



# Masayuki Amagai

M.D., Ph.D.

## Current Appointments

Vice-President for Research, Keio University

Professor, Department of Dermatology

Keio University School of Medicine

Team Leader, Laboratory for Skin Homeostasis

RIKEN Center for Integrative Medical Sciences

President, Japanese Dermatological Association

## Education and Training

1979-1985          Keio University School of Medicine

1985-1989          Department of Dermatology and Molecular Biology  
Keio University, Graduate School of Medicine

1985-1989          Dermatology Resident Training at Department of Dermatology,  
Keio University Hospital and Section of Dermatology,  
Kitasato Institute Hospital

## Expertise

- Clinical field          skin diseases in general, autoimmune blistering diseases, allergic skin diseases, skin infections
- Research field          immunology, cell biology, molecular biology

## Fellowship Appointments

1989-1992          Visiting research fellow, Dermatology Branch (John R. Stanley's lab),  
National Cancer Institute, National Institutes of Health

## Faculty Appointments

1992-1995	Subchief, Division of Dermatology, Tokyo Electric Power Hospital
1996	Instructor, Department of Dermatology, Ehime University School of Medicine
1996-2005	Assistant Professor, Department of Dermatology, Keio University School of Medicine
2005-present	Professor and Chair, Department of Dermatology, Keio University School of Medicine
2007-2013	Vice Director, Keio University Hospital
2013-2017	Vice Dean, Keio University School of Medicine
2013-present	Team Leader, Laboratory for Skin Homeostasis, RIKEN Center for Integrative Medical Sciences
2017-2021	Dean, Keio University School of Medicine
2021-present	Vice-President for Research, Keio University

## Awards and Honors

1991	The Minami Prize from Japanese Dermatological Association
2000	The JSID Award from Japanese Society for Investigative Dermatology
2002	Alfred Marchionini Award at World Congress of Dermatology, Paris
2005	CE.R.I.E.S Research Award
2006	JSPS Prize from Japan Society for the Promotion of Science
2006	JSI Award from Japanese Society for Immunology
2010	Honorary membership of the Austrian Society of Dermatology and Venerology
2012	Erwin von Bälz Award (1st prize)
2013	The 2013 Research Achievement Award from American Skin Association
2014	Ogawa-Seiji Memorial Award from Lydia O'Leary Memorial Pias Dermatological Foundation
2015	Honorary membership of the European Society for Dermatological Research
2015	Honorary membership of the German Dermatology Society
2016	International honorary member of American Dermatological Association
2016	International Member of the National Academy of Medicine (USA)

- 2018 Council Member of Science Council of Japan
- 2019 Honorary membership of the Society for Investigative Dermatology
- 2023 American Skin Association's 2023 George W. Hambrick Award

## Named Lecture

- 2002 Morris H. Samitz Lecture at University of Pennsylvania, Department of Dermatology
- 2003 William Montagna Lecture at the Society for Investigative Dermatology
- 2015 Arthur Rook Oration at British Association of Dermatologists
- 2017 Rudi Cormane Lecture at the European Society for Dermatological Research
- 2018 Sven Hellerström Lecture at Karolinska Institutet, Sweden
- 2018 Kung Sun Oh Memorial Lecture at Yonsei University, Korea
- 2020 Yau-Chin Lu Lecture at Taiwanese Dermatological Association
- 2021 Aaron Lerner Discovery Lecture at Yale University
- 2022 KP Chen Memorial Lecture at National Taiwan University

## Medical Societies

- International Society for Investigative Dermatology (founding Board of Directors, 2014-; Secretary General, 2019- )
- Japanese Dermatological Association (Board of Director 2011-2016, Vice President 2016-2018, President 2018- )
- Japanese Society for Investigative Dermatology (Board of Director 1999-2010, Secretary-Treasurer 2010-2011, President 2011-2014)
- Japanese Society for Immunology (Councilor 2008- )
- Japanese Society of Inflammation and Regeneration (Board of Director 2013- )
- Japanese Society for Cell Biology
- Society for Investigative Dermatology
- European Society for Dermatological Research
- American Academy of Dermatology
- International Eczema Council (Councilor 2015-)

