

# Arene ruthenium(II) complexes bearing the $\kappa$ -P or $\kappa$ -P, $\kappa$ -S ePh<sub>2</sub>P(CH<sub>2</sub>)<sub>3</sub>SPh ligand

Sören Arlt <sup>1</sup>, Vladana Petković <sup>2</sup>, Gerd Ludwig <sup>1</sup>, Thomas Eichhorn <sup>3</sup>, Heinrich Lang <sup>4</sup>, Tobias Rüffer <sup>4</sup>, Sanja Mijatović <sup>2</sup>, Danijela Maksimović-Ivanic <sup>2</sup> and Goran N. Kaluđerović <sup>3,5\*</sup>

<sup>1</sup> Institute of Chemistry, Martin Luther University Halle-Wittenberg, Kurt-Mothes-Straße 2, D-06120 Halle, Germany; soeren.arlt@web.de, ludwig.gerd7@gmail.com

<sup>2</sup> Institute for Biological Research "Sinisa Stankovic" National Institute of Republic of Serbia, University of Belgrade, Bulevar despota Stefana 142, 11060 Belgrade, Serbia; vladanap@yahoo.com, sanja-mama@ibiss.bg.ac.rs, nelamax@ibiss.bg.ac.rs

<sup>3</sup> Department of Engineering and Natural Sciences, University of Applied Sciences Merseburg, Eberhard-Leibnitz-Strasse 2, DE-06217 Merseburg, Germany; thomas.eichhorn@hs-merseburg.de, goran.kaluderovic@hs-merseburg.de

<sup>4</sup> Institute of Chemistry, Chemnitz University of Technology, Straße der Nationen 62, D-09111 Chemnitz, Germany; heinrich.lang@chemie.tu-chemnitz.de, tobias.rueffer@chemie.tu-chemnitz.de

<sup>5</sup> Faculty of Pharmacy, Novi Sad University of business academy in Novi Sad, Trg mladenaca 5, 21000 Novi Sad, Serbia; goran.kaluderovic@faculty-pharmacy.com

\* Correspondence: goran.kaluderovic@hs-merseburg.de

## Supporting Information

### 1. Analytical data

List of HSQC-NMR spectra:

Figure S1. [Ru( $\eta^6$ -benzene)Cl<sub>2</sub>{Ph<sub>2</sub>P(CH<sub>2</sub>)<sub>3</sub>SPh- $\kappa$ P}] **2a**.

Figure S2. [Ru( $\eta^6$ -benzene)Cl{Ph<sub>2</sub>P(CH<sub>2</sub>)<sub>3</sub>SPh- $\kappa$ P, $\kappa$ S}]PF<sub>6</sub> **4a**.

Figure S3. [Ru( $\eta^6$ -indane)Cl<sub>2</sub>{Ph<sub>2</sub>P(CH<sub>2</sub>)<sub>3</sub>SPh- $\kappa$ P}] **2c**.

Figure S4. [Ru( $\eta^6$ -indane)Cl{Ph<sub>2</sub>P(CH<sub>2</sub>)<sub>3</sub>SPh- $\kappa$ P, $\kappa$ S}]PF<sub>6</sub> **4c**.

Figure S5. [Ru( $\eta^6$ -thn)Cl<sub>2</sub>{Ph<sub>2</sub>P(CH<sub>2</sub>)<sub>3</sub>SPh- $\kappa$ P}] **2d**.

Figure S6. [Ru( $\eta^6$ -thn)Cl{Ph<sub>2</sub>P(CH<sub>2</sub>)<sub>3</sub>SPh- $\kappa$ P, $\kappa$ S}]PF<sub>6</sub> **4d**.

Figure S7. [Ru( $\eta^6$ -mesitylene)Cl{Ph<sub>2</sub>P(CH<sub>2</sub>)<sub>3</sub>SPh- $\kappa$ P, $\kappa$ S}]Cl **3b**.

Figure S8. [Ru( $\eta^6$ -mesitylene)Cl{Ph<sub>2</sub>P(CH<sub>2</sub>)<sub>3</sub>SPh- $\kappa$ P, $\kappa$ S}]PF<sub>6</sub> **4b**.

Figure S9. [Ru( $\eta^6$ -1,4-dialin)Cl{Ph<sub>2</sub>P(CH<sub>2</sub>)<sub>3</sub>SPh- $\kappa$ P, $\kappa$ S}]Cl **3e**.

Figure S10. [Ru( $\eta^6$ -1,4-dialin)Cl{Ph<sub>2</sub>P(CH<sub>2</sub>)<sub>3</sub>SPh- $\kappa$ P, $\kappa$ S}]PF<sub>6</sub> **4e**.

