CURRICULUM VITAE

Name Kazuhiro Maeshima

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Address Department of Chromosome Science
National Institute of Genetics
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Researchmap: https://researchmap.jp/7000007143?lang=en
JCB People & Ideas: https://doi.org/10.1083/jcb.201910088

Education

Ph.D., Graduate School of Medicine, Osaka University, Osaka, Japan (1995 – 1999)

M.S., Graduate School of Medicine, Osaka University, Osaka, Japan (1993 – 1995)

B.S., College of Biological Sciences, University of Tsukuba, Tsukuba, Japan (1989 – 1993)

Academic Positions

2024 – Present Department Head, Department of Chromosome Science, National Institute of Genetics, Japan.

2023 – Present Adjunct Professor, The Graduate University for Advanced Studies (SOKENDAI), Japan

2022 – 2024 Assistant to the Director-General, National Institute of Genetics, Japan

2019 – Present Professor, Department of Chromosome Science, National Institute of Genetics, Japan

2020 – 2022 Department Head, Department of Chromosome Science, National Institute of Genetics, Japan

2009 – 2023 Adjunct Professor, Department of Genetics, School of Life Science, SOKENDAI, Japan

2009 – 2019 Professor, Structural Biology Center, National Institute of Genetics (NIG), Japan

2007 – 2009 Senior Research Scientist, Cellular Dynamics Laboratory, RIKEN, Japan

2005 – 2007 Research Scientist, Cellular Dynamics Laboratory, RIKEN, Japan

2004 – 2005 Special Postdoctoral Researcher (SPDR), Cellular Dynamics Laboratory, RIKEN, Japan

1999 – 2004 Postdoctoral Fellow, Departments of Biochemistry and Molecular Biology, University of Geneva, Switzerland

Honors & Awards

2016 Kihara Memorial Foundation Academic Award

2004–2005 RIKEN Special Postdoctoral Researcher Fellowship

1999–2000 Naitoh Foundation Postdoctoral Fellowship

1996–1999 JSPS Research Fellow for Young Scientists (DC1)

Editorial & Advisory

2024 – Present Japan Science and Technology Agency (JST) FOREST Advisor (AD).

2023 – Present Associate Editor, *Cell Structure and Function* (JSCB).

2022 – Present Editorial Board, *Nucleus* (Taylor & Francis).

2022 – Present Associate Editor, *Chromosoma* (Springer).

2020 – Present Editorial Board, *BMC Epigenetics & Chromatin*.

2014 – Present Editorial Board, *Scientific Reports* (Springer).

2013 – 2016 Planning Group Member (PGM), Japanese-American Frontiers of Science (*JAFoS*) Symposium.

Invited Talks and Seminars

2025

”Chromatin organization and behavior in living cells revealed by super-resolution imaging.” **Sixth Annual Meeting on Advances on Nuclear Topology and 3D Chromatin Architecture in Cancer.** New York, NY, United States. 25 Nov 2025.

”Linker histone H1 serves as liquid-like “glue” of the chromatin domain.” **The 63rd Annual Meeting of the Biophysical Society of Japan.** Nara, Japan. 24 Sep 2025.

“Local chromatin behaviors during the cell-cycle revealed by single-molecule imaging/analysis.” **Frontier of BioMedicine Seminar, Tsinghua University.** Beijing, China. 8 Sep 2025.

”Linker histone H1 serves as liquid-like “glue” of the chromatin domain.” **Cold Spring Harbor Asia Conference “Nuclear Architecture and Function”.** Suzhou, China. 2 Sep 2025.

”Replication-dependent histone (Repli-Histo) labeling specifically visualizes the physical properties of euchromatin/heterochromatin in living human cells.” **EMBL Conference “Gene regulation: one molecule at a time”.** Heidelberg, Germany. 16 Jul 2025.

”Nucleosome behaviors in live human cells revealed by single-nucleosome imaging.” **MBI Friday Virtual Seminar, Mechanobiology Institute, National University of Singapore.** Singapore, Singapore. 10 Jan 2025.

