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Air-Stable Triazole-Based Ru(II) Complexes Catalyzed Transfer Hydrogenation of Ketones and Aldehydes Using Ethanol as a Solvent and a Hydrogen Donor

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Supplementary Information

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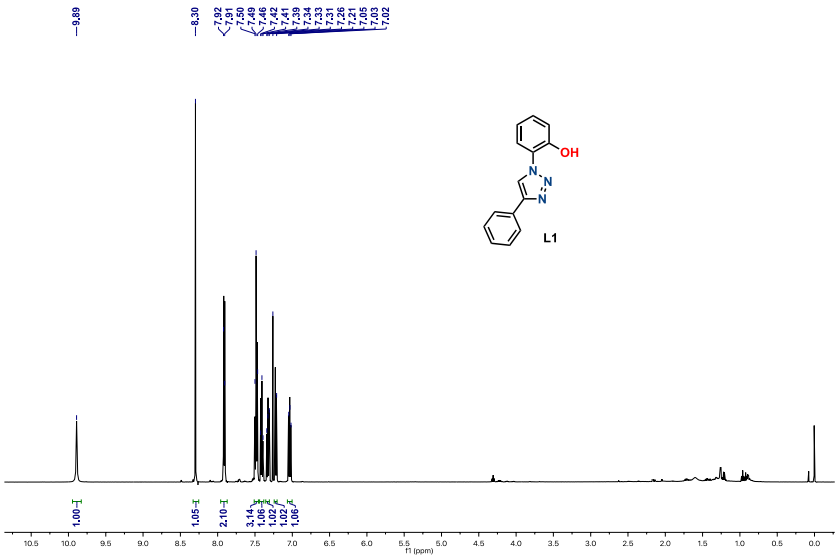

Fig. S**1**. ^{1}H NMR spectrum of **L1**.

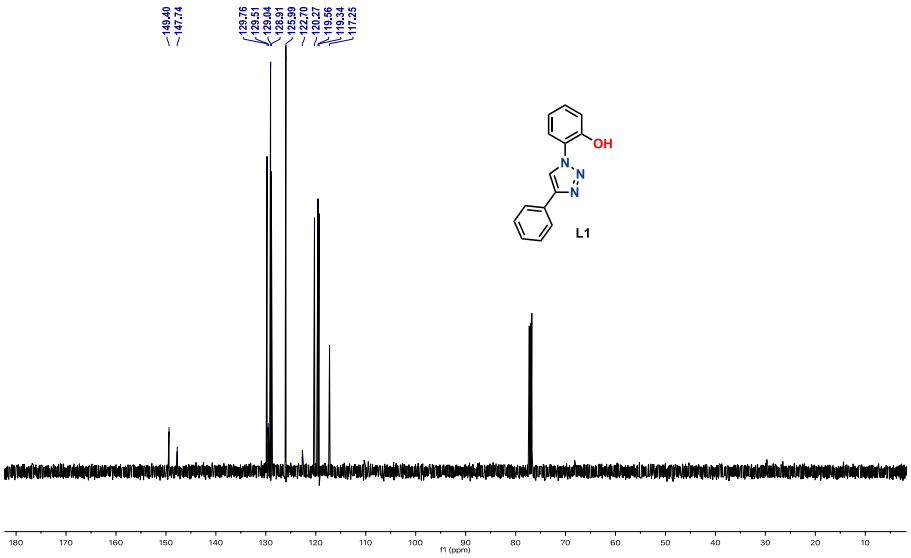

Fig. S2. ^{13}C{^{1}H} NMR spectrum of **L1**.

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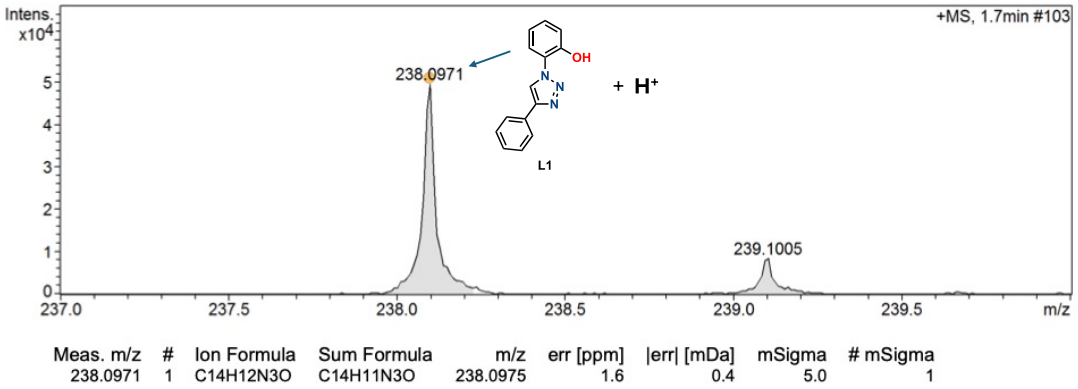

Fig. S3. Mass spectrum **L-1**, molecular ion ESI-TOF: 238.0971 $[(M+H)]^+$ (100 %), calculated for $C_{14}H_{11}N_3O$: 238.0936.

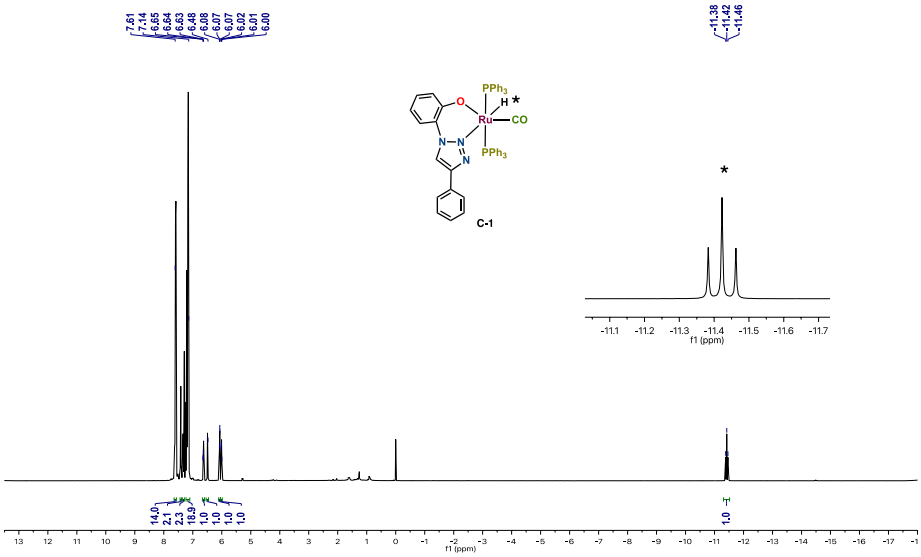

Fig. S4. ^{1}H NMR spectrum of **C-1**.