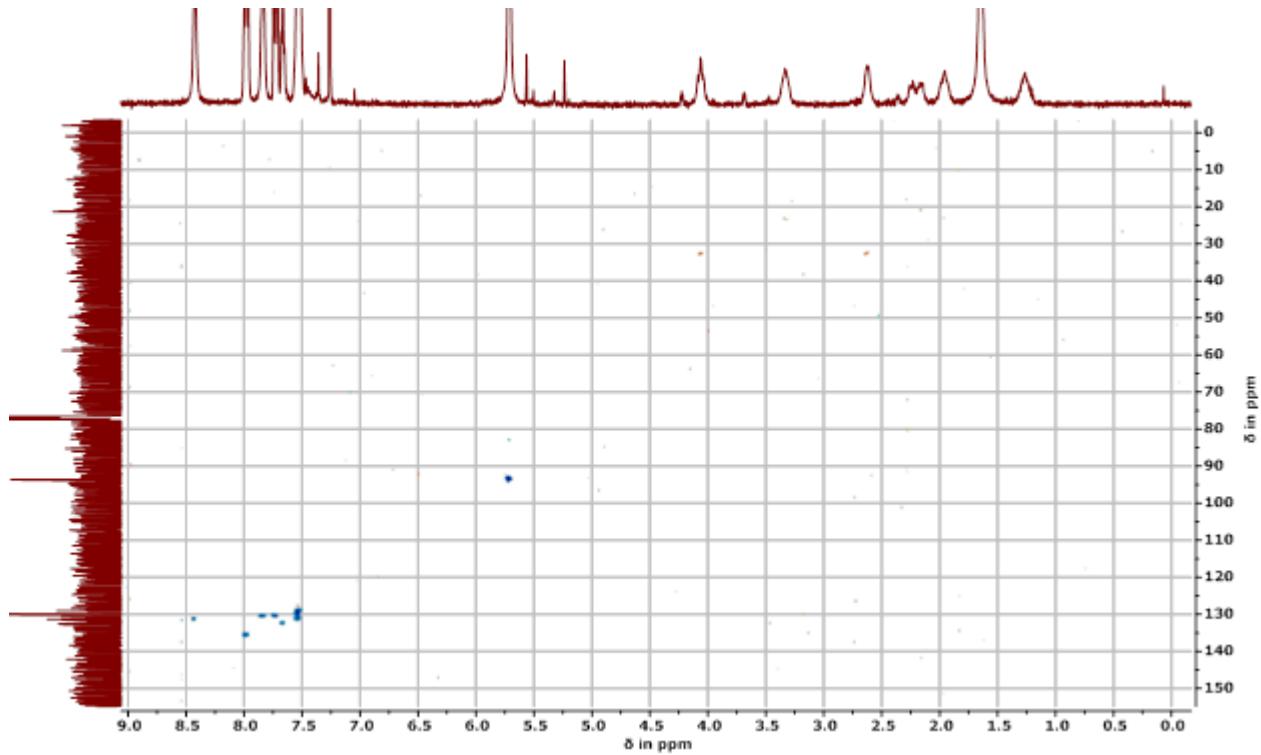


Figure S1. HSQC-NMR spectra for compound 2a.

