Department of Clinical Application,
Cebter for iPS cell Research and Application,
Kyoto University
53 Kawahara-cho Shogoin Sakyo-ku, Kyoto,
606-8507 JAPAN
Phone: 81-75-366-7066, Fax: 81-75-366-7071

Daisuke Doi, MD, PhD

Email: daisuke.doi@cira.kyoto-u.ac.jp

Date of Birth: Mar 08, 1977

Nationality: Japan

Education

Years	Degree	Institute and Location
1995-2001	M.D.	Shiga University of Medical Science, Shiga, Japan
2006-2010	Ph.D.	Kyoto University Graduate School of Medicine, Kyoto, Japan

Positions

2001 Resident, Department of Neurosurgery, Kyoto University Hospital, Kyoto, Japan

2002-2003 Clinical staff, Department of Neurosurgery, Yamatotakada Municipal Hospital, Nara, Japan

2004-2005 Clinical staff, Department of Neurosurgery, Kurashiki Central Hospital, Okayama, Japan

2005-2006 Clinical staff, Department of Neurosurgery, Kyoto University Hospital, Kyoto, Japan

2010-2016 Postdoctoral researcher, Department of Cell Growth and Differentiation, Center for iPS Cell Research and Application, Kyoto University, Kyoto, Japan

2016-2020 Assistant Professor, Department of Clinical Application, Center for iPS Cell Research and Application, Kyoto University, Kyoto, Japan

2020-present Junior Associate Professor, Department of Clinical Application, Center for iPS Cell Research and Application, Kyoto University, Kyoto, Japan

Research Skills

Cell culture: embryonic stem cells (mouse, monkey, and human) and induced pluripotent stem cells. Differentiation to dopaminergic progenitors and cerebral organoids

In vivo skills: generating model animals of Parkinson's disease (rat), cell transplantation, and behavioral assessment.

Staining: Immunohistochemistry in vitro and in vivo, analysis with a confocal microscope.

Cell sorter: Analysis and cell sorting with fluorescence-activated cell sorter (FACS) and magnetic cell sorter (MACS).

License and Certifications

2001 Japan Medical License

2010 Japanese Board of Neurosurgery

2012 PhD, Kyoto University Graduate School of Medicine

2015 Certifying physician of Japanese society for Regenerative Medicine

Selected Publications

Doi D, Magotani H, Kikuchi T, Ikeda M, Hiramatsu S, Yoshida K, Amano N, Nomura M, Umekage M, Morizane A, Takahashi J.

Pre-clinical study of induced pluripotent stem cell-derived dopaminergic progenitor cells for Parkinson's disease.
Nat. Commun.;11: 3369 (2020)

Kikuchi T, Morizane A, **Doi D**, Magotani H, Onoe H, Hayashi T, Mizuma H, Takara S, Takahashi R, Inoue H, Morita S, Yamamoto M, Okita K, Nakagawa M, Parmar M, Takahashi J
Human iPS cell-derived dopaminergic neurons function in a primate Parkinson's disease model.
Nature;548,592-296 (2017)

Morizane A, Kikuchi T, Hayashi T, Mizuma H, Takara S, Doi H, Mawatari A, Glasser M.F, Shiina T, Ishigaki H, Itoh Y, Okita K, Yamasaki E, **Doi D**, Onoe H, Ogasawara K, Yamanaka S, Takahashi J.
MHC matching improves engraftment of iPSC-derived neurons in non-human primates.
Nat. Commun.;8,385 (2017)

Kikuchi T, Morizane A, **Doi D**, Okita K, Nakagawa M, Yamakado H, Inoue H, Takahashi R, Takahashi J.
Idiopathic Parkinson's disease patient-derived induced pluripotent stem cells function as midbrain dopaminergic neurons in rodent brains.
J Neurosci Res;95(9)1829-1837 (2017)

Samata B, **Doi D**, Nishimura K, Kikuchi T, Watanabe A Sakamoto Y, Kakuta J, Ono Y, Takahashi J.
Purification of functional human ES and iPSC-derived midbrain dopaminergic progenitors using LRTM1.
Nat. Commun.;**4**,13097 (2016)

Katsukawa M, Nakajima Y, Fukumoto A, **Doi D**, Takahashi J.
Fail-safe Therapy by Gamma-Ray Irradiation Against Tumor Formation by Human Induced Pluripotent Stem Cell-Derived Neural Progenitors. Stem Cells Dev **25**, 815-825 (2016).

