Supplementary Information

Robust Hydrophobic Gold, Glass and Polypropylene Surfaces Obtained Through a Nanometric Covalently Bound Organic Layer

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General Information: The ¹H NMR, ¹³C NMR and 2D NMR were performed with a Varian-400 VNMRJ System. The chemical shifts are expressed in ppm and determined in comparison of the deuterated solvent used as internal reference. Most of ¹H NMR signals were attributed through 2D NMR analyses (COSY, HSQC). Abbreviation: s: singlet, d: doublet, t: triplet, m: massif, mult: multiplet.
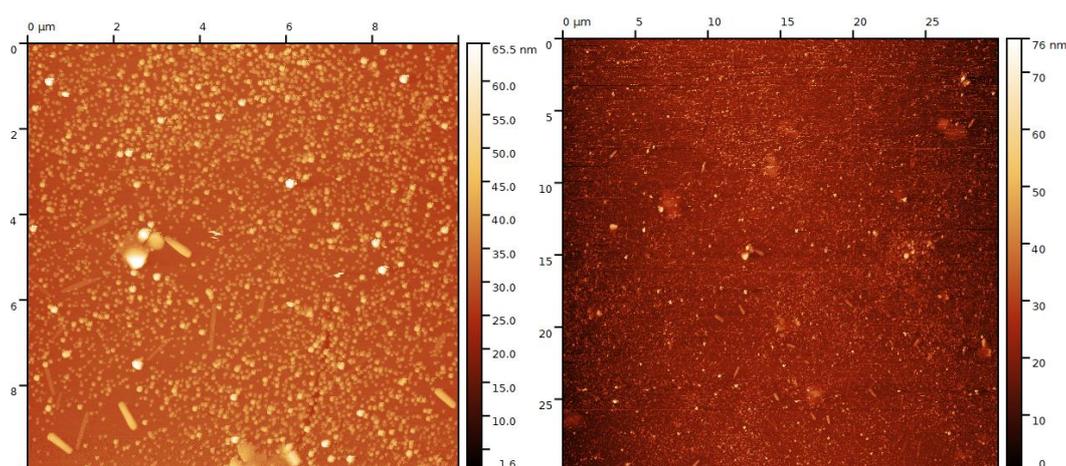
Experimental section:

Figure S1. AFM topography of glass surfaces, left 10 μm x 10 μm, right 30 μm x30 μm

Figure S2. Ellipsometric angles ψ (Psi) and Δ (Delta) as a function of the wavelength at different incident angles, 65°, 70° and 75° for bare gold surface. Continuous lines represent the acquired data and the dotted black lines correspond to the Cauchy fit.
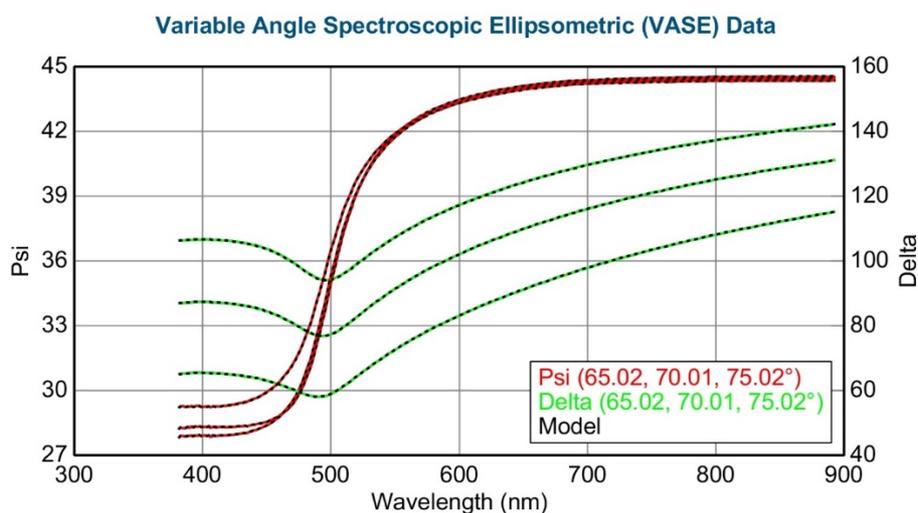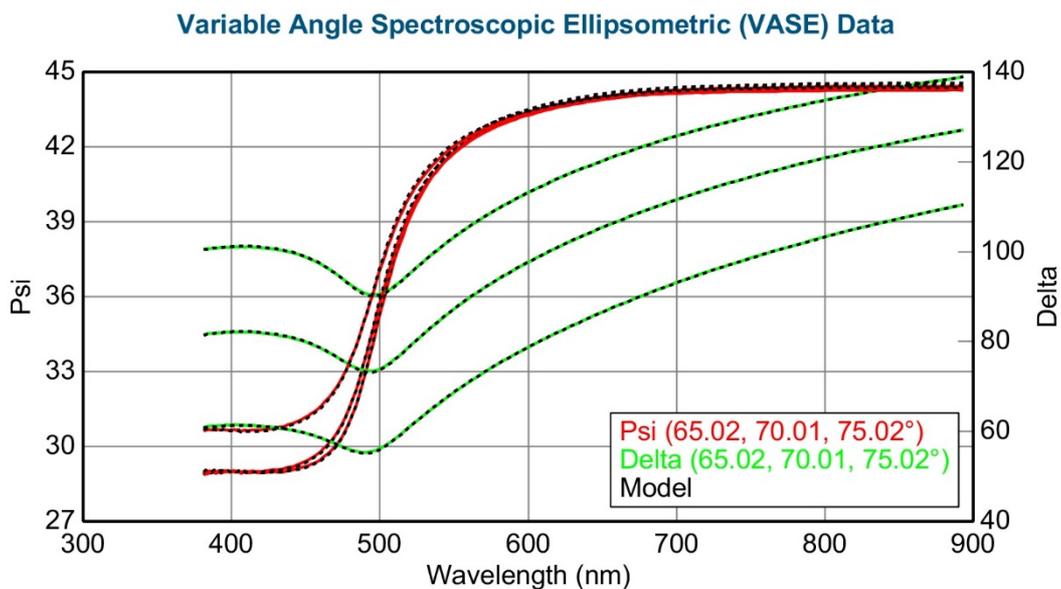
Figure S3. Ellipsometric angles ψ (Psi) and Δ (Delta) as a function of the wavelength at different incident angles, 65°, 70° and 75° for a gold surface modified with calix[4]arene **1** through diazoate route in NaOH. Continuous lines represent the acquired data and the dotted black lines correspond to the Cauchy fit.
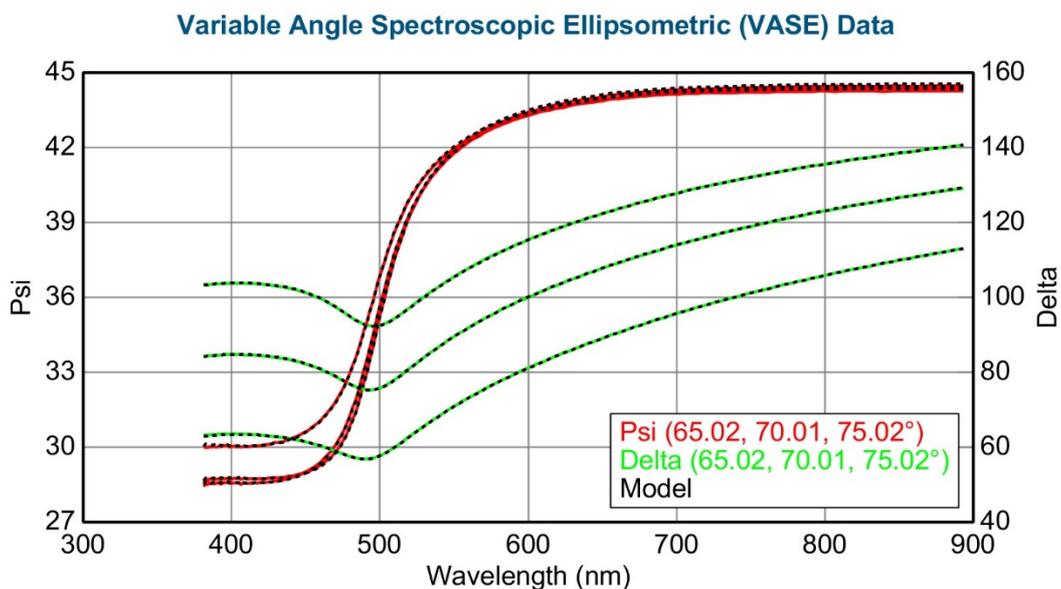

