

Dr Andrew Powell

Lecturer in Neuropharmacology

Neurobiology

Contact details

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About

Andrew Powell is a Lecturer in Neuropharmacology in the College of Medical and Dental Sciences. Andrew's research investigates the pathophysiology of disorders of the brain; potential treatments and the impact this has on normal brain function.

Biography

Andrew Powell qualified with a BSc (Hons) in Physiology (with industrial experience) from the University of Manchester in 1996. Following this, he moved to Bristol University to study for a PhD with Dr Elizabeth Seward where he focussed on the control of neurotransmitter release by G-protein coupled receptors. After completing his PhD, Andrew joined the group of Prof. Neil Marrion, where he investigated the relationship between single Ca^{2+} channel activity and secretory vesicle fusion. Andrew moved to Birmingham in 2003 to join the group of Prof Jefferys to investigate the physiological role of prion protein and its contribution to the pathophysiology of prion diseases. More recently, Andrew combined his expertise in secretory vesicle dynamics and pathophysiology to investigate the mechanisms underlying X-linked mental retardations. Andrew was promoted to a lectureship in Neuropharmacology in 2007.

Teaching

- BMedSc undergraduate course (yrs1-3)
- BDS (years 1 &3)
- MBChB (Yrs 1 &2)
- Particular focus on Neuropharmacology and Neurobiology modules
- Module Co-ordinator for the Module Outside Main Discipline "Good Brain Bad Brain 1" and "Good Brain Bad Brain 2"
- Module Co-ordinator for Autonomic Physiology (BSc Chemistry with Pharmacology)

Postgraduate supervision

Currently co-supervise 1 PhD student.

Research

Research interests include the neuropathophysiology underlying prion diseases, epilepsy and intellectual disabilities, focussing on the cellular changes which can explain the changes that occur at the neuronal network level. Additional research interests include the control of neurotransmitter release by intracellular signalling cascades such as G-proteins and Ca^{2+} changes.

Publications

Jiruska, P., Csicsvari, J., Powell, A.D., Fox, J., Chang, W-C., Vreugdenhil, M., Li, X., Palus, M., Fernandez, A., Dearden, R. and Jefferys, J.G.R. (2010) High-frequency network activity, global increase in neuronal activity and synchrony expansion precede epileptic seizures in vitro. **J. Neurosci.** 30:5690-5701.

Jiruska, P., Finnerty, G., Powell, A.D., Lofti, N. and Jefferys, J.G.R. (2010) Epileptic high-frequency network activity in a chronic model of non-lesional temporal lobe epilepsy. **Brain** 133:1380-1390

Jiruska, P., Powell, A.D., Deans, J.K., and Jefferys, J.G.R. (2010) Effects of Direct Brain Stimulation Depend On Seizure Dynamics. **Epilepsia**51:93-97.

Jiruska, P., Powell, A.D., Chang, W-C and Jefferys, J.G.R. (2010) Electrographic high-frequency activity and epilepsy. **Epilepsy Res.**89:60-65.

Jiruska, P., Cmejla, R., Powell, A.D., Chang, W-C., Vreugdenhil, M and Jefferys, J.G.R. (2009) Reference noise method of removing 50 Hz noise from recorded signals. **J.Neurosci. Meth.**184:110-114.

Khelifaoui, M., Pavlowsky, A., Powell, A.D., Valnegri, P., Cheong, K.W., Blandin, Y., Passafaro, M., Jefferys, J.G.R., Chelly, J. & Billuart, P. (2009) The X-linked mental retardation protein oligophrenin1 regulates clathrin-mediated endocytosis by inhibiting the RhoA/ROCK pathway. **Hum. Mol. Genet.** 18:2575-83.

Lu, C.B., Hamilton, J.B., Powell, A.D., Toescu, E.C. & Vreugdenhil, M (2009) Effect of ageing on CA3 interneuron sAHP and gamma oscillations is activity-dependent. **Neurobiol. Aging.** *In press.* DOI: 10.1016/j.neurobiolaging.2009.05.006

Powell, A.D., Toescu, E.C., Collinge, J. & Jefferys, J.G.R. (2008) Ca^{2+} -buffering in prion-null mice: association with reduced afterhyperpolarizations in CA1 hippocampal neurons. **J. Neurosci.** 28:3877-8

