

Prof Paul Taylor

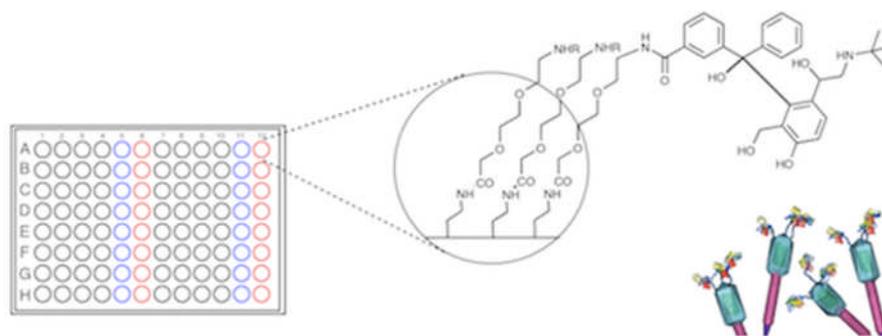
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This proposal is representative of the projects currently on offer in our group. For more details of active research projects, please visit the Research and Publications sections of our webpage at: <http://www.chem.leeds.ac.uk/People/Taylor.html>

Chemical Genomics, Cancer Treatments, Evolution & Chemical Education

A Chemical Genomics approach to Cancer Treatment: Our methods link drugs and natural products to genes that may affect cancer, for example drug candidate VAL401, being developed by ValiSeek Limited. VAL401 is the reformulation of an existing clinical drug to enable use instead in the treatment of cancer (Dilly et al., 2014). Preclinical data indicate potential use of the reformulated drug in lung, pancreatic, breast and prostate cancers.



The Evolutionary Origins of Chemical Messengers in Humans: A collaborative programme with Professor David Scanlan (School of Life Sciences, University of Warwick) and Dr Andrew Millard (Warwick Medical School) building on the finding that retinoic acid is not, as generally thought, an animal "invention" but originates in cyanobacteria (Millard et al., 2014). We are currently studying further lateral genetic transfer events using phylogenetic analysis and experimental study of chemical signals in "model" cyanobacteria using analytical chemistry and genetics techniques, all leading to new insights into both ecology and medicine.

Chemical Education: A student-engaged research programme (Lambert et al., 2012) around topics such as research-based learning, interdisciplinarity, internationalisation and enterprise education in tertiary education.

References

- 1 Millard A; Scanlan DJ; Gallagher C; Marsh A; Taylor PC Unexpected evolutionary proximity of eukaryotic and cyanobacterial enzymes responsible for biosynthesis of retinoic acid and its oxidation *Molecular BioSystems* 10 380-383, 2014
- 2 Taylor PC; Clark AJ; Marsh A; Singer DRJ; Dilly SJ A chemical genomics approach to identification of interactions between bioactive molecules and alternative reading frame proteins *Chemical Communications* 49 9588-9590, 2013
- 3 Ladwa SR; Dilly SJ; Clark AJ; Marsh A; Taylor PC Rapid identification of a putative interaction between β 2- adrenoceptor agonists and ATF4 using a chemical genomics approach *ChemMedChem* 3 742-744, 2008
- 4 Dilly SJ; Bell MJ; Clark AJ; Marsh A; Napier RM; Sergeant MJ; Thompson AJ; Taylor PC A photoimmobilisation strategy that maximises exploration of chemical space in small molecule affinity selection and target discovery *Chemical Communications* 2808-2810, 2007