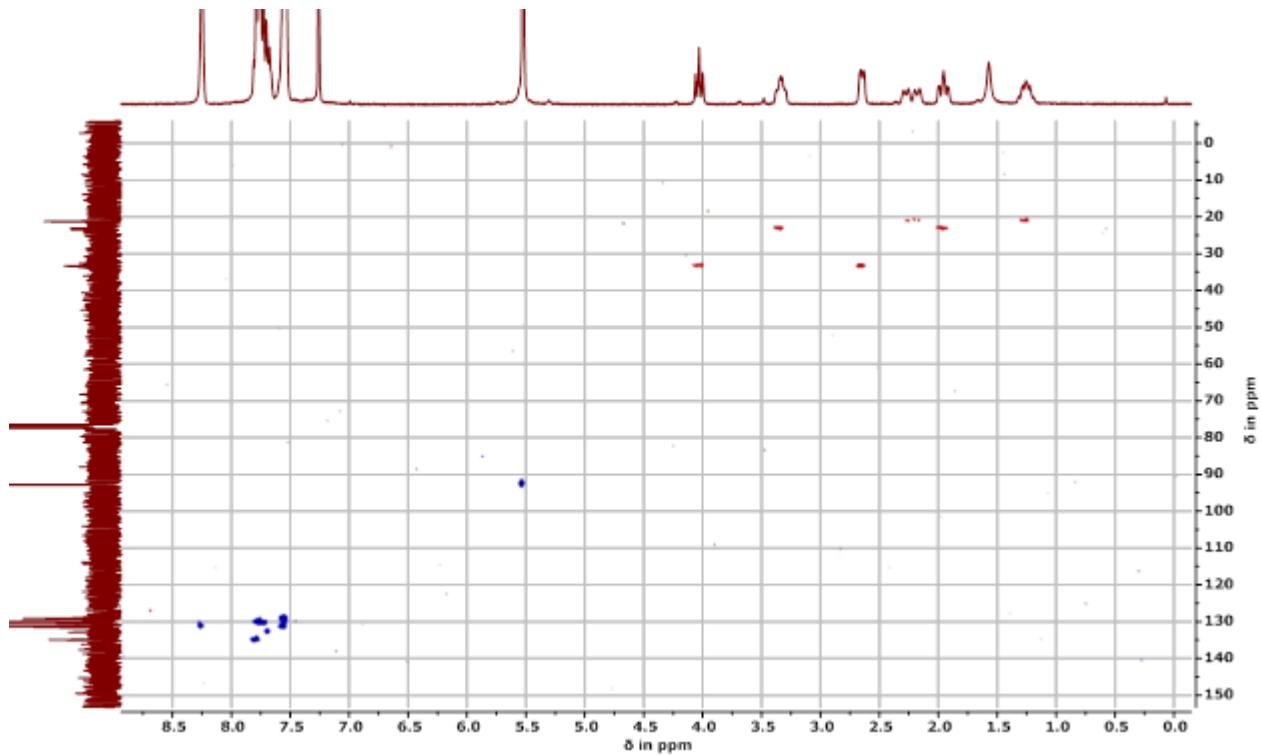
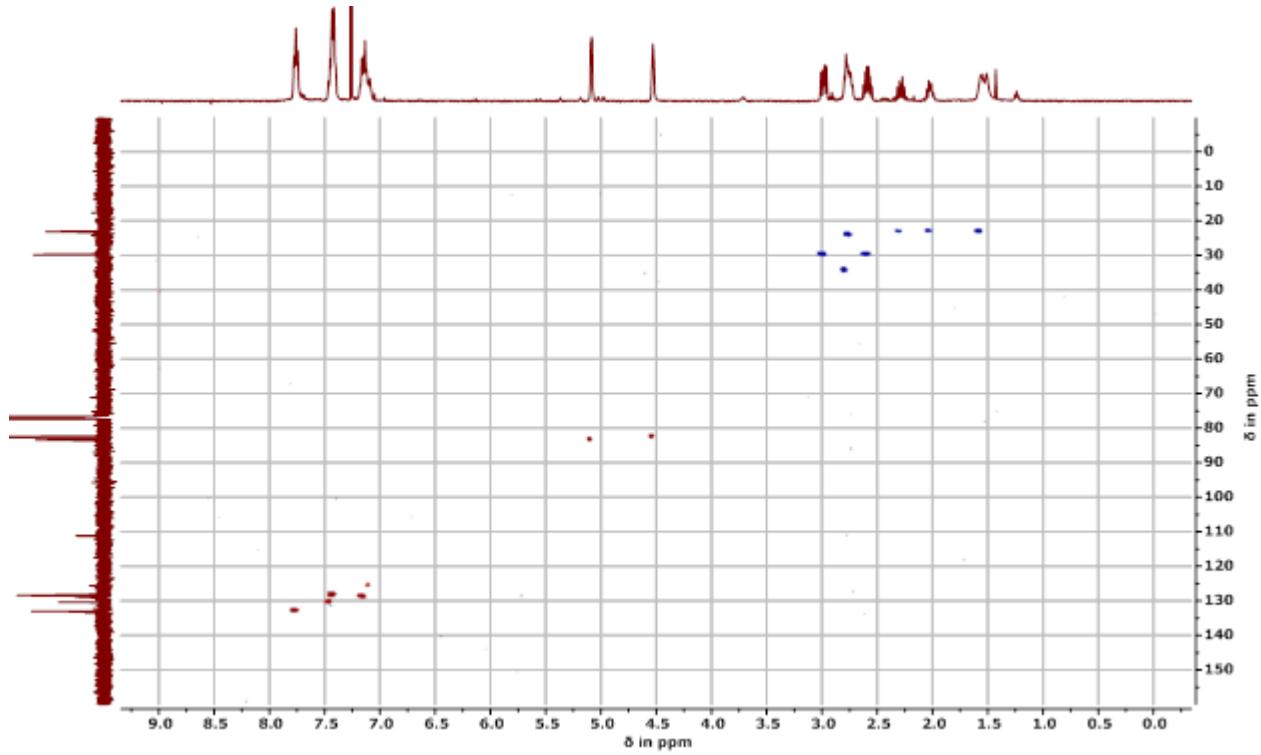
