

THE INFLUENCE OF CHELATE RING SIZE ON THE *IN VITRO* ANTICANCER ACTIVITY OF ARENE-OSMIUM(II) COMPLEXES WITH κ^2 -P,P' LIGANDS

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The unique chemical properties of organometallic complexes which have found use in catalysis are now being for medicinal applications. The structural diversity, ligand exchange properties and redox activity of these complexes make them well-suited as potential agents for cancer therapy.[1] Arene-osmium(II) complexes have drawn considerable interest as potential anticancer agents and have shown *in vitro* anticancer activity comparable to *Cisplatin*.[2]

In this study, the *in vitro* anticancer activity of the osmium derivatives $[(\eta^6\text{-cymene})\text{OsBrL}_2]\text{BF}_4$ (where $\text{L}_2 = \text{dppm}$, dppe , dppp and dppb) has been investigated. Structural studies using crystallography and DFT methods have been used to establish structure-activity relationships.

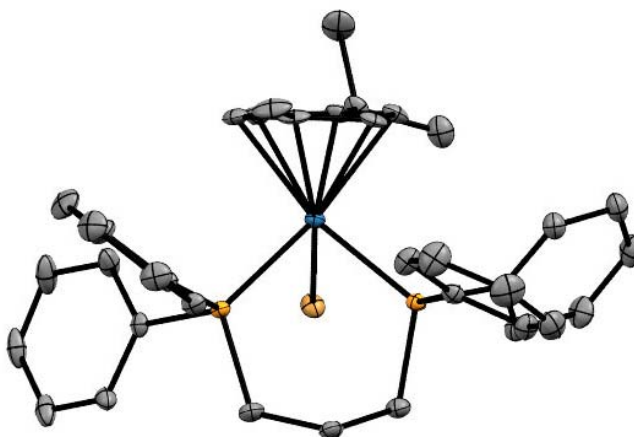


Figure 1. Molecular structure of $[(\eta^6\text{-cymene})\text{OsBr}(\text{dppp})]\text{BF}_4$ (H atoms and BF_4 ion omitted for clarity)

[1] Meier-Menches, S.M.; Gerner, C.; Berger, W.; Hartinger, C.G.; Keppler, B.K. *Chem. Soc. Rev.*, **2018**, 47, 909.

[2] Needham, R.J.; Sanchez-Cano, C.; Zhang, X.; Romero-Canelón, I.; Habtemariam, A.; Cooper, M.S.; Meszaros, L.; Clarkson, G.J.; Blower, P.J.; Sadler, P.J. *Angew. Chem. Int. Ed.*, **2017**, 56, 1017.