Figure S4.Ellipsometric angles ψ (Psi) and Δ (Delta) as a function of the wavelength at different incident angles, 65°, 70° and 75° for a gold surface modified with calix[4]arene **1** through electrochemical route by CA. Continuous lines represent the acquired data and the dotted black lines correspond to the Cauchy fit.
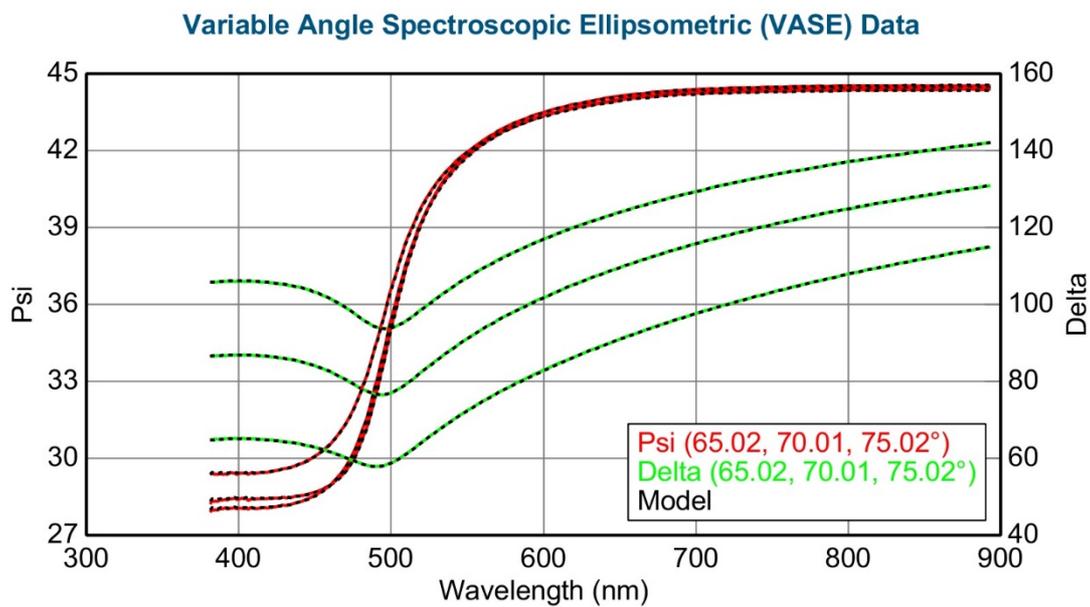
Figure S5. Ellipsometric angles ψ (Psi) and Δ (Delta) as a function of the wavelength at different incident angles, 65°, 70° and 75° for a gold surface modified with calix[4]arene **1** through electrochemical route by CV. Continuous lines represent the acquired data and the dotted black lines correspond to the Cauchy fit.
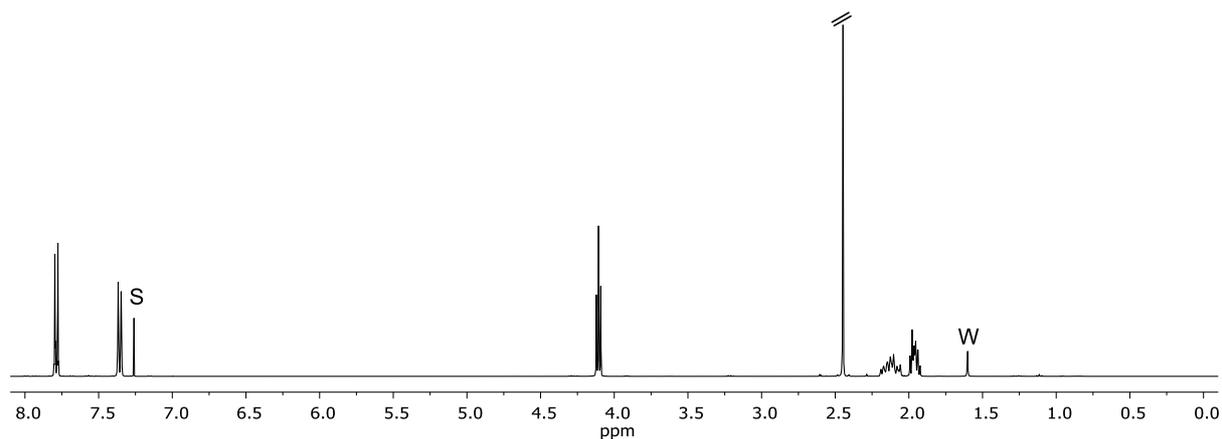
Figure S6. ^{1}H NMR (298K, 400MHz) spectrum of **3** in CDCl$_3$. S = solvent and W = water
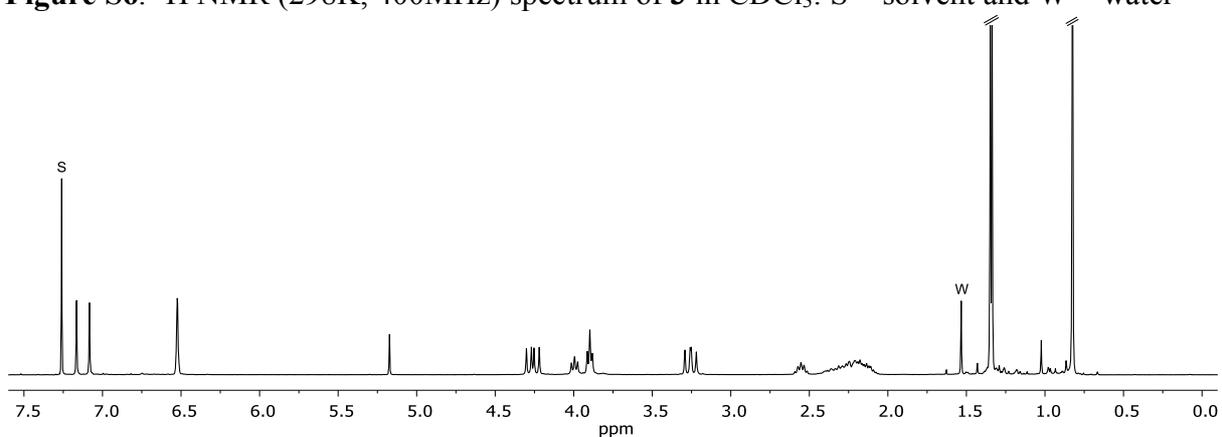

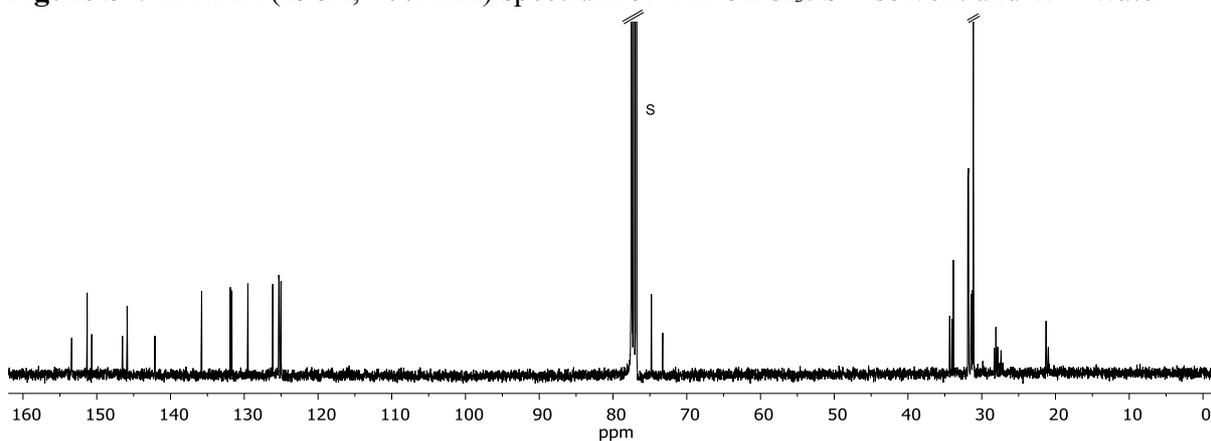**Figure S7.**^{1}H NMR (298K, 400MHz) spectrum of **4** in CDCl$_3$. S = solvent and W = water

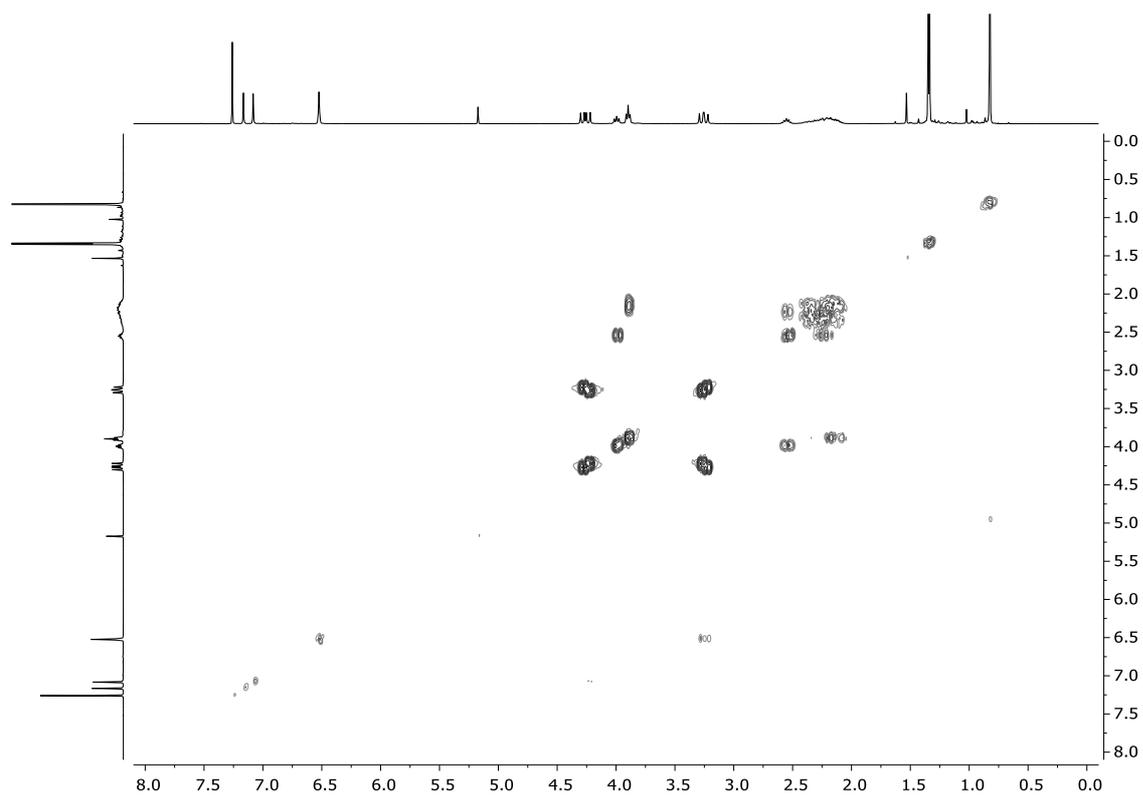**Figure S8**. ^{13}C NMR (298K, 100MHz) spectrum of **4** in CDCl$_3$. S = solvent

