

Dr David Wyllie  
**Selected publications**

**2013**

McKay, S., C. P. Bengtson, H. Bading, D. J. A. Wyllie and G. E. Hardingham (2013). Recovery of NMDA receptor currents from MK-801 blockade is accelerated by Mg<sup>2+</sup> and memantine under conditions of agonist exposure. *Neuropharmacology* 74: 119-125.

Wyllie, D. J. A., M. R. Livesey and G. E. Hardingham (2013). Influence of GluN2 subunit identity on NMDA receptor function. *Neuropharmacology* 74: 4-17.

**2010**

Clayton EL, Sue N, Smillie KJ, O'Leary T, Bache N, Cheung G, Cole AR, Wyllie DJ, Sutherland C, Robinson PJ, Cousin MA Dynamin I phosphorylation by GSK3 controls activity-dependent bulk endocytosis of synaptic vesicles. *Nature Neuroscience* 13:845-U885.

O'Leary T, van Rossum MCW, Wyllie DJA (2010). Homeostasis of intrinsic excitability in hippocampal neurones: dynamics and mechanism of the response to chronic depolarization. *Journal of Physiology* 588,157-170

**2009**

Otton HJ, Janssen A, Wyllie DJA (2009). Inhibition of recombinant GluN1/GluN2A and GluN1/GluN2B N-methyl-D-aspartate receptors by single malt whiskies. *Biochemical Society Transactions* 37: 1423-1425.

O'Leary T, Wyllie DJA (2009). Single-channel properties of N-methyl-D-aspartate receptors containing chimeric GluN2A/GluN2D subunits. *Biochemical Society Transactions* 37: 1347-1354.

Patani R, Compston A, Puddifoot CA, Wyllie DJA, Hardingham GE, Allen ND, Chandran S (2009). Activin/Nodal inhibition alone accelerates highly efficient neural conversion from human embryonic stem cells and imposes a caudal positional identity. *PLoS ONE* 4(10): e7327. doi:10.1371/journal.pone.0007327

Otton HJ, Janssen A, O'Leary T, Chen PE, Wyllie DJA (2009). Inhibition of rat recombinant GluN1/GluN2A and GluN1/GluN2B NMDA receptors by ethanol at concentrations based on the US/UK drink-drive limit. *European Journal of Pharmacology* 61: 14-21.

Martel MA, Soriano FX, Baxter P, Rickman C, Duncan R, Wyllie DJA, Hardingham GE (2009). Inhibiting pro-death NMDA receptor signaling dependent on the NR2 PDZ ligand may not affect synaptic function or synaptic NMDA receptor signaling to gene expression. *Channels* 3: 12-15.

Puddifoot CA, Chen PE, Schoepfer R, Wyllie DJA (2009). Pharmacological characterization of recombinant NR1/NR2A NMDA receptors with truncated and deleted carboxy termini expressed in *Xenopus laevis* oocytes. *Br J Pharmacol* 156: 509-518.

Martel MA, Wyllie DJA, Hardingham GE (2009). In developing hippocampal neurons, NR2B-containing N-methyl-D-aspartate receptors can mediate signalling to neuronal survival and synaptic potentiation, as well as neuronal death. *Neuroscience* 158: 334-343

## 2008

Chen PE, Geballe MT, Katz E, Erreger K, Livesey M, O'Toole KK, Le P, Lee CJ, Snyder JP, Traynelis SF, Wyllie DJA (2008) Modulation of glycine potency in rat recombinant NMDA receptors containing chimeric NR2A/2D subunits expressed in *Xenopus laevis* oocytes. *Journal of Physiology* 586: 227-245

O'Leary T, Wyllie DJA (2008) The ups and downs of synaptic plasticity: influences on this particular 'market'. *Journal of Physiology* 586: 5839-5840

Papadia S, Soriano FX, Léveillé F, Martel M-A, Dakin KA, Hansen H, Kaindl A, Siffringer M, Fowler J, Stefovská V, McKenzie G, Craigon M, Corriveau R, Ghazal P, Horsburgh K, Yankner B, Wyllie DJA, Ikonomidou C, Hardingham GE (2008) Synaptic NMDA receptor activity boosts intrinsic antioxidant defences. *Nature Neuroscience* 11: 476-487

Soriano FX, Martel M-A, Papadia S, Vaslin A, Baxter P, Rickman C, Forder J, Tymianski M, Duncan R, Aarts M, Clarke P, Wyllie DJA, Hardingham GE (2008) Specific targeting of pro-death NMDA receptor signals with differing reliance on the NR2B PDZ ligand. *Journal of Neuroscience* 28: 10696-10710

Wilbery A, Haley JE, Wishart TM, Conforti L, Morreale G, Beirowski B, Babetto E, Adalbert R, Gillingwater TH, Smith T, Wyllie DJA, Ribchester RR, Coleman MP (2008) VCP binding influences intracellular distribution of the slow Wallerian degeneration protein, WldS. *Molecular and Cellular Neuroscience* 38: 325-340