2024
”Replication-dependent histone (Repli-Histo) labeling specifically visualizes the physical properties of euchromatin/heterochromatin in living human cells.” **1st International Conference on Cell Organization and Genome Integrity.** Guangzhou, China. 8 Dec 2024.

”Replication-dependent histone (Repli-Histo) labeling specifically visualizes the physical properties of euchromatin/heterochromatin in living human cells.” **The 12th 3R+3C International Symposium.** Fukuoka, Japan. 22 Nov 2024.

”Replication-dependent histone (Repli-Histo) labeling dissects the physical properties of euchromatin/heterochromatin in living human cells.” **RIKEN International Symposium: The 3D genome.** Kobe, Japan. 11 Nov 2024.

”Nucleosome behavior during interphase cell cycle revealed by single-nucleosome imaging.” **Genome Organisation Australia Webinar 2024.** Online, Australia. 24 Oct 2024.

”Single-nucleosome imaging unveils that condensins and nucleosome-nucleosome interactions differentially constrain chromatin to organize mitotic chromosomes.” **NIG & RIKEN International Symposium 2024 “SMC Complexes: Orchestrating Diverse Genome Functions”.** Numazu, Japan. 16 Oct 2024.

”Chromatin organization and behavior during the cell cycle revealed by single-nucleosome imaging/tracking.” **ICTS Meeting “Interdisciplinary aspects of chromatin organization and gene regulation”.** Bangalore, India. 16 Sep 2024.

”Replication-dependent histone (Repli-Histo) labeling specifically visualizes physical properties of euchromatin/heterochromatin in living human cells.” **Physical Models of Living Matters, The 3rd Symposium of Physical Biology and Biological Physics.** Taoyuan, Taiwan. 30 Aug 2024.

”Histone deacetylation (nucleosome–nucleosome interactions) and condensins differentially constrain chromatin to organize mitotic chromosomes in living cells.” **FASEB Research Conference “Biology of Acetylation in Health and Disease”.** Rome, Italy. 3 Aug 2024.

”Linker histone H1 serves as liquid-like “glue” of the chromatin domain.” **JSCB Annual Meeting 2024.** Tsukuba, Japan. 19 Jul 2024.

”Replication-dependent histone (Repli-Histo) labeling specifically visualizes physical properties of euchromatin/heterochromatin in living human cells.” **IUPAB 2024.** Kyoto, Japan. 27 Jun 2024.

”Replication-dependent histone (Repli-Histo) labeling specifically visualizes the physical properties of euchromatin/heterochromatin in living human cells.” **Cold Spring Harbor Meeting “Genome Organization & Nuclear Function”.** NY, United States. 1 May 2024.

”Replication-dependent histone (Repli-Histo) labeling specifically visualizes the physical properties of euchromatin/heterochromatin in living human cells.” **RIKEN Symposium on Nuclear Structure and Function.** Wako, Japan. 12 Mar 2024.

2023
”Chromatin organization and behavior in living human cells revealed by single-nucleosome imaging.” **CIG Seminar, University of Lausanne.** Lausanne, Switzerland. 11 Dec 2023.

”What is the physical nature of euchromatin in living human cells? Is euchromatin really open in the cell?” **The 61st Annual Meeting of the Biophysical Society of Japan.** Nagoya, Japan. 15 Nov 2023.

”Is euchromatin really open in the cell?” **Multiscale Genome Organization (MGO) Seminar.** Online, United States. 1 Aug 2023.

”Chromatin behavior during interphase and mitosis revealed by single-nucleosome imaging.” **2023 Telluride Workshop Biological Physics of Chromosomes.** Colorado, United States. 5 Jun 2023.

”Physical nature of euchromatic domains in living cells.” **Sussex-Japan Genome Stability Meeting.** Brighton, United Kingdom. 19 Jan 2023.

”Chromatin behavior during interphase and mitosis revealed by single-nucleosome imaging.” **Workshop around the mitotic chromosome.** Lyon, France. 4 Jan 2023.

