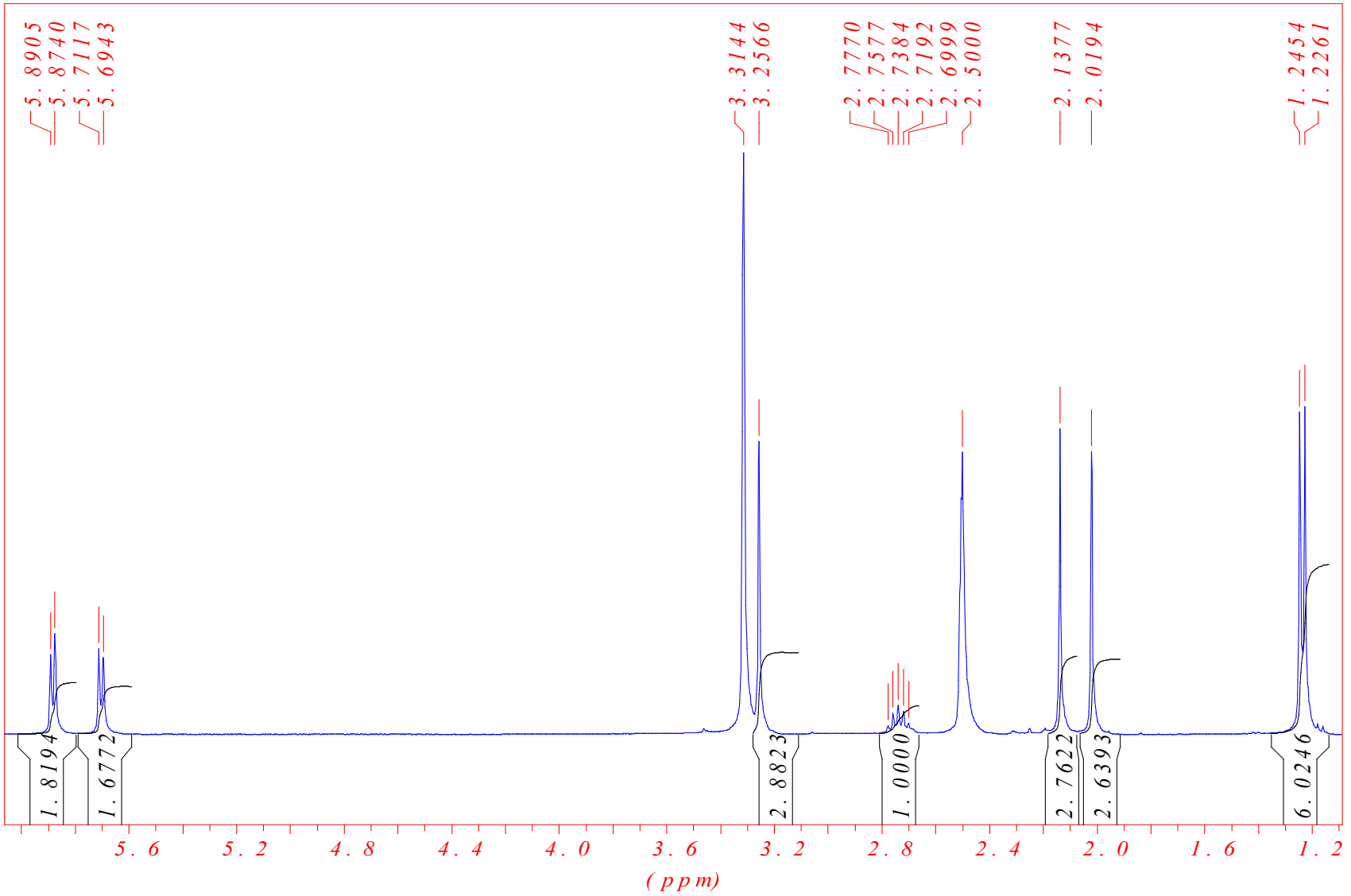

Figure S1 - ^{1}H-NMR spectrum of [Ru(η^{6}-*p*-cym)(μ-meaha)]$_2$(CF_3SO_3)$_2$ (**5**) in d^{6}-DMSO