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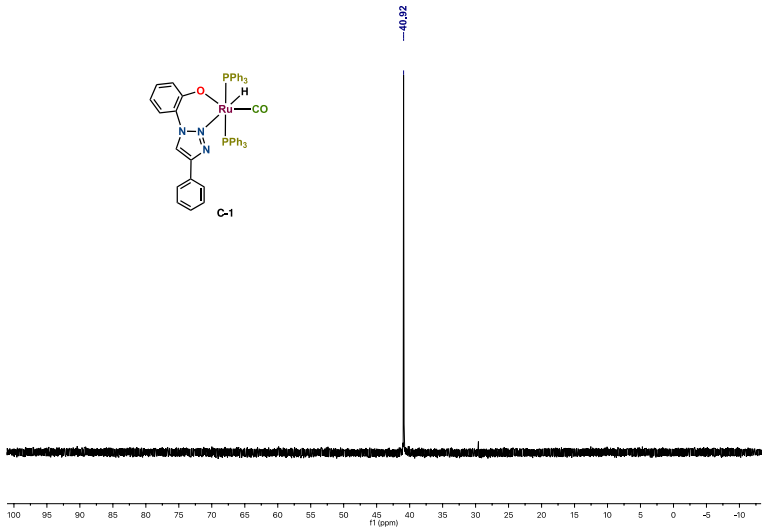

Fig. S5. $^{31}P\{^{1}H\}$ NMR spectrum of **C-1**.

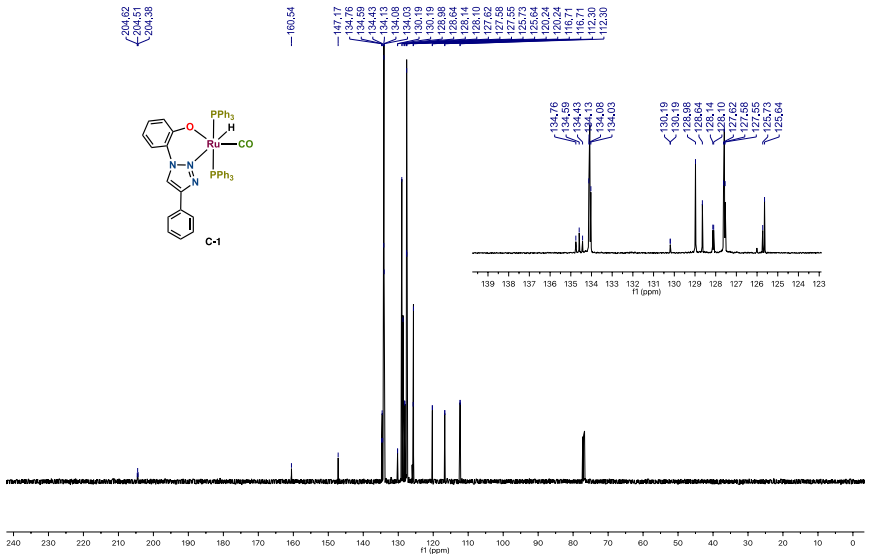

Fig. S6. $^{13}C\{^{1}H\}$ NMR spectrum of **C-1**.

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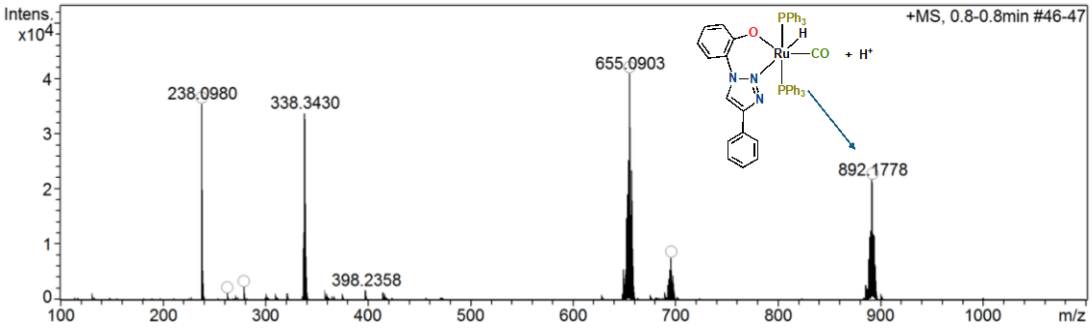

Fig. S7. Mass spectrum **C-1**, molecular ion ESI-TOF: 892.1745 $[(M+H)]^+$ (100%), calculated for $C_{51}H_{41}N_3O_2P_2Ru$: 891.1742.

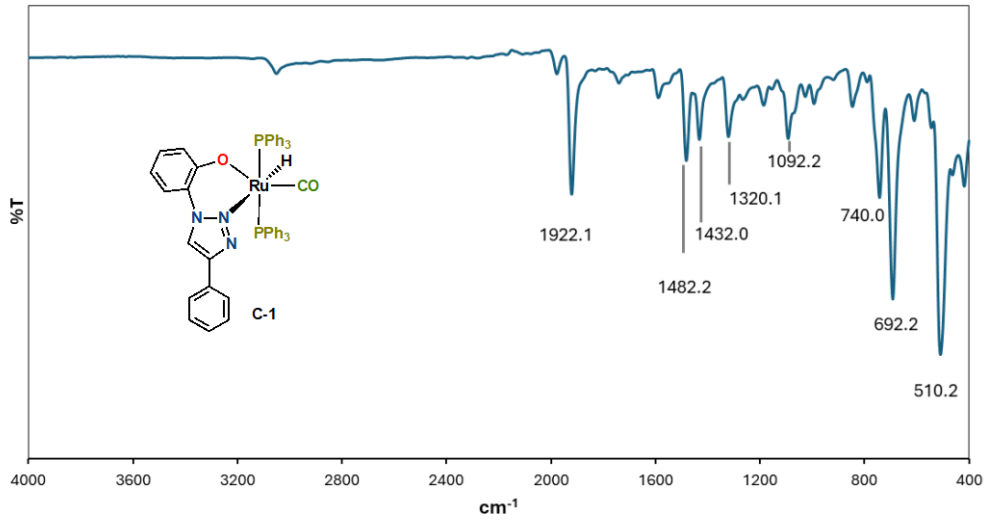

Fig. S8. IR for **C-1**.

