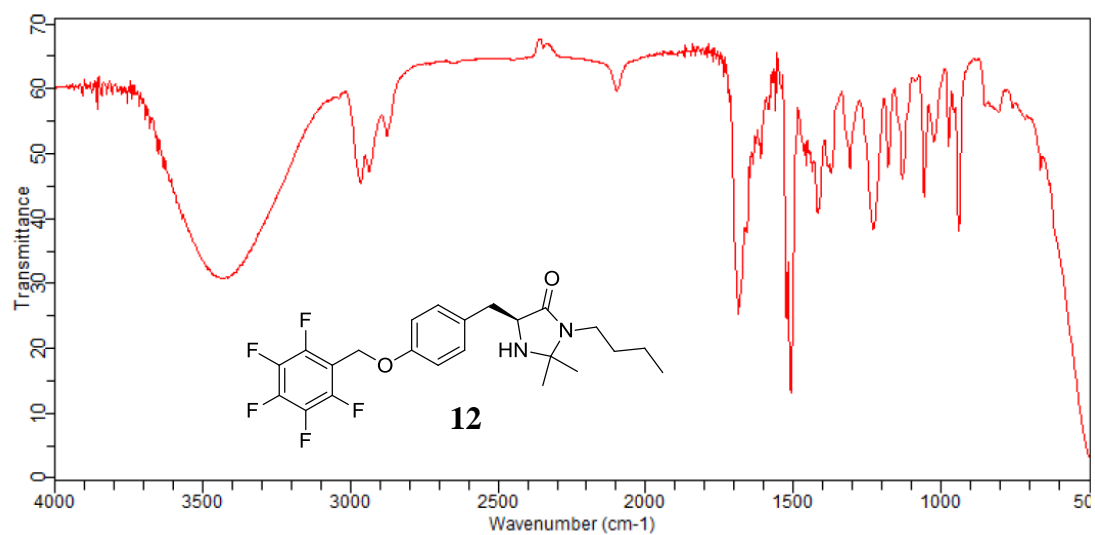
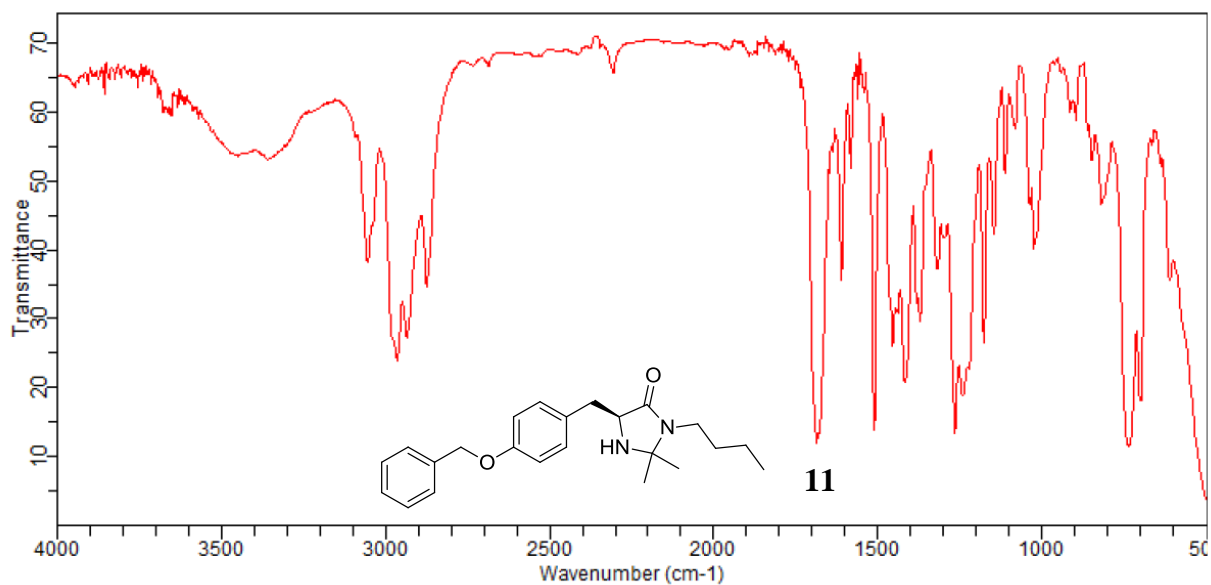