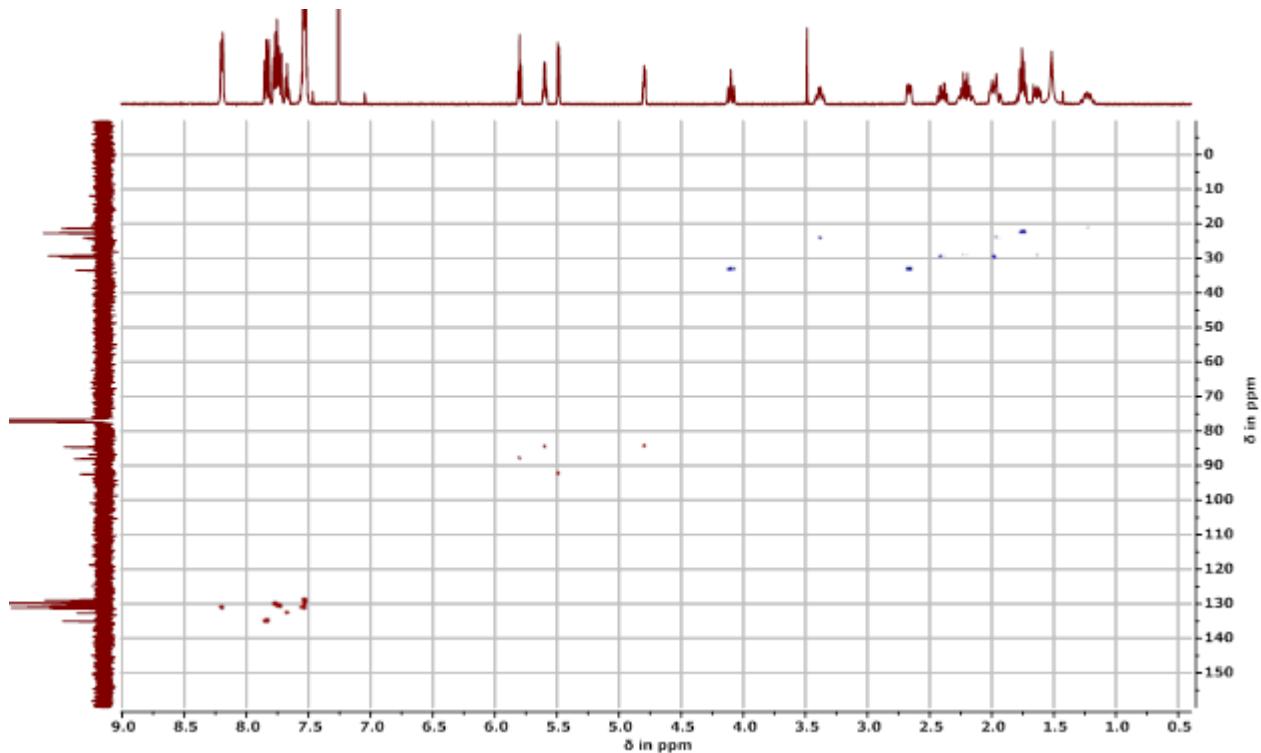