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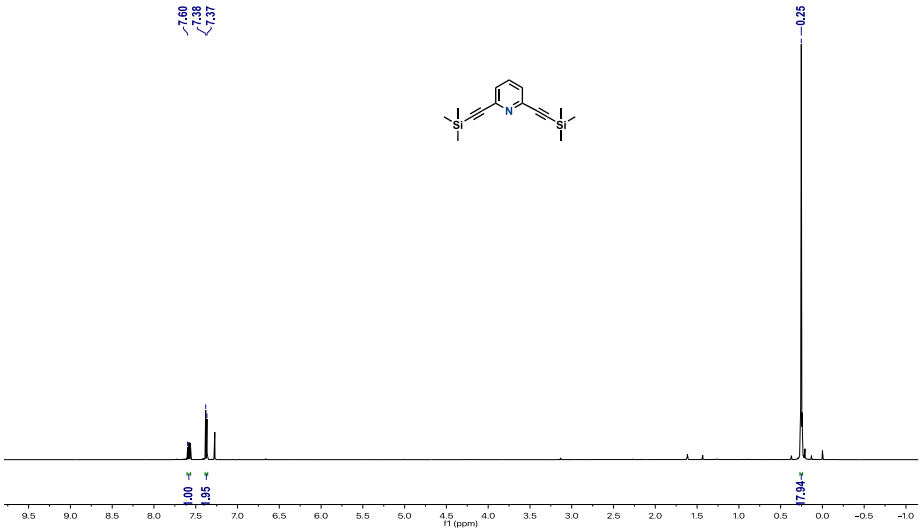

Fig. S9. ^{1}H NMR spectrum of 2,6-bis((trimethylsilyl)ethynyl)pyridine.

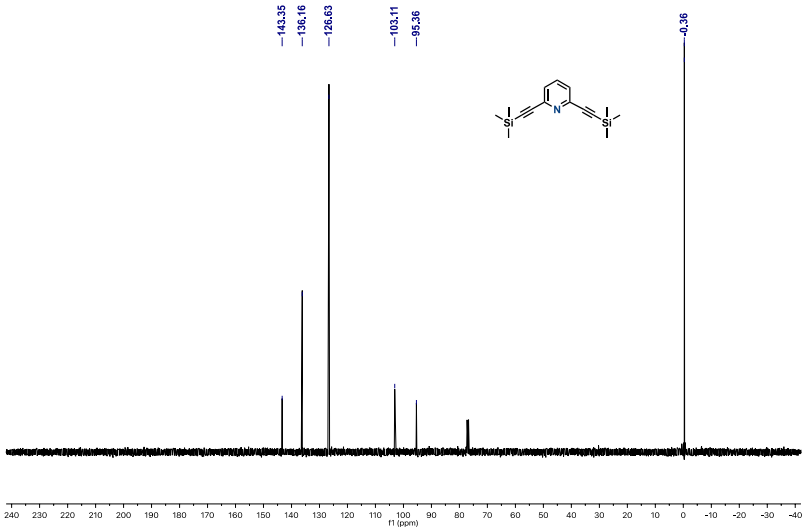

Fig. S10. ^{13}C{^{1}H} NMR spectrum of 2,6-bis((trimethylsilyl)ethynyl)pyridine.

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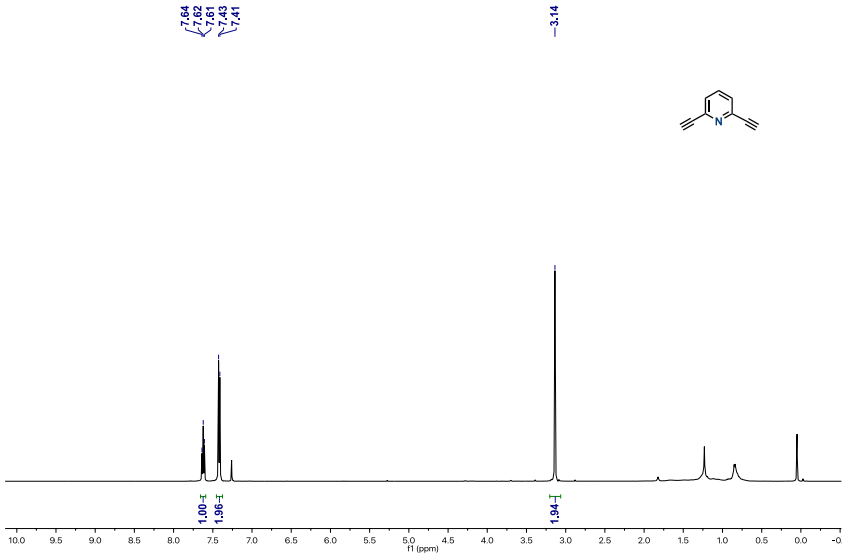

Fig. S11. ^{1}H NMR spectrum of 2,6-diethynylpyridine, **B**.

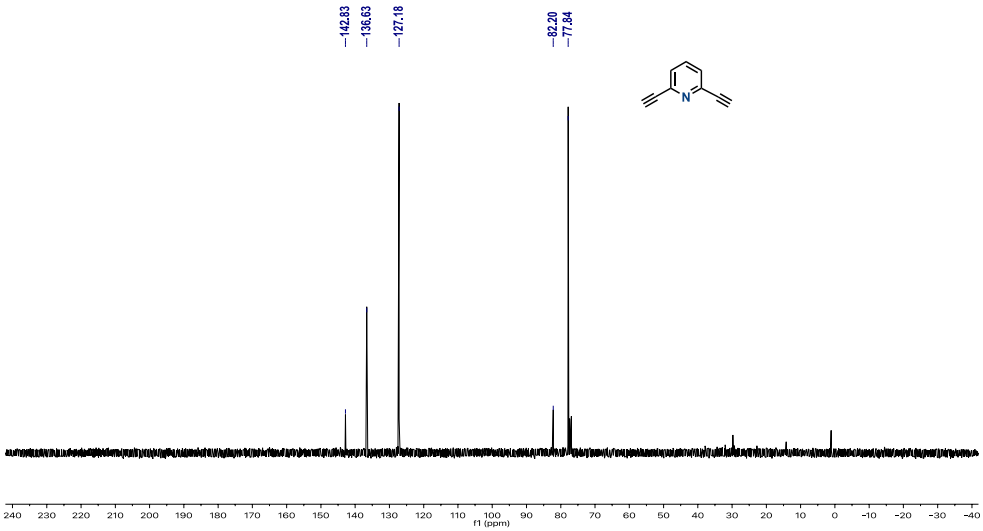

Fig. S12. ^{13}C{^{1}H} NMR spectrum of 2,6-diethynylpyridine, **B**.

