

Andrew McAinsh, PhD



centre for mechanochemical cell biology

Associate Professor

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Education/Qualifications:

- 1997 | **BSc in Molecular Biology** (First Class, Hons), Manchester University, UK.
2001 | **PhD at the Gurdon Institute**, Cambridge University, UK.

Appointments held:

- 2009- | **Associate Professor in Mechanochemical Cell Biology**, Warwick Medical School, University of Warwick, UK
2005-2009 | **Leader**, Chromosome Segregation Laboratory, MCRI, Oxted, UK
2001-2005 | **Fellow of the Jane Coffin Childs Fund for Medical Research** with Prof. Peter K. Sorger in the Department of Biology, Massachusetts Institute of Technology, USA.
1997-2001 | **PhD student** with Prof. Stephen P. Jackson at the Gurdon Institute, University of Cambridge, UK.
1995-1996 | **Industrial Placement Student** with Dr. Stephen G. Volsen, Eli Lilly CNS Research Centre, UK.

Research Funding:

- 2009-2013 | **£0.7M transitional, externally-reviewed programme funding from MCCC.**
2005-2009 | **Marie Curie Cancer Care, Core Funding for Chromosome Segregation Laboratory.**
Summer 2009 | **Genes & Development**, Summer Studentship (£2000; for Gemma Chadwick)
2009-2013 | PhD Studentship from the **Fundação para a Ciência e a Tecnologia (£130,000**; for Catarina Samora).
Summer 2008 | **Genes & Development** Summer Studentship (£2000; for Angelo Castello)
Summer 2008 | **Marine Biology Laboratory, Woods Hole Summer Research fellowship/Colwin Fellow** (Andrew D. McAinsh; The MBL kinetochore consortium): **\$10,038**
Summer 2007 | **Marine Biology Laboratory, Woods Hole Summer Research fellowship/Colwin Fellow** (Co-investigators - Andrew D. McAinsh & Patrick Meraldi; Analysis of Kinetochore Function by Quantitative Live-Cell Imaging): **\$18,650**
2001-2004 | Fellowship from the **Jane Coffin Childs Fund for Medical Research.**
1997-2000 | PhD Studentship from the **Medical Research Council (MRC).**

Primary research papers in peer-reviewed journals: † joint corresponding authors * equal contribution

Amaro A.C., Samora C.P., Holtackers R., Wang E., Kingston I., Lampson M., †McAinsh A.D. & †Meraldi P. (2010). **Molecular control of kinetochore-microtubule dynamics and chromosome oscillations.** *Nature Cell Biology*, **12**: 319-329

*Jaqaman K., *King E.M., Amaro A.C., *Winter J.R., Dorn J.F., Elliot H.L., Mchedlishvili N., McClelland S.E., Porter I.M., Posch M., Toso A., †Danuser G., †McAinsh A.D., †Meraldi P. & †Swedlow J.R. (2010). **Kinetochore alignment within the metaphase plate is regulated by centromere stiffness and microtubule depolymerises.** *Journal of Cell Biology*, **188**: 665-79.

Braun M., Drummond D.R., Cross R.A. & McAinsh A.D. (2009). **Klp2 organises microtubules into parallel bundles by an ATP-dependent sorting mechanism.** *Nature Cell Biology*, **11**: 724-730.

*Toso A., *Winter J.R., Garrod A.J., Amaro A.C., †Meraldi P. & †McAinsh A.D. (2009). **Kinetochores generated pushing forces separate centrosomes during bipolar spindle assembly.** *Journal of Cell Biology*, **184**: 365-372.

*McClelland S.E., *Borusu S., Amaro A.C., Winter J.R., Belwal M., †McAinsh A.D. & †Meraldi P. (2007). **The CENP-A NAC/CAD kinetochore complex controls chromosome congression and spindle bipolarity.** *EMBO Journal*, **26**: 5033-5047.

Porter I.M., McClelland S.E., Khoudoli G.A., Hunter C.J., Andersen J.S., McAinsh A.D., Blow J. & Swedlow, J.R. (2007). **Bod1, a novel kinetochore protein required for chromosome biorientation.** *Journal of Cell Biology*, **179**: 187-197.

Przewlaka M.R., Zhang W., Costal P., Archambault V., D'Avino P.P., Lilley K.S., Laue E.D., McAinsh A.D. & Glover D.M. (2007). **Molecular analysis of core kinetochore composition and assembly in *Drosophila melanogaster*.** *PLoS ONE*, **2**: e478.

*†McAinsh A.D., *†Meraldi P., *Draviam V.M., Toso A. & Sorger P.K. (2006). **The human kinetochore proteins Nnf1R and Mcm21R are required for accurate chromosome segregation.** *EMBO Journal*, **25**:4033-49

*Meraldi P., *McAinsh A.D., Rheinbay E. & Sorger P.K. (2006). **Phylogenetic and structural analysis of centromeric DNA and kinetochore proteins.** *Genome Biology*, **7**: R23.

Jazayeri A., McAinsh A.D. & Jackson S.P. (2004). ***Saccharomyces cerevisiae* Sin3p facilitates DNA double-strand break repair.** *Proceedings National Academy of Sciences, USA*, **101**:1644-1649

Roy R., Meier B., McAinsh A.D., Feldmann H. & Jackson S.P. (2004). **Separation-of-function mutants of yeast Ku80 reveal a Yku80p-Sir4p interaction involved in telomeric silencing.** *Journal Biological Chemistry*, **279**: 86-94

De Wulf P., *McAinsh A.D. & Sorger P.K. (2003) **Hierarchical assembly of the budding yeast kinetochore from multiple subcomplexes.** *Genes & Development*, **17**, 2902-2921

McAinsh A.D., Scott-Drew S., Murray J.A., Jackson S.P. (1999). **DNA damage triggers disruption of telomeric silencing and Mec1p-dependent relocation of Sir3p.** *Current Biology*. **9**:963-6.

Craig P.J., McAinsh A.D., McCormack A.L., Smith W., Beattie R.E., Priestley J.V., Yip J.L., Averill S., Longbottom E.R., Volsen S.G. (1998). **Distribution of the voltage-dependent calcium channel $\alpha(1A)$ subunit throughout the mature rat brain and its relationship to neurotransmitter pathways.** *Journal of Comparative Neurology* **397**:251-67.

Review articles:

†McAinsh A. D. & †Meraldi P. **Asymmetric Sister Kinetochores.** Submitted to *Biochemical Society Transactions*

Samora C.P. & McAinsh A. D. **Photoactivated-GFP- α Tubulin as a tool to study microtubule plus-end turnover in living human cells.** Submitted to *Methods in Molecular Biology*.

McClelland S.E. & McAinsh A.D. (2009) **Hydrodynamic analysis of human multi-protein complexes during mitosis.** *Methods in Molecular Biology*. **545**:81-98.

Kaseda, K., McAinsh A.D. & Cross, R.A. (2009). **Walking, hopping, diffusing and braking modes of kinesin-5** *Biochemical Society Transactions* **37**: 066-71

McAinsh A.D., Tytell J.D. and Sorger P.K.. (2003). **Structure, Function and Regulation of Budding Yeast Kinetochores.** *Annual Review of Cell and Developmental Biology*, **19**:519-539

Books:

Editor(s): McAinsh, A.D. (2009) **Mitosis: Methods and Protocols** *Methods in Molecular Biology*. 545: 330 pages, Humana Press Inc., USA