

Unit Name

Cell Division Dynamics Unit

Collaborations

Azusa Inoue, RIKEN, Japan, Spindle assembly in mouse zygotes and early embryos

Bai Luolan, Harvard Medical School, USA, Cytoplasmic streaming and cytokinesis in early embryos

Tim Mitchison, Harvard Medical School, USA, Cytoplasmic streaming and cytokinesis in early embryos

Research Personnel

Takahiro Yamamoto, Postdoctoral Scholar

Toane Arata, Research Unit Technician

Diana Romero Zamora, Postdoctoral Scholar

Yutei Takahashi, PhD student

Marvin van Toorn, Postdoctoral Scholar

Yoko Nakasone, Research Assistant (Part-time)

Ayaka Mori, Research Unit Technician

Yumeko Nomura, Intern student

Aurellia Ramara Winaya, PhD student

Yang Ming, PhD student

Ai Kiyomitsu, Science and Technology Associate

Scholarly Contributions and Creative Productions (by Faculty)

Books and Edited Books

1. The Mitotic Spindle - Methods and Protocols. Methods in Molecular Biology 2024, Will be notified soon, Will be notified soon.

<https://link.springer.com/book/10.1007/978-1-0716-4224-5>

This detailed volume presents methods for investigating mitotic spindle assembly, chromosome segregation, and cytokinesis. Split into six parts, the book examines advanced microscopes, spatiotemporal manipulation of the spindle and target molecules, quantitative live imaging, screening, centrosome manipulation and purification, and spindle positioning in synthetic or complicated contexts. Written for the highly successful *Methods in Molecular Biology* series, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step and readily reproducible laboratory protocols, and tips on troubleshooting and avoiding know pitfalls.

Authoritative and up-to-date, *The Mitotic Spindle: Methods and Protocols* serves as an ideal guide for researchers seeking a better system-level understanding of the mitotic spindle.

Journal Article

1. Kiyomitsu, A.; Nishimura, T.; Hwang, S. J. J.; Ansai, S.; Kanemaki, M. T.; Tanaka, M.; Kiyomitsu, T. Ran-GTP Assembles a Specialized Spindle Structure for Accurate Chromosome Segregation in Medaka Early Embryos. Nature communications 2024, 15, 981.

Poster Presentation at Conference

1. Kiyomitsu, T.; Kiyomitsu, A.; Mori, A. Dynein-Mediated Centrosome Positioning Ensures Bilateral Microtubule-Nucleation Waves for Rapid Bipolar Spindle Assembly in Medaka Embryos, ASCB/Cell Bio 24 2024.

Presentation at Conference

1. Kiyomitsu, T. Unexpected Features of Early Embryonic Division in Medaka. OIST-Keio Showcase talk Series 7: Science meets Society: Frontiers in Interdisciplinary Approaches to Life Sciences 2025.

2. Kiyomitsu, T. Unexpected Features of Early Embryonic Division in Medaka. OIST-JST ActX joint mini-symposium 2025.

3. Kiyomitsu, T. Functions and Regulations of Dynein Motor in Mitosis. OIST-NanoLSI symposium 2024.

4. Kiyomitsu, T. Mechanisms of Early Embryonic Division in Medaka. OIST-Suntory joint conference 2024.

5. Kiyomitsu, T. How Can We Use Medaka Fish Embryos for Aging Research? OIST mini-symposium: Approaches to ageing issues - BBSRC researchers w/Dr. M. Collins and Sir. Tim Hunt 2024.

6. Kiyomitsu, T. Live Imaging and AID2-Mediated Protein Knockdown Reveal Unexpected Features of Early Embryonic Divisions in Medaka. The 18th International Zebrafish Conference 2024.

7. Kiyomitsu, T. Localization Dynamics and Functions of Dynein in Medaka Early Embryos. Cell Division Workshop 2024 at NIG 2024.

Scholarly Contributions (by Unit Members)

Name of Unit Member	Type	Title
Yang Ming	Poster Presentation at Conference	Spatiotemporal regulations of RanGTP-dependent mitotic spindle assembly in medaka embryos
Takahiro Yamamoto	Poster Presentation at Conference	KIFC1 function for bipolar spindle assembly in medaka early embryos

Honors, Awards & Fellowships

2025-04-01	NIKON JOICO AWARD, ニコン最優秀 JOICO 賞, 2025, NIKON
2023 - Ongoing	JST FOREST Researcher, JST 創発研究者, 2022, JST

Honors, Awards & Fellowships (only by unit members)

2023-10-01 Marvin van Toorn, JSPS Fellow, 日本学術振興会外国人特別研究員, 2023, JSPS, 細胞周期依存的なダイニンアダプターのスイッチング機構

Other Institutional Service

2024 KAKENHI Clinic, (University)
2024 OIST x KEIO summer camp, (University)

Outreach Activities (For Unit Members Only)

2025-01-16 Sarah Ikeda and Aurellia Ramara Winaya, SEED program support, OIST

Workshops and Seminars (Organized and Hosted by Faculty/Units)

Speaker Name(s)	Title	Location	Date
Atsuo Sasaki	Lab seminar	OIST	2024-11-13
Diana Romero Zamora	Lab seminar	OIST	2024-06-06