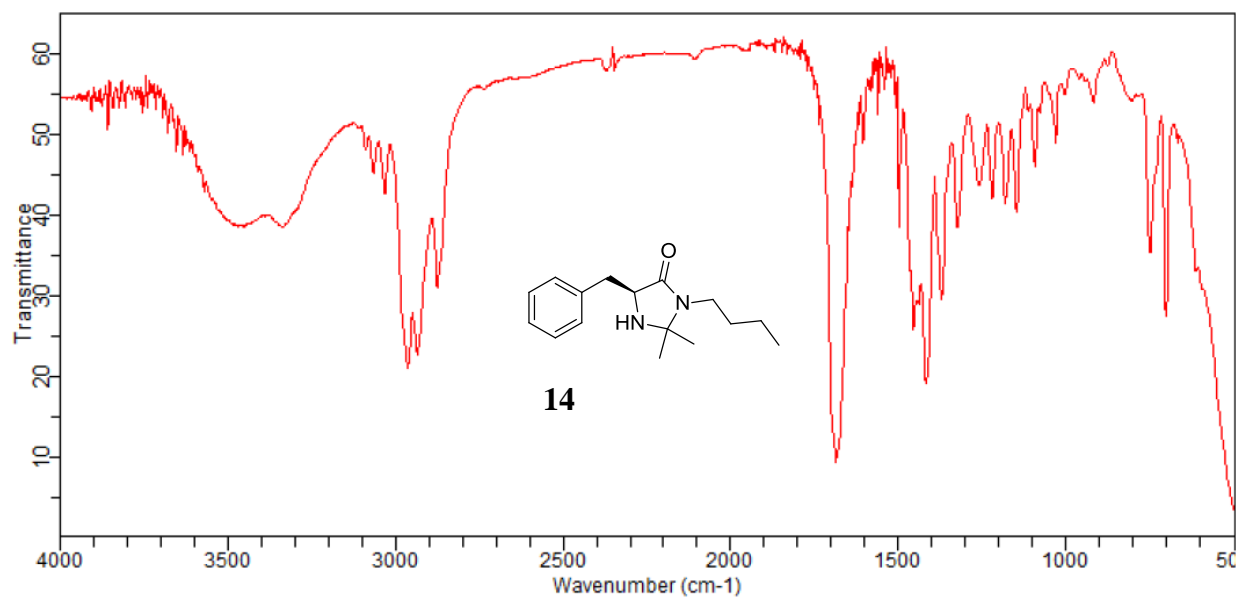
**Figure S5.** <sup>1</sup>H NMR spectrum of compound **13**.



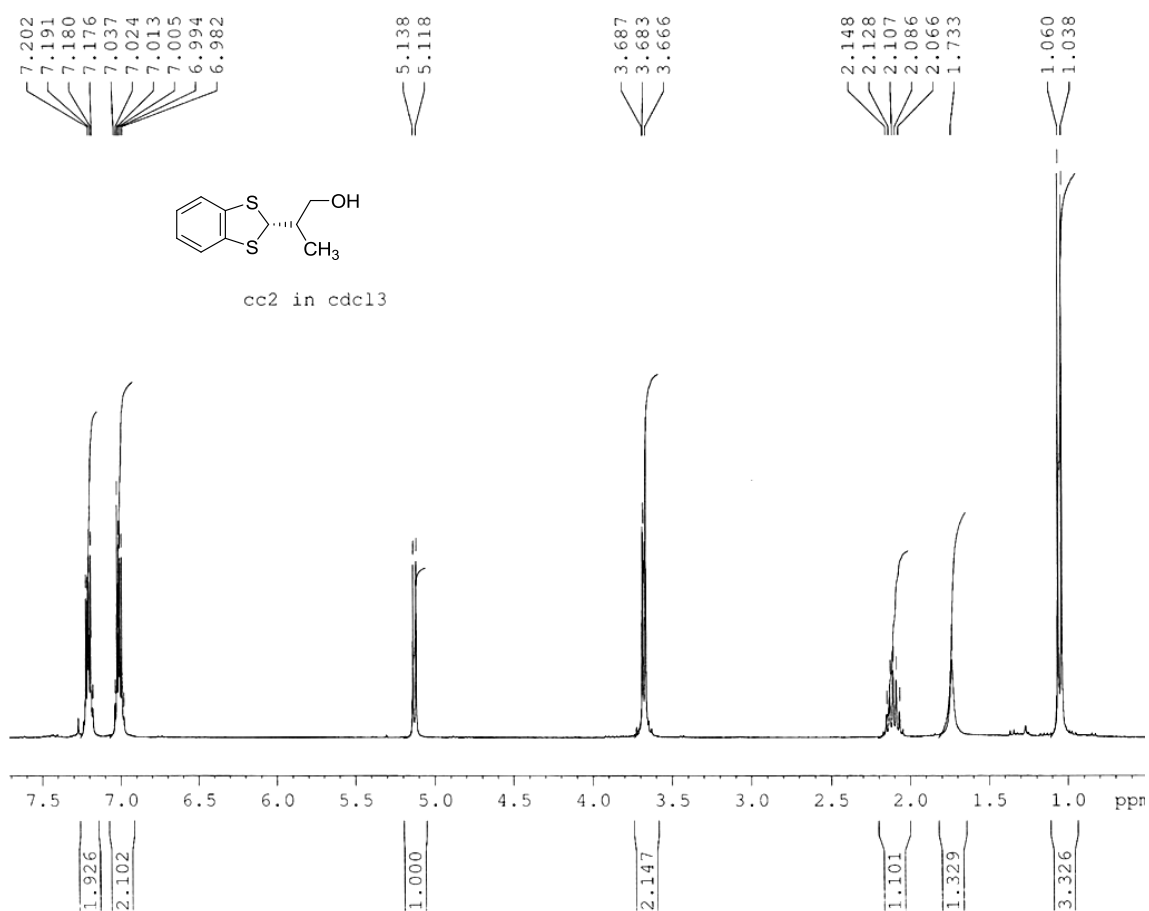
**Figure S6.** <sup>13</sup>C NMR spectrum of compound **13**.





