Bungo Akiyoshi

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Group Leader
Wellcome Trust Senior Research Fellow
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ORCID ID: http://orcid.org/0000-0001-6010-394X
Nationality: Japanese

Degrees: Ph.D. University of Washington 2010
B.S. University of Tokyo 2004

Professional Positions

2013–Present	Group Leader, Department of Biochemistry, University of Oxford, UK
2010–2013	Postdoctoral Fellow, Sir William Dunn School of Pathology, University of Oxford, UK (Advisor: Professor Keith Gull, FRS)
2005–2010	Graduate Research Assistant, Fred Hutchinson Cancer Research Center, Seattle, USA (Advisor: Dr. Sue Biggins)
2004–2010	Molecular and Cellular Biology Graduate Student, University of Washington, Seattle, USA
2003–2004	Research Assistant, Department of Biophysics and Biochemistry, University of Tokyo, Japan (Advisor: Professor Masayuki Yamamoto)

Professional Experiences

2018–2023	Royal Society Research Grant Board: Biological Sciences
2017–2021	Biochemical Society Committee (Research Area IV: Cells)
2021	Co-organizer, The Dynamic Cell IV (online), UK
2019	Co-chair, ASCB Minisymposium, Washington DC, USA
2019	Co-organizer, Dynamic Kinetochore Workshop, Paris, France
2018, 2019	Co-organizer, Microtubule Meeting UK (4th and 5th), Edinburgh, UK
2017	ASCB Ambassador

Research Grants (as main applicant unless noted otherwise)

2018–2023	Wellcome Trust Senior Research Fellowship (£1,910,507)
2020–2025	Wellcome Trust Multi-User Equipment Grant ((£475,478, co-applicant)
2020	EMBO Young Investigator program small grant (€10,000)
2018	John Fell Fund, Oxford University Press (£21,107)
2018	EMBO Young Investigator program small grant (€10,000)
2017–2021	EMBO Young Investigator program (€15,000)
2017–2018	EPA Cephalosporin Fund (£20,907)
2016–2018	Wellcome Trust Enhancement Grant (£178,556)
2013–2018	Wellcome-Beit Prize Fellowship (£25,000)
2013–2018	Wellcome Trust and Royal Society Sir Henry Dale Fellowship (£1,013,112)

Honors and Awards

2017	EMBO Young Investigator program
2016	Biochemical Society's Early Career Research Award (Cells)
2015	R.R. Bensley Award in Cell Biology (AAA Young Investigator Award)
2013	Wellcome-Beit Prize
2011	Human Frontier Science Program Long Term Fellowship
2010	EMBO Long Term Fellowship
2010	Harold M. Weintraub Graduate Student Award

Institutional responsibilities

2019–Present	Equality and Diversity Inclusion Team (formerly Athena Swan Equality & Diversity Self Assessment Team)
2016	Graduate Admissions

Teaching Experience

2021	Senior demonstrator for gene expression practical to undergraduate students
2014–2020	Tutorials to Wellcome Trust Chromosome and Developmental Biology DPhil program students
2014	Lectures to third year undergraduate Biochemistry students, University of Oxford
2005–2006	Science Education Partnership (SEP) Program, Fred Hutchinson Cancer Research Center
2005	Teaching Assistant, Genetics 371, University of Washington

Professional membership

2015–Present	American Society for Cell Biology (ASCB)

Publications (#corresponding author, *equal contribution)

Ishii M and **Akiyoshi B#** (in press) Plasticity in centromere organization and kinetochore composition: lessons from diversity. ***Current Opinion in Cell Biology***

Marcianò G*, Ishii M*, Nerusheva OO*, and **Akiyoshi B#** (2021) Kinetoplastid kinetochore kinases KKT2 and KKT3 have unique centromere localization domains. ***Journal of Cell Biology*** 220(8):e202101022

Ludzia P# and **Akiyoshi B#** (2021) Illuminating the mechanism of monogenic antigen expression in trypanosomes. ***Nature Reviews Microbiology***. doi: 10.1038/s41579-021-00641-5

Tromer EC#, Wemyss TA, Ludzia P, Waller RF, and **Akiyoshi B#** (2021) Repurposing of synaptonemal complex proteins for kinetochores in Kinetoplastida. ***Open Biology*** 11: 210049