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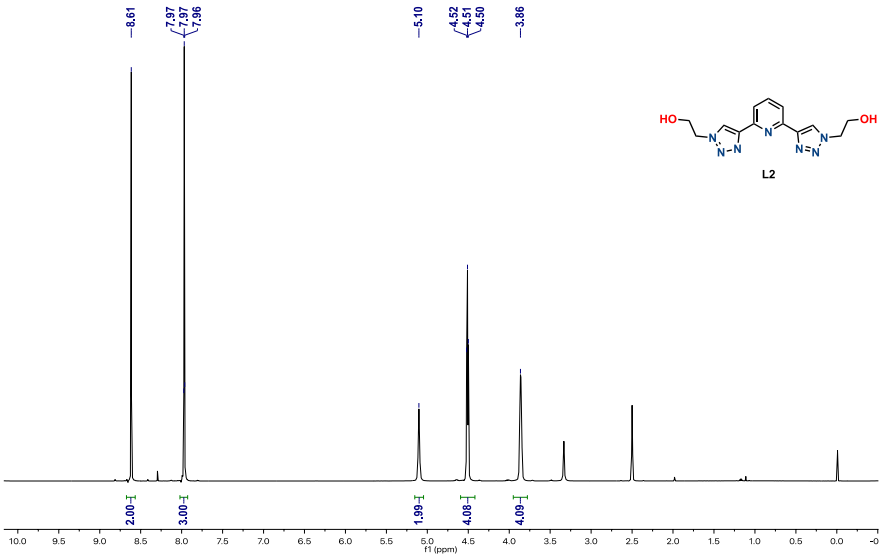

Fig. S13. ^{1}H NMR spectrum of **L2**.

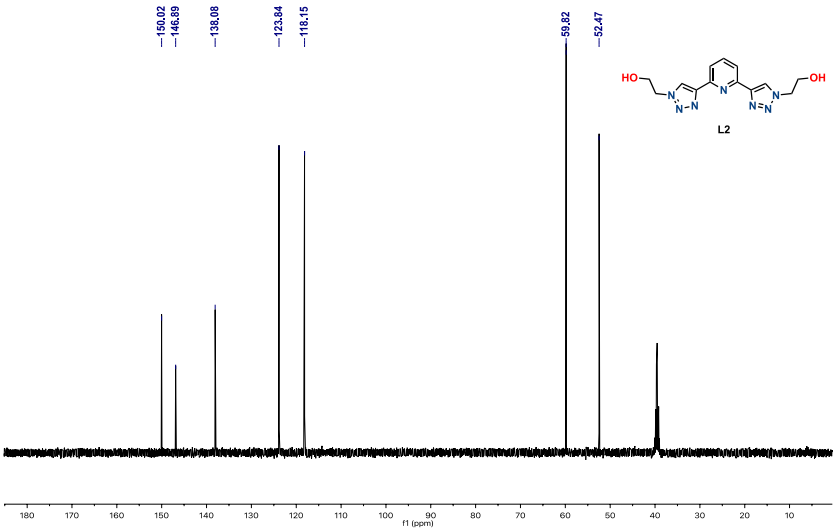

Fig. S14. ^{13}C{^{1}H} NMR spectrum of **L2**.

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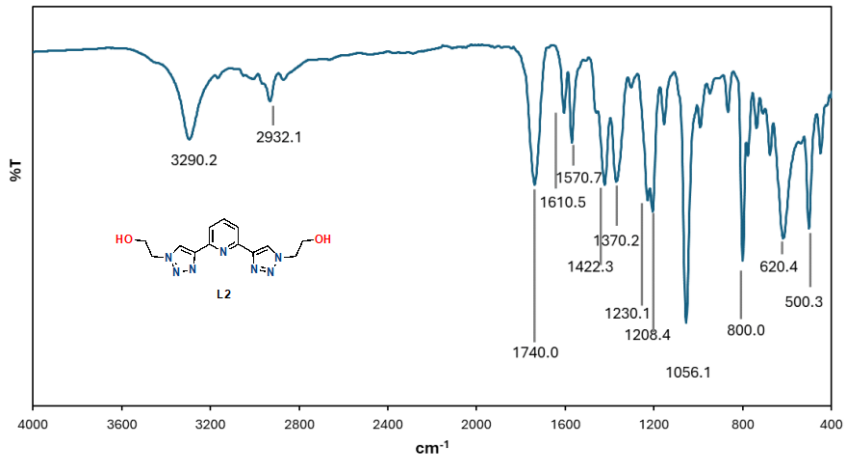

Fig. S15. IR for **L2**.

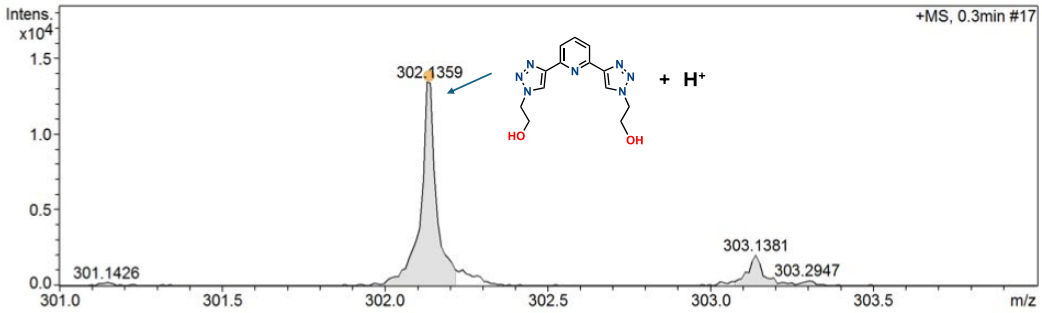

Fig. S16. Mass spectrum **L-2**, molecular ion ESI-TOF: 302.1359 $[(M+H)]^+$ (100%), calculated for $C_{13}H_{15}N_7O_2$: 301.1287.

