Electronic Supplementary Information for Dalton Transactions

A Linear Triplatinum Tetrahydride Complex Featuring two Pt-Pt bonds

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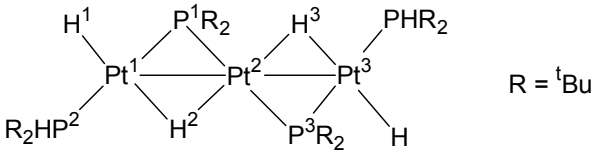
Electronic Supplementary Information



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ISOTOPOLOGUES

A	**Pt–Pt–Pt**	**29.0 %**
B	**^{195}Pt–Pt–Pt**	**29.6 %**
C	**Pt–^{195}Pt–Pt**	**14.8 %**
D	**^{195}Pt–^{195}Pt–Pt**	**15.1 %**
E	**^{195}Pt–Pt–^{195}Pt**	**7.5 %**
F	**^{195}Pt–^{195}Pt–^{195}Pt**	**3.9 %**

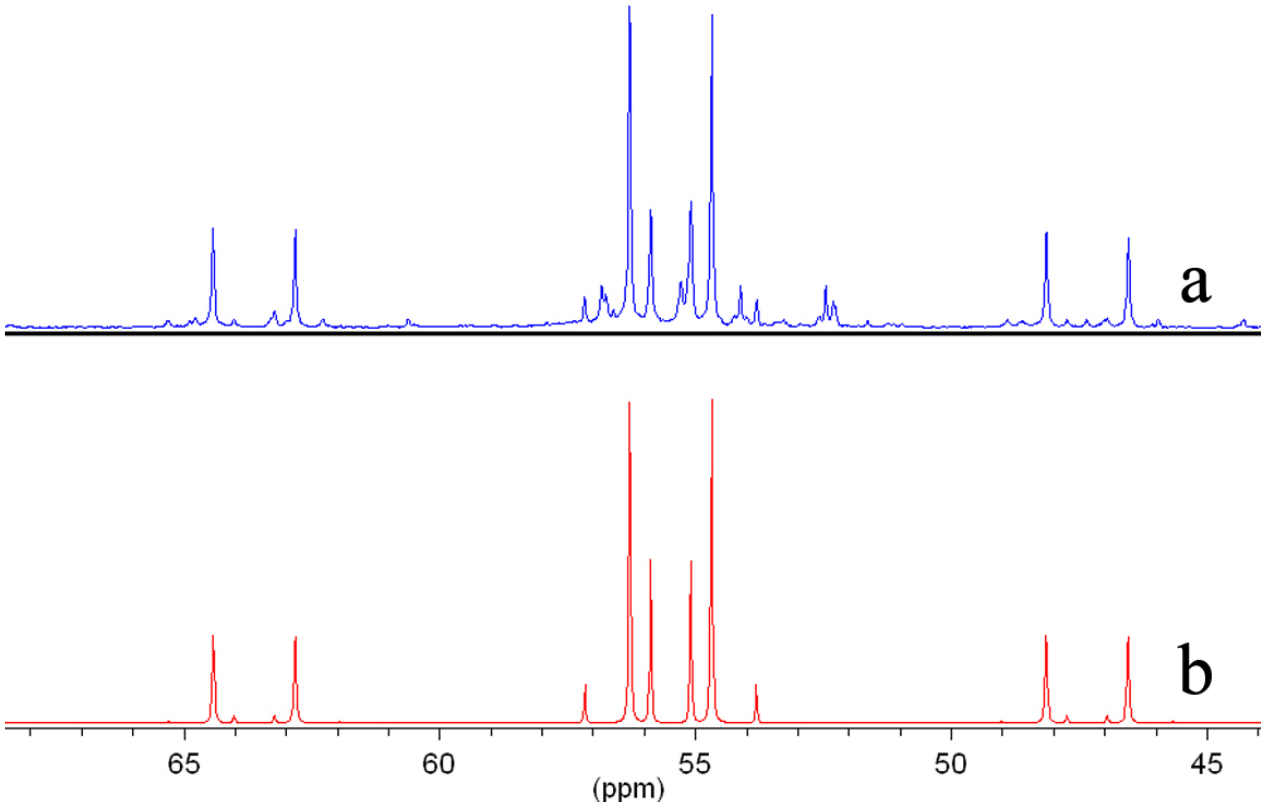


Figure S1. $^{31}P\{^{1}H\}$ NMR spectrum of **3** in the P^2 region: (a) experimental (C_6D_6, 295 K); (b) calculated considering all isotopologues using the WINDAISY software.

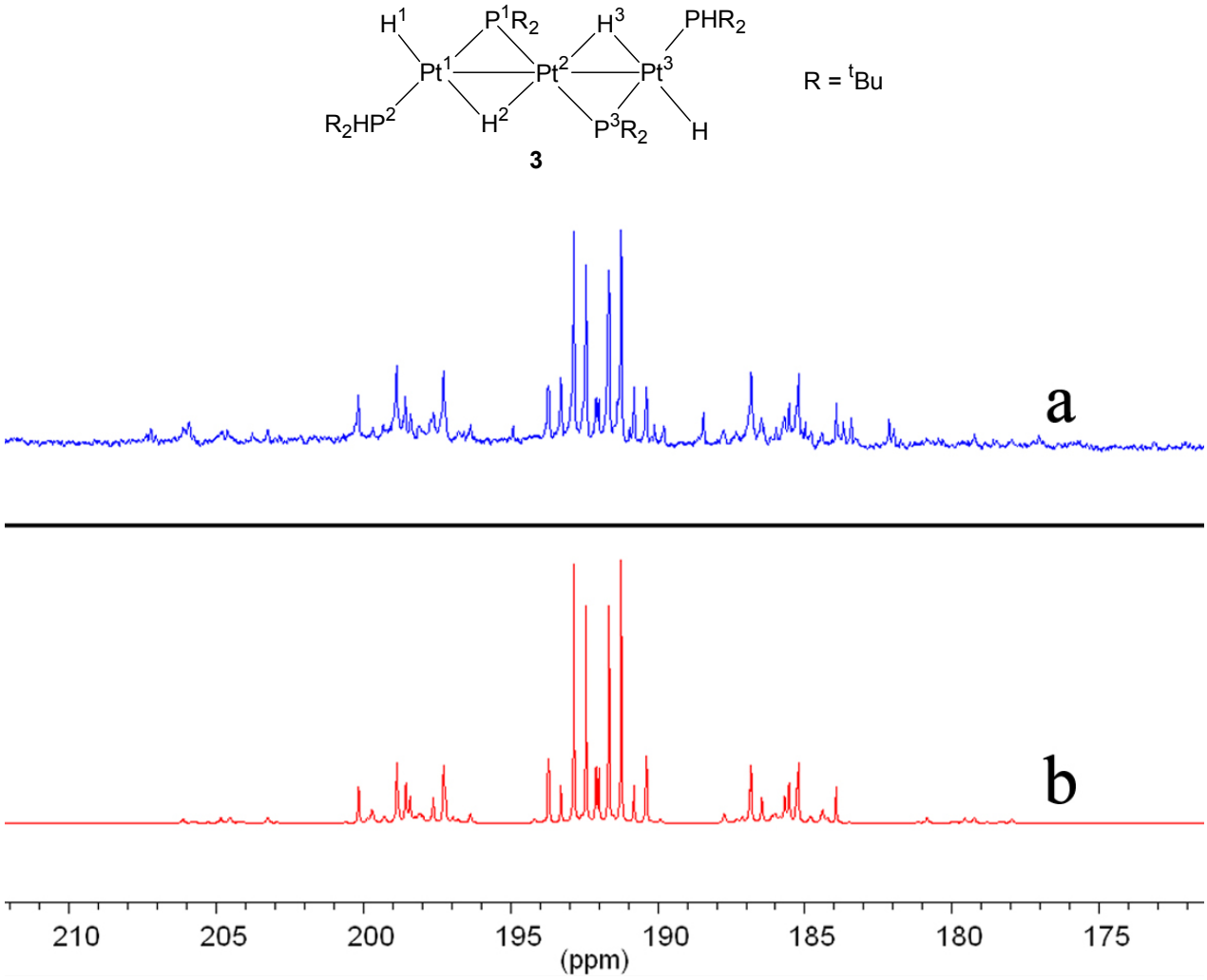
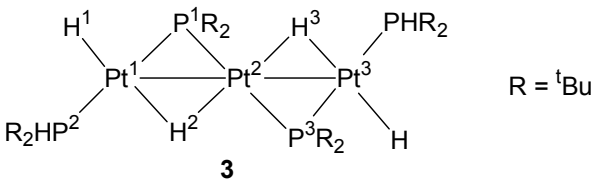