## Editors and Editorial boards

- The Journal of Clinical Investigation (Consulting Editor 2007- )
- Journal of Investigative Dermatology (Section Editor 2002-2017, Editorial Consultants 2018-2020)

British Journal of Dermatology (Editorial Advisory Board 2001-)

Faculty of 1000 Medicine (Section Head 2006-)

The Journal of American Academy of Dermatology (Editorial Board 1998-2008)

JAAD International (Editorial Board 2020- )

Journal of Dermatological Science (Editorial Board 2001-2018)

Experimental Dermatology (Editorial Board 2003-2014)

Der Hautarzt (Editorial Board, 2007-)

Fitzpatrick's Dermatology 9<sup>th</sup> edition (Editor, 2014-)

## Selected Publications

(Over 440 publications; total citation 19,535; h-index 74; May 20, 2022)

**Researcher ID K-5325-2013, ORCID [0000-0003-3314-7052](https://orcid.org/0000-0003-3314-7052)**

1. Amagai M, Klaus-Kovtun V, Stanley JR. Autoantibodies against a novel epithelial cadherin in pemphigus vulgaris, a disease of cell adhesion. **Cell** 67 (5): 869-877, 1991.
2. Amagai M, Karpati S, Prussick R, Klaus-Kovtun V, Stanley JR. Autoantibodies against the amino-terminal cadherin-like binding domain of pemphigus vulgaris antigen are pathogenic. **J Clin Invest** 90 (3): 919-926, 1992.
3. Tang A, Amagai M, Granger LG, Stanley JR, Udey MC: Adhesion of epidermal Langerhans cells to keratinocytes mediated by E-cadherin. **Nature** 361: 82-85, 1993
4. Amagai M, Hashimoto T, Shimizu N, Nishikawa T. Absorption of pathogenic autoantibodies by the extracellular domain of pemphigus vulgaris antigen (Dsg3) produced by baculovirus. **J Clin Invest** 94 (1): 59-67, 1994.
5. Ishii K, Amagai M, Hall RP, Hashimoto T, Takayanagi A, Gamou S, Shimizu N, Nishikawa T: Characterization of autoantibodies in pemphigus using antigen-specific ELISAs with baculovirus expressed recombinant desmogleins. **J Immunol** 159: 2010-2017, 1997
6. Amagai M, Nishikawa T, Noursari HC, Anhalt GJ, Hashimoto T. Antibodies against desmoglein 3 (pemphigus vulgaris antigen) are present in sera from patients with paraneoplastic pemphigus and cause acantholysis in vivo in neonatal mice. **J Clin Invest** 102 (4): 775-782, 1998.
7. Amagai M, Matsuyoshi N, Wang ZH, Andl C, Stanley JR. Toxin in bullous impetigo and staphylococcal scalded-skin syndrome targets desmoglein 1. **Nat Med** 6 (11): 1275-1277, 2000.
8. Amagai M, Tsunoda K, Suzuki H, Nishifuji K, Koyasu S, Nishikawa T. Use of autoantigen-knockout mice in developing an active autoimmune disease model for pemphigus. **J Clin Invest** 105 (5): 625-631, 2000.