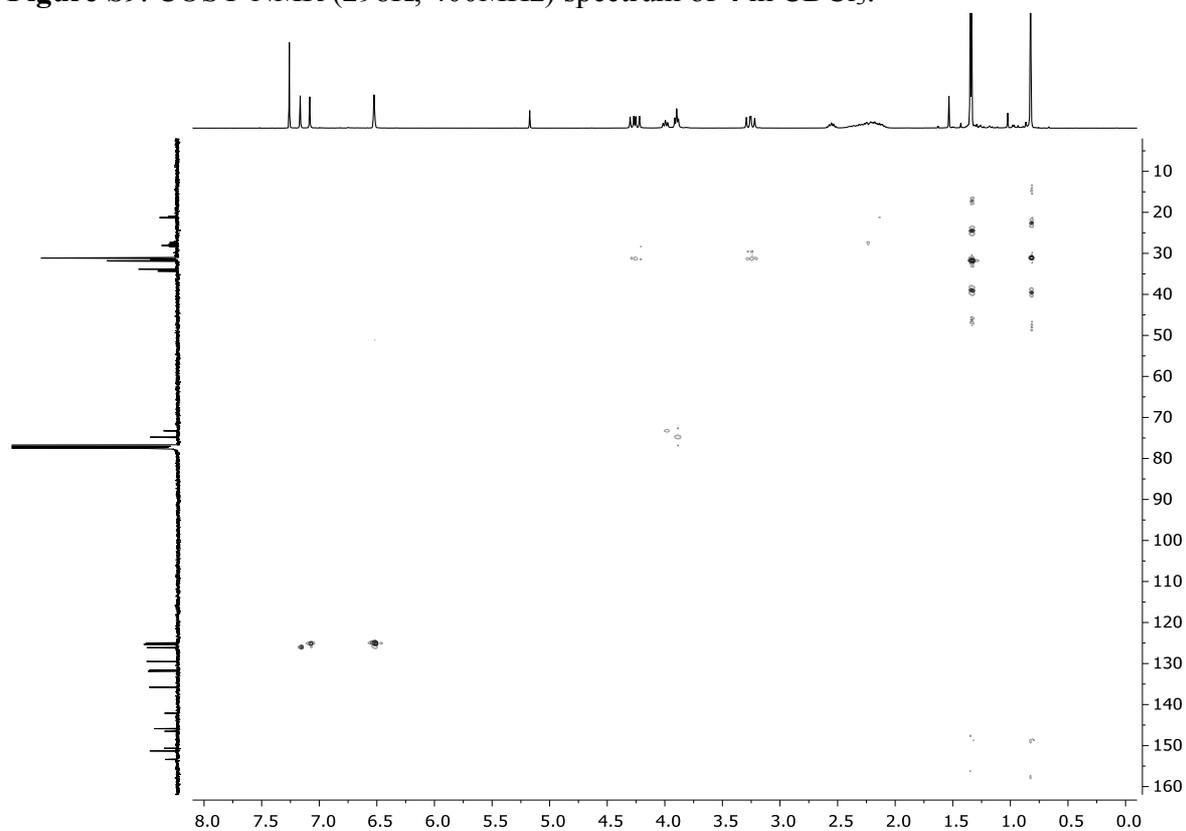**Figure S9**. COSY NMR (298K, 400MHz) spectrum of **4** in CDCl$_3$.

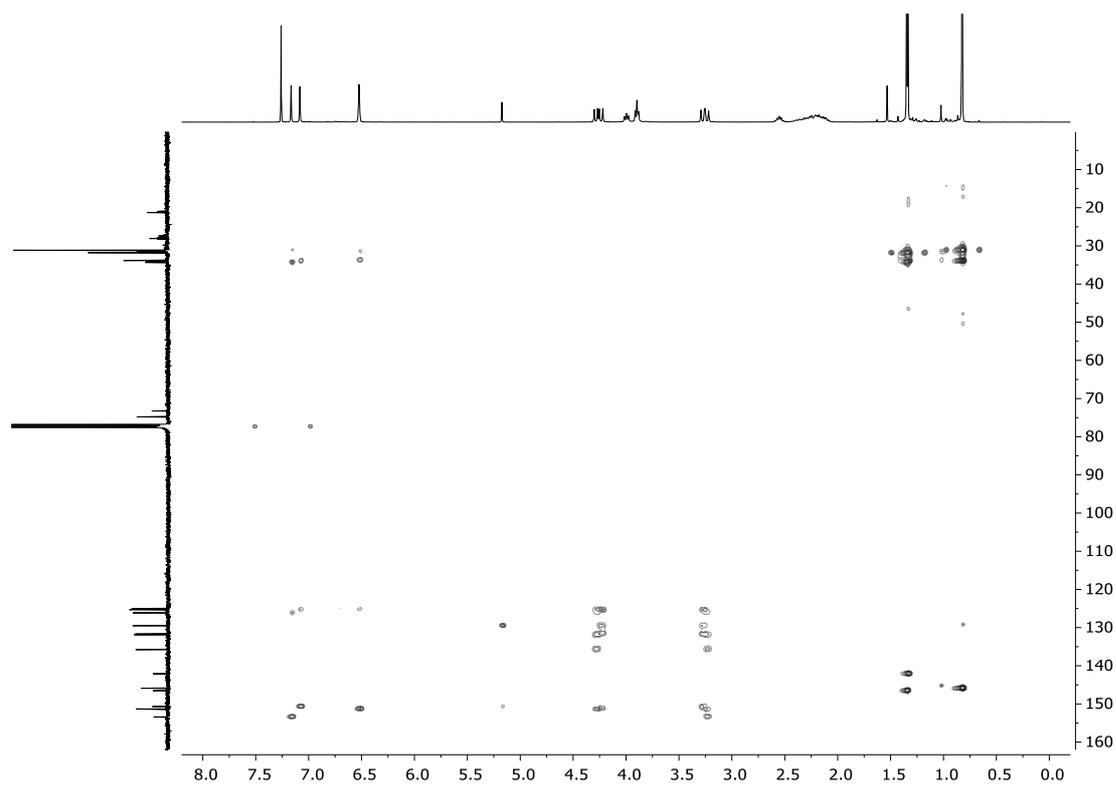**Figure S10**. HSQC NMR (298K, 400MHz) spectrum of **4** in CDCl$_3$.

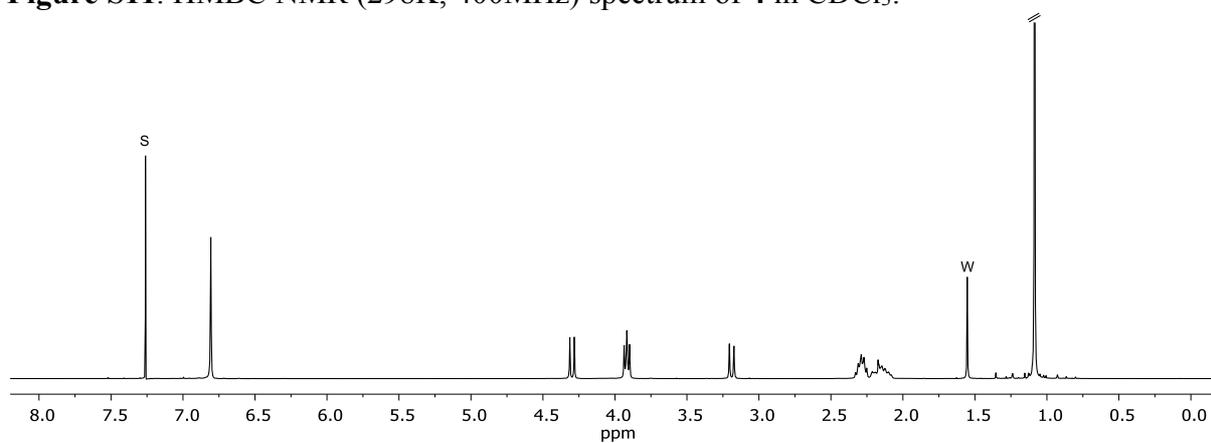**Figure S11**. HMBC NMR (298K, 400MHz) spectrum of **4** in CDCl$_3$.