Figure S2. $^{31}P\{^{1}H\}$ NMR spectrum of **3** in the phosphanide region: (a) experimental (C_6D_6, 295 K); (b) calculated considering all isotopologues using the WINDAISY software.



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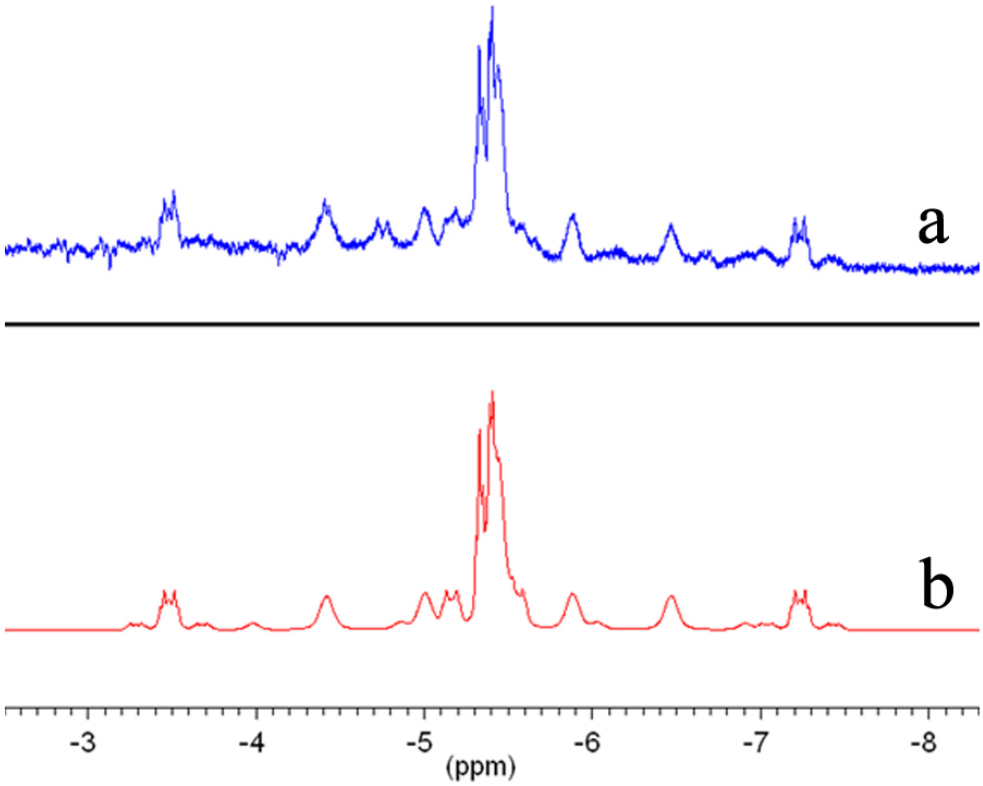
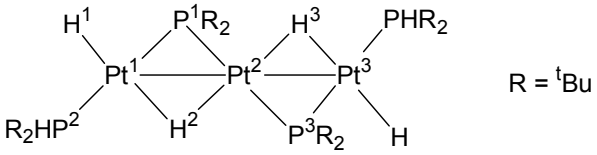


Figure S3. Portion of the ^{1}H NMR spectrum of **3** in the hydride region: (a) experimental (C_6D_6, 295 K); (b) calculated considering isotopologues **A**, **B**, **C**, **D** and **E** using the WINDAISY software.