Figure S2. HSQC-NMR spectra for compound 4a.



**Figure S3.** HSQC-NMR spectra for compound 2c.



**Figure S4.** HSQC-NMR spectra for compound 4c.

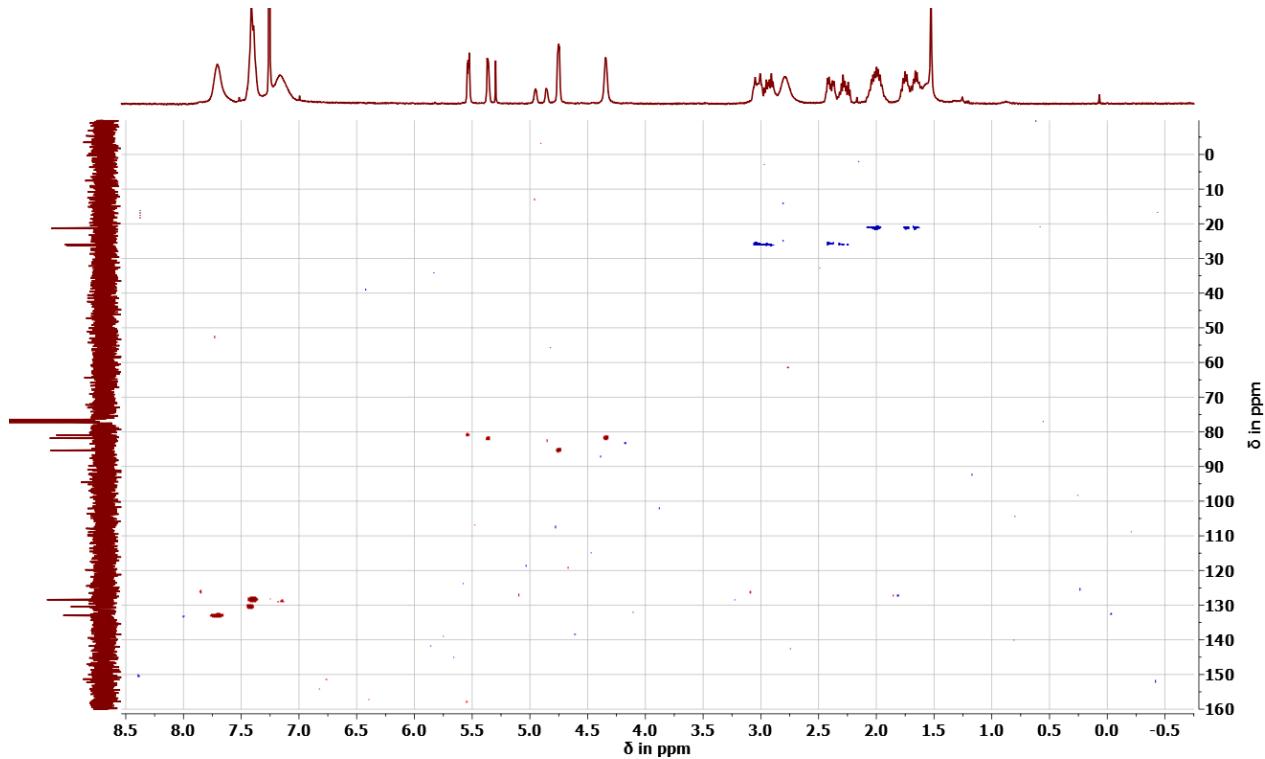


Figure S5. HSQC-NMR spectra for compound 2d.