Nishimura K, **Doi D**, Samata B, Murayama S, Tahara T, Onoe H, Takahashi J.
Estradiol Facilitates Functional Integration of iPSC-Derived Dopaminergic Neurons into Striatal Neuronal Circuits via Activation of Integrin α5β1.
Stem Cell Reports **6,** 511-524 (2016)

Doi D, Samata B, Katsukawa M, Kikuchi T, Morizane A, Ono Y, Sekiguchi K, Nakagawa M, Parmar M,

Takahashi J.

Isolation of Human Induced Pluripotent Stem Cell-derived Dopaminergic Progenitors by Cell Sorting for Successful Transplantation.

Stem Cell Reports **2**, 337-350 (2014)

Nakagawa M, Taniguchi Y, Senda S, Takizawa N, Ichisaka T, Asano K, Morizane A, **Doi D**, Takahashi J, Nishizawa M, Yoshida Y, Toyoda T, Osafune K, Sekiguchi K and Yamanaka S.

A novel efficient feeder-free culture system for the derivation of human induced pluripotent stem cells.

Sci Rep **4,** 3594 (2014).

Morizane A, **Doi D**, Kikuchi T, Okita K, Hotta A, Kawasaki T, Hayashi T, Onoe H, Shiina T, Yamanaka S and Takahashi J.

Direct Comparison of Autologous and Allogeneic Transplantation of iPSC-Derived Neural Cells in the Brain of a Nonhuman Primate.

Stem Cell Reports **1,** 283-292 (2013).

Morizane A, **Doi D** & Takahashi J.

Neural induction with a dopaminergic phenotype from human pluripotent stem cells through a feeder-free floating aggregation culture.

Methods Mol Biol **1018,** 11-19 (2013).

Shinoyama M, Ideguchi M, Hayashi H, **Doi D**, Hashimoto N, Suzuki M and Takahashi J.

Cytotoxic T lymphocyte antigen 4 immunogloblin promotes neuronal differentiation in the grafts of embryonic stem cell-derived neural precursor cells."

Neuroscience **202,** 484-491 (2012).

Doi D, Morizane A, Kikuchi T, Onoe H, Hayashi T, Kawasaki T, Motono M, Sasai Y, Saiki H, Gomi M, Yoshikawa T, Hayashi H, Shinoyama M, Refaat M.M, Suemori H, Miyamoto S and Takahashi J. Prolonged Maturation culture favors a reduction in the tumorigenicity and the dopaminergic function of human ESC-derived neural cells in a primate model of Parkinson's disease.

Stem Cells 30(5): 935-945 (2012).

Gomi M, Takagi Y, Morizane A, **Doi D**, Nishimura M, Miyamoto S, Takahashi J. Functional recovery of the murine brain ischemia model using human induced pluripotent stem cell-derived telencephalic progenitors. Brain Res. 1459: 52-60 (2012)

Kikuchi T, Morizane A, **Doi D**, Onoe H, Hayashi H, Kawasaki T, Saiki H, Miyamoto S, and Takahashi J. Survival of human induced pluripotent stem cell-derived midbrain dopaminergic neurons in the brain of a primate model of Parkinson's disease. J. Parkinson's Disease 1(4):395-412 (2011)

Morizane A, **Doi D**, Kikuchi T, Nishimura K and Takahashi J. Small-molecule inhibitors of bone morphogenic protein and activin/nodal signals promote highly efficient neural induction from human pluripotent stem cells. J. Neurosci. Res. 89(2):117-126 (2011)

Koyanagi M, Takahashi J, Arakawa Y, **Doi D**, Fukuda J, Hayashi H, Narumiya S, and Hashimoto N Inhibition of the Rho/ROCK pathway reduced apoptosis during transplantation of embryonic stem cell-derived neural precursors. J. Neurosci. Res. 86(2):270-280 (2008)

Selected Presentations

Neuroscience 2008 (Society for neuroscience), Washington DC, 2008 Nov 18, Analysis of the human ES cell-derived tumor in the primate model of Parkinson's disease (poster presentation).