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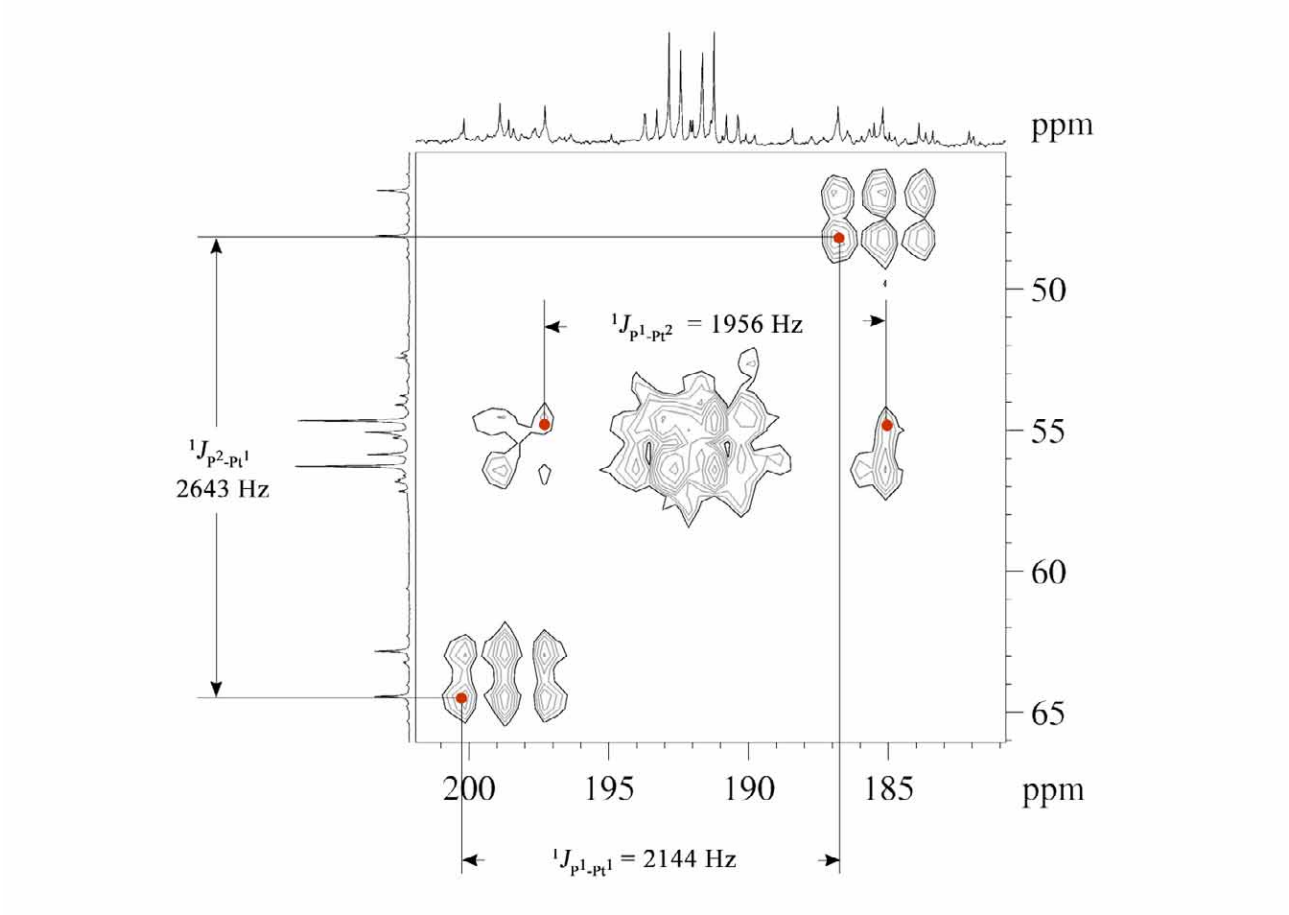
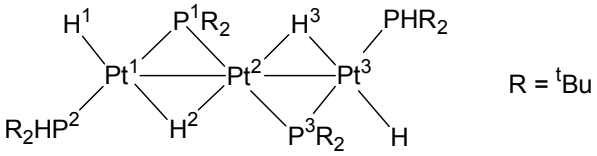


