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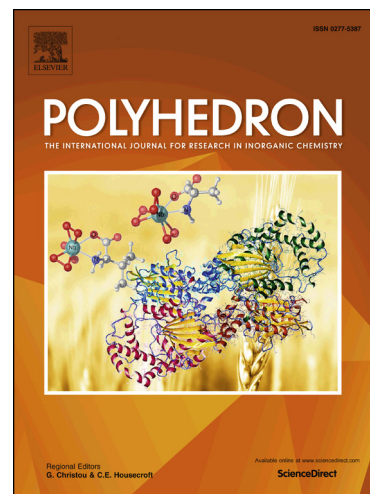
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# Synthesis, characterization and interactions with 9-methylguanine of ruthenium(II) $\eta^6$ -arene complexes with aromatic diimines.

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## ABSTRACT

The complexes of the formula  $[(\eta^6\text{-arene})\text{Ru}(\text{L})\text{Cl}]\text{PF}_6$ , where arene is benzene (bz) or p-cymene (cym) and L is 2,(2'-pyridyl)quinoline (pqn), were synthesized and characterized by means of NMR spectroscopic techniques, HR-ESI mass spectrometry and, in the case of  $[(\eta^6\text{-cym})\text{Ru}(\text{pqn})\text{Cl}]\text{PF}_6$ , by X-ray single crystal diffraction. Their resistance in hydrolysis was also studied. A comparative NMR study of their 9-methylguanine (9-MeG) complexes,  $[(\eta^6\text{-arene})\text{Ru}(\text{pqn})(9\text{-MeG})](\text{PF}_6)_2$ , with similar diimine complexes revealed that the unimpeded rotation of 9-MeG is hindered by interactions between the 9-MeGO6 and the p-cymene aromatic proton H2 and, by the bulky shape of the pqn. This conformation forces the 9-MeGH8 to be in close proximity to the aromatic ring system of pqn. NMR spectroscopic techniques lead to the conclusion that the strong shielding effect on 9-MeGH8 depends on the extension of the aromatic system of the ligand. Also, we conclude that the strong deshielding on the 9-MeGNH1 is influenced by both the N7 ruthenation of 9-MeG and the addendum electron density in the 9-MeG ring system, due to the proximity to the aromatic ring system of pqn.

**Keywords:**  $\eta^6$ -arene ruthenium; 9-methylguanine; cancer chemotherapy; NMR; mass spectrometry

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