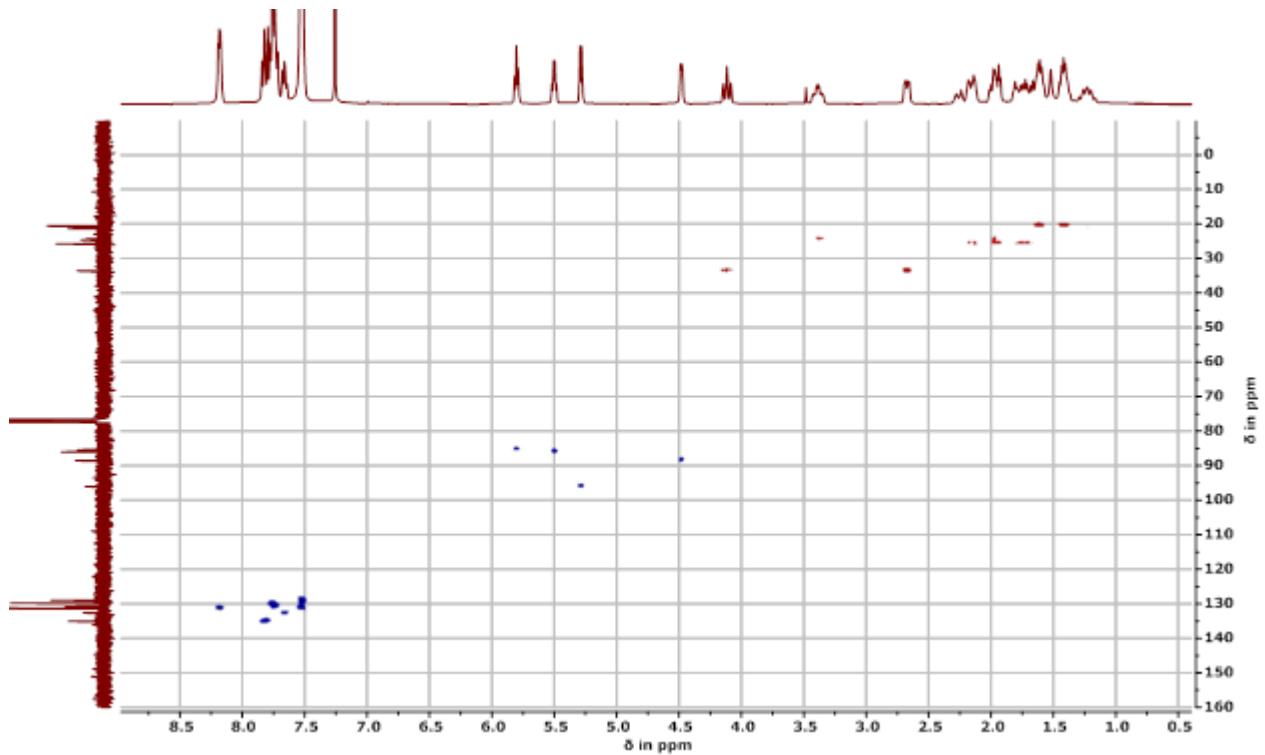


Figure S6. HSQC-NMR spectra for compound 4d.

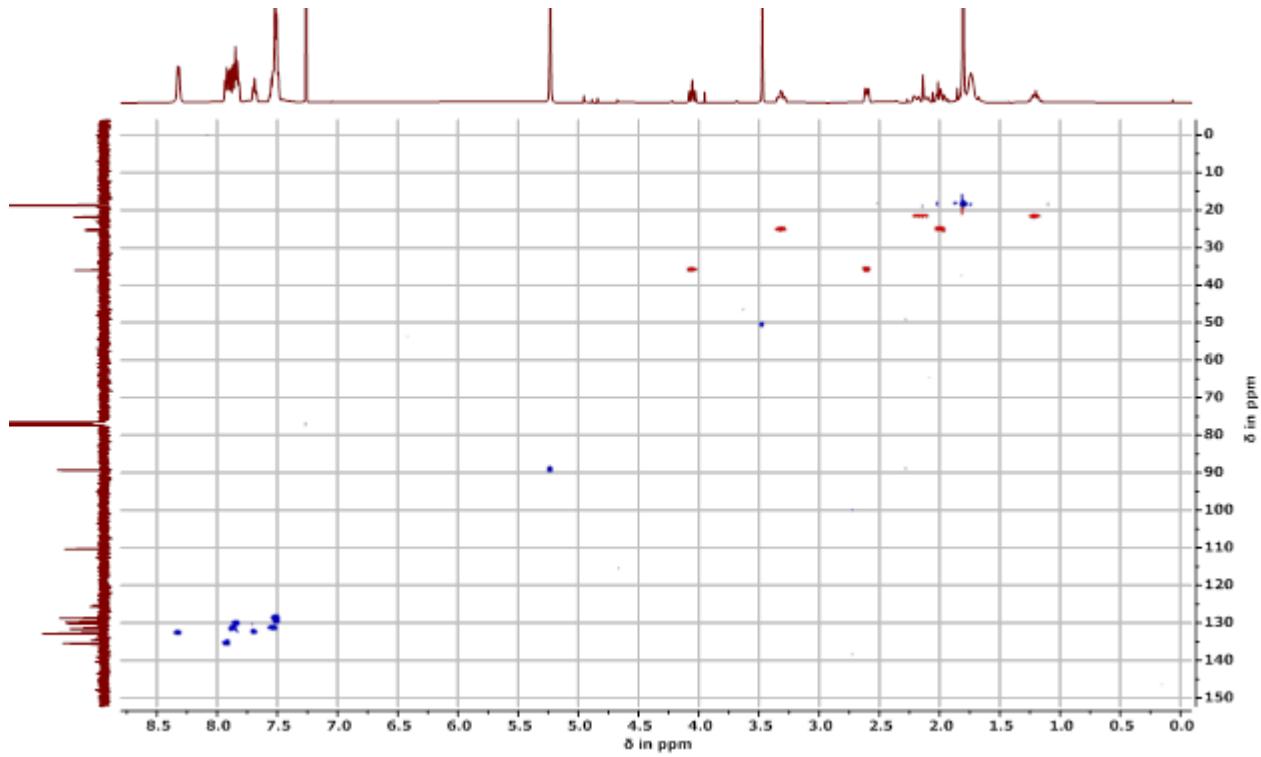


Figure S7. HSQC-NMR spectra for compound 3b.