Figure S4:Cross peaks of the $^{31}P\{^{1}H\}$-COSY spectrum (C_6D_6, 295 K) of **3**.



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R = ^{t}Bu

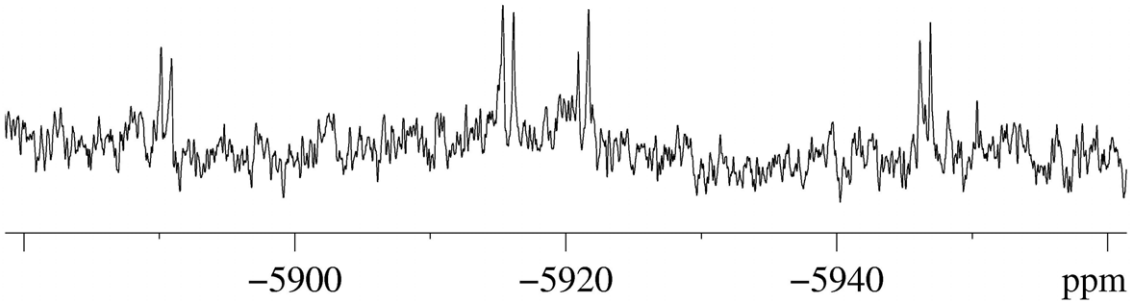
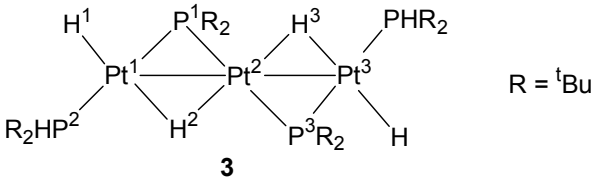


Figure S5: $^{195}Pt\{^{1}H\}$ NMR spectrum (C_6D_6, 295 K) of **3** in the region of $Pt^{1/3}$



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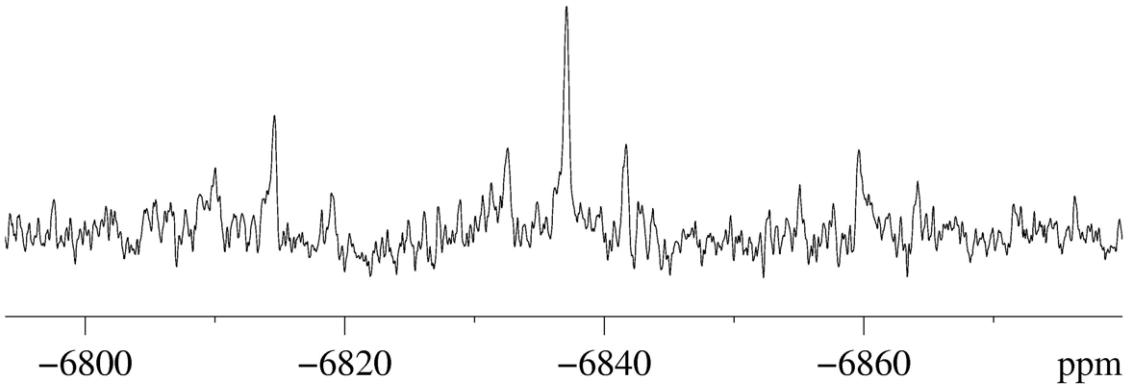

Figure S6: $^{195}Pt\{^{1}H\}$ NMR spectrum (C_6D_6, 295 K) of **3** in the region of Pt^2.

