Microscopic Anatomy

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We are interested in developing new technology for visualizing unknown biological phenomena by using various imaging devices such as electron microscopes and optical microscopes. Currently, there are many ongoing projects about nerve development and nerve regeneration to analyze the mechanisms of various molecules and cells. For examples, we are trying to develop new artificial nerves with higher therapeutic effect for the treatment of peripheral nerve injury, and to develop a new device that visualizes human senses *in vitro* (in cultured cells). Please feel free to contact us if you are interested in imaging with an electron microscope or in developing novel imaging technology.

Research interests

1. Developing new technology to visualize the biological phenomena by parallelly using the various kinds of imaging tools including scanning/transmission electron microscopes, light microscopes, MRI, CT etc.
2. Novel artificial nerve development for treating a peripheral nerve injury
3. Developing new device to visualize human senses with iPS derived sensory neuron
4. Visualization of neural activity by using electron microscopy with newly developed sample preparation procedure

Materials and methods for collaborations

1. General histological evaluation skills including the electron microscopy and optical microscopy analysis, immuno-electron microscopic analysis
2. Cutting-edge microscopy system including many kinds of transmission / scanning electron microscopy, super resolution laser scanning microscopy system (Zeiss) is prepared for the analysis by fluorescent reporter or immunostaining
3. Various kinds of genetically modified mice strains over 50 lines are prepared for visualizing the process of normal developmental and regeneration

Links to additional info

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2. Lab HP (Eng/Jap); https://www.med.niigata-u.ac.jp/an3/welcome.html