2022
”What is the physical nature of chromatin domains in euchromatin?” **MBSJ 2022.** Chiba, Japan. 1 Dec 2022.

”Liquid-like domain organization of early DNA replication regions in living human cells.” **NIG International Symposium 2022 “Chromosome Replication in the New Era: Old and New Questions in Life Science”.** Mishima, Japan. 11 Nov 2022.

”Chromatin behavior in living cells revealed by single-nucleosome imaging/tracking.” **FASEB “The Transcription, Chromatin, and Epigenetics in Aging Conference”.** Catania, Italy. 11 Sep 2022.

”Chromatin Behavior in Living Human Cells Revealed by Single-nucleosome Imaging/Tracking.” **Japan-UK Regulation through Chromatin Conference 2022.** Leicester, United Kingdom. 22 Aug 2022.

”Local chromatin behavior in living human cells revealed by single-nucleosome imaging.” **JSCB Annual Meeting 2022.** Tokyo, Japan. 28 Jun 2022.

2021
”Local chromatin motion is steady during interphase cell cycle and independent of nuclear size and genome chromatin density.” **MBSJ 2021.** Makuhari, Japan. 1 Dec 2021.

”Local chromatin motion is steady during interphase cell cycle and independent of nuclear size and genome chromatin density.” **The 59th Annual Meeting of the Biophysical Society of Japan.** Online. 25 Nov 2021.

”Chromatin behavior in living cells revealed by single-nucleosome imaging.” **Virtual Talk, Cambridge University Biological Society.** Cambridge, United Kingdom. 11 Feb 2021.

2020
”Local chromatin motion in living human cells revealed by single nucleosome imaging.” **The 79th Annual Meeting of the Japanese Cancer Association Symposium on “4D Nucleome in cancer”.** Japan. 3 Oct 2020.

”Toward understanding the real chromatin organization present in the cell.” **58th Annual Meeting of the Biophysical Society of Japan “Listening to happy cells through the microscope, a tribute to Shinya Inoue”.** Japan. 17 Sep 2020.

”Chromosome Organization in Living Human Cells Revealed by Single Nucleosome Imaging.” **Telluride Workshop on Physical Genomics and Transcriptional Engineering.** Colorado, United States. 24 Feb 2020.

2019
”Chromosome organization in living cells revealed by single nucleosome imaging.” **MBSJ 2019.** Fukuoka, Japan. 3 Dec 2019.

”Chromatin dynamics and transcription.” **57th Annual Meeting of the Biophysical Society of Japan.** Miyazaki, Japan. 24 Sep 2019.

”Chromosome organization in living human cells revealed by single nucleosome imaging.” **12th EBSA-10th ICBP-IUPAP Biophysics Congress.** Madrid, Spain. 21 Jul 2019.

”Chromosome organization in living human cells revealed by single nucleosome imaging.” **François Jacob Conference.** Paris, France. 7 Jun 2019.

2018
”Correlation analysis of single nucleosome dynamics reveals compact chromatin domain organization in living cells.” **MBSJ 2018.** Yokohama, Japan. 29 Nov 2018.

”Correlation analysis of single nucleosome dynamics reveals compact chromatin domain organization in living cells.” **2018 Telluride Workshop on Chromatin Structure and Dynamics.** Colorado, United States. 1 Aug 2018.

2017
”Dynamic chromatin domains revealed by super-resolution live cell imaging.” **Gordon Research Conference “Genome Architecture in Cell Fate & Disease”.** Hong Kong, China. 6 Jul 2017.

”How is a long strand of genomic DNA organized in the cell? Dynamic organization of chromatin domains revealed by super-resolution live-cell imaging.” **DBS Biology Colloquium, National University of Singapore.** Singapore, Singapore. 10 Feb 2017.

2016
”Dynamic organization of chromatin domains revealed by super-resolution live-cell imaging.” **MBSJ 2016.** Yokohama, Japan. 30 Nov 2016.