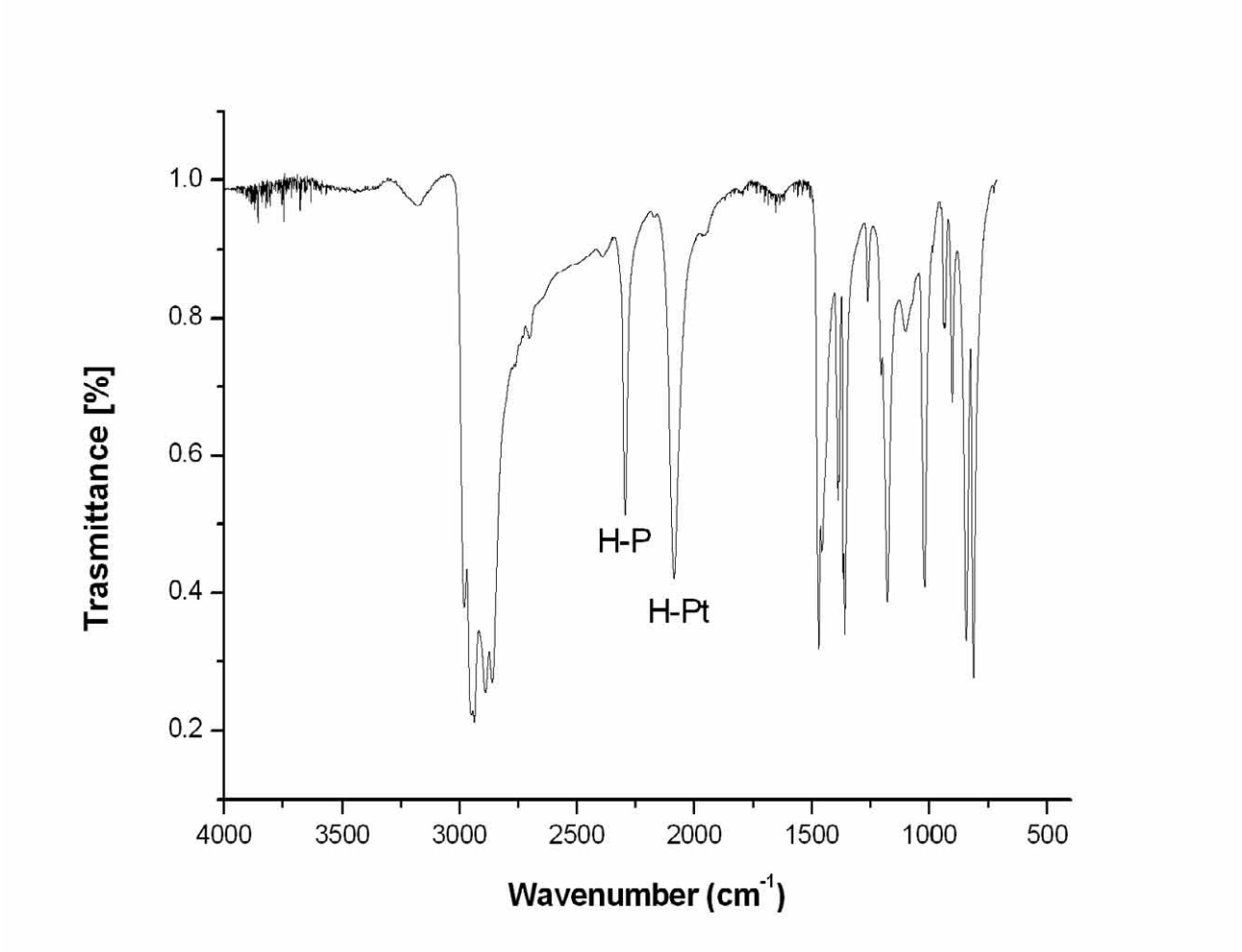

Figure S7. IR spectrum of **3** (KBr)