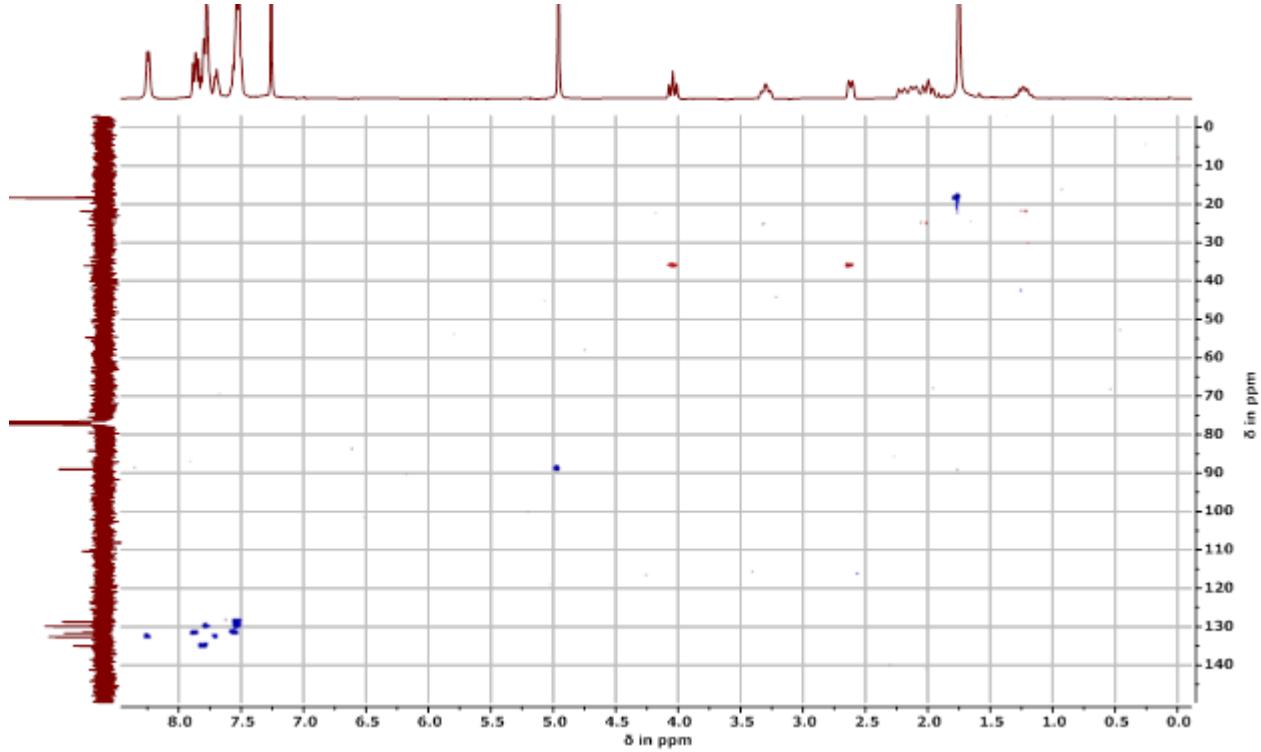


Figure S8. HSQC-NMR spectra for compound 4b.