Figure S12. ^{1}H NMR (298K, 400MHz) spectrum of **5** in CDCl$_3$. S = solvent and W = water
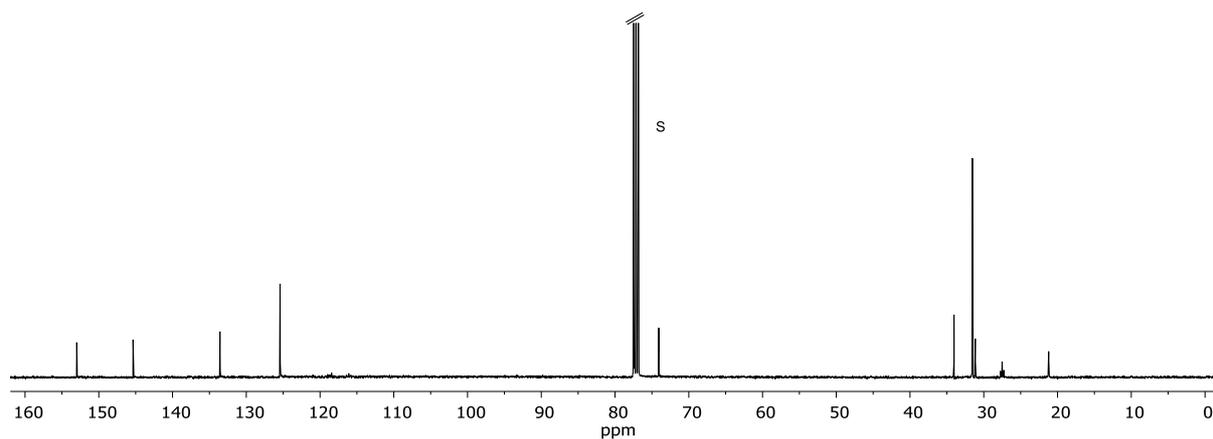
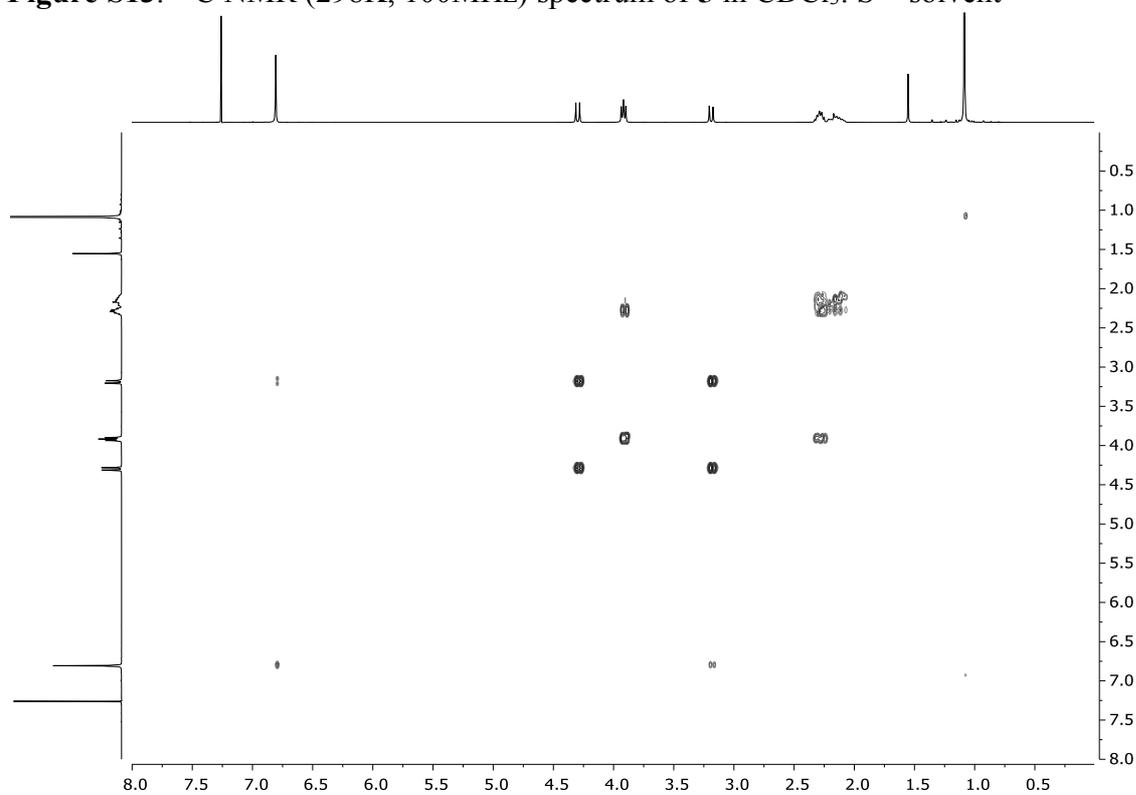**Figure S13**. ^{13}C NMR (298K, 100MHz) spectrum of **5** in CDCl$_3$. S = solvent

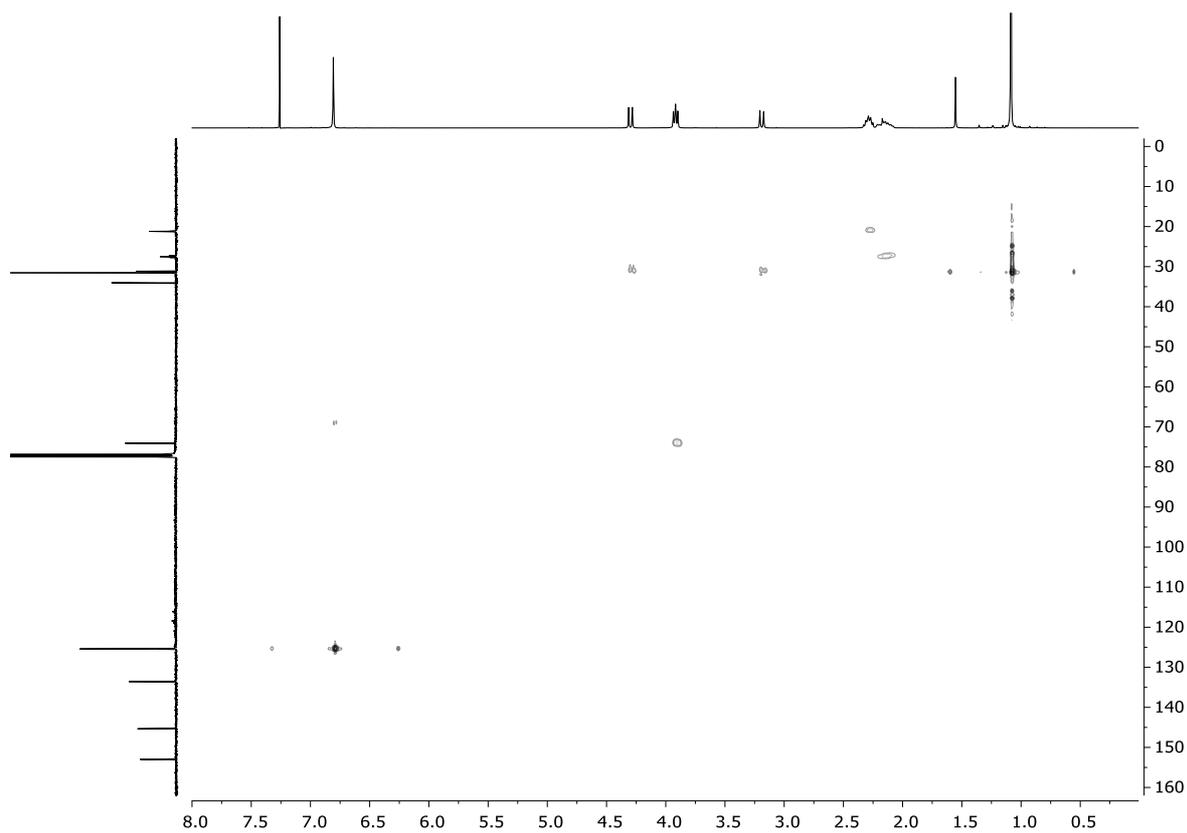**Figure S14**. COSY NMR (298K, 400MHz) spectrum of **5** in CDCl$_3$.

Figure S15. HSQC NMR (298K, 400MHz) spectrum of **5** in CDCl₃.
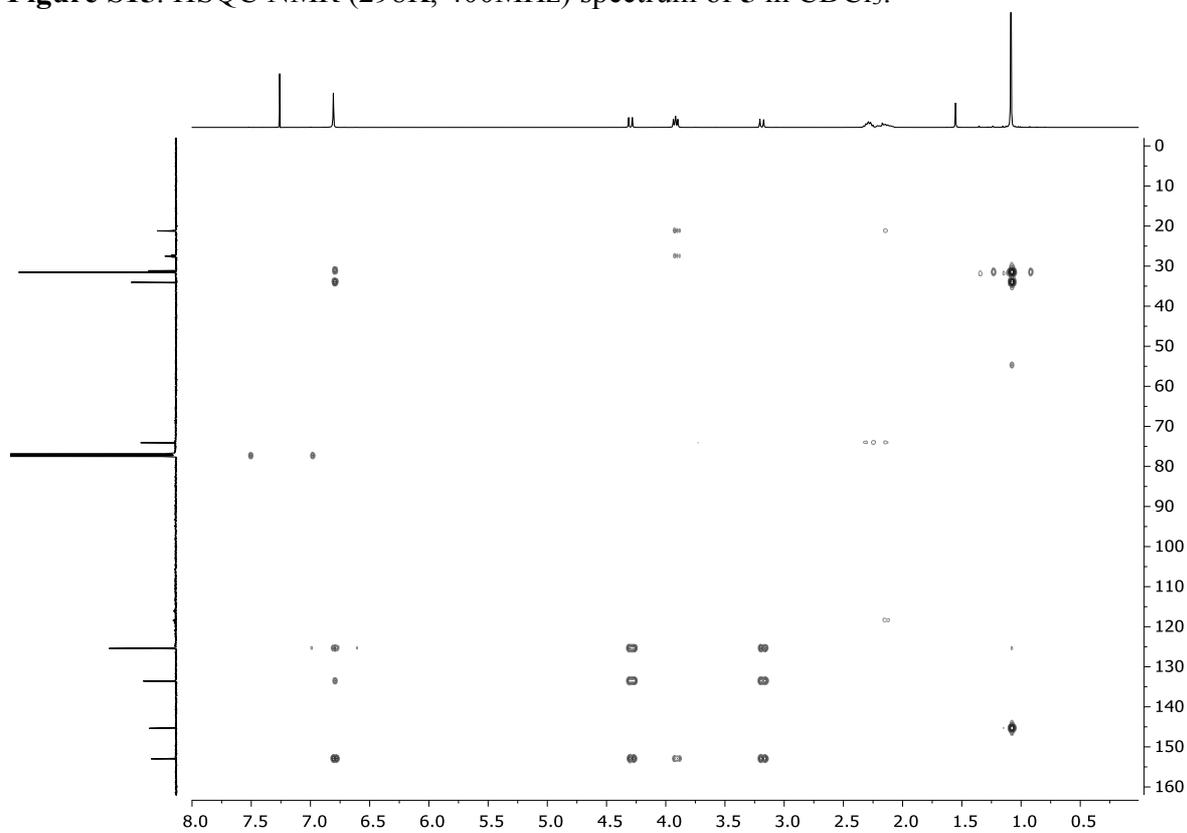