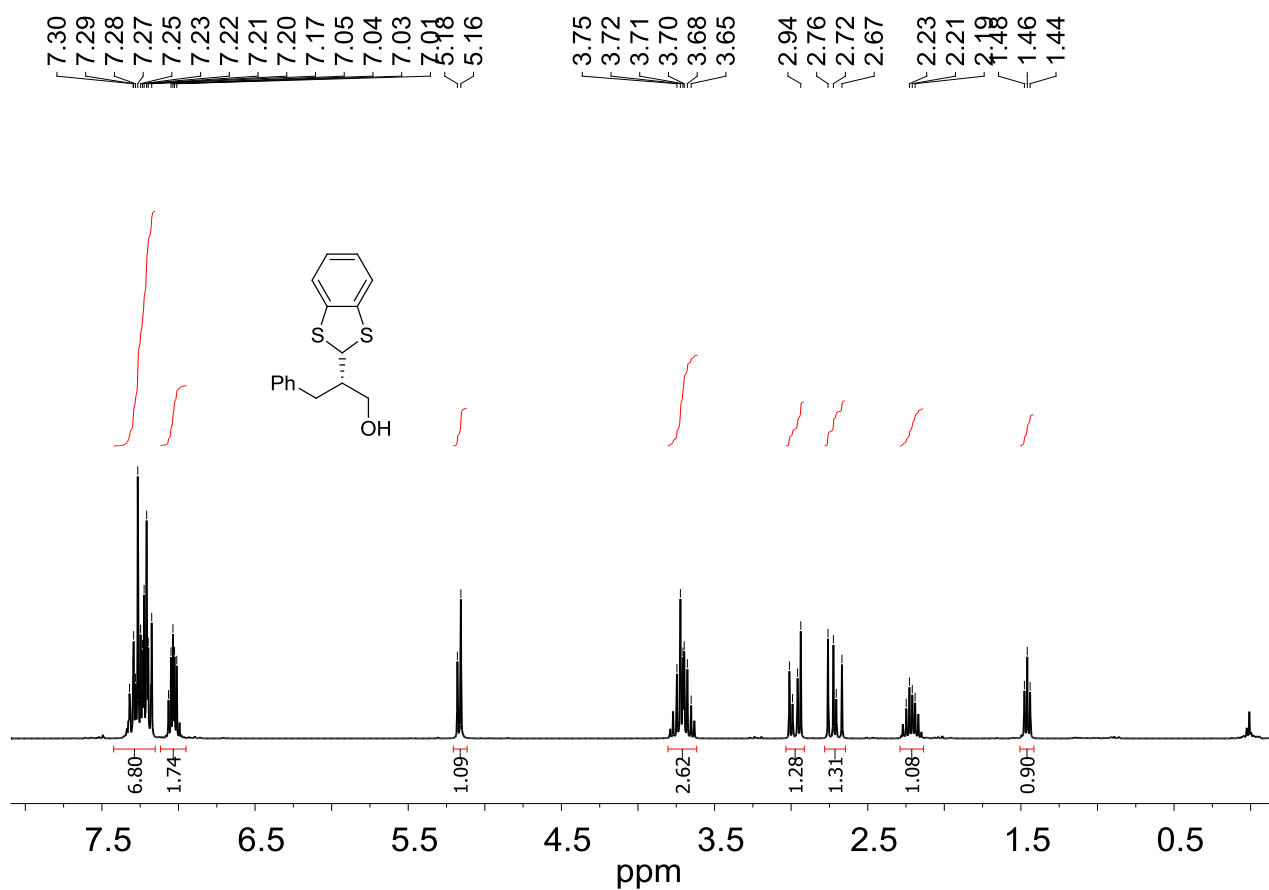


**Figure S9.** IR spectra of compounds **11-14**.

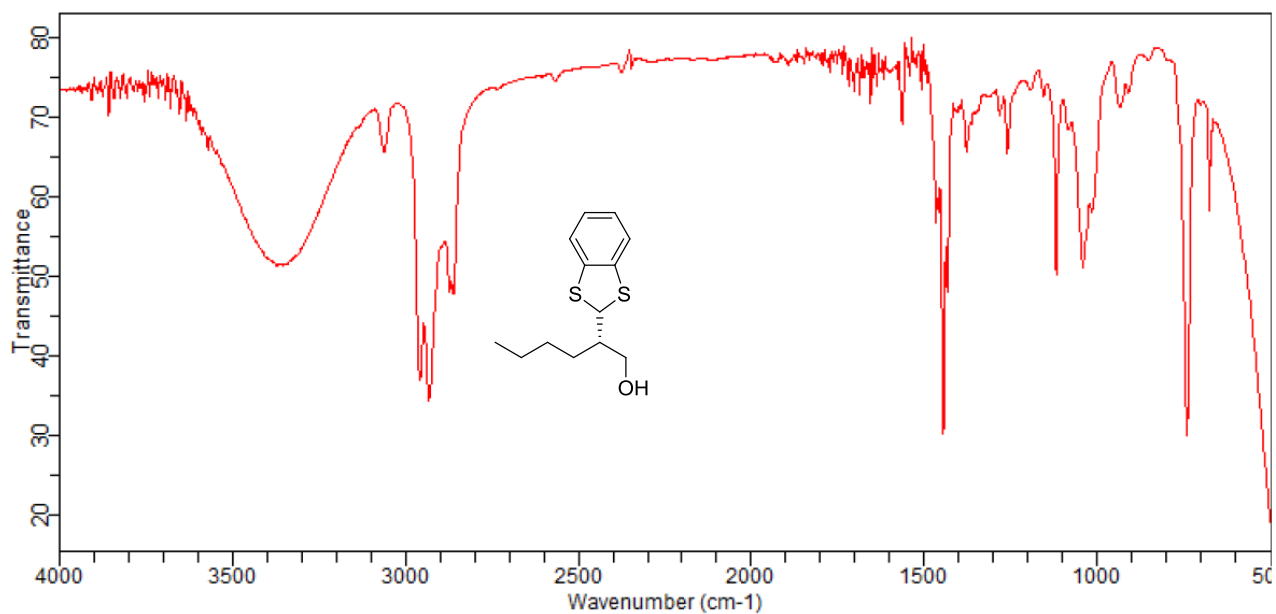


