

**Group Leader****Wellcome Trust Senior Research Fellow, EMBO Young Investigator**

Department of Biochemistry, University of Oxford, UK

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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<br>(Advisor: Professor Keith Gull, FRS)         |
| 2005–2010    | Graduate Research Assistant, Fred Hutchinson Cancer Research Center, Seattle, USA<br>(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<br>(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**

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

## Teaching Experience

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)

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

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) <sup>1</sup>H, <sup>13</sup>C and <sup>15</sup>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

Drinneberg 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