9. Nagasaka T, Nishifuji K, Ota T, Whittock NV, Amagai M. Defining the pathogenic involvement of desmoglein 4 in pemphigus and staphylococcal scalded skin syndrome. **J Clin Invest** 114 (10): 1484-1492, 2004.
10. Stanley JR, Amagai M. Pemphigus, bullous impetigo, and the staphylococcal scalded-skin syndrome. **N Engl J Med** 355 (17): 1800-1810, 2006.
11. Fallon PG, Sasaki T, Sandilands A, Campbell LE, Saunders SP, Mangan NE, Callanan JJ, Kawasaki H, Shiohama A, Kubo A, Sundberg JP, Presland RB, Fleckman P, Shimizu N, Kudoh J, Irvine AD, Amagai M, McLean WH. A homozygous frameshift mutation in the mouse Flg gene facilitates enhanced percutaneous allergen priming. **Nat Genet** 41 (5): 602-608, 2009.
12. Kubo A, Nagao K, Yokouchi M, Sasaki H, Amagai M. External antigen uptake by Langerhans cells with reorganization of epidermal tight junction barriers. **J Exp Med** 206 (13): 2937-2946, 2009.
13. Takahashi H, Kouno M, Nagao K, Wada N, Hata T, Nishimoto S, Iwakura Y, Yoshimura A, Yamada T, Kuwana M, Fujii H, Koyasu S, Amagai M. Desmoglein 3-specific CD4+ T cells induce pemphigus vulgaris and interface dermatitis in mice. **J Clin Invest** 121 (9): 3677-3688, 2011.
14. Kawasaki H, Nagao K, Kubo A, Hata T, Shimizu A, Mizuno H, Yamada T, Amagai M. Altered stratum corneum barrier and enhanced percutaneous immune responses in filaggrin-null mice. **J Allergy Clin Immunol** 129 (6): 1538-1546, 2012.
15. Kubo A, Nagao K, Amagai M. Epidermal barrier dysfunction and cutaneous sensitization in atopic diseases. **J Clin Invest** 122 (2): 440-447, 2012.
16. Nagao K, Kobayashi T, Moro K, Ohyama M, Adachi T, Kitashima DY, Ueha S, Horiuchi K, Tanizaki H, Kabashima K, Kubo A, Cho YH, Clausen BE, Matsushima K, Suematsu M, Furtado GC, Lira SA, Farber JM, Udey MC, Amagai M. Stress-induced production of chemokines by hair follicles regulates the trafficking of dendritic cells in skin. **Nat Immunol** 13 (8): 744-752, 2012.
17. Hata T, Nishimoto S, Nagao K, Takahashi H, Yoshida K, Ohyama M, Yamada T, Asano K, Amagai M. Ectopic expression of epidermal antigens renders the lung a target organ in paraneoplastic pemphigus. **J Immunol** 191 (1): 83-90, 2013.
18. Sasaki T, Shiohama A, Kubo A, Kawasaki H, Ishida-Yamamoto A, Yamada T, Hachiya T, Shimizu A, Okano H, Kudoh J, Amagai M. A homozygous nonsense mutation in the gene for Tmem79, a component for the lamellar granule secretory system, produces spontaneous eczema in an experimental model of atopic dermatitis. **J Allergy Clin Immunol** 132 (5): 1111-1120, 2013
19. Kubo A, Shiohama A, Sasaki T, Nakabayashi K, Kawasaki H, Atsugi T, Sato S, Shimizu A, Mikami S, Tanizaki H, Uchiyama M, Maeda T, Ito T, Sakabe J, Heike T, Okuyama T, Kosak iR, Kosaki K, Kudoh J, Hata K, Umezawa A, Tokura Y, Ishiko A, Niizeki H, Kabashima K, Mitsuhashi Y, Amagai M. Mutations in *SERPINB7*, Encoding a Member of the Serine Protease Inhibitor Superfamily, Cause Nagashima-type Palmoplantar Keratosis. **Am J Hum Genet** 93 (5): 945-956, 2013