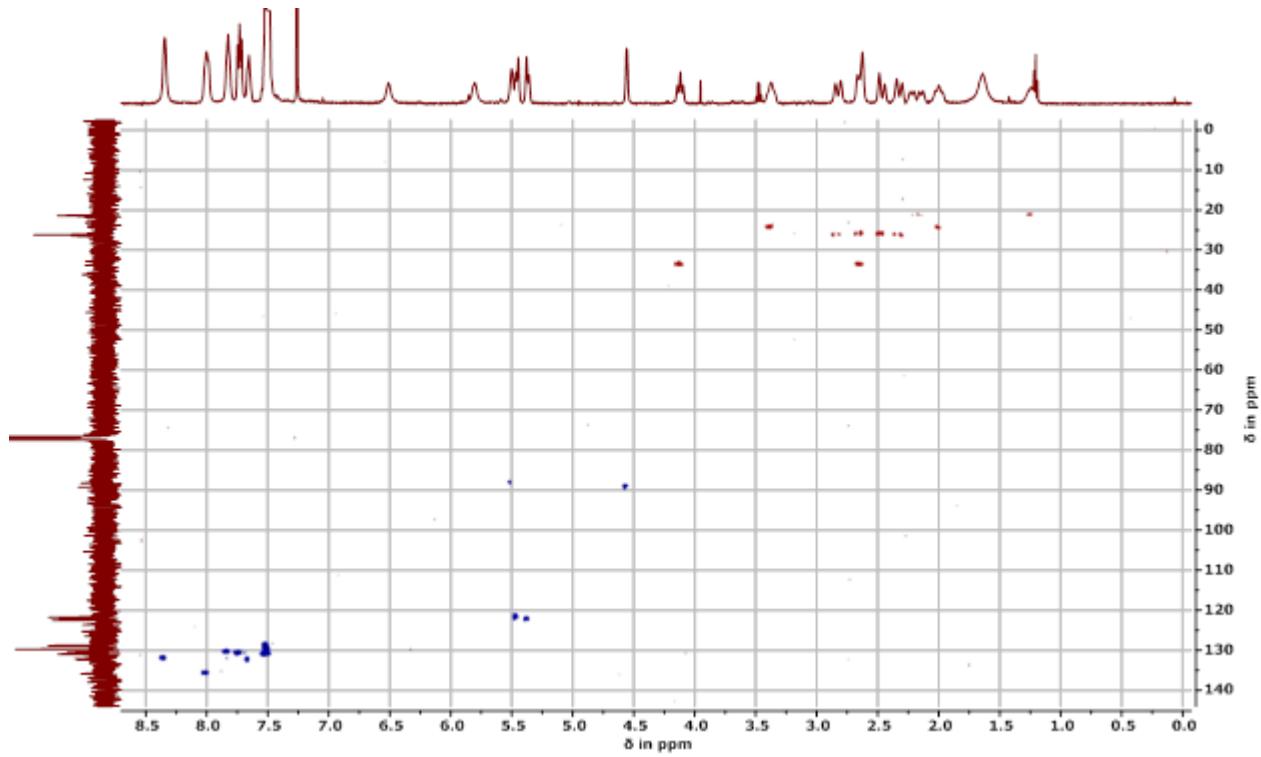


Figure S9. HSQC-NMR spectra for compound 3e.

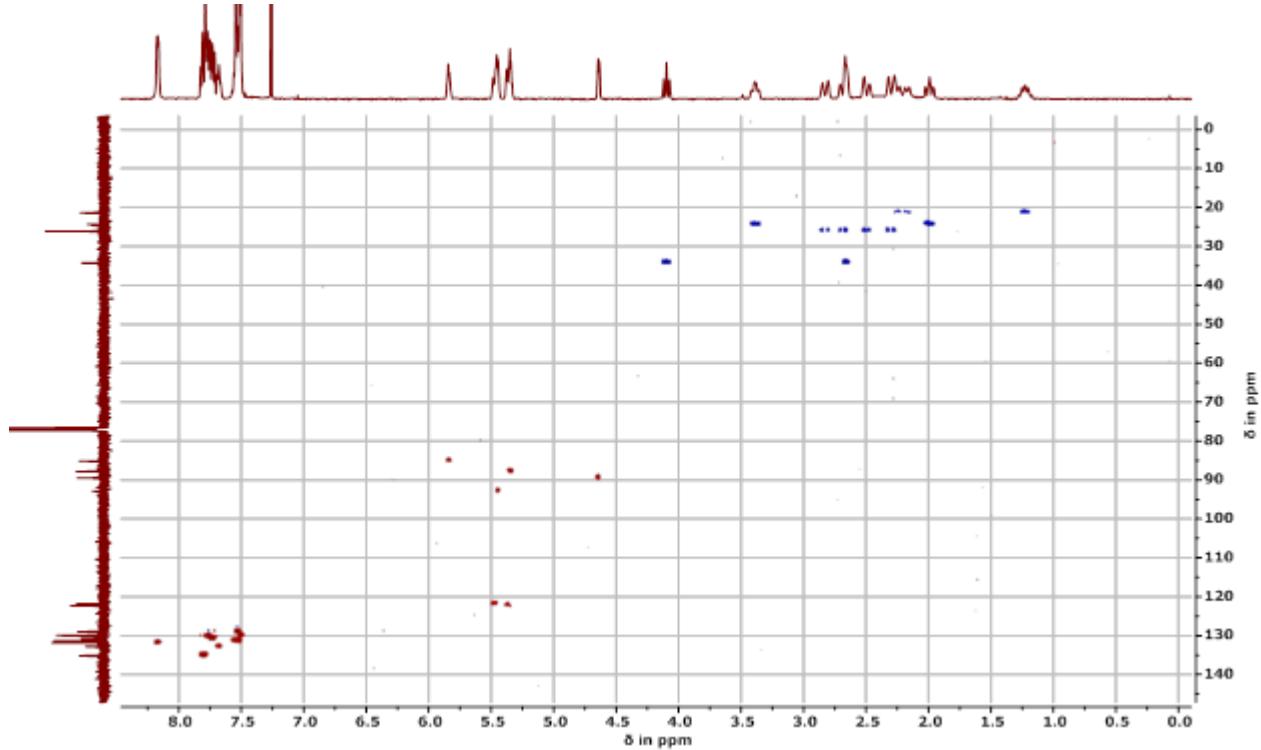


Figure S10. HSQC-NMR spectra for compound 4e.