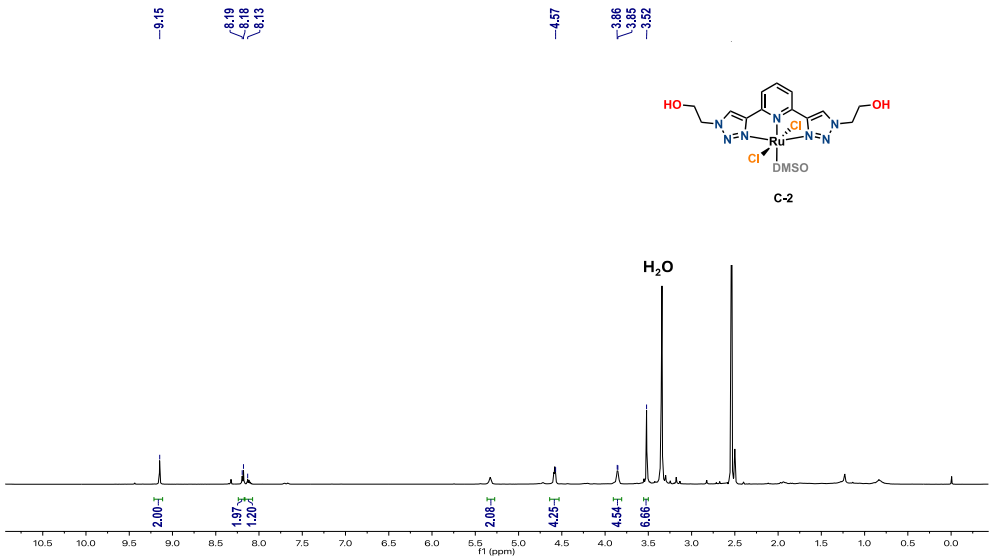

Fig. S17. ^{1}H NMR spectrum of **C-2**

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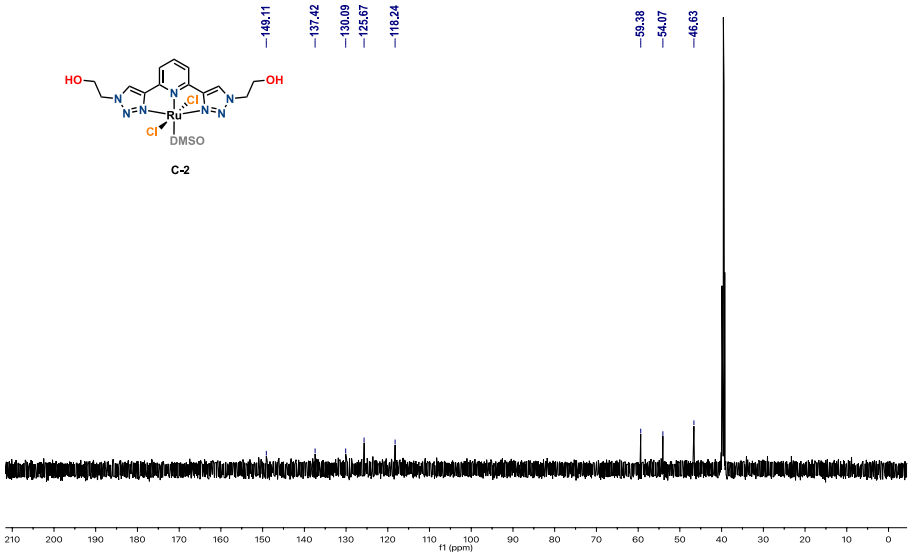

Fig. S18. $^{13}C\{^{1}H\}$ NMR spectrum of **C-2**.

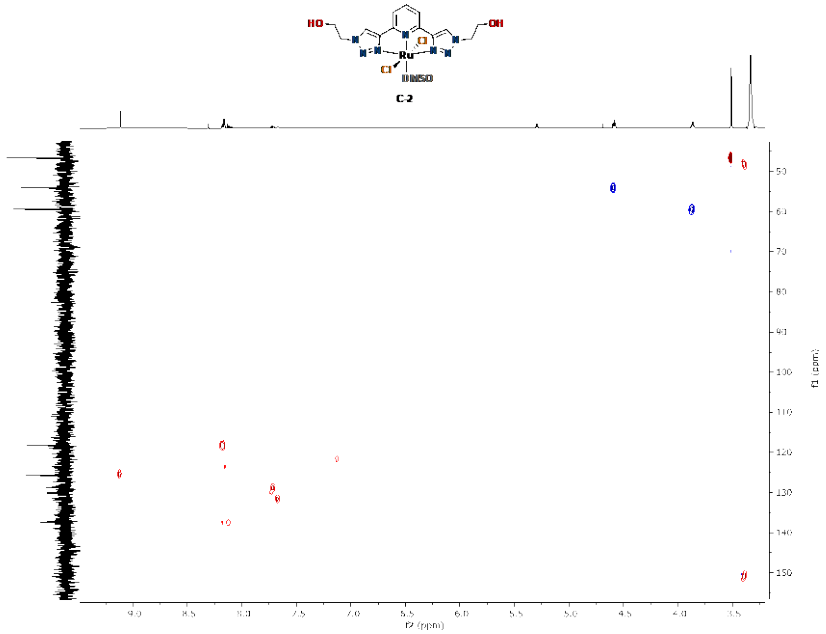

Fig. S19. HSQC NMR spectrum of **C-2**.

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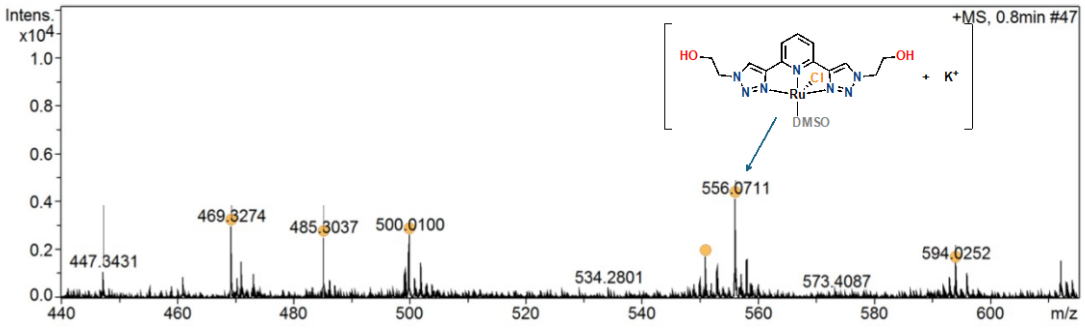

Fig. S20. Mass spectrum **C-2**, molecular ion ESI-TOF: $[(M\text{-}Cl) + K]^+$ ion peak at m/z 556.05 calculated for $C_{15}H_{21}ClN_7O_3RuS$.