**Figure S10.**  $^1\text{H}$  NMR spectrum of compound **3**.



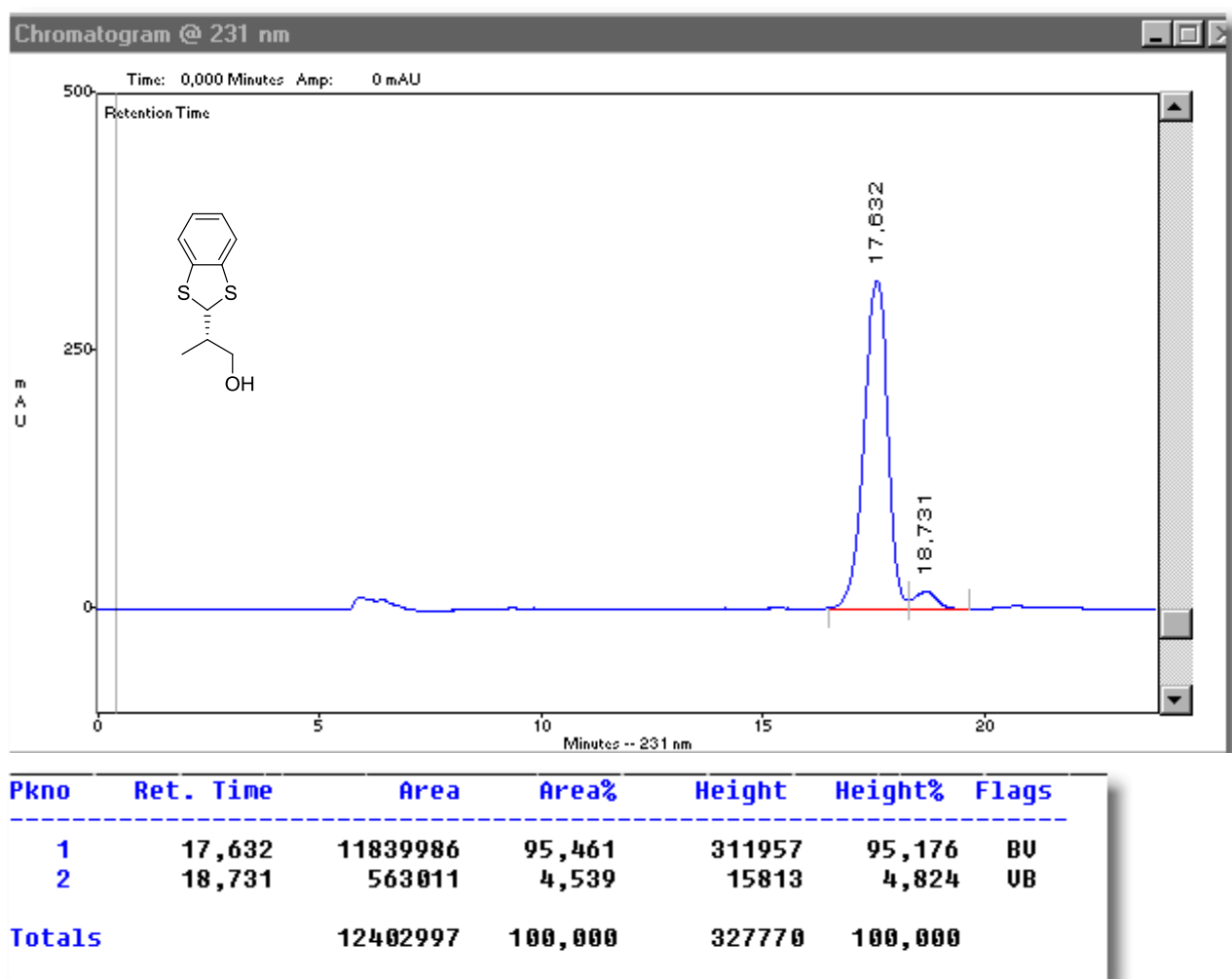


**Figure S11.** <sup>1</sup>H NMR spectrum of compound **9**.