Neuroscience 2009 (Society for neuroscience), Chicago, Illinois, 2009 Oct 20, Characterization of human embryonic stem cell-derived tumors in the brain of monkey Parkinson's disease model (Poster presentation).

Neuroscience 2010 (Society for neuroscience), San Diego, California, 2010 Nov 15, Sorting and transplantation of neural progenitor cells derived from human pluripotent stem cells (poster presentation).

ISSCR 9th Annual meeting (International Society for Stem Cell Research), Toronto, Canada, 2011 Jun 16, Sorting and transplantation of dopaminergic progenitor cells derived from human pluripotent stem cells (poster presentation).

ISSCR 10th Annual meeting (International Society for Stem Cell Research), Yokohama, Japan, 2012 Jun

14, Sorting and transplantation of dopaminergic progenitor cells derived from human pluripotent stem cells (poster presentation).

ISSCR 11th Annual meeting (International Society for Stem Cell Research), Boston, USA, 2013 Jun 13, Sorting and transplantation of dopaminergic progenitor cells derived from human pluripotent stem cells (poster presentation).

The 7th Takeda Science Foundation Symposium on PharmaSciences/CiRA International Symposium 2014, Osaka, Japan, 2014 Jan 16, Sorting and transplantation of dopaminergic progenitor cells derived from human pluripotent stem cells (poster presentation).

ISSCR 13th Annual meeting (International Society for Stem Cell Research), Stockholm, Sweden, 2015 Jun 24, A clinical study of autologous transplantation using iPSC-derived dopaminergic progenotors to Parkinson’s disease patients (poster presentation).

ISSCR 14th Annual meeting (International Society for Stem Cell Research), San Francisco, USA, 2016 Jun 24, Quality control of iPSC-derived dopaminergic cell grafts for Parkinson’s disease patients (poster presentation).

14th International Symposium on Neural Transplantation & Repair (2017) Port Douglas, Australia
Fail-Safe Therapy by Gamma-ray Irradiation Against Tumor Formation by Human iPSC-derived Neural Progenitors (oral presentation)

ISSCR 16th Annual Meeting (2018) Melbourne, Australia
Non-Clinical Study of Human iPSC-derived Dopaminergic Progenitors for Parkinson's Disease Patients (poster presentation)

CellCAN's Second Pan-Canadian Strategic Forum on Cell & Gene Therapy (2019) Tronto, Canada
Preparing for First Human Trial of iPSC-derived Cells for Parkinson's Disease (invited lecture)

ISSCR 17th Annual Meeting, Innovation Showcase by Miltenyi Biotec GmbH (2019) Los Angeles, US
A therapy for Parkinson's Disease: Latest Clinical Research Highlights and Concepts for Manufacturing of ATMPs (invited lecture)

ISSCR 17th Annual Meeting (2019) Los Angeles, USA

GMP-Compliant Microchip Based Cell Sorting of iPSCs-derived Dopaminergic Progenitors (poster presentation)

ISSCR 19th Annual Meeting (2021) Virtual

Development of Transplantable Cerebral Organoids Derived from Human Induced Pluripotent Stem Cells (poster presentation)

16th International Symposium on Neural Transplantation and Repair (INTR) & 31st Annual meeting of the Network for European CNS Transplantation and Restoration (NECTAR, 2021) Virtual

Transplantation of brain organoids for reconstructing injured neural circuit (oral presentation)