

Curriculum Vitae

Ken J. Ishii, M.D. /Ph.D.



DEMOGRAPHIC INFORMATION

Personal data:

Business address: 1) Division of Vaccine Science, Department of Microbiology and Immunology, The Institute of Medical Science, The University of Tokyo, (IMSUT) Tokyo, Japan 108-8639

Phone & Fax: 1) +81-3-5449-5314

URL: <https://vaccine-science.ims.u-tokyo.ac.jp/en/>

Education:

1993 M.D., School of Medicine, YCU, Japan

2003 Ph.D., Grad Sch of Medicine, Yokohama City University (YCU), Japan

Positions and Employment:

1993-1995 Residency, Internal Medicine, Surgery, Radiology, School of Medicine, Yokohama City University, Kanagawa, Japan

1995-1996 Senior Resident, Anesthesiology, ICU, Department of Anesthesiology, School of Medicine, Yokohama City University, Kanagawa, Japan

1996-2000 Post-doctoral Fellow, Office of Vaccine Research and Review (OVR), Center of Biologics Evaluation and Research (CBER), Food and Drug Administration (FDA), Department of Human Health Services (DHHS), US Federal Government

2000-2003 Staff Scientist, IND primary reviewer, Office of Vaccine Research and Review (OVR), Center for Biologics and Evaluation Research (CBER), Food and Drug Administration (FDA), Department of Health and Human Services/US Federal Government, Bethesda, MD

2003-2008 Group Leader, Akira Innate Immunity Project, ERATO, Japan Science and Technology Agency Research Institute for Microbial Diseases, Osaka University, Japan

2006-2010 Associate Professor, Department of Molecular Protozoology Research Institute for Microbial Diseases, Osaka University, Japan

2007-2010 Associate Professor, Laboratory of Host Defense, WPI Immunology Frontier Research Center, Osaka University

2010-2017 Project Leader, Laboratory of Adjuvant Innovation, National Institute of Biomedical Innovation, Osaka, Japan

2010- Professor, Principal Investigator, Laboratory of Vaccine Science, Immunology Frontier Research Center, Osaka University

- 2015-2015 Director, Center for Drug Design Research, National Institute of Biomedical Innovation, Health and Nutrition (NIBIOHN), Ministry of Health, Labour and Welfare (MHLW), Japan
- 2015-2017 Managing director, Department of Science Promotion, Japan Agency for Medical Research and Development (AMED), Japan
- 2017-2018 Director, Center for Vaccine and Adjuvant Research (CVAR), NIBIOHN, MHLW, Japan
- 2019- Director, International Research and Development Center for Mucosal Vaccines, The Institute of Medical Science, The University of Tokyo, Japan
- 2019- Professor, Division of Vaccine Science, The Institute of Medical Science, The University of Tokyo

ORGANIZATIONAL ACTIVITIES

Editorial Activities

Associate Editor: *J. Immunology, Vaccine, Frontiers in Immunology, Int. Immunology*
 Advisory board: *EBIOMedicine, Oncotarget, npjVaccine,*

Other Experience and Professional Memberships

- 2000- American Association of Immunologists
- 2000- American Association for the Advancement of Science
- 2003- Japanese Society for Immunology (councilor, 2012-)
- 2006- Japanese Society of Host Defense Research
- 2006- Japanese Society of Parasitology
- 2006 Peer review panelist; Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM), National Institute of Environmental Health Sciences (NIEHS), U.S. Department Health and Human Services, USA
- 2006-2007 New York Academy of Science
- 2007- The Japanese Society for Vaccinology (Trustee, 2012-)
- 2008-2010 Program Officer, Ministry of Education, Culture, Sports, Science and Technology, Japanese Government
- 2008- Specialty Advisor, Pharmaceuticals and Medical Devices Agency (PMDA), Ministry of Health Japanese government
- 2012-2014 Scientific advisory board, Pharmaceuticals and Medical Devices Agency (PMDA), Ministry Of Health, Japanese Government
- 2012 Organizer, 34th Naito Conference
- 2017-2019 Advisor for Science and Technology for Japan Agency for Medical Research and Development (AMED), Japan
- 2016-2021 Scientific Advisory Committee, International Vaccine Institute, Korea
- 2018- Selection Committee, Global Health Innovative Technology Fund (GHIT), Japan
- 2021- Scientific Advisory Committee, The Coalition for Epidemic Preparedness Innovations (CEPI)

RECOGNITION

Honors and Awards

| | |
|------|---|
| 1996 | Oak Ridge Research Institute post graduate fellowship, Tennessee, USA |
| 2000 | Department of Health and Human Services (DHHS) individual award for contribution public health Mission. USA |
| 2001 | DHHS individual award for special accomplishment, USA |
| 2002 | DHHS individual award for special accomplishment, USA |
| 2003 | DHHS individual award for special accomplishments, USA |
| 2007 | Naito Foundation Best Poster Award 2007 |
| 2008 | Osaka University Achievement Award for Education and Research |
| 2008 | Japanese Society of Immunology, Young Investigator Award |
| 2010 | Isamu Tagaya Memorial Vaccine Research Award (Japan) |
| 2014 | Osaka Science Prize (Japan) |
| 2014 | Highly cited researcher in 2014 Thomson Reuters |
| 2015 | Highly cited researcher in 2015 Thomson Reuters |
| 2016 | Highly cited researcher in 2016 Clarivate |
| 2019 | JSI award (Japanese Society of Immunology) |