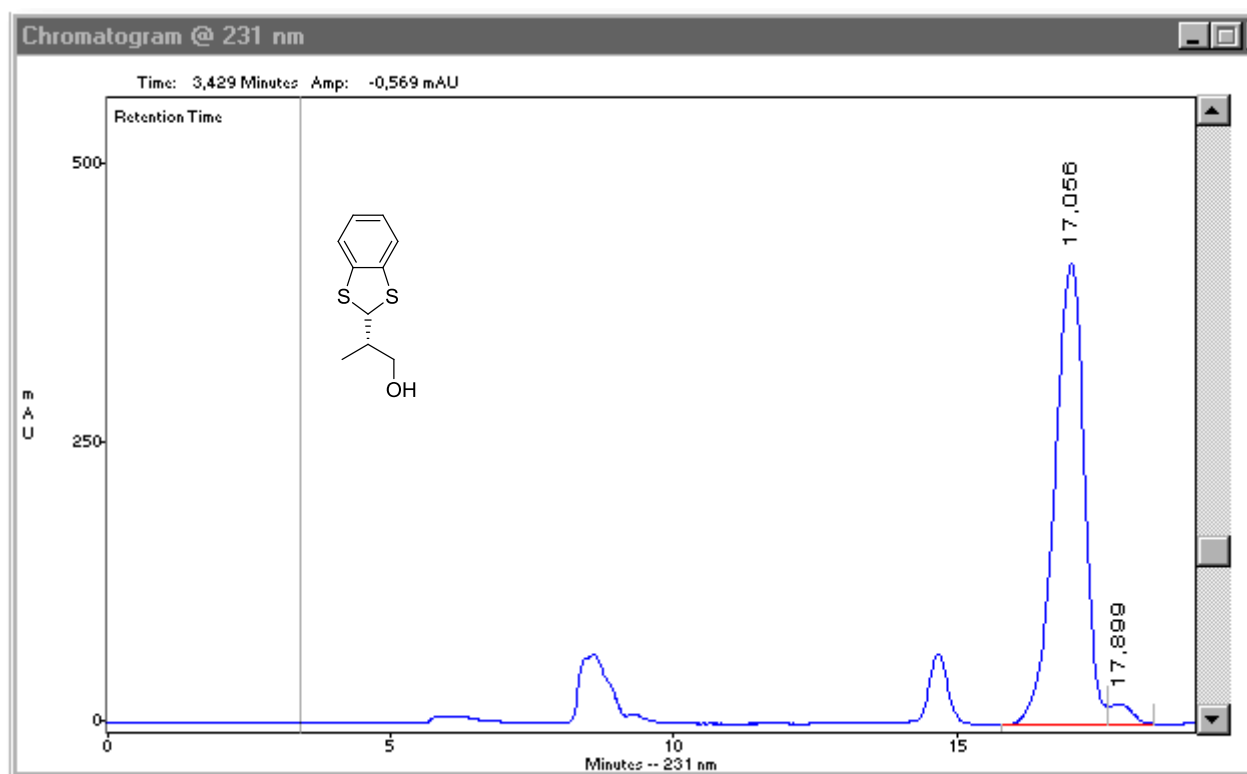


**Figure S12.** IR spectrum of compound **8**.



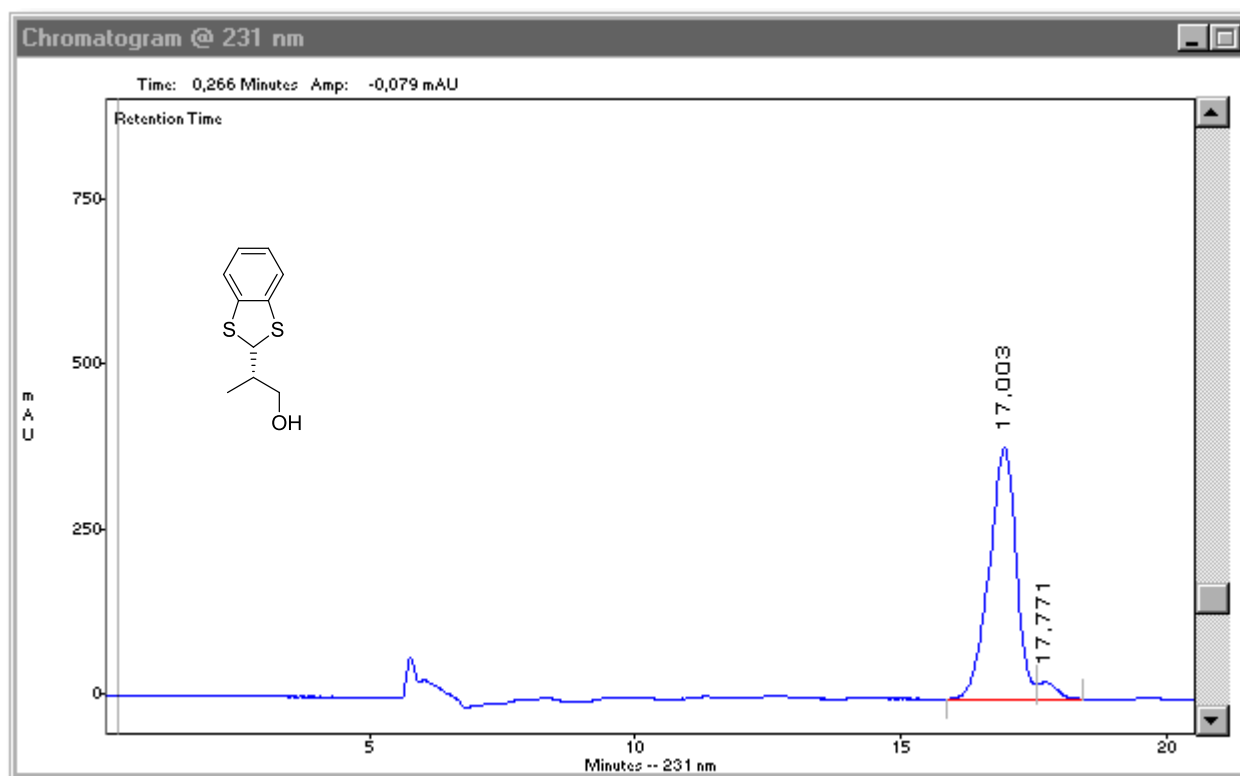


**Figure S15.** Chromatogram of (*S*)-2-(benzo[d][1,3]dithiol-2-yl)propan-1-ol (**3**) obtained with catalyst **14** (Table 3, entry 10).