”Dynamic organization of chromatin domains revealed by super-resolution live-cell imaging.” **14th Workshop on the molecular and physical biology of chromosomes @MBL.** Woods Hole, MA, United States. 11 Sep 2016.

”Chromatin fluctuation in living mammalian cells.” **The First Symposium of Chiral Molecular Science and Technology in Chiba University.** Chiba, Japan. 1 Mar 2016.

”Visualization of chromatin domains in living human cells.” **Japan QBio Week, Mishima Symposium “Quantitative Biology: Force, Information and Dynamics”.** Mishima, Japan. 12 Jan 2016.

2015
”Human genome structure and dynamics.” **Pacifichem 2015.** Hawaii, United States. 16 Dec 2015.

”How is a long strand of DNA organized in the cell?” **9th International Symposium on Nanomedicine (ISNM2015).** Mie, Japan. 12 Dec 2015.

”How can chromatin condense with salt? A model study using a synthetic nucleosome.” **53rd Annual Meeting of the Biophysical Society of Japan.** Kanazawa, Japan. 14 Sep 2015.

”Chromatin Structure and Dynamics in Live Mammalian Cells.” **2nd Symposium on Complex Biodynamics & Networks.** Tsuruoka, Japan. 13 May 2015.

2014
”Chromatin fluctuation in live mammalian cells.” **The 4D Nucleosome 2014.** Hiroshima, Japan. 17 Dec 2014.

”Chromatin fluctuation in live mammalian cells.” **Royal Society workshop “Chromosome Dynamics: Computational Models and Experimental Data”.** Chicheley Hall, United Kingdom. 18 Nov 2014.

”Chromatin fluctuation in live mammalian cells.” **The 14th DNA Transactions Workshop.** Oléron, France. 7 Sep 2014.

2013
”Chromatin Structure and Dynamics in Living Mammalian Cells.” **Workshop on modeling of biomolecular systems in cellular environments.** Kyoto, Japan. 31 Oct 2013.

”How is a long strand of DNA organized in the cell?” **ICOB Seminar, National Taiwan University College of Medicine.** Taipei, Taiwan. 2 Jul 2013.

”How is a long strand of DNA organized in the cell?” **IBMB Seminar, Academia Sinica.** Taipei, Taiwan. 1 Jul 2013.

”Flexible and dynamic nucleosome fiber in living mammalian cells.” **Workshop on the 4D Nucleome: Functional Nuclear Organization in Space and Time.** Mainz, Germany. 12 Jun 2013.

2012
”How is a long strand of DNA organized in the cells?” **Lorentz Center Workshop “Genome Mechanics at the Nuclear Scale”.** Leiden, Netherlands. 10 Dec 2012.

”Human genome organization and dynamics.” **Paradigm Innovation in Biology, Academia Sinica.** Taipei, Taiwan. 16 Oct 2012.

2011
”How small numbers of long genomic DNA are stored in cells.” **Albany 2011: 17th Conversation.** Albany, NY, United States. 14 Jun 2011.

2010
”Application of small molecules to elucidate cellular mechanisms: Nuclear pore formation is governed by Cyclin-dependent kinases in human cells.” **International Symposium on Cell Functions Mediated by Small Molecules.** Tsukuba, Japan. 8 Nov 2010.

”How is a long strand of DNA compacted into a chromosome?” **Structural and functional diversity of the eukaryotic genome.** Brno, Czechia. 14 Oct 2010.

”Mitotic Chromosome Structure: Irregular Folding of Nucleosome Fibers?” **75th Cold Spring Harbor Symposium on Quantitative Biology “Nuclear organization and function”.** Cold Spring Harbor, NY, United States. 7 Jun 2010.

”How is genome DNA compacted into a chromosome?” **DNA and chromatin workshop at Kyoto University.** Kyoto, Japan. 7 Apr 2010.

”X-ray imaging of human genome.” **JSPS Colloquium “Current approaches and future perspectives on the human genome, transcriptome and proteome”.** Stockholm, Sweden. 19 Jan 2010.

