



南京大学高济宇有机化学前沿讲座

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题目: **Ratiometric Probes for Nitroreductase: Monitoring Reductive Stress in Mammalian Cells.**

报告人: **Robert Elmes, Department of Chemistry, Maynooth University**

地点: 化学楼G211报告厅

时间: 2017年5月22号 (星期一) 上午10:00

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Biography:

Oct 2014 – : Assistant Prof. **Department of Chemistry, Maynooth University**

Oct 2014 – : Research Fellow, Department of Pharmaceutical & Medicinal Chemistry, Royal College of Surgeons in Ireland, Dublin.

Jan 2012 – Aug 2014: Postdoctoral Research Associate, School of Chemistry, University of Sydney

April 2011 – Dec 2011: Postdoctoral Research Associate, Trinity Biosciences Institute, TCD. Dublin.

Oct 2007- March 2011: PhD. (Chemistry), School of Chemistry, Trinity College Dublin.

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Lecture abstract:

Reductive stress has been shown to play a pivotal role in numerous disease states including cardiac ischemia, Alzheimer's disease and most notably solid tumors. By its nature, reductive stress is associated with elevated levels of numerous reductive enzymes, however, particular interest has been invested in oxidoreductases such as nitroreductase (NTR), DT diaphorase and azoreductase to name just a few examples. NTRs are a particularly valuable marker for reductive stress being capable of reducing nitroaromatics to corresponding nitroso or amino derivatives; a feature that has been exploited in both prodrug strategies and in methods for selective detection of tumour hypoxia. However, despite promising high levels of selectivity and sensitivity, in addition to facile intracellular monitoring of NTR activity, the development of fluorescent probes for NTR has only recently become a burgeoning area of research interest.

This work will summarise some of our initial efforts to design easily accessible, sensitive and selective probes for NTR including some preliminary evaluations of their use in monitoring reductive stress in a biological context.

Selected publications:

1. Elmes, R. B. P., Chem. Commun., 2016, 52, 8935.
2. A. Lloret, T. Fuchsberger, E. Giraldo, J. Vina, Curr. Alzheimer Res., 2016, 13, 206.
3. C. Koumenis, E. Hammond, A. Giaccia, Tumor Microenvironment and Cellular Stress. Springer Science, 2013

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