

MS35-P12 | NEW TITANIUM CALIX[N]ARENE-BASED SCAFFOLDS AS ANTI-TUMOUR AGENTS.

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There is a drive to develop new anti-tumour agents based on metals other than platinum. Some recently made Ti salen complexes have been shown to outperform cis-platin.¹ We present a range of new Ti calix[n]arene [n = 4, 6, 8] complexes and, for some examples, report on toxicity testing against tumour cell line U87. We have also investigated the deliberate hydrolysis of such species to track their chemistry under physiological conditions.²

Our synthetic and structural studies have developed and characterised a range of new Ti(IV) scaffolds including: (1) monometallic, calix[4]arene-based; (2) dimetallic, with OH⁻/Cl⁻ bridges, calix[4]arene-based; (3) Ti₄ ladders encapsulated by calix[8]arene; (4) more exotic architectures, including: up to 8 Ti⁴⁺ ions, an example with non-coordinated polyiodide ions, and a rare example with a disiloxane (from grease) bridge over a Ti₄ ladder.

Variation of the halogen in the starting material, and carried through into the products, leads to some common scaffolds, namely the Ti₄ ladders, but also some insights into reaction pathways via the isolation of key intermediates and/or secondary products. This leads to an appreciation of the variety possible in such systems, and hence the degree of control required to generate the desired products.

[1] A. Tzubery & E. Y. Tshuva, *Inorg. Chem.*, 2011, 50, 7946-7948.

[2] D. M. Miller-Shakesby, S. Nigam, D. L. Hughes, E. Lopez-Estelles, M. R. J. Elsegood, C. J. Cawthorne, S. J. Archibald, and Carl Redshaw, *Dalton Trans.*, 2018, 47, 8992-8999.