RESEARCH ACTIVITIES

Publications: Selected publications

1. Kobiyama K, Imai M, Jounai N, Nakayama M, Hioki K, Iwatsuki-Horimoto K, Yamayoshi S, Tsuchida J, Niwa T, Suzuki T, Ito M, Yamada S, Watanabe T, Kiso M, Negishi H, Temizoz B, Ishigaki H, Kitagawa Y, Nguyen CT, Itoh Y, Takeshita F, Kawaoka Y, Ishii KJ. Optimization of an LNP-mRNA vaccine candidate targeting SARS-CoV-2 receptor-binding domain. *bioRxiv* 2021.03.04.433852; doi: <https://doi.org/10.1101/2021.03.04.433852>
2. Kuroda E et al. Inhaled Fine Particles Induce Alveolar Macrophage Death and Interleukin-1 α Release to Promote Inducible Bronchus-Associated Lymphoid Tissue Formation. *Immunity*. 2016 45(6):1299-1310.
3. Kobiyama K et al. Nonagonistic Dectin-1 ligand transforms CpG into a multitask nanoparticulate TLR9 agonist. *Proc Natl Acad Sci U S A*. 2014 111(8):3086-91. (Direct submission)
4. Desmet CJ and Ishii KJ. Nucleic acid sensing at the interface between innate and adaptive immunity in vaccination. *Nat Rev Immunol*. 2012 12(7):479-91.
5. Marichal T et al. DNA released from dying host cells mediates aluminum adjuvant activity. *Nat Med*. 2011 17(8):996-1002.
6. Koyama S et al Plasmacytoid dendritic cells delineate immunogenicity of influenza vaccine subtypes. *Science Transl Med*. 2010 2(25):25ra24.
7. Ishii KJ et al. Host innate immune receptors and beyond: making sense of microbial infections. *Cell Host Microbe*. 2008 3(6):352-63.
8. Ishii KJ et al TANK-binding kinase-1 delineates innate and adaptive immune responses to DNA vaccines. *Nature*. 2008 451(7179):725-9.
9. Ishii KJ et al A Toll-like receptor-independent antiviral response induced by double-stranded B-form DNA. *Nat Immunol*. 2006 7(1):40-48.
10. Ishii KJ et al . Potential Role of PI3 Kinases, rather than DNA-PK, in CpG DNA Induced Immune Activation *J. Exp. Med*. 2002 196(2):269-74.

11. Ishii KJ et al Genomic DNA released by dying cells induces the maturation of antigen presenting cells. *J. Immunol.* 2001 167(5): 2602-2607.

Books

- 1- Ishii KJ and Tang CK (Editor) “*Biological DNA Sensor: The Impact of Nucleic Acids on Diseases and Vaccinology*” ELSEVIER, 2013

Guide lines

1. Guideline for Nonclinical Studies of Preventive Vaccines for Infectious Diseases issued by ministry of health, Japan. 2010. (co-PI of the project and author)
2. WHO Guidelines on the Nonclinical Evaluation of Vaccine Adjuvants and Adjuvanted Vaccines 2013 (under revision) (External advisor and author)

Editorial activities:

Editor; Associate Editor: *J. Immunol.*, *Vaccine*, *Front. Immunol.*, *NPJ Vaccines*, *Human Vaccine & Immunother.*, Advisory board for *EBioMedicine*, *Oncotarget*

Patents (selected out of 30 patented, 110 filed)

1. COVID-19 vaccine composed of LNP-mRNA encoding SARS-CoV2 Spike Ag RBD. Filed June 2021
2. Malaria vaccine. Inventors: Toshihiro Horii, Ken Ishii, Takahiro Tougan Patent number: 9028843 Filed: July 8, 2014 Issued: May 12, 2015
3. Complex containing oligonucleotide having immunopotentiating activity and use thereof; Ken Ishii, Kouji Kobiyama, Taiki Aoshi, Fumihiko Takeshita, Yuji Kasuya, Takako Niwa, Makoto Koizumi , NIBIOHN, Daiichi Sakyō, Patent number: 11015202, May 25, 2021, 10202606, Feb 12 2019
4. Exosome-targeted DNA vaccine; Ken Ishii, Kouji Kobiyama, Tomohiro Kanuma NIBIOHN, filed 2016
5. Oligodeoxynucleotide and Its Use to Induce an Immune Response. Inventors: Dennis Klinman, Daniela Verthelyi, Ken Ishii, James J. Mond, Patent number: 8389495 Issue date: March 5 2013