Figure S16. HMBC NMR (298K, 400MHz) spectrum of **5** in CDCl₃.
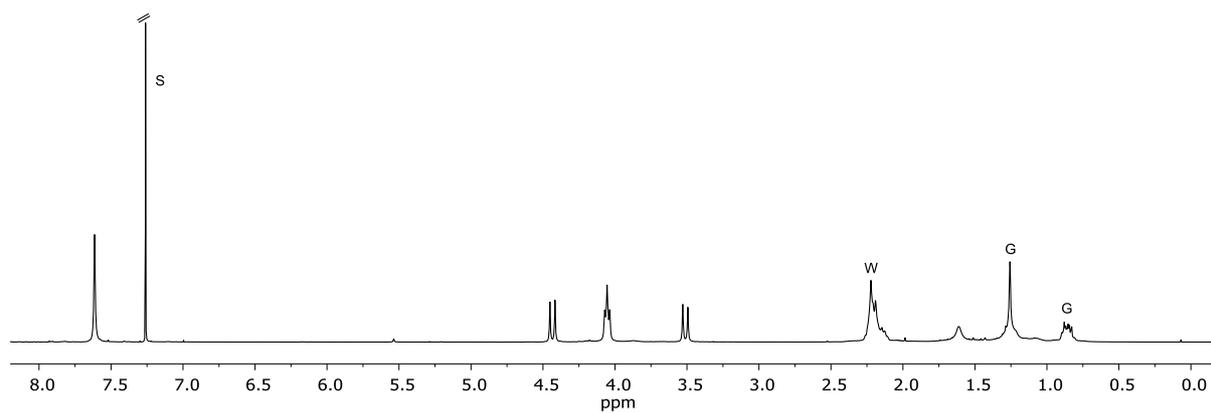
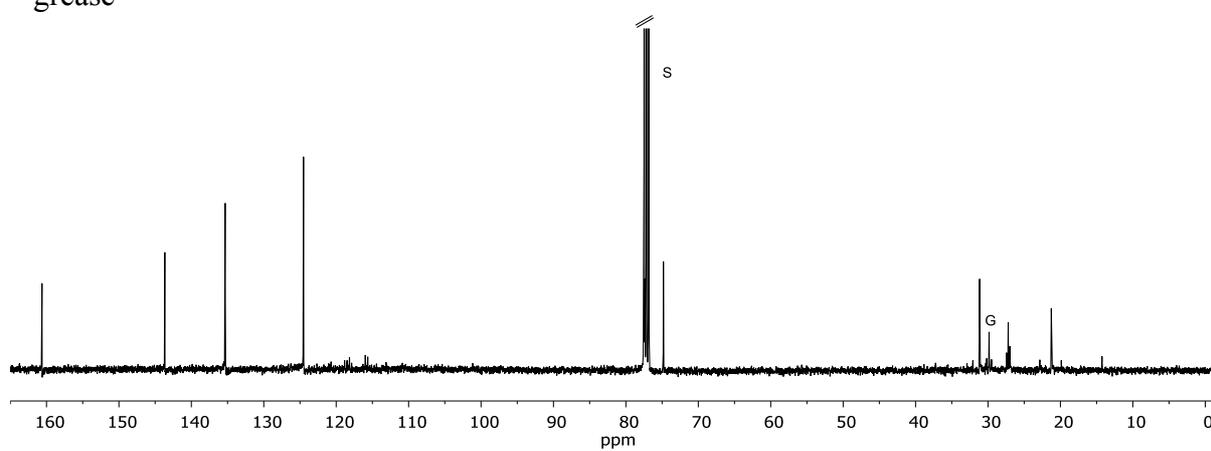**Figure S17.** ¹H NMR (298K, 400MHz) spectrum of **6** in CDCl₃. S = solvent, W = water and G = grease

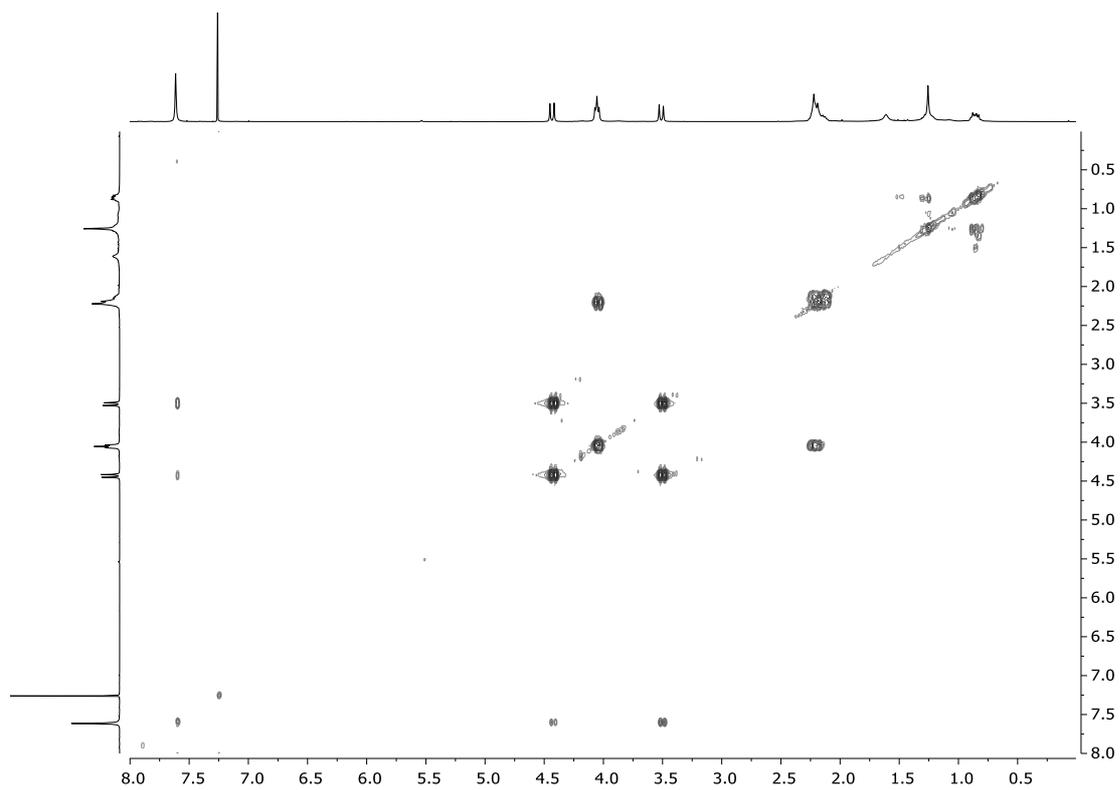**Figure S18**. ¹³C NMR (298K, 100MHz) spectrum of **6** in CDCl₃. S = solvent and G = grease

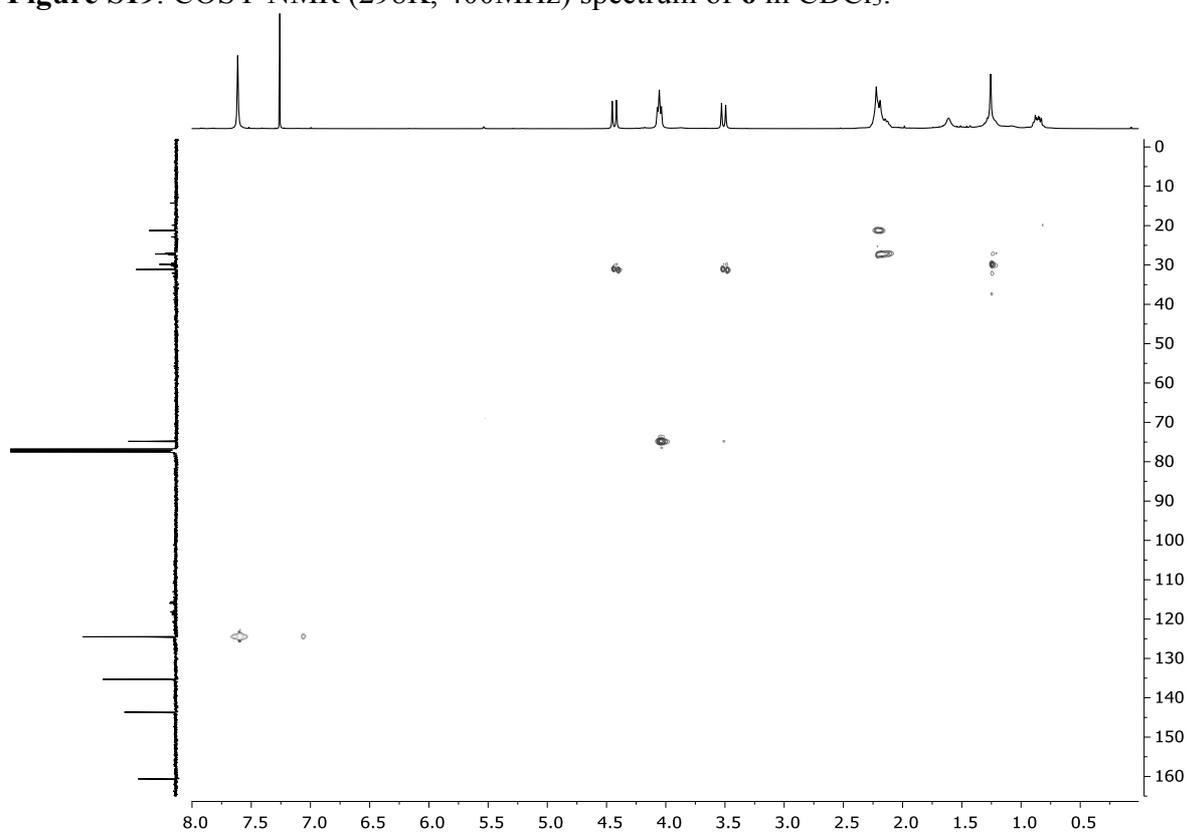**Figure S19**. COSY NMR (298K, 400MHz) spectrum of **6** in CDCl$_3$.