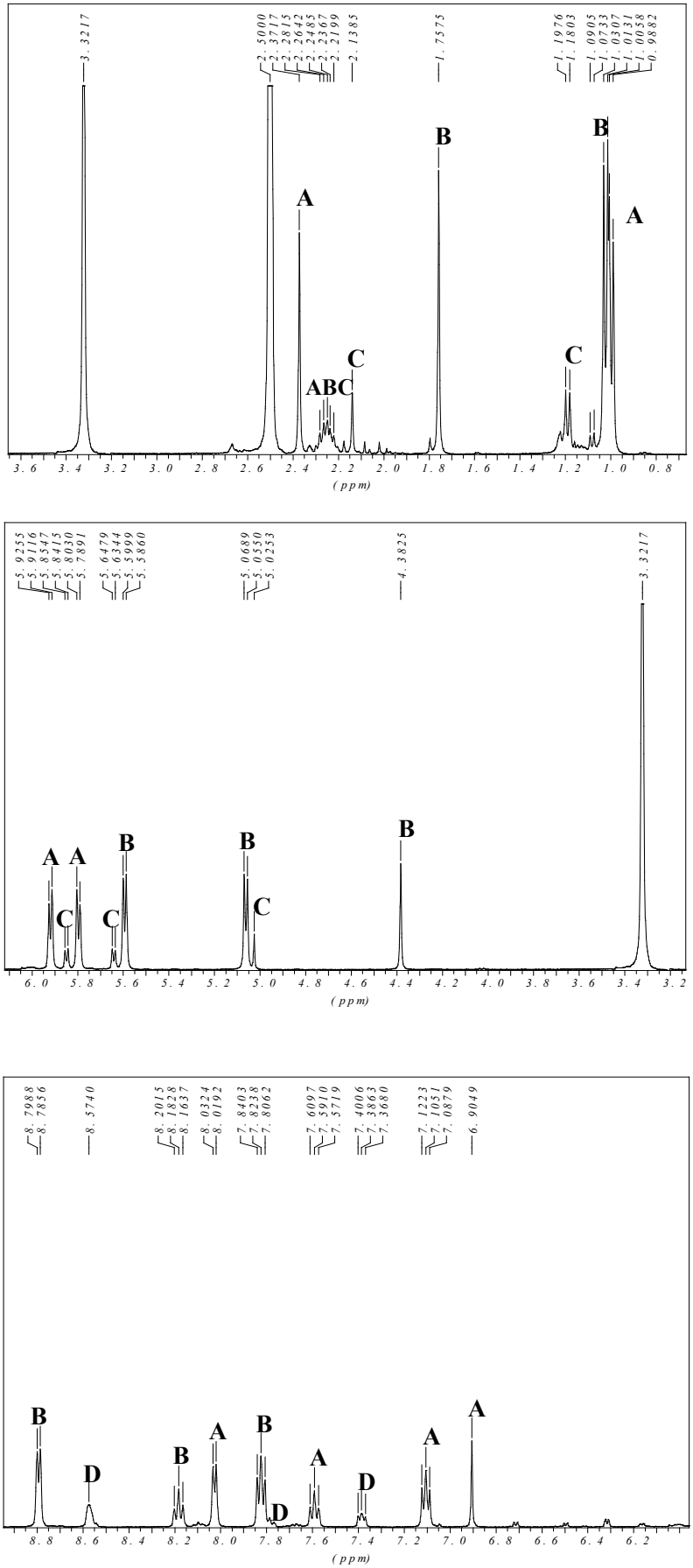

Fig. S2 - ^{1}H-NMR spectrum of $[Os(\eta^6\text{-}p\text{-cym})(\square\text{-}OH)py]_2(CF_3SO_3)_2$ (**16**) in d^6-DMSO. A-C indicate the species $[Os(py)(\eta^6\text{-}p\text{-cym})(\square\text{-}OH)_2Os(\eta^6\text{-}p\text{-cym})]^{2+}$ (A), $[Os(\eta^6\text{-}p\text{-cym})(\square\text{-}OH)py]_2^{2+}$ (B) and $[Os(\eta^6\text{-}p\text{-cym})(\square\text{-}OH)]_2^{2+}$ (C) formed after partial or full dissociation of pyridine (D) in solution