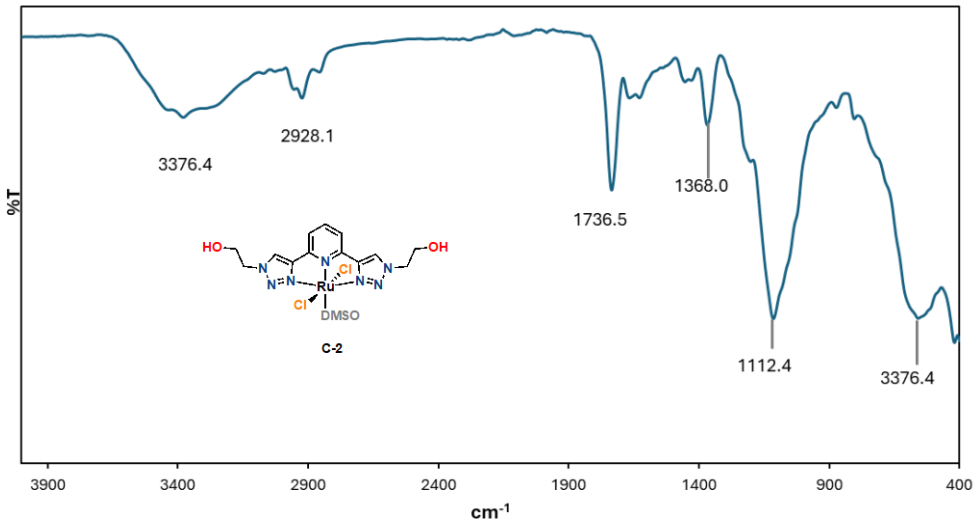

Fig. S21. IR for **C-2**.

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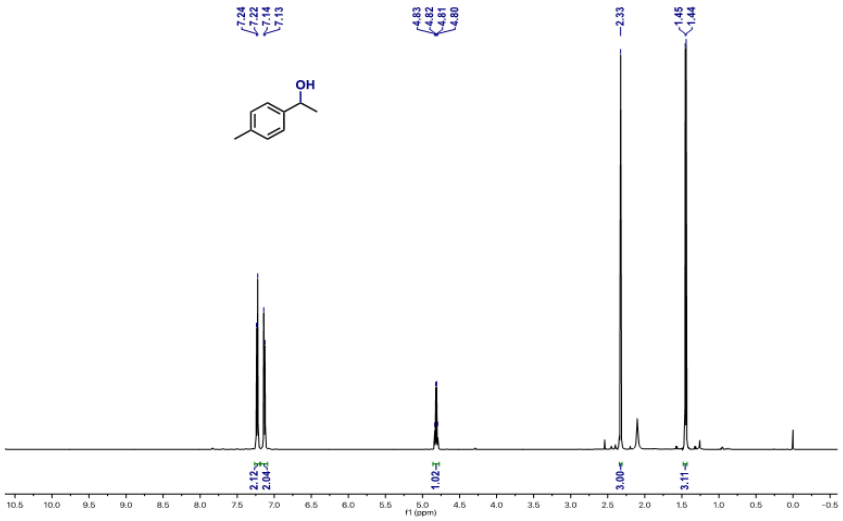

Fig. S22. ^{1}H NMR spectrum of 1-(*p*-tolyl)ethan-1-ol.

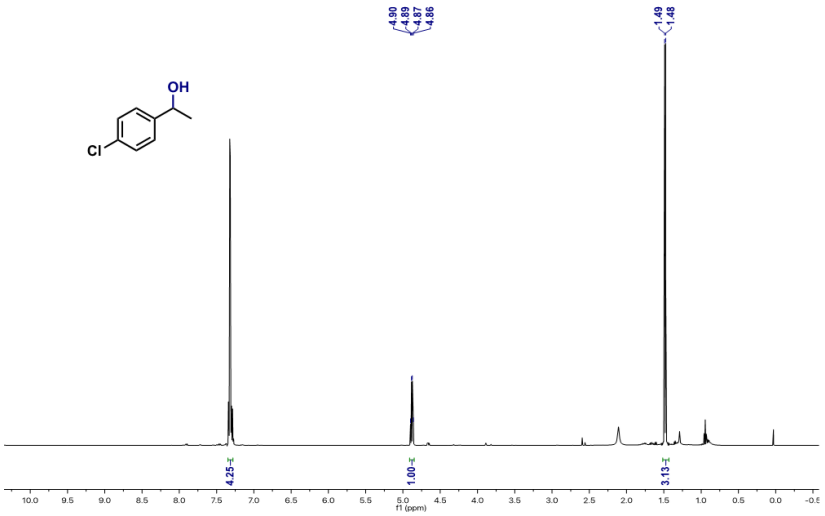

Fig. S23. ^{1}H NMR spectrum of 1-(4-chlorophenyl)ethan-1-ol.

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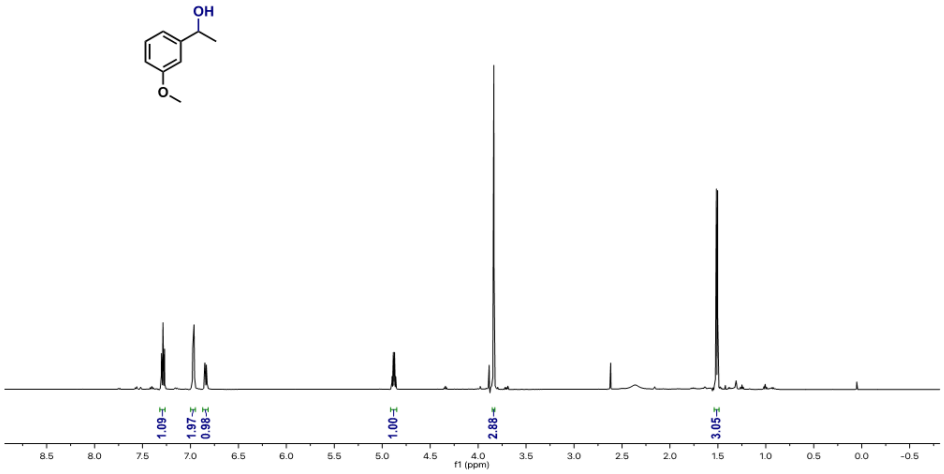

Fig. S24. ^{1}H NMR spectrum of 1-(3-methoxyphenyl)ethan-1-ol.