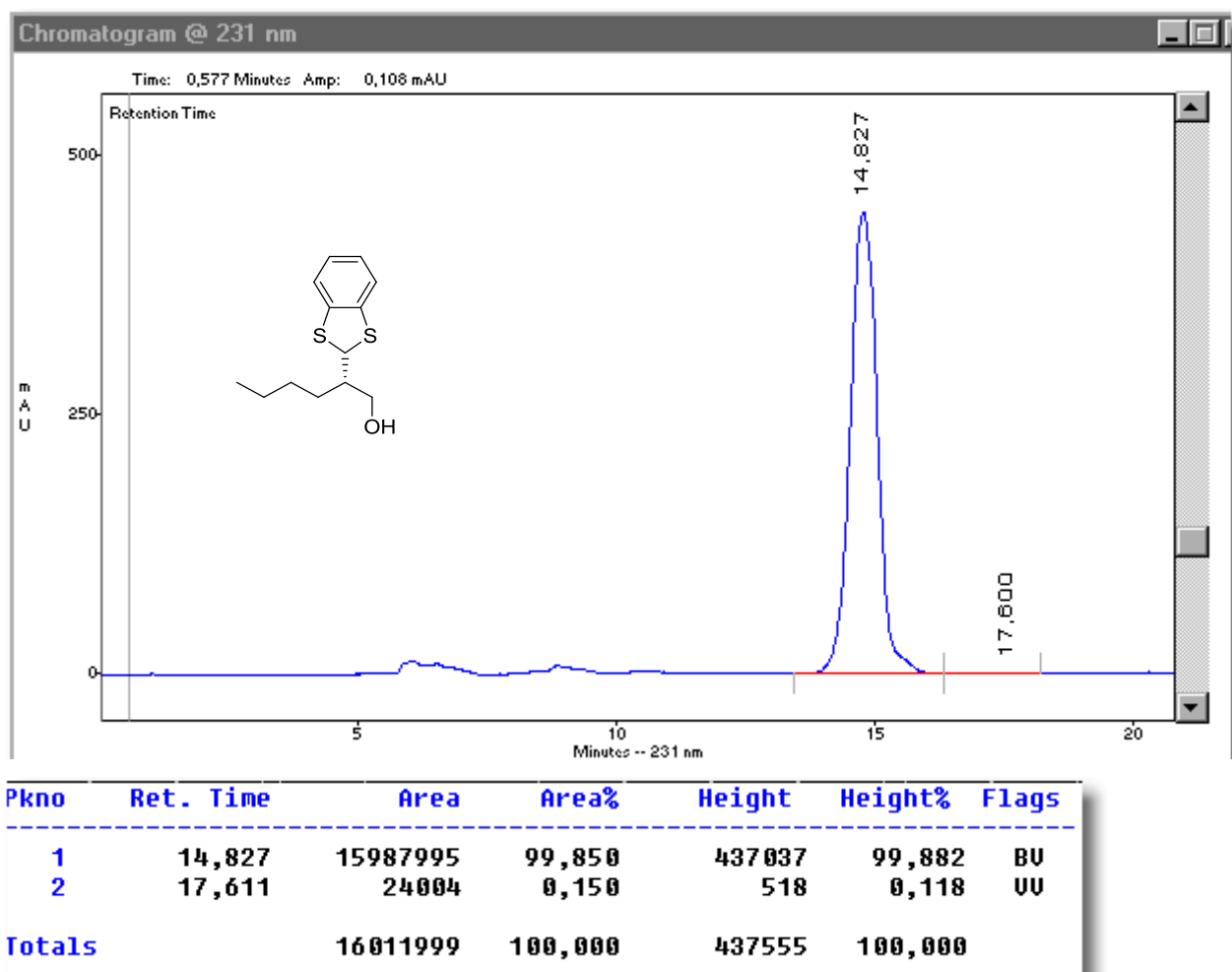
Pkno	Ret. Time	Area	Area%	Height	Height%	Flags
1	17,056	14737754	96,869	404159	95,871	BU
2	17,899	476419	3,131	17408	4,129	UI
<b>Totals</b>		<b>15214173</b>	<b>100,000</b>	<b>421567</b>	<b>100,000</b>	

**Figure S16.** Chromatogram of (*S*)-2-(benzo[d][1,3]dithiol-2-yl)propan-1-ol (**3**) obtained with catalyst **13** (5 mol%) (Table 4, entry 9).