2009
”Mitotic chromosome structure: irregular folding of nucleosome fibers.” **17th International Chromosome Conference.** Boone, NC, United States. 23 Jun 2009.

”How is genome DNA compacted into a mitotic chromosome?” **The 9th NIBB-EMBL Symposium “Functional Imaging from Atoms to Organisms”.** Okazaki, Japan. 20 Apr 2009.

2008
”Mitotic Chromosome Structure: Irregular folding of nucleosome fibers.” **International Symposium Chromosome Dynamics in Ise.** Ise, Japan. 30 May 2008.

2007
”Mitotic chromosome structure: regular or random?” **International Symposium on Functional Organization of the Nucleus.** Awaji Island, Japan. 10 Jan 2007.

2006
”Mitotic chromosome structure: regular or random?” **Osaka University COE International Symposium “Chromatin Signaling Symposium”.** Osaka, Japan. 2 Nov 2006.

”Cell cycle dependent dynamics of nuclear pores: Pore-free island and lamin A/C.” **EMBO Workshop “Functional organization of the Cell Nucleus”.** Prague, Czechia. 6 May 2006.

20 Selected Publications (* corresponding author)

1. Maeshima K* (2025). The shifting paradigm of chromatin structure: from the 30-nm chromatin fiber to liquid-like organization. ***Proceedings of the Japan Academy, Series B: Physical and Biological Sciences*** 101: 339–56. doi:10.2183/pjab.101.020.

2. Minami K, Nakazato K, Ide S, Kaizu K, Higashi K, Tamura S, Toyoda A, Takahashi K, Kurokawa K, and Maeshima K* (2025). Replication-dependent histone labeling dissects the physical properties of euchromatin/heterochromatin in living human cells. ***Science Advances*** 11: eadu8400. doi:10.1126/sciadv.adu8400.

3. Maeshima K*, Iida S, Shimazoe MA, Tamura S, and Ide S (2024). Is euchromatin really open in the cell? ***Trends in Cell Biology*** 34: 7–17. doi:10.1016/j.tcb.2023.05.007.

4. Iida S, Ide S, Tamura S, Sasai M, Tani T, Goto T, Shribak M, and Maeshima K* (2024). Orientation-independent-DIC imaging reveals that a transient rise in depletion attraction contributes to mitotic chromosome condensation. ***Proceedings of the National Academy of Sciences of the United States of America*** 121: e2403153121. doi:10.1073/pnas.2403153121.

5. Hibino K, Sakai Y, Tamura S, Takagi M, Minami K, Natsume T, Shimazoe MA, Kanemaki MT, Imamoto N, and Maeshima K* (2024). Single-nucleosome imaging unveils that condensins and nucleosome-nucleosome interactions differentially constrain chromatin to organize mitotic chromosomes. ***Nature Communications*** 15: 7152. doi:10.1038/s41467-024-51454-y.

6. Nozaki T, Shinkai S, Ide S, Higashi K, Tamura S, Shimazoe AM, Nakagawa M, Suzuki Y, Okada Y, Sasai M, Onami S, Kurokawa K, Iida S, and Maeshima K* (2023). Condensed but liquid-like domain organization of active chromatin regions in living human cells. ***Science Advances*** 9: eadf1488. doi:10.1126/sciadv.adf1488.

7. Iida S, Shinkai S, Itoh Y, Tamura S, Kanemaki MT, Onami S, and Maeshima K* (2022). Single-nucleosome imaging reveals steady-state motion of interphase chromatin in living human cells. ***Science Advances*** 8: eabn5626. doi:10.1126/sciadv.abn5626.

8. Nagashima R, Hibino K, Ashwin SS, Babokhov M, Fujishiro S, Imai R, Nozaki T, Tamura S, Tani T, Kimura H, Shribak M, Kanemaki MT, Sasai M, and Maeshima K* (2019). Single nucleosome imaging reveals loose genome chromatin networks via active RNA polymerase II. ***Journal of Cell Biology*** 218: 1511–30. doi:10.1083/jcb.201811090.