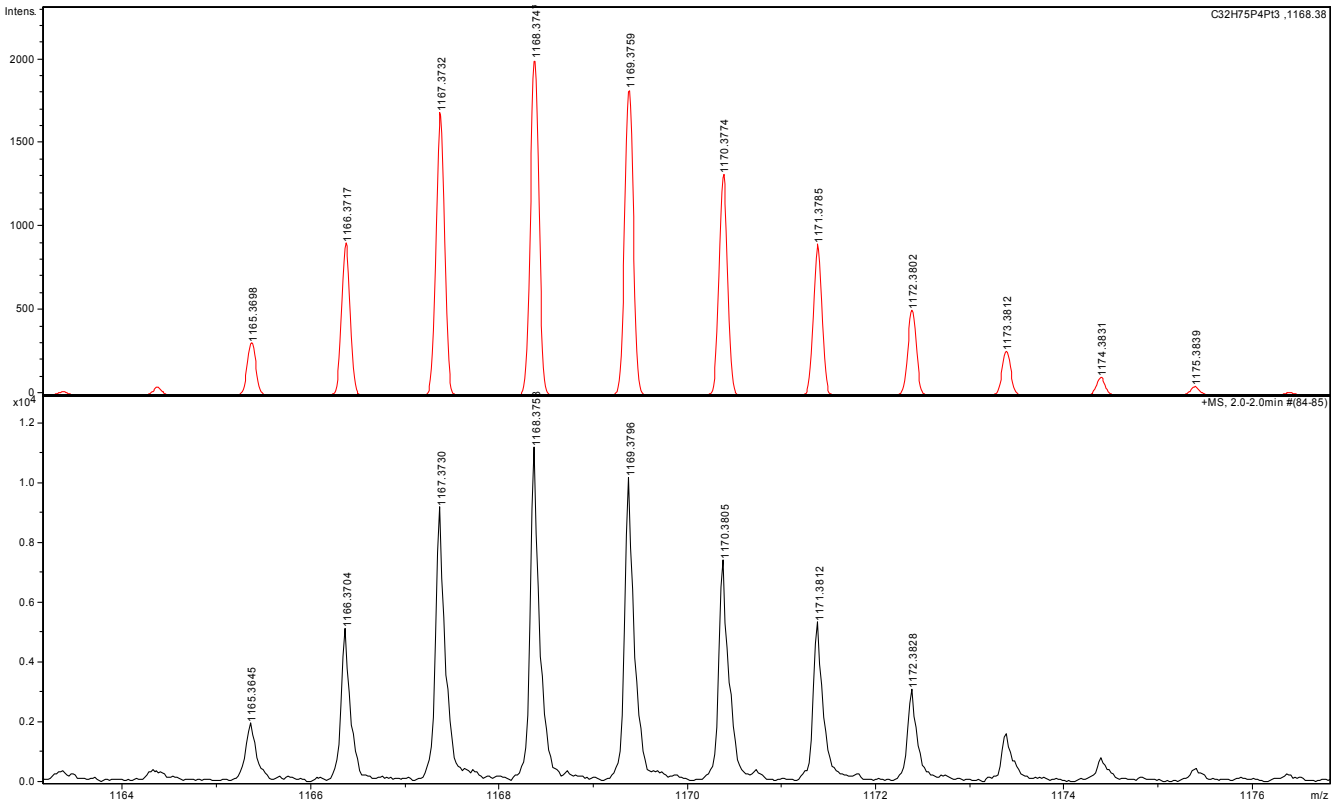

Figure S8. Experimental (black trace) and simulated (red trace) HR ESI-MS(+) spectrum of **3** (exact mass for $[M–H_2+H]^+$ = 1168.38 Da) in THF diluted with CH_3OH. The error between simulated and observed isotope patterns is –0.12 ppm.