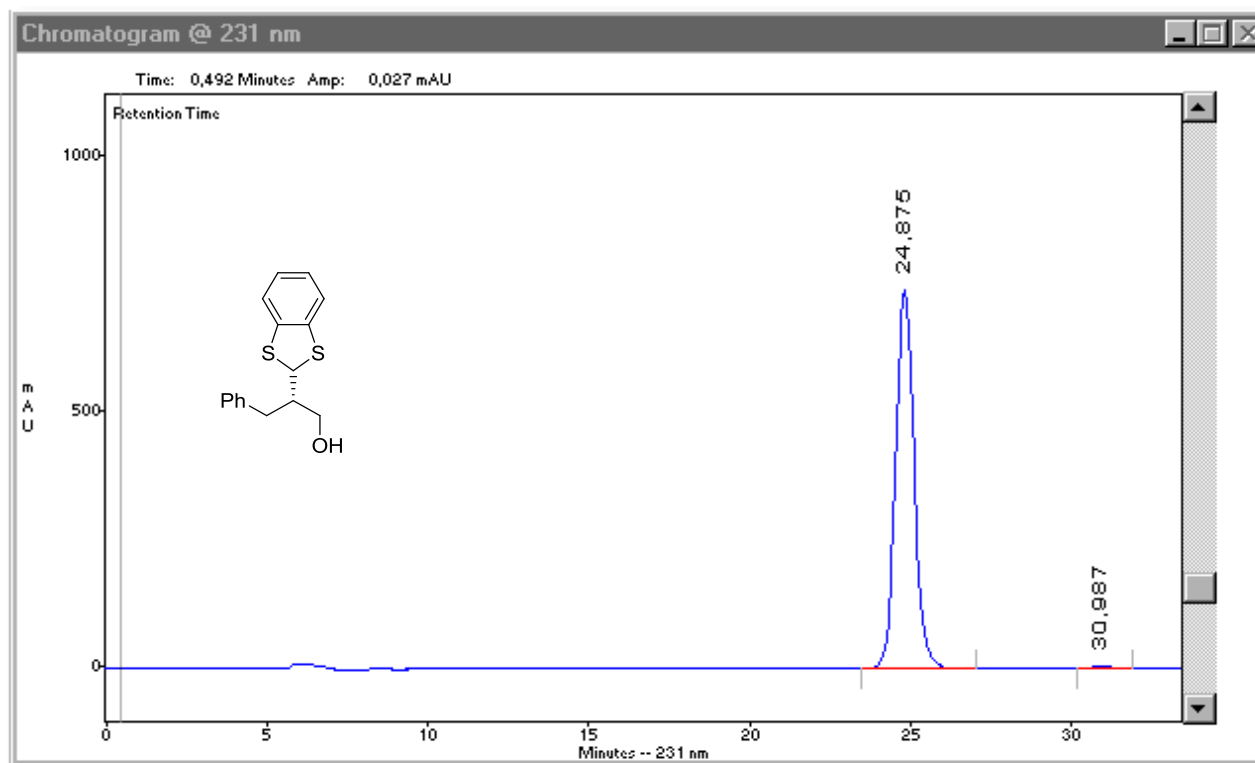


Pkno	Ret. Time	Area	Area%	Height	Height%	Flags
1	17,003	13243338	95,774	374262	93,888	BS
2	17,771	584373	4,226	24365	6,112	SI
<b>Totals</b>		<b>13827711</b>	<b>100,000</b>	<b>398627</b>	<b>100,000</b>	

**Figure S17.** Chromatogram of (S)-2-(benzo[d][1,3]dithiol-2-yl)propan-1-ol (**3**) obtained with catalyst **13** (20 mol%) (Table 4, entry 8).



**Figure S18.** Chromatogram of (S)-2-(benzo[d][1,3]dithiol-2-yl)hexan-1-ol (**8**) obtained with catalyst **13** (Table 4, entry 15).



Pkno	Ret. Time	Area	Area%	Height	Height%	Flags
1	24.885	29219282	99.226	729239	99.263	BU
2	30.987	228009	0.774	5414	0.737	BI
<b>Totals</b>		<b>29447292</b>	<b>100.000</b>	<b>734653</b>	<b>100.000</b>	

**Figure S19.** Chromatogram of (S)-2-(benzo[d][1,3]dithiol-2-yl)-3-phenylpropan-1-ol (**9**) obtained with catalyst **13** (Table 4, entry 16).