

## Synthesis, structure and cytotoxicity of a series of Dioxidomolybdenum(VI) complexes featuring Salan ligands.

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Seven hexacoordinated cis-dioxidomolybdenum(VI) complexes  $[\text{MoO}_2\text{L}^{1-7}]$  (1-7) derived from various tetradentate diamino bis(phenolato) "salan" ligands,  $N,N'$ -dimethyl- $N,N'$ -bis-(2-hydroxy-3-X-5-Y-6-Z-benzyl)-1,2-diaminoethane  $\{(X = \text{Br}, Y = \text{Me}, Z = \text{H} (\text{H}_2\text{L}^1); X = \text{Me}, Y] \text{Cl}, Z = \text{H} (\text{H}_2\text{L}^2); X = \text{}^i\text{Pr}, Y = \text{Cl}, Z = \text{Me} (\text{H}_2\text{L}^3)\}$  and  $N,N'$ -bis-(2-hydroxy-3-X-5-Y-6-Z-benzyl)-1,2-diaminopropane  $\{(X = Y = \text{}^t\text{Bu}, Z = \text{H} (\text{H}_2\text{L}^4); X = Y = \text{Me}, Z = \text{H} (\text{H}_2\text{L}^5); X = \text{}^i\text{Pr}, Y] \text{Cl}, Z = \text{Me} (\text{H}_2\text{L}^6); X = Y = \text{Br}, Z = \text{H} (\text{H}_2\text{L}^7)\}$  containing O-N donor atoms, have been isolated and structurally characterized. The formation of cis-dioxidomolybdenum(VI) complexes was confirmed by elemental analysis, IR, UV-vis and NMR spectroscopy, ESI-MS and cyclic voltammetry. X-ray crystallography showed the  $\text{O}_2\text{N}_2$  donor set to define an octahedral geometry in each case. The complexes (1-7) were tested for their in vitro antiproliferative activity against HT-29 and HeLa cancer cell line.  $\text{IC}_{50}$  values of the complexes in HT-29 follow the order  $6 < 7 < <1 < 2 < 5 < <3 < 4$  while the order was  $6 < 7 < 5 < 1 < <3 < 4 < 2$  in HeLa cells. Some of the complexes proved to be as active as the clinical referred drugs, and the greater potency of 6 and 7 ( $\text{IC}_{50}$  values of 6 are 2.62 and 10.74  $\mu\text{M}$  and that of 7 is 11.79 and 30.48  $\mu\text{M}$  in HT-29 and HeLa cells, respectively) may be dependent on the substituents in the salan ligand environment coordinated to the metal. **More in *Journal of Inorganic Biochemistry*, 2017, 172, 110, <https://doi.org/10.1016/j.jinorgbio.2017.04.015>**