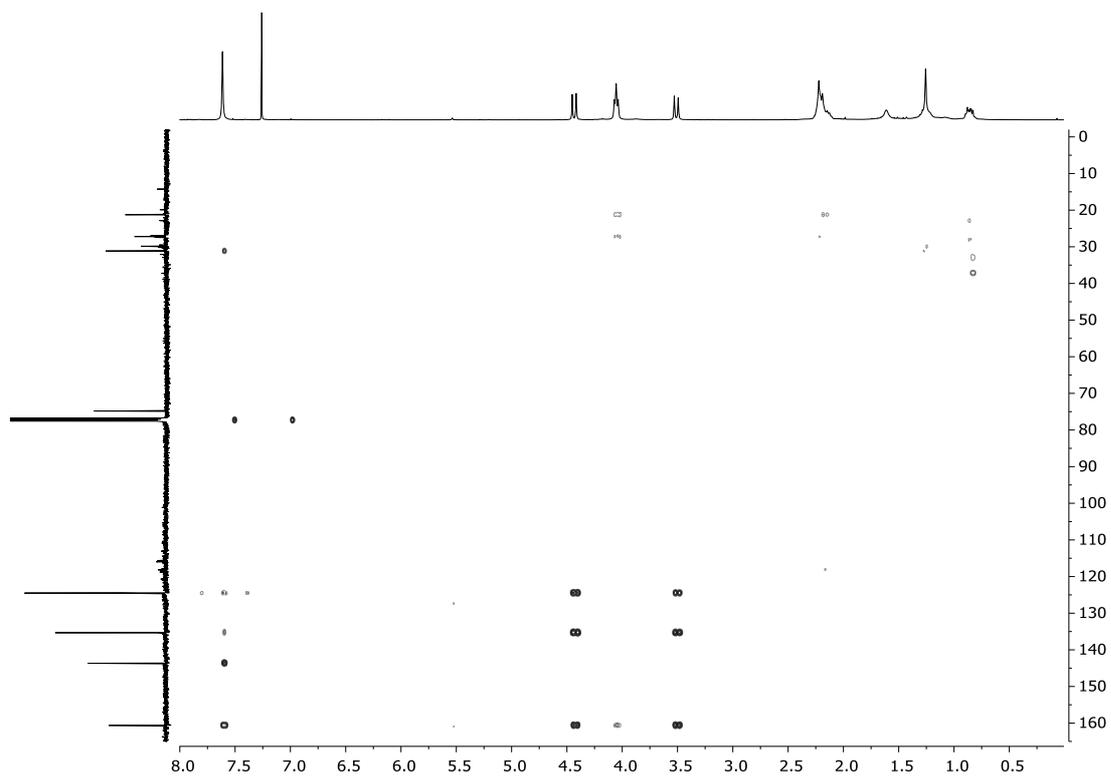**Figure S20**. HSQC NMR (298K, 400MHz) spectrum of **6** in CDCl$_3$.

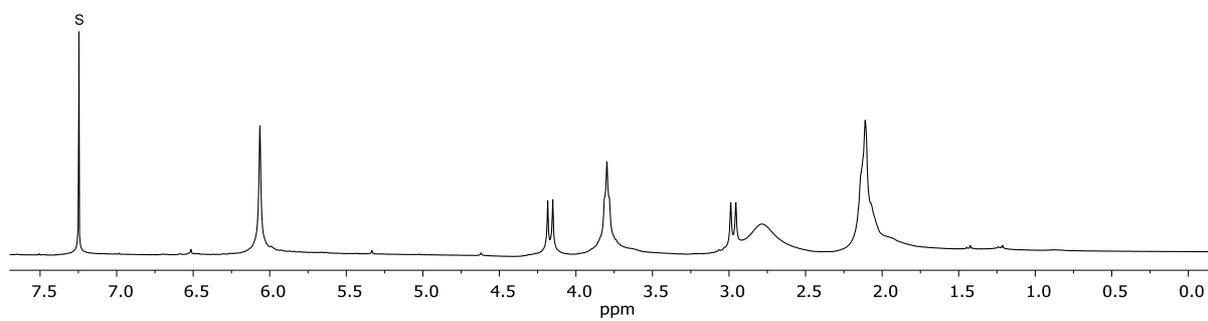**Figure S21**. HMBC NMR (298K, 400MHz) spectrum of **6** in CDCl$_3$.

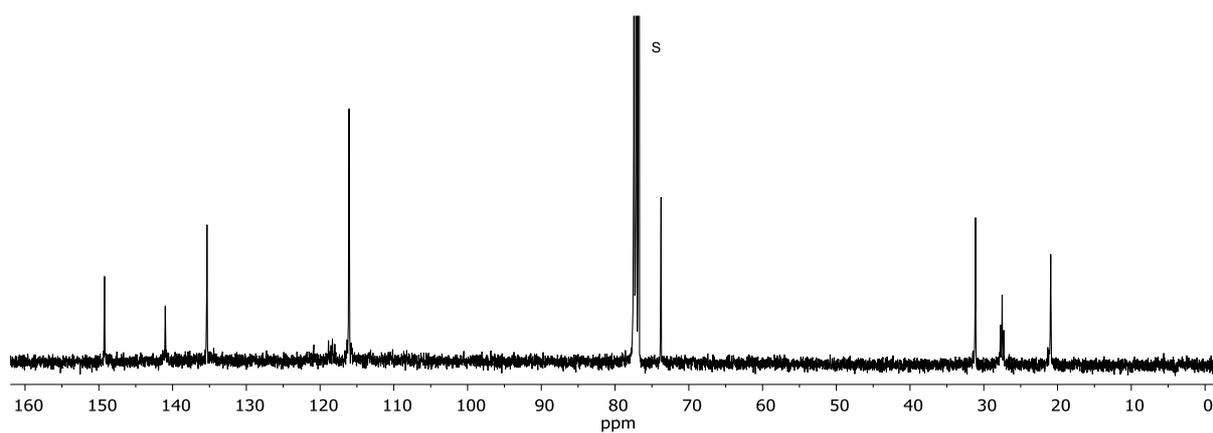**Figure S22**. ^{1}H NMR (298K, 400MHz) spectrum of **7** in CDCl$_3$. S = solvent

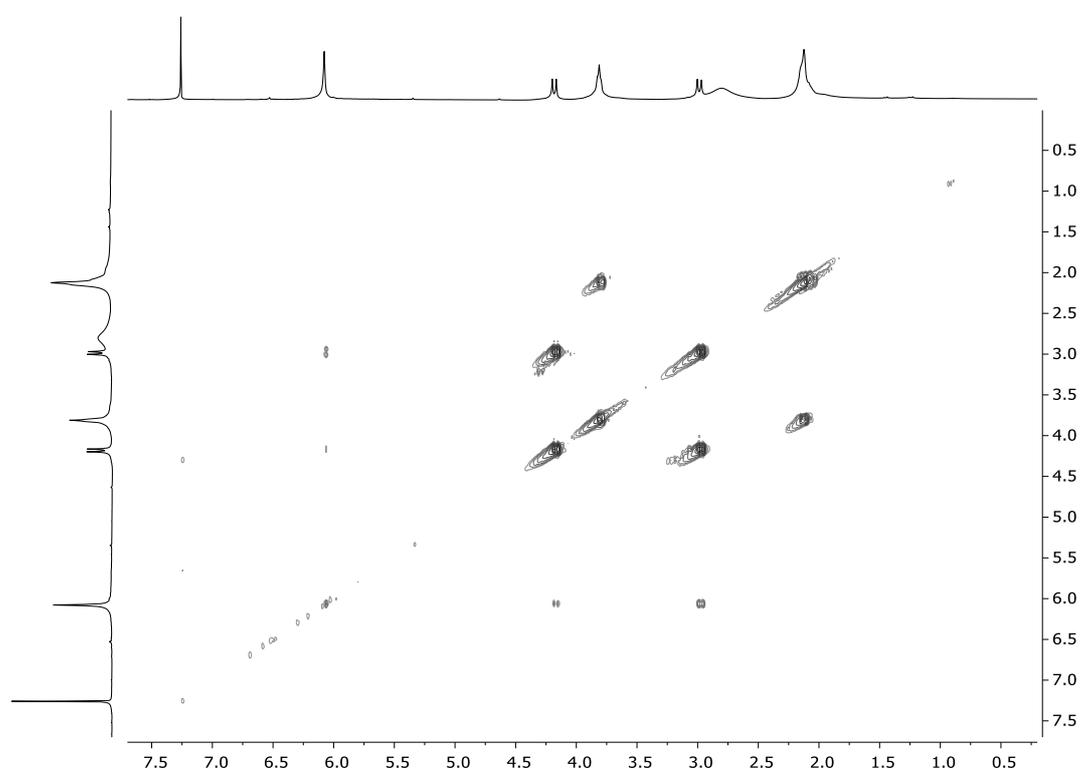**Figure S23**. ^{13}C NMR (298K, 100MHz) spectrum of **7** in CDCl$_3$. S = solvent