Selected publication lists

Saeki T et al. ***Regen Ther*** 2022, Yanagisawa T et al. ***Biochem Biophys Res Commun.*** 2022, Shibata R et al. ***J Neurotrauma***. 2022, Kitagawa et al. ***Stem Cell Rep.*** 2022, Haraguchi T et al. ***Commun Biol.*** 2022, Kawai M et al. ***Cell Rep*** 2021, Yang F et al. ***Ocul Surf.*** 2021, Masuda S, Suzuki T, **Shibata S** et al. ***Plast Reconstr Surg.*** 2021, Sharp MM et al. ***Acta Neuropathol Commun.*** 2021, Li Y, Kanzaki S, **Shibata S** et al. ***Front Neurol.*** 2021, Sato Y et al. ***Nature.*** 2021, Simankova A et al. ***Glia***. 2021, Kamata Y et al. ***Stem Cells Transl Med.*** 2021, Suzuki M et al. ***Cancer Res.*** 2021, Nagai N et al. ***Commun Biol.*** 2020, Suzuki T et al. ***Int J Mol Sci*** 2020, Teratani T et al. ***Nature.*** 2020, Kajikawa K et al. ***Mol Brain.*** 2020, Ishiwa S et al. ***BMC Nephrol*** 2020, Takahashi M et al ***Dev Biol*** 2020, Okazaki I, **Shibata S** et al. ***Metalloproteinases Med*** 2020, Yamane M et al ***FASEB J.*** 2020, Hirano Y et al. ***Commun Biol*** 2020, Yamaguchi T et al ***Science Advances*** 2020, Tanaka H et al. ***Nat Commun.*** 2020, Khazaei M et al. ***Sci Transl Med.*** 2020, Saeki T et al. ***Neurosci Lett.*** 2020, Mohan S et al. ***J Neuropathol Exp Neurol.*** 2019, Serizawa T et al. ***Development***. 2019, Ariyasu D et al. ***Endocrinology***. 2019, Hoshino Y et al. ***Sci Rep*** 2019, Li Y, Kanzaki S, **Shibata S** et al. ***Neurosci Res***. 2019, **Shibata S** et al. ***Front Neural Circuits*** 2019, Kirihara T, et al. ***iScience*** 2019, Yamazaki Y, Abe Y, **Shibata S**, et al. ***J Neurosci***. 2019, Kinugasa Y, et al. ***Journal of Cell Science***, 2019, Abe Y et al. ***Neurochem Int.*** 2019, Miki F, et al. ***Biol Reprod***. 2019, Suzuki N, Yamaguchi T, **Shibata S**, et al. ***Am J Ophthalmol.*** 2019, Ito S et al. ***eNeuro.*** 2018, Okubo T et al. ***Stem Cell Rep*** 2018, Kojima K et al. ***Stem Cells Transl Med.*** 2018, Nori S et al. ***Stem Cell Reports.*** 2018, Matsuo K et al. ***Bone.*** 2018, Nagoshi N, et al. ***Stem Cells Transl Med.*** 2018, Kimura H et al. ***Sci Rep*** 2018, Ouchi T et al. ***J Dent Res.*** 2018, He J, Yamane M, **Shibata S** et al. ***Cornea*** 2018, Fukuhara S et al., ***Dig Dis Sci*** 2017, Mori T et al. ***IOVS.*** 2017, Suzuki H et al. ***PLoS One*** 2017, Kodo K, **Shibata S** et al. ***Sci Rep*** 2017, Morizawa YM et al. ***Nat Commun*** 2017, Takano M et al. ***Stem Cell Rep*** 2017, Inagaki E et al. ***Stem Cells Transl Med.*** 2017, Ouchi T Morikawa S, **Shibata S** et al. ***Differentiation*** 2016, Komaki Y et al. ***Sci Rep*** 2016, Futatsugi K et al. ***Sci Rep*** 2016, Fujimura K et al. ***J Neurosci*** 2016, Narumi S et al. ***Nature Genetics*** 2016, Fox RG et al. ***Nature*** 2016, Inagaki Y et al. ***PLoS One*** 2016, Fujimura T, **Shibata S** et al. ***PLoS One*** 2016, Fujiyoshi K et al. ***J Neurosci.*** 2016, Kawabata S et al. ***Stem Cell Rep*** 2016, **Shibata S** et al. ***Methods in Mol Biol*** 2015, Iwai H et al. ***Stem Cells Transl Med*** 2015, Lin ZY, Hirano T, **Shibata S** et al. ***Dev Biol*** 2015, **Shibata S** et al. ***Microscopy***. 2015, Murota Y et al. ***Cell Rep*** 2014, Zhang L et al. ***Mol Brain*** 2014, Takano M et al. ***J of Neuroinflammation*** 2014, Kuroiwa-Numasawa Y, et al. ***Stem Cell Rep*** 2014, Ohtomo R, Mori T, **Shibata S** et al. ***Modern Pathol*** 2013, Nishimoto Y et al. ***Mol Brain*** 2013. Sato H et al. ***Neuroscience*** 2013, Fukuda T et al. ***Nature*** 2013, Takahashi T et al. ***PLoS One*** 2013, Takagi T et al. ***Plast Reconstr Surg*** 2012, Takano M et al. ***PLoS One*** 2012. Kanzaki S et al. ***PLoS One*** 2012. Omoto M et al. ***PLoS One*** 2012, **Shibata S** et al. ***Brain Res*** 2012, Yasuda A, Tsuji O, **Shibata S**, et al. ***Stem Cells.*** 2011, Renault-Mihara F, et al. ***EMBO Mol Med*** 2011, Asada N, et al. ***JCI.*** 2011, Katoh H, **Shibata S**, et al. ***Mol Brain*** 2011, 2011, Nagoshi N, **Shibata S** et al. ***Glia*** 2011, **Shibata S**, et al. ***Molecular Brain.*** 2010, Tada H, et al. ***J Biol Chem.*** 2010, Kumagai G, et al. ***PLoS One.*** 2009, Nagoshi N, **Shibata S**, et al. ***JCB.*** 2009, Takagi T, et al. ***Neuroimage***. 2009, Nagoshi N, **Shibata S** et al. ***Cell Stem Cell.*** 2008, Kaneko S et al. ***Nat Med*** 2006, Akamatsu W, et al. ***Proc Natl Acad Sci U S A***. 2005, Sakakibara S, et al. ***Proc Natl Acad Sci U S A.*** 2002, Fujino T, Hasegawa M, **Shibata S**, et al. ***Biochem Biophys Res Commun.*** 2000