Wrighton DC, Baker EJ, Chen PE, Wyllie DJA (2008) Mg<sup>2+</sup> and memantine block of rat recombinant NMDA receptors containing chimeric NR2A/2D subunits expressed in *Xenopus laevis* oocytes. *Journal of Physiology* 586: 211-225

Wyllie DJA (2008) 2B or 2B and 2D? – That is the question. *Journal of Physiology* 586: 693

## 2007

Erreger K, Geballe MT, Kristensen A, Chen PE, Hansen KB, Lee CJ, Yuan H, Le P, Lyuboslavsky PN, Micale N, Jørgensen L, Clausen RP, Wyllie DJA, Snyder JP, Traynelis SF (2007) Subunit-specific agonist activity at NR2A, NR2B, NR2C, and NR2D containing N-methyl-D-aspartate glutamate receptors. *Molecular Pharmacology* 72: 907-920

Vickers CA, Wyllie DJA (2007) Late-phase, protein synthesis-dependent long-term potentiation in hippocampal CA1 pyramidal neurones with destabilized microtubule networks. *British Journal of Pharmacology* 151: 1071-1077

Wyllie DJA (2007) Single-channel recording. In *Advanced Techniques for Patch-clamp Analysis* Ed. Walz W. Humana Press Totowa, New Jersey pp 69-129

Wyllie DJA, Chen PE (2007) Taking the time to study competitive antagonism. *British Journal of Pharmacology* 150: 541-551

## **2006**

Baxter AW, Wyllie DJA (2006) Phosphatidylinositol-3-kinase activation and AMPA receptor subunit trafficking underlie the potentiation of mEPSC amplitudes triggered by the activation of L-type calcium channels. *Journal of Neuroscience* 26: 5456-5469

Chen PE, Wyllie DJA (2006). Pharmacological insights obtained from structure-function studies of ionotropic glutamate receptors. *British Journal of Pharmacology* 147: 839-853

Frizelle PA, Chen PE, Wyllie DJA (2006) Equilibrium constants for (R)-[(S)-1-(4-bromo-phenyl)-ethylamino]-(2,3-dioxo-1,2,3,4-tetrahydroquinoxalin-5-yl)-methyl]-phosphonic acid (NVP-AAM077) acting at recombinant NR1/NR2A and NR1/NR2B NMDA receptors: implications for studies of synaptic transmission. *Molecular Pharmacology* 70: 1022-1032

Gillingwater TH, Wishart TM, Chen PE, Haley JE, Robertson K, MacDonald SH-F, Middleton S, Wawrowski K, Shipston MJ, Melmed S, Wyllie DJA, Skehel PA, Coleman MP, Ribchester RR (2006) The neuroprotective *Wlds* gene regulates expression of PTTG1 and erythroid differentiation regulator 1-like gene in mice and human cells. *Human Molecular Genetics* 15: 625-635

Wyllie DJA, Johnston AR, Lipscombe D, Chen PE (2006) Single-channel analysis of a point mutation of a conserved serine residue in the S2 ligand binding domain of the NR2A NMDA receptor. *Journal of Physiology* 574: 477-489

## **2005**

Chen PE, Geballe MT, Stansfeld PJ, Johnston AR, Yuan H, Jacob AL, Snyder JP, Traynelis SF, Wyllie DJA (2005) Structural features of the glutamate binding site in recombinant NR1/NR2A N-methyl-D-aspartate receptors determined by site-directed mutagenesis and molecular modeling. *Molecular Pharmacology* 67: 1470-1484

Erreger K, Dravid SM, Banke TG, Wyllie DJA, Traynelis SF (2005) Subunit specific gating controls rat recombinant NR1/NR2A and NR1/NR2B channel kinetics and synaptic signalling profiles. *Journal of Physiology* 563: 345-358

Erreger K, Dravid SM, Geballe MT, Snyder JP, Wyllie DJA, Traynelis SF (2005) Mechanism of partial agonism at NMDA receptors for a conformationally restricted analog. *Journal of Neuroscience* 25: 7858-7866

Vickers CA, Dickson KS, Wyllie DJA (2005) Induction and maintenance of late-phase long-term potentiation in isolated dendrites of rat CA1 pyramidal neurones. *Journal of Physiology* 568: 803-813

## **2004**

Chen PE, Johnston AR, Mok MHS, Schoepfer R, Wyllie DJA (2004) Influence of a threonine residue in the S2 ligand binding domain in determining agonist potency and

deactivation rate of recombinant NR1a/NR2D NMDA receptors. *Journal of Physiology* 558: 45-58

Erreger K, Chen PE, Wyllie DJA, Traynelis SF (2004) Glutamate receptor gating. *Critical Reviews in Neurobiology* 16: 187-224