Ludzia P, Lowe ED, Marcianò G, Mohammed S, Redfield C#, and **Akiyoshi B#** (2021) Structural characterization of KKT4, an unconventional microtubule-binding kinetochore protein. ***Structure*** 29(9):1014-1028.e8

Akiyoshi B# (2020, Preprint) Analysis of a Mad2 homolog in *Trypanosoma brucei* provides possible hints on the origin of the spindle checkpoint. ***bioRxiv*** doi.org/10.1101/2020.12.29.424754

Ludzia P, **Akiyoshi B#**, and Redfield C# (2020) ^{1}H, ^{13}C and ^{15}N resonance assignments for the microtubule-binding domain of the kinetoplastid kinetochore protein KKT4 from *Trypanosoma brucei*. ***Biomolecular NMR Assignments*** 14(2):309-3151

Ishii M and **Akiyoshi B#** (2020) Characterization of unconventional kinetochore kinases KKT10 and KKT19 in *Trypanosoma brucei*. ***Journal of Cell Science*** 133: jcs240978

Nerusheva OO, Ludzia P, and **Akiyoshi B#** (2019) Identification of four unconventional kinetoplastid kinetochore proteins KKT22–25 in *Trypanosoma brucei*. ***Open Biology*** 9: 190236

Akiyoshi B# (2019) Evolution: A Mosaic-Type Centromere in an Early-Diverging Fungus. ***Current Biology*** **29**: R1184–R1186

Llauró A*, Hayashi H*, Bailey M*, Wilson A, Ludzia P, Asbury CL#, and **Akiyoshi B#** (2018) The kinetoplastid kinetochore protein KKT4 is an unconventional microtubule tip-coupling protein. ***Journal of Cell Biology*** 217 (11) 3886-3900

Hayashi H and **Akiyoshi B#** (2018) Degradation of cyclin B is critical for nuclear division in *Trypanosoma brucei.* ***Biology Open*** 7: bio031609

Drinnenberg IA# and **Akiyoshi B#** (2017) Evolutionary lessons from species with unique kinetochores. ***Progress in Molecular and Subcellular Biology***, 56: 111–138

Akiyoshi B# (2016) The unconventional kinetoplastid kinetochores: from discovery toward functional understanding. ***Biochemical Society Transactions*** 44: 1201–1217

Nerusheva OO and **Akiyoshi B#** (2016) Divergent polo box domains underpin the unique kinetoplastid kinetochore. ***Open Biology*** 6: 150206

Kim J, Ishiguro K, Nambu A, **Akiyoshi B**, Yokobayashi S, Kagami A, Ishiguro T, Pendas AM, Takeda N, Sakakibara Y, Kitajima TS, Tanno Y, Sakuno T, and Watanabe Y. (2015) Meikin is a conserved regulator of meiosis I-specific kinetochore function. ***Nature*** 517: 466–471

Akiyoshi B# and Gull K. (2014) Discovery of unconventional kinetochores in kinetoplastids. ***Cell*** 156 (6): 1247–58

Akiyoshi B# and Gull K. (2013) Evolutionary cell biology of chromosome segregation: insights from trypanosomes. ***Open Biology*** **3:** 130023

Akiyoshi B, Nelson CR, and Biggins S. (2013) The Aurora B kinase promotes inner and outer kinetochore interactions in budding yeast. ***Genetics*** 194: 785–9

Sarangapani KK, **Akiyoshi B**, Duggan NM, Biggins S and Asbury CL. (2013) Phosphoregulation promotes release of kinetochores from dynamic microtubules via multiple mechanisms. ***PNAS*** 110 (18): 7282–7

Akiyoshi B, Nelson CR, Duggan N, Ceto S, Ranish JA, and Biggins S. (2013) The Mub1/Ubr2 ubiquitin ligase complex regulates the conserved Dsn1 kinetochore protein. ***PLoS Genetics*** 9 (2): e1003216

Gonen S*, **Akiyoshi B***, Iadanza MG*, Shi D, Duggan N, Biggins S and Gonen T. (2012) The structure of purified kinetochores reveals multiple microtubule attachment sites. ***Nature Structural and Molecular Biology*** 19: 925–929