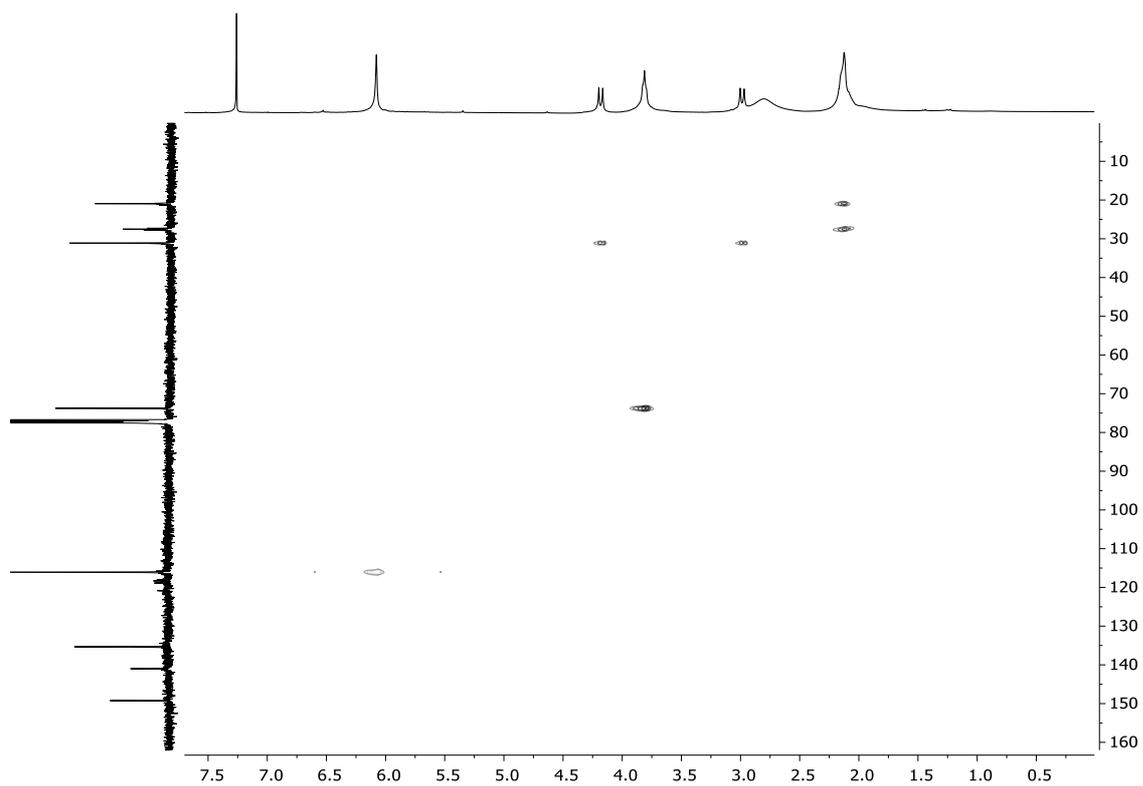**Figure S24**. COSY NMR (298K, 400MHz) spectrum of **7** in CDCl$_3$.

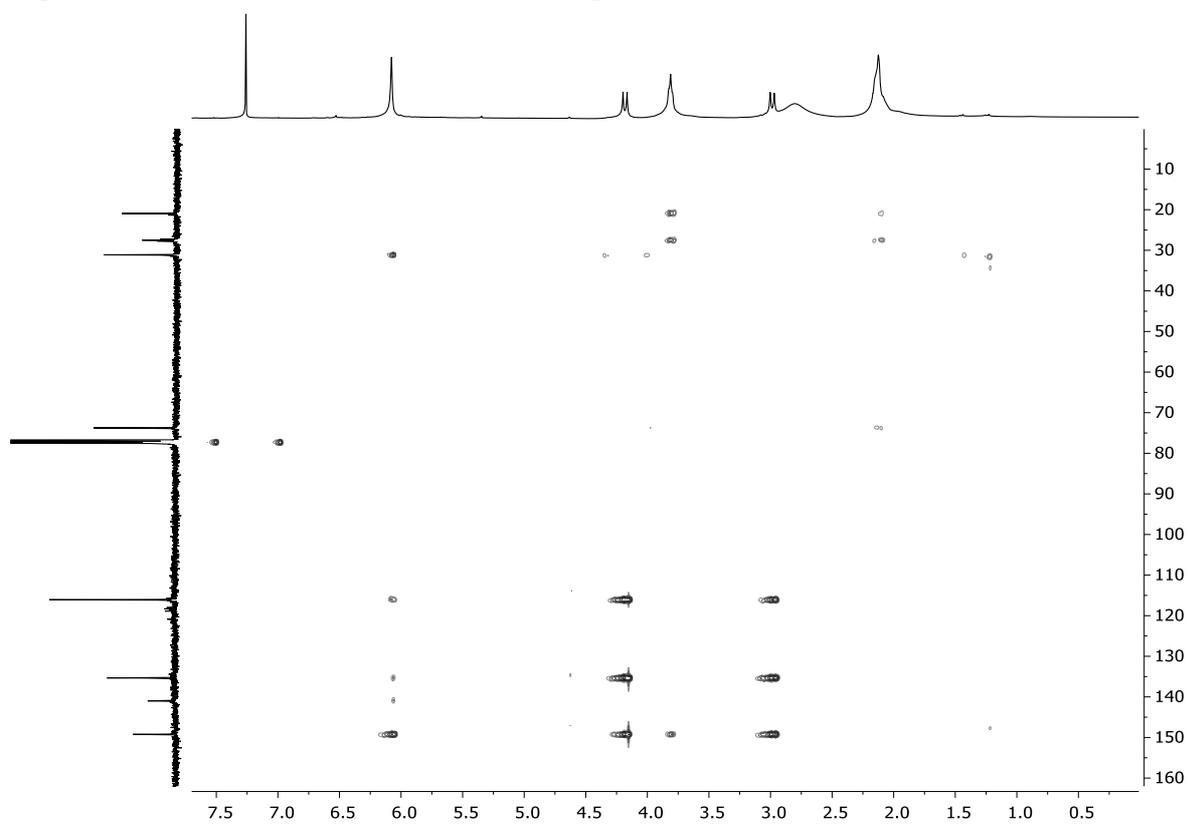**Figure S25**. HSQC NMR (298K, 400MHz) spectrum of **7** in CDCl₃.

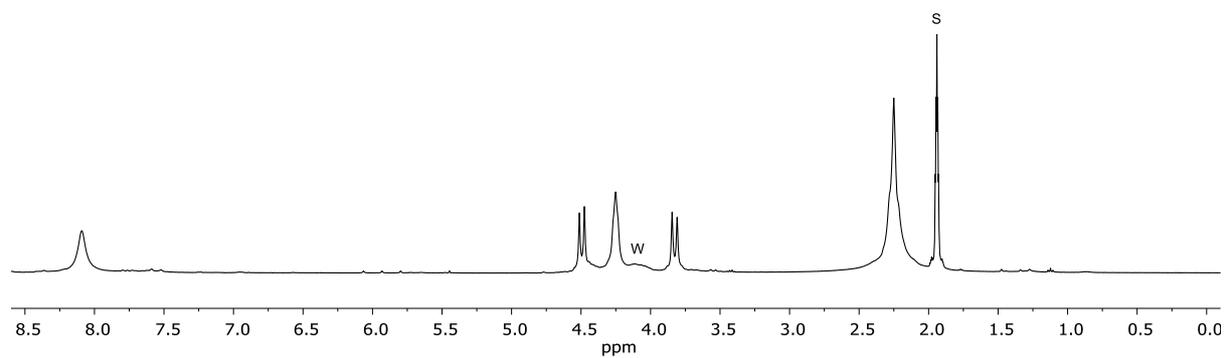**Figure S26**. HMBC NMR (298K, 400MHz) spectrum of **7** in CDCl₃.

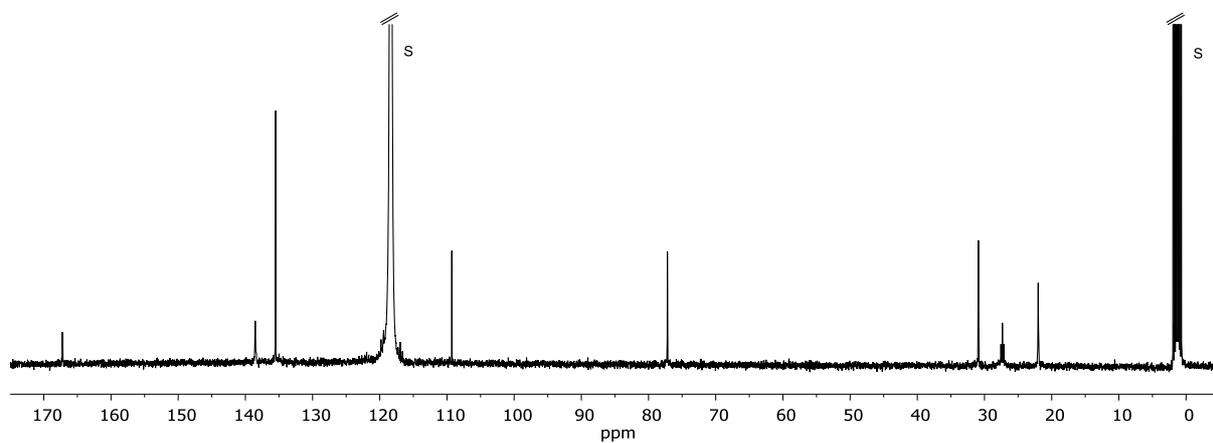**Figure S27**. ^{1}H NMR (298K, 400MHz) spectrum of **1** in CD$_3$CN. S = solvent, W = water.