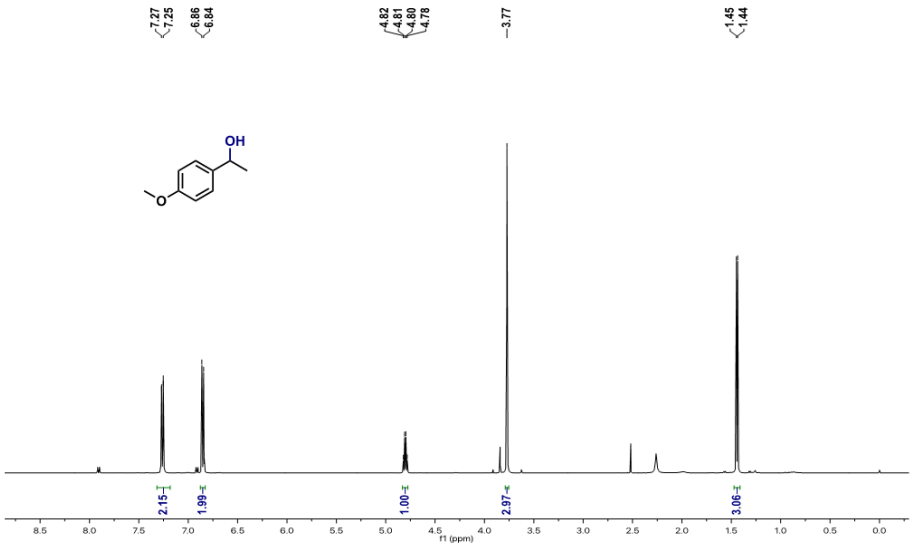

Fig. S25. ^{1}H NMR spectrum of 1-(4-methoxyphenyl)ethan-1-ol.

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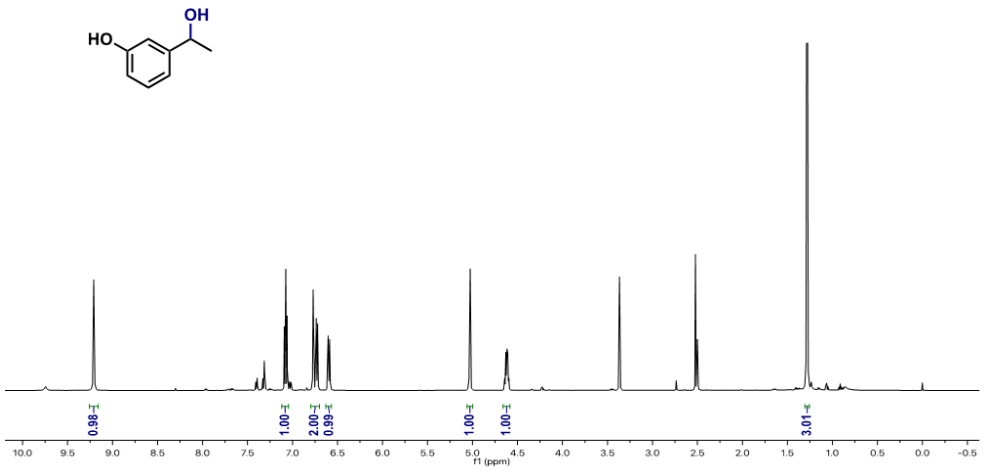

Fig. S26. ^{1}H NMR spectrum of 3-(1-hydroxyethyl)phenol.

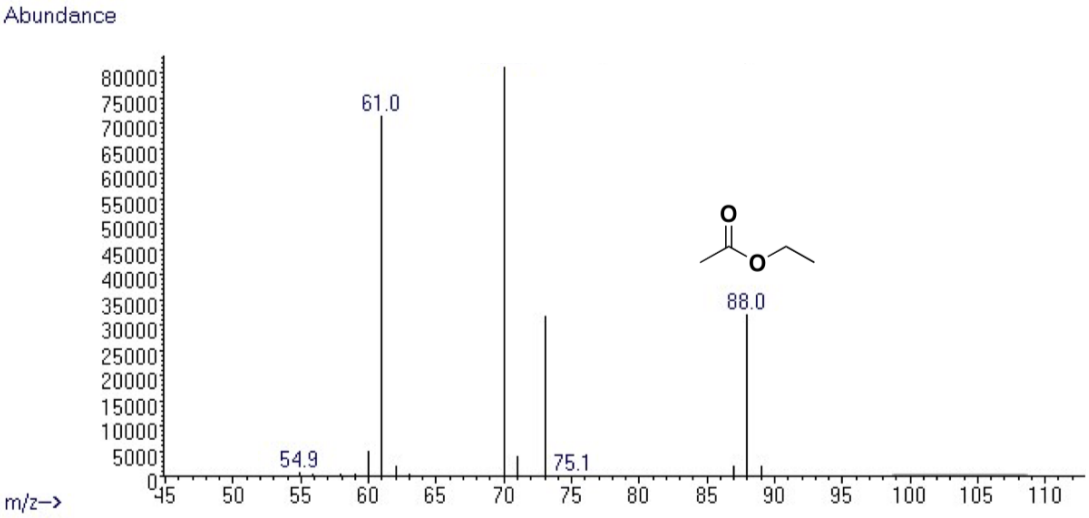

Fig. S27. Mass spectrum of ethyl acetate, $C_4H_8O_2$.