9. Maeshima K*, Matsuda T, Shindo Y, Imamura H, Tamura S, Imai R, Kawakami S, Nagashima R, Soga T, Noji H, Oka K, and Nagai T* (2018). A Transient Rise in Free

Mg(2+) Ions Released from ATP-Mg Hydrolysis Contributes to Mitotic Chromosome Condensation. ***Current Biology*** 28: 444–51 e6. doi:10.1016/j.cub.2017.12.035.

10. Shimamoto Y*****, Tamura S, Masumoto H, and Maeshima K***** (2017). Nucleosome-nucleosome interactions via histone tails and linker DNA regulate nuclear rigidity. ***Molecular Biology of the Cell*** 28: 1580–9. doi:10.1091/mbc.E16-11-0783.

11. Nozaki T, Imai R, Tanbo M, Nagashima R, Tamura S, Tani T, Joti Y, Tomita M, Hibino K, Kanemaki MT, Wendt KS, Okada Y, Nagai T, and Maeshima K***** (2017). Dynamic Organization of Chromatin Domains Revealed by Super-Resolution Live-Cell Imaging. ***Molecular Cell*** 67: 282–93 e7. doi:10.1016/j.molcel.2017.06.018.

12. Imai R, Nozaki T, Tani T, Kaizu K, Hibino K, Ide S, Tamura S, Takahashi K, Shribak M*****, and Maeshima K***** (2017). Density imaging of heterochromatin in live cells using orientation-independent-DIC microscopy. ***Molecular Biology of the Cell*** 28: 3349–59. doi:10.1091/mbc.E17-06-0359.

13. Maeshima K*****, Rogge R (co-first author), Tamura S, Joti Y, Hikima T, Szerlong H, Krause C, Herman J, Seidel E, DeLuca J, Ishikawa T, and Hansen JC***** (2016). Nucleosomal arrays self-assemble into supramolecular globular structures lacking 30-nm fibers. ***The EMBO Journal*** 35: 1115–32. doi:10.15252/embj.201592660.

14. Maeshima K*****, Kaizu K (co-first author), Tamura S, Nozaki T, Kokubo T, and Takahashi K (2015). The physical size of transcription factors is key to transcriptional regulation in chromatin domains. ***Journal of Physics: Condensed Matter*** 27: doi:10.1088/0953-8984/27/6/064116.

15. Takata H, Hanafusa T, Mori T, Shimura M, Iida Y, Ishikawa K, Yoshikawa K, Yoshikawa Y, and Maeshima K***** (2013). Chromatin compaction protects genomic DNA from radiation damage. ***PLOS ONE*** 8: e75622. doi:10.1371/journal.pone.0075622.

16. Hihara S, Pack CG, Kaizu K, Tani T, Hanafusa T, Nozaki T, Takemoto S, Yoshimi T, Yokota H, Imamoto N, Sako Y, Kinjo M, Takahashi K, Nagai T, and Maeshima K***** (2012). Local nucleosome dynamics facilitate chromatin accessibility in living Mammalian cells. ***Cell Reports*** 2: 1645–56. doi:10.1016/j.celrep.2012.11.008.

17. Joti Y, Hikima T, Nishino Y, Kamada F, Hihara S, Takata H, Ishikawa T, and Maeshima K***** (2012). Chromosomes without a 30-nm chromatin fiber. ***Nucleus*** 3: 404–10. doi:10.4161/nucl.21222.

18. Nishino Y, Eltsov M, Joti Y, Ito K, Takata H, Takahashi Y, Hihara S, Frangakis AS, Imamoto N, Ishikawa T, and Maeshima K***** (2012). Human mitotic chromosomes consist predominantly of irregularly folded nucleosome fibres without a 30-nm chromatin structure. ***The EMBO Journal*** 31: 1644–53. doi:10.1038/emboj.2012.35.

19. Maeshima K*****, Hihara S, and Eltsov M (2010). Chromatin structure: does the 30-nm fibre exist in vivo? ***Current Opinion in Cell Biology*** 22: 291–7. doi:10.1016/j.ceb.2010.03.001.