Akiyoshi B# and Biggins S. (2012) Reconstituting the kinetochore-microtubule interface: what, why, and how. ***Chromosoma*** 121: 235–250

Unnikrishnan A, **Akiyoshi B**, Biggins S, and Tsukiyama T. (2012) An efficient purification system for native minichromosome from *Saccharomyces cerevisiae*. ***Methods in Molecular Biology*** 833: 115–23

Akiyoshi B*, Sarangapani KK*, Powers AF*, Nelson CR, Reichow SL, Arellano-Santoyo HS, Gonen T, Ranish JA, Asbury CL, and Biggins S. (2010) Tension directly stabilizes reconstituted kinetochore-microtubule attachments. ***Nature*** 468: 576–9 (*equal contribution)

Akiyoshi B and Biggins S. (2010) Cdc14-dependent dephosphorylation of a kinetochore protein prior to anaphase in *Saccharomyces cerevisiae.* ***Genetics*** 186: 1487–91

Akiyoshi B, Nelson CR, Ranish JA, and Biggins S. (2009) Quantitative proteomic analysis of purified yeast kinetochores identifies a PP1 regulatory subunit. ***Genes and Development*** 23: 2887–99

Akiyoshi B, Nelson CR, Ranish JA, and Biggins S. (2009) Analysis of Ipl1-mediated phosphorylation of the Ndc80 kinetochore protein in *Saccharomyces cerevisiae*. ***Genetics*** 183: 1591–5

Talks and Seminars

Seminar at the University of Edinburgh, Edinburgh, UK (hosted by Adele Marston and Owen Davies) 2021
Talk at the 11th Salk Institute Cell Cycle meeting (online) 2021
Seminar at the University of Kumamoto (online), Kumamoto, Japan (hosted by Kei-ichiro Ishiguro) 2021
Invited talk, The Socially Distant Centromere Conference (online) 2021
Talk at the 38th Chromosome Workshop/19th Nuclear Dynamics, virtual meeting, Japan 2021
Seminar at the University of Cambridge, Cambridge, UK (hosted by Eelco Tromer and Ross Waller) 2020
Invited talk at the ASCB/EMBO meeting (Session Chair), Washington DC, USA 2019
Invited talk at the London Parasitology Club, London, UK 2019
Invited talk at the Cell Cycle meeting, Trieste, Italy 2019
Seminar at the University of Edinburgh, Edinburgh, UK (hosted by Keith Matthews and Robin Allshire) 2019
Seminar at the University of York, York, UK (hosted by Daniel Jeffares) 2019