20. Yoshida K, Kubo A, Fujita H, Yokouchi M, Ishii K, Kawasaki H, Nomura T, Shimizu H, Kouyama K, Ebihara T, Nagao K, Amagai M: Distinct behavior of human Langerhans cells and inflammatory dendritic epidermal cells at tight junctions in atopic dermatitis. **J Allergy Clin Immunol** 134 (4), 856-864, 2014.
21. Kobayashi T, Glatz M, Horiuchi K, Kawasaki H, Akiyama H, Kaplan DH, Kong HH, Amagai M, Nagao K: Dysbiosis and *Staphylococcus aureus* Colonization Drives Inflammation in Atopic Dermatitis. **Immunity**, 42 (4), 756-766, 2015.
22. Adachi T, Kobayashi T, Sugihara E, Yamada T, Ikuta K, Pittaluga S, Saya H, Amagai M, Nagao K: Hair follicle-derived IL-7 and IL-15 mediate skin-resident memory T cell homeostasis and lymphoma. **Nat Med**, 21 (11), 1272-1279, 2015.
23. Amagai M. Cracking the code of skin inflammation with CD1a. **Nat Immunol**. 17(10), 1133-1134, 2016.
24. Amagai M. Modulating immunity to treat autoimmune disease. **New Eng J Med**, 375(15) 1487-1489, 2016.
25. Yokouchi M, Atsugi T, Logtestijn MV, Tanaka RJ, Kajimura M, Suematsu M, Furuse M, Amagai M, Kubo A. Epidermal cell turnover across tight junctions based on Kelvin's tetrakaidecahedron cell shape. **eLife** 5 e19593, 2016.
26. Someya T and Amagai M. Toward a new generation of smart skins. **Nat Biotechnol** 37(4), 382-388, 2019.
27. Matsui T, Kadono-Maekubo N, Suzuki Y, Furuichi Y, Shiraga K, Sasaki H, Ishida A, Takahashi S, Okada T, Toyooka K, Sharif J, Abe T, Kiyonari H, Tominaga M, Miyawaki A, and Amagai M. A unique mode of keratinocyte death requires intracellular acidification **Proc Natl Acad Sci USA** 118 (17) e2020722118; <https://doi.org/10.1073/pnas.2020722118>, 2021.
28. Takahashi H, Nomura H, Iriki H, Kubo A, Isami K, Mikami Y, Mukai M, Sasaki T, Yamagami J, Kudoh J, Ito H, Kamata A, Kurebayashi Y, Yoshida H, Yoshimura A, Sun HW, Suematsu M, O'Shea JJ, Kanno Y, Amagai M. Cholesterol 25-hydroxylase is a metabolic switch to constrain T cell-mediated inflammation in the skin. **Sci Immunol** 6 (64): doi: 10.1126/sciimmunol.abb6444, 2021.
29. Iriki H, Takahashi H, Wada N, Nomura H, Mukai M, Kamata A, Ito H, Yamagami J, Matsui T, Kurebayashi Y, Mise-Omata S, Nishimasu H, Nureki O, Yoshimura A, Hori S, Amagai M. Peripheral tolerance by Treg via constraining OX40 signal in autoreactive T cells against desmoglein 3, a target antigen in pemphigus. **Proc Natl Acad Sci USA** 118 (49): 1-12, [doi: 10.1073/pnas.2026763118](https://doi.org/10.1073/pnas.2026763118), 2021.
30. Ito Y, Sasaki T, Li Y, Tanoue T, Sugiura Y, Skelly AN, Suda W, Kawashima Y, Okahashi N, Watanabe E, Horikawa H, Shiohama A, Kurokawa R, Kawakami E, Iseki H, Kawasaki

H, Iwakura Y, Shiota A, Yu L, Hisatsune J, Koseki H, Sugai M, Arita M, Ohara O, Matsui T, Suematsu M, Hattori M, Atarashi K, Amagai M, Honda K. *Staphylococcus cohnii* is a potentially biotherapeutic skin commensal alleviating skin inflammation. **Cell Rep.** 35 (4): 109052, [doi: 10.1016/j.celrep.2021.109052](https://doi.org/10.1016/j.celrep.2021.109052), 2021.