Figure S28. ^{13}C NMR (298K, 100MHz) spectrum of **1** in CD$_3$CN. S = solvent.
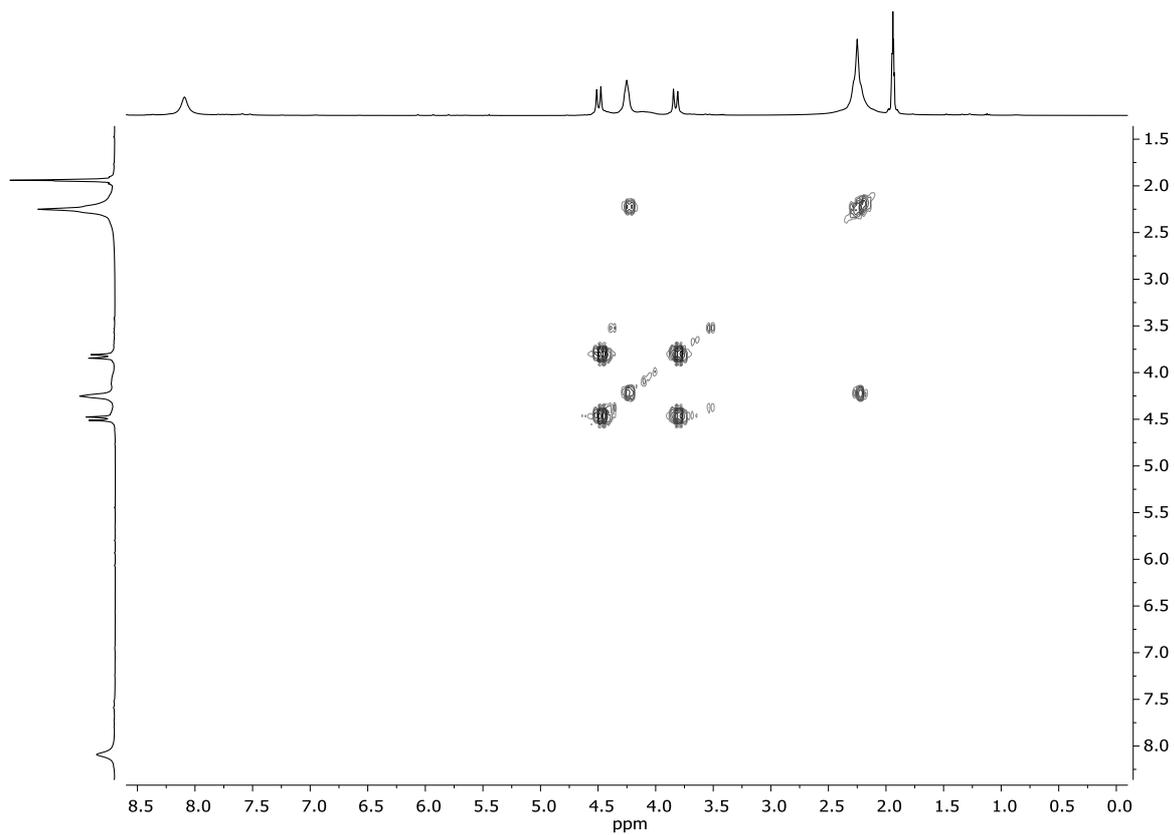
Figure S29. COSY NMR (298K, 400MHz) spectrum of **1** in CD₃CN.

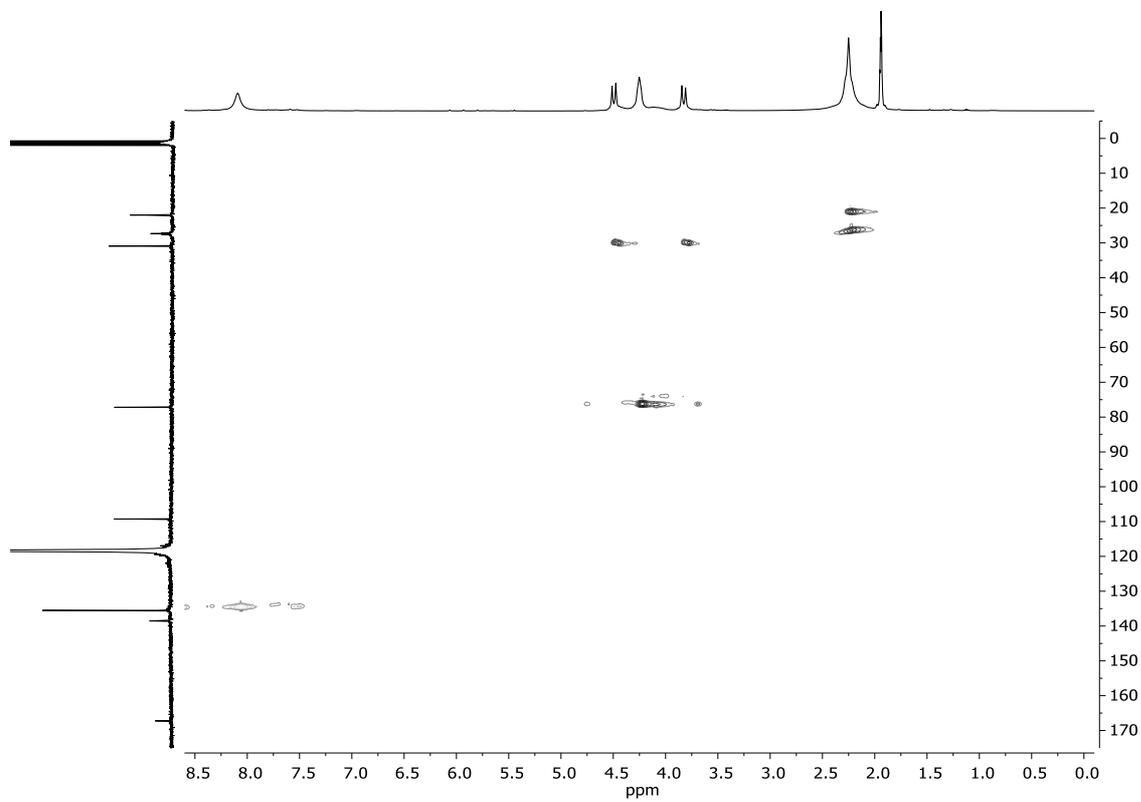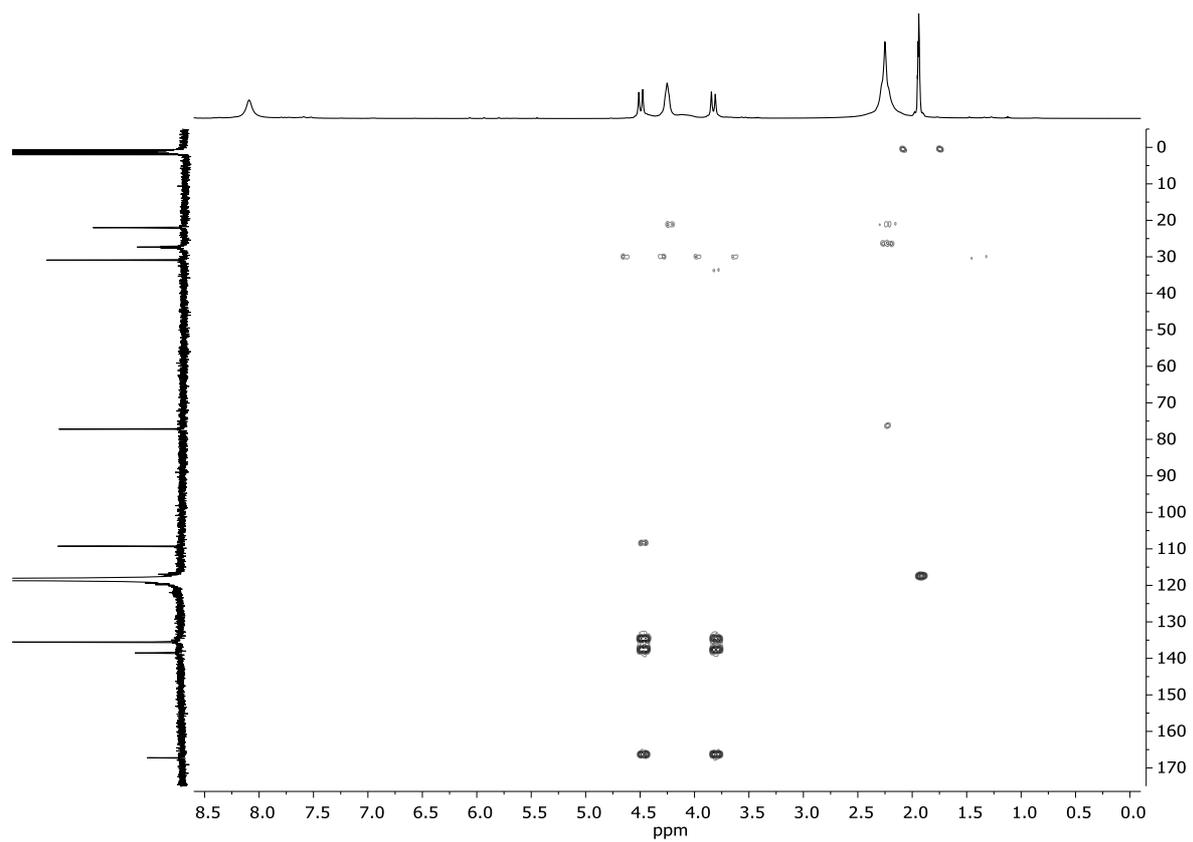**Figure S30**. HSQC NMR (298K, 400MHz) spectrum of **1** in CD₃CN.

Figure S31. HMBC NMR (298K, 400MHz) spectrum of **1** in CD$_3$CN.