Invited talk at the Gordon Research Conference: Centromere Biology, Mount Snow, USA 2018
Invited talk at the International Congress of Cell Biology, Hyderabad, India 2018
Seminar at the Cancer Institute of JFCR, Tokyo, Japan (hosted by Norihisa Shindo) 2017
Seminar at the Tohoku University, Sendai, Japan (hosted by Asako Sugimoto) 2017
Seminar at the RIKEN, Wako, Japan (hosted by Tatsuya Hirano) 2017
Invited talk at the Kinetoplastid Breeders' Club Meeting (KBC4), Lancaster, UK 2017
Invited talk at the EMBO Dynamic kinetochore workshop, Edinburgh, UK 2017
Short talk at the Kinetoplastid Molecular Cell Biology Meeting, Woods Hole, USA 2017
Seminar at the University of Dundee, Dundee UK (hosted by Inke Näthke) 2017
Seminar at the Institut Curie, Paris, France (hosted by Ines Drinnenberg) 2017
Seminar at the University of Tokyo, Tokyo, Japan (hosted by Yoshinori Watanabe) 2016
Invited talk at an ASCB meeting special interest subgroup, San Francisco, USA 2016
Invited lecture at the Biozentrum, Basel, Switzerland (hosted by Erich Nigg) 2016
Talk at the BSP Trypanosomiasis and Leishmaniasis Seminar, České Budějovice, Czech Republic 2016
Invited talk at the EMBO Conference: Microtubules: Structure, Regulation and Functions, Heidelberg, Germany 2016
Cells Early Career Research Award Medal Lecture at Cilia, Cytoskeleton and Cancer, Edinburgh 2016
Seminar at the Hubrecht Institute, Utrecht, Netherlands (hosted by Geert Kops) 2016
Seminar at the University of Glasgow, Glasgow (hosted by Jeremy Mottram) 2015
Seminar at the MRC LMB, Cambridge (hosted by Andrew Carter) 2015
Seminar at the Francis Crick Institute, Mill Hill (hosted by Eva Frickel) 2015
Seminar at the Nagoya University, Nagoya, Japan (hosted by Tomomi Kiyomitsu) 2015
Seminar at the Cancer Institute of JFCR, Tokyo, Japan (hosted by Toru Hirota) 2015
Invited talk at the Gordon Research Conference: Motile & Contractile Systems, New London, US 2015
R.R. Bensley Award Lecture at the Experimental Biology 2015, Boston, US 2015
Invited talk at the Mazelet November meeting, Mazelet, France (hosted by Kim Nasmyth) 2014
Seminar at the University of Tokyo, Tokyo, Japan (hosted by Yoshinori Watanabe) 2014
Seminar at the National Institute of Genetics, Mishima, Japan (hosted by Tatsuo Fukagawa) 2014
Invited talk at the 20th International Chromosome Conference (ICC), University of Kent, Canterbury, UK 2014
Seminar at the University of Dundee, Dundee UK (hosted by Mike Ferguson) 2014
Seminar at the London School of Hygiene & Tropical Medicine, London, UK (hosted by John Kelly) 2013
Seminar at the RIKEN, Wako, Japan (hosted by Tatsuya Hirano) 2013
Seminar at the RIKEN CDB, Kobe, Japan (hosted by Tomoya Kitajima) 2013
Seminar at the Harvard Medical School, Boston, USA (hosted by Jonathan Higgins) 2013
Talk at the Kinetoplastid Molecular Cell Biology Meeting, Woods Hole, USA 2013
Seminar at the University of Tokyo, Tokyo, Japan (hosted by Yoshinori Watanabe) 2012
Invited Talk at the 106th International Titisee Conference: Reconstituting Chromatin: From Self-Assembly to Self-Organization, Black Forest, Germany 2012
Talk at the EMBO Workshop on: Structures, Function & Regulation of Centromeres and Kinetochores, Barcelona, Spain 2012
Invited Talk at the UK-Japan Mechanochemical Cell Biology Symposium, Warwick, UK 2012
Seminar at the Max Planck Institute for Molecular Physiology, Dortmund, Germany (hosted by Andrea Musacchio) 2012
Seminar at the University of Edinburgh, UK (hosted by David Leach) 2012
Seminar at the University of Edinburgh, UK (hosted by Robin Allshire) 2012
Talk and poster presentation at the BSCB Meeting Spring Conference, Warwick, UK 2012
Seminar at the University of Oxford, UK (hosted by the Biochemistry Department) 2011
Seminar at the Cancer Research UK Clare Hall Laboratories, UK (hosted by John Diffley) 2011
Talk and poster presentation at the 6th UK-Japan Cell Cycle Workshop, Windermere, UK 2011
Seminar at the University of Oxford, UK (hosted by Kim Nasmyth) 2010
Seminar at the Cancer Institute of JFCR, Tokyo, Japan (hosted by Toru Hirota) 2010
Seminar at the University of Tokyo, Tokyo, Japan (hosted by Yoshinori Watanabe) 2010
Talk and poster presentation at the CSHL Cell Cycle meeting, Cold Spring Harbor, New York, USA 2010
Seminar at the University of Oxford, UK (hosted by Keith Gull) 2009
Seminar at the Cambridge University, UK (hosted by Mark Field) 2009
Seminar at the Kyoto University, Kyoto, Japan (hosted by Mitsuhiro Yanagida) 2009
Seminar at the University of Tokyo, Tokyo, Japan (hosted by Yoshinori Watanabe) 2009
Seminar at the University of California, San Diego, San Diego, USA (hosted by Arshad Desai) 2008
Seminar at the Institute for Systems Biology, Seattle, USA (hosted by Jeff Ranish) 2008
Seminar at the Rockefeller University, New York, USA (hosted by Tarun Kapoor) 2007

Seminar at the Friedrich Miescher Laboratory of the Max Planck Society, Tuebingen, Germany (hosted by Silke Hauf)
2007