20. Eltsov M*****, Maclellan KM, Maeshima K (co-first author), Frangakis AS, and Dubochet J (2008). Analysis of cryo-electron microscopy images does not support the existence of 30-

nm chromatin fibers in mitotic chromosomes in situ. ***Proceedings of the National Academy of Sciences of the United States of America*** 105: 19732–7. doi:10.1073/pnas.0810057105.

Publications (Full list)

1. Shimazoe MA, Huertas J, Phillips C, Ide S, Tamura S, Farr S, Ashwin S, Sasai M, Collepardo-Guevara R, and Maeshima K (2025). Linker histone H1 functions as a liquid-like glue to organize chromatin in living human cells. ***bioRxiv*** 2025.03. 05.641622.

2. Semeigazin A, Minami K, Shimazoe MA, Khochbin S, Panne D, Ide S, and Maeshima K (2025). Liquid-like transcription condensates locally constrain chromatin in living human cells. ***bioRxiv*** doi:10.1101/2025.07.05.663270.

3. Otsuka A, Shimazoe MA, Watanabe S, Tamura S, Minami K, Kiyono T, Takeshita F, and Maeshima K (2025). Single-nucleosome imaging uncovers biphasic chromatin dynamics in inducible human transformed cells. ***Cell Structure and Function*** doi:10.1247/csf.25147.

4. Minami K, Semeigazin A, Nakazato K, and Maeshima K (2025). Euchromatin and Heterochromatin: Implications for DNA Accessibility and Transcription. ***Journal of Molecular Biology*** 169270. doi:10.1016/j.jmb.2025.169270.

5. Maeshima K (2025). The shifting paradigm of chromatin structure: from the 30-nm chromatin fiber to liquid-like organization. ***Proceedings of the Japan Academy, Series B: Physical and Biological Sciences*** 101: 339–56. doi:10.2183/pjab.101.020.

6. Minami K, Nakazato K, Ide S, Kaizu K, Higashi K, Tamura S, Toyoda A, Takahashi K, Kurokawa K, and Maeshima K (2025). Replication-dependent histone labeling dissects the physical properties of euchromatin/heterochromatin in living human cells. ***Science Advances*** 11: eadu8400. doi:10.1126/sciadv.adu8400.

7. Iida S, Shimazoe MA, Minami K, Tamura S, Ashwin SS, Higashi K, Nishiyama T, Kanemaki MT, Sasai M, Schermelleh L, Toyoda A, Kurokawa K, and Maeshima K (2025). Cohesin prevents local mixing of condensed euchromatic domains in living human cells. ***bioRxiv*** doi:10.1101/2025.08.27.672592.

8. Fujishiro S, Sasai M, and Maeshima K (2025). Chromatin domains in the cell: Phase separation and condensation. ***Current Opinion in Structural Biology*** 91: 103006. doi:10.1016/j.sbi.2025.103006.

9. Semeigazin A, Iida S, Minami K, Tamura S, Ide S, Higashi K, Toyoda A, Kurokawa K, and Maeshima K (2024). Behaviors of nucleosomes with mutant histone H4s in euchromatic domains of living human cells. ***Histochemistry and Cell Biology*** 162: 23–40. doi:10.1007/s00418-024-02293-x.

10. Otsuka A, Minami K, Higashi K, Kawaguchi A, Tamura S, Ide S, Hendzel MJ, Kurokawa K, and Maeshima K (2024). Chromatin organization and behavior in HRAS-transformed mouse fibroblasts. ***Chromosoma*** 133: 135–48. doi:10.1007/s00412-024-00817-x.

11. Minami K, Nakazato K, Ide S, Kaizu K, Higashi K, Tamura S, Toyoda A, Takahashi K, Kurokawa K, and Maeshima K (2024). Replication-dependent histone (Repli-Histo) labeling

dissects the physical properties of euchromatin/heterochromatin in living human cells. ***bioRxiv*** doi:10.1101/2024.10.20.61880.

