

Dr Daniel Tennant

Lecturer in Cancer Biochemistry

[School of Cancer Sciences \(/schools/cancer/index.aspx\)](/schools/cancer/index.aspx)

Contact details

Telephone [+44 121 414 8651 \(tel:+44 121 414 8651\)](tel:+441214148651)

Email [d.tennant@bham.ac.uk \(mailto:d.tennant@bham.ac.uk\)](mailto:d.tennant@bham.ac.uk)

Hypoxia and Metabolism Group
School of Cancer Sciences
University of Birmingham
Birmingham
B15 2TT
UK

About

Dan Tennant is a Lecturer in the School of Cancer Sciences.

He has recently moved to Cancer Sciences to set up his group to study hypoxia and cancer metabolism. Dan has already attracted funding from the Royal Society to support his work. He has published reviews in top journals, such as Cell and Nature Reviews Cancer, as has been invited to speak at International Conferences.

Dan's area of expertise is in the oxygen sensing and the hypoxic regulation of metabolism. His laboratory contains the specialised equipment necessary to carry out this work, including a Don Whitley Hypoxystation. His close collaborations with Ulrich Günther at the UK's largest NMR facility (Henry Wellcome Building) and Mark Viant at the Advanced Mass Spectrometry Facility, both of which are situated in Birmingham, allows him to perform cutting edge metabolic flux analysis research to study cellular metabolism.

Qualifications

- Ph.D. (2005), Manchester University
- MSci (2002) in Biochemistry, Cambridge University
- BA (2001) in Natural Sciences, Cambridge University

Biography

Dan Tennant graduated with a BA (Hons) and MSci from the University of Cambridge in 2002. He went on to Manchester University to study for his PhD with Professors Caroline Dive and David Tomlinson. During this time, he developed a strong interest in low oxygen (hypoxia) and the means by which cells survive these conditions.

He then undertook a post-doctoral research post in the laboratory of Professor Eyal Gottlieb, studying tumour hypoxia and metabolism, and in particular a family of enzymes that sense cellular oxygen levels, known as Prolyl Hydroxylases (PHDs).

After just over five years, Dan started his own group at the University of Birmingham to investigate the ways in which cells alter their metabolism in order to survive hostile environments.

Teaching

- BMedSc
- MSc in Mathematics and Computation in Biology and Medicine

Postgraduate supervision

Dan Tennant is currently supervising doctoral students in:

- Modelling hypoxic cellular metabolism
- Investigating the metabolic basis of chemotherapy resistance
- Examining the role of redox control in glioblastoma

For any doctoral research enquiries, please email: [dr@contacts.bham.ac.uk \(mailto:dr@contacts.bham.ac.uk\)](mailto:dr@contacts.bham.ac.uk) or call +44 (0)121 414 5005 For a full list of available Doctoral Research opportunities, please visit our [Doctoral Research programme listings.](http://www.birmingham.ac.uk/students/courses/postgraduate/research/med/cancer-studies.aspx)
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Research

Current research in the Tennant laboratory concerns the means by which hypoxia leads to alterations in cellular metabolism, both via changes in the transcriptome and direct energetic and redox-based alterations.

The research projects in the group are therefore aimed at addressing the following questions:

1. How do changes in oxygen tension evoke alterations in cellular metabolism both directly and indirectly?
2. In what way do changes in cellular metabolism during tumour growth lead to therapy resistance?
3. Can we directly target metabolic transformation during tumour growth to evolve novel, more-specific anti-cancer therapies?

Publications

Heiserich L., Caswell P.T., Unwin R.D., Campbell A.D., Knevels E., Schwartz J.P., Tennant D.A., Bienvenut W., Anderson K.I., Carmeliet P., Machesky L.M., Norman J.C., Gottlieb E., (2011), Inhibition of prolyl hydroxylation and polymerisation of β -actin drives hypoxia-induced cell migration and invasion, *Nature Cell Biology*, submitted

Frezza C., Zheng L., Tennant D.A., Gottlieb E., (2011), Metabolic profiling of hypoxic cells revealed a catabolic profile required for cell survival, *PLoS ONE*, 6(9):e24411

Tennant D.A., (2011), PK-M2 makes cells sweeter on HIF1, *Cell*, 145:647-9

Tennant D.A. and Gottlieb E., (2010), HIF Prolyl Hydroxylase-3 mediates alpha-ketoglutarate-induced apoptosis and tumor suppression, *Journal of Molecular Medicine*, 88:839-49

Tennant D.A. and Gottlieb E., (2010), Targeting metabolic transformation for cancer therapy, *Nature Reviews Cancer*, 10:267-77

Frezza C., Tennant D.A., Gottlieb E., (2010), IDH1 mutations in gliomas: when an enzyme loses its grip, *Cancer Cell*, 17:7-9

Tennant D.A., Frezza C., MacKenzie E.D., Nguyen Q.D., Zheng L., Selak M.A., Roberts D.L., Dive C., Watson D.G., Aboagye E.O., Gottlieb E., (2009), Reactivating HIF prolyl hydroxylases under hypoxia results in metabolic catastrophe and cell death, *Oncogene*, 28:4009-21

Tennant D.A., Durán R.V., Boulahbel H., Gottlieb E., (2009), Metabolic transformation in cancer, *Carcinogenesis*, 30:1269-80

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