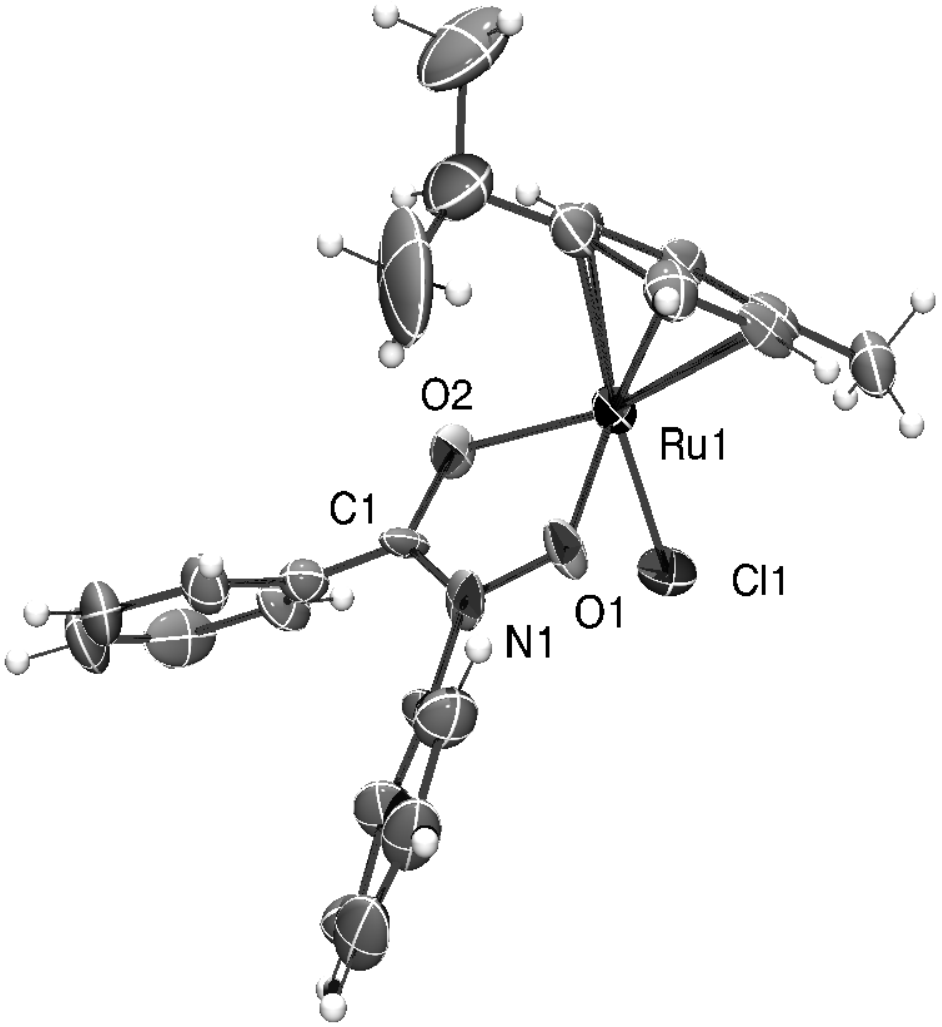

Figure S3 X-Ray structure of [Ru(η^6-*p*-cym)(phebha)Cl] (**9**). Thermal ellipsoids show 50 % probability with partial numbering scheme. Selected bond lengths (Å) and angles (^{o}): Ru(1)-Cl(1) 2.411(3), Ru(1)-O(1) 2.097(14), Ru(1)-O(2) 2.062(15), Ru(1)-C_{arene}(avr.) 2.166(23); O(1)-Ru(1)-O(2) 77.5(3), Cl(1)-Ru(1)-O(1) 85.3(5), Cl(1)-Ru(1)-O(2) 84.3(5).

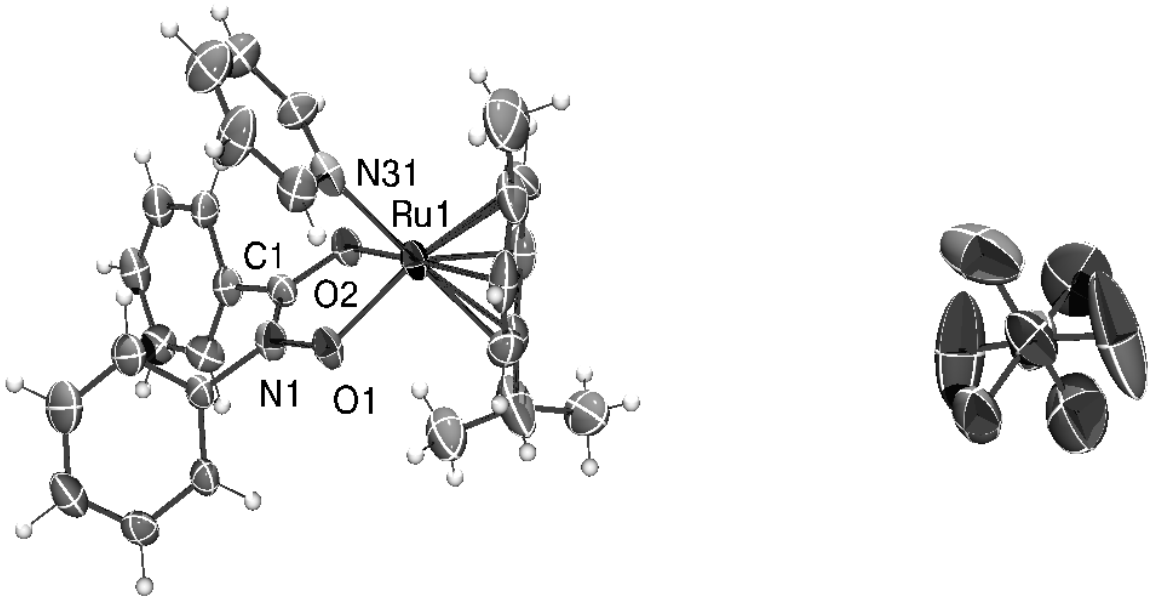

Figure S4 - X-Ray structure of [Ru(η^6-*p*-cym)(phebha)(py)]CF_3SO_3 (**14**). Thermal ellipsoids show 50 % probability with partial numbering scheme. Selected bond lengths (Å) and angles (^{o}): Ru(1)-O(1) 2.029(7), Ru(1)-O(2) 2.075(6), Ru(1)-N(31) 2.144(10), Ru(1)-C_{arene}(avr.) 2.17(4); O(1)-Ru(1)-O(2) 79.1(3), N(31)-Ru(1)-O(1) 82.3(3), N(31)-Ru(1)-O(2) 82.8(3).