

## **Development of Novel Anti-Tumour Agents for the Treatment of Prostate Cancer**

**Host School/Institute: Discipline of Pathology, School of Medical Sciences**  
**Project Code: SMS11**

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### Description of Project:

Our studies with 1<sup>st</sup> generation DpT chelators yielded vital structure-activity relationships & the discovery of the potent and selective anti-cancer chelator, Dp44mT (DR1). Further studies showing the selective and marked activity of Dp44mT in tumours growing *in vivo* was recently published. However, Dp44mT caused some cardiac fibrosis at high non-optimal doses in nude mice (DR2), but interestingly not in C57BL6 mice. To find a more favourable efficacy/toxicity balance, we will screen 2<sup>nd</sup>-generation chelators that build logically on our studies *and will result in agents with even greater selective anti-tumour activity.*

We hypothesise that a terminal N4 atom that has lipophilic R groups bound to it that are not H will increase membrane permeability and anti-proliferative activity. Hence, we will examine the anti-proliferative activity *in-vitro* and *in-vivo* of other chelators like Dp44mT that have with no H atoms at N4. These chelators include Dp44eT, Dp44m4eT and Dp44mH. These studies will identify the 3 most active 2<sup>nd</sup> generation DpT chelators with greatest activity that will be examined in the *in-vivo* models of PCa by others. This work is clearly important for the development of new agents for the treatment of a highly common and aggressive tumour.

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**Please note: In order to apply for this project you need to contact the supervisor (Professor D Richardson) prior to submitting your application.**