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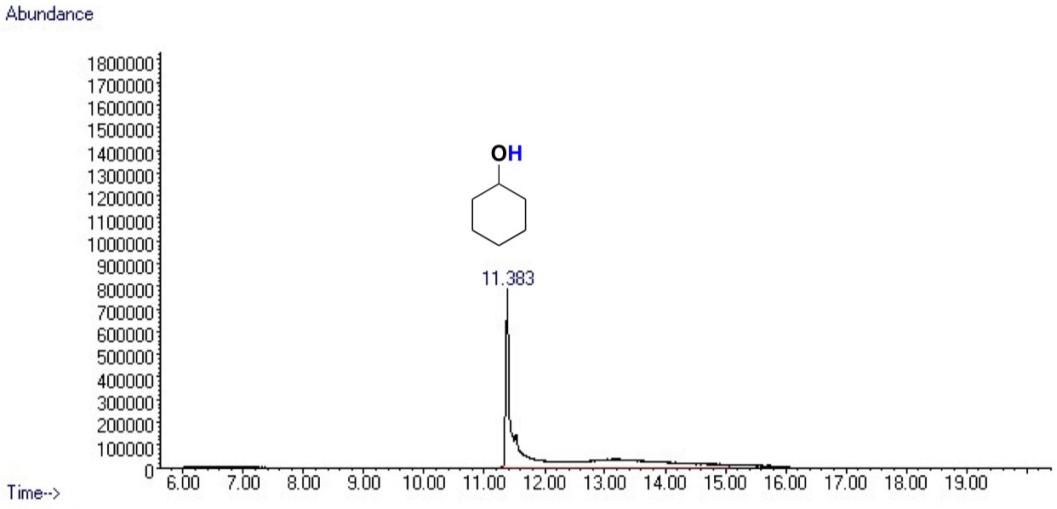

Fig. S28. Chromatogram of cyclohexanol $C_6H_{12}O$.

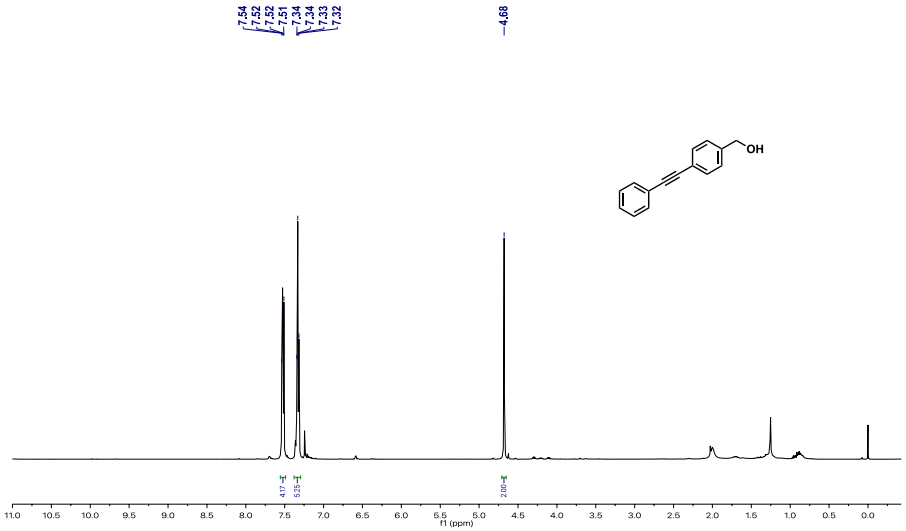

Fig. S29. ^{1}H NMR spectrum of (4-(phenylethynyl)phenyl)methanol.

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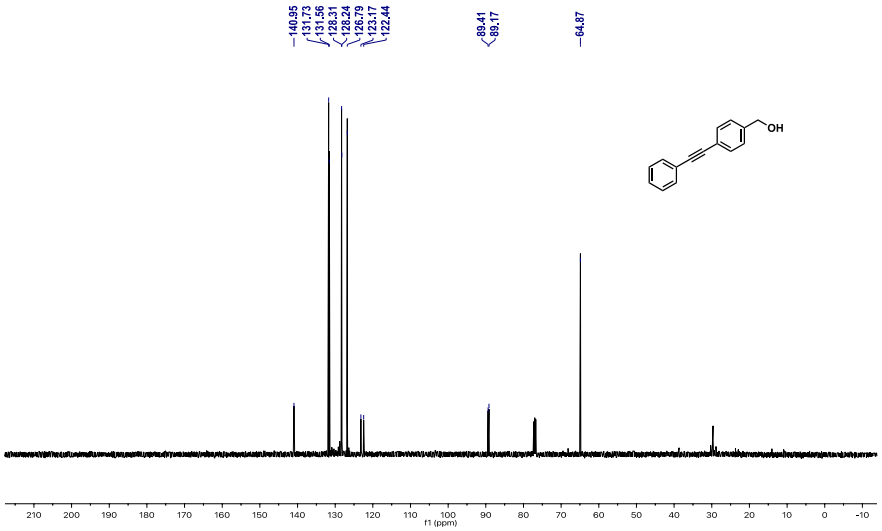

Fig. S30. $^{13}C\{^{1}H\}$ NMR spectrum of (4-(phenylethynyl)phenyl)methanol.

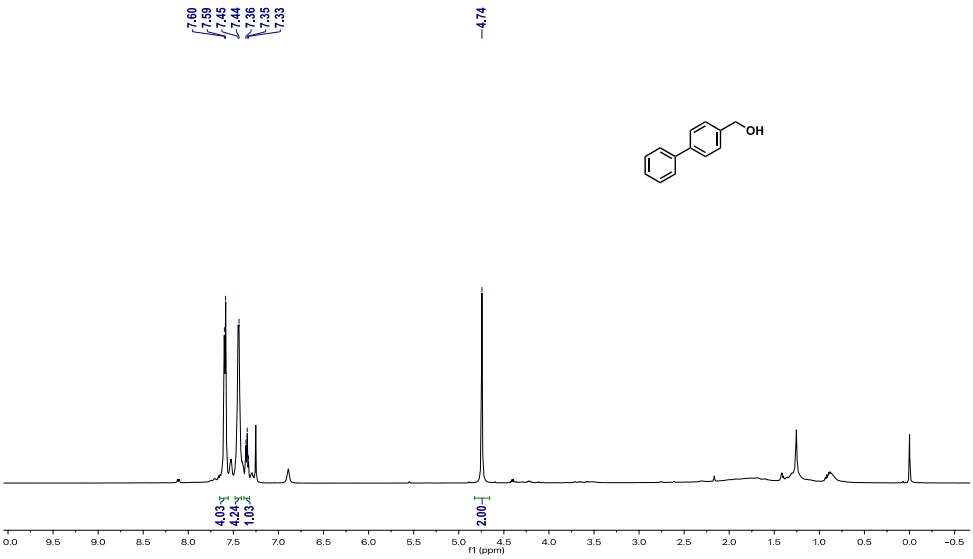

Fig. S31. ^{1}H NMR spectrum of [1,1'-biphenyl]-4-ylmeth.