12. Maeshima K, Iida S, Shimazoe MA, Tamura S, and Ide S (2024). Is euchromatin really open in the cell? ***Trends in Cell Biology*** 34: 7–17. doi:10.1016/j.tcb.2023.05.007.

13. Iida S, Ide S, Tamura S, Tani T, Goto T, Shribak M, and Maeshima K (2024). Orientation-Independent-DIC imaging reveals that a transient rise in depletion force contributes to mitotic chromosome condensation. ***bioRxiv*** doi:10.1101/2023.11.11.566679.

14. Iida S, Ide S, Tamura S, Sasai M, Tani T, Goto T, Shribak M, and Maeshima K (2024). Orientation-independent-DIC imaging reveals that a transient rise in depletion attraction contributes to mitotic chromosome condensation. ***Proceedings of the National Academy of Sciences of the United States of America*** 121: e2403153121. doi:10.1073/pnas.2403153121.

15. Hibino K, Sakai Y, Tamura S, Takagi M, Minami K, Natsume T, Shimazoe MA, Kanemaki MT, Imamoto N, and Maeshima K (2024). Single-nucleosome imaging unveils that condensins and nucleosome-nucleosome interactions differentially constrain chromatin to organize mitotic chromosomes. ***Nature Communications*** 15: 7152. doi:10.1038/s41467-024-51454-y.

16. Smallwood K, Watt KEN, Ide S, Baltrunaite K, Brunswick C, Inskeep K, Capannari C, Adam MP, Begtrup A, Bertola DR, Cho M, Demmer L, Demo E, Devinsky O, Gallagher ER, Sacoto MJG, Jech R, Keller-Ramey J, Keren B, Kussmann J, Ladda R, Lansdon LA, Lunke S, Mardy A, McLaughlin H, McWalters K, Person R, Raiti L, Saitoh N, Saunders CJ, Schnur R, Skorvanek M, Sell SL, Slavotinek A, Sullivan BR, Stark Z, Symonds JD, Wenger T, Weber S, Whalen S, White SM, Willaert R, Winkelman J, Zech M, Zeidler S, Maeshima K, Stottmann RW, Trainor PA, and Weaver KN (2023). Variant- and tissue-specific effects underlie phenotypic heterogeneity in individuals with heterozygous variants in POLR1A. ***The American Journal of Human Genetics*** 110: 809-825. doi: 10.1016/j.ajhg.2023.03.014

17. Nozaki T, Shinkai S, Ide S, Higashi K, Tamura S, Shimazoe AM, Nakagawa M, Suzuki Y, Okada Y, Sasai M, Onami S, Kurokawa K, Iida S, and Maeshima K (2023). Condensed but liquid-like domain organization of active chromatin regions in living human cells. ***Science Advances*** 9: eadf1488. doi:10.1126/sciadv.adf1488.

18. Minami K, Iida S, and Maeshima K. Chromatin organization and DNA damage. In: Tamanoi KYaF, editor. ***The Enzymes*** "DNA Damage and Double Strand Breaks". 51: Elsevier; 2022.

19. Maeshima K, and Meshorer E (2022). Editorial: Emerging concepts and tools in genome organization and chromatin function in eukaryotes. ***Current Opinion in Cell Biology*** 78: 102120. doi:10.1016/j.ceb.2022.102120.

20. Maeshima K (2022). A phase transition for chromosome transmission when cells divide. ***Nature*** 609: 35–6. doi:10.1038/d41586-022-01925-3.

21. Iida S, Shinkai S, Itoh Y, Tamura S, Kanemaki MT, Onami S, and Maeshima K (2022). Single-nucleosome imaging reveals steady-state motion of interphase chromatin in living human cells. ***Science Advances*** 8: eabn5626. doi:10.1126/sciadv.abn5626.

22. Ide S, Tamura S, and Maeshima K (2022). Chromatin behavior in living cells: Lessons from single-nucleosome imaging and tracking. ***Bioessays*** 44: e2200043. doi:10.1002/bies.202200043.

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