

フロンティア医学研究所
免疫制御医学部門

○主な研究内容

- 1 ヒト T 細胞の分化、機能調節メカニズム
- 2 抗原特異的な抗体産生メカニズム
- 3 エピムノームの機能
- 4 免疫関連疾患の病態解析

○Pub Med 掲載論文(2018 年)

1. Interleukin 5-producing ST2+ memory Th2 cells in IgG4-related dacryoadenitis and sialadenitis.

Yamamoto M, Takano KI, Kamekura R, Aochi S, Suzuki C, Ichimiya S, Nakase H, Himi T, Takahashi H.

Mod Rheumatol. 2018 Oct 25;1-5. doi: 10.1080/14397595.2018.1526357. [Epub ahead of print]

PMID: 30354922

2. A Case of Retroperitoneal Fibrosis Diagnosed as IgG4-related Disease After 35 Years.

Konno S, Matsuno Y, Ichimiya S, Nishimura M, Kawakami Y.

Intern Med. 2018 Oct 17. doi: 10.2169/internalmedicine.1241-18. [Epub ahead of print]

PMID: 30333398 Free Article

3. Mucosal Immune Response in Nasal-Associated Lymphoid Tissue upon Intranasal Administration by Adjuvants.

Takaki H, Ichimiya S, Matsumoto M, Seya T.

J Innate Immun. 2018;10(5-6):515-521. doi: 10.1159/000489405. Epub 2018 Jun 1. Review.

PMID: 29860261 Free Article

4. Stage classification of IgG4-related dacryoadenitis and sialadenitis by the serum cytokine environment.

Yamamoto M, Takano K, Kamekura R, Suzuki C, Ichimiya S, Himi T, Nakase H, Takahashi H.

Mod Rheumatol. 2018 Nov;28(6):1004-1008. doi: 10.1080/14397595.2018.1436029. Epub 2018 Feb 23.

PMID: 29385874

5. Vaccine adjuvant ARNAX promotes mucosal IgA production in influenza HA vaccination.

Takeda Y, Takaki H, Fukui-Miyazaki A, Yoshida S, Matsumoto M, Seya T.

Biochem Biophys Res Commun. 2018 Dec 2;506(4):1019-1025. doi:

10.1016/j.bbrc.2018.10.166. Epub 2018 Nov 4.

PMID: 30404733 Free Article

6. Potential utility of core needle biopsy in the diagnosis of IgG4-related dacryoadenitis and sialadenitis.

Takano K, Okuni T, Yamamoto K, Kamekura R, Yajima R, Yamamoto M, Takahashi H, Himi T. *Mod Rheumatol*. 2018 May 9:1-4. doi: 10.1080/14397595.2018.1465665. [Epub ahead of print] No abstract available.

PMID: 29656682

7. Clinical utility of 18 F-fluorodeoxyglucose/positron emission tomography in diagnosis of immunoglobulin G4-related sclerosing sialadenitis.

Takano K, Yajima R, Kamekura R, Yamamoto M, Takahashi H, Yama N, Hatakenaka M, Himi T.

Laryngoscope. 2018 May;128(5):1120-1125. doi: 10.1002/lary.26945. Epub 2017 Oct 8.

PMID: 28988418

○その他の論文(2018年)

1. Circulating PD-1+CXCR5-CD4+ T cells underlying the immunological mechanisms of IgG4-related disease

Ryuta Kamekura Motohisa Yamamoto Kenichi Takano Hayato Yabe Fumie Ito Ippei Ikegami Hiromi Takaki Katsunori Shigehara Chisako Suzuki Tetsuo Himi Hiroki Takahashi Shingo Ichimiya.

Rheumatology Advances in Practice, Volume 2, Issue 2, 1 July 2018, rky043,

<https://doi.org/10.1093/rap/rky043>

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○Pub Med 掲載論文(2017 年)

- (1) Kamekura R, Takano K, Kawata K, Ito F, Jitsukawa S, Yamamoto M, Takahashi H, Himi T, Ichimiya S. A critical role of local BCL6(hi)PD-1(hi) T follicular helper cells in the pathogenesis of IgG4-related disease. *J Immunol.* 199: 2624-2629, 2017.
- (2) Jitsukawa, S, Kamekura R, Kawata K, Ito F, Sato A, Matsumiya H, Nagaya T, Kubo T, Kikuchi K, Sato N, Hasegawa T, Kiyonari H, Mukumoto Y, Takano K, Himi T, Ichimiya S. Sorting nexin 5 restrains the oncogenic setting for thyroid cancer. *J Pathol.* 243: 342-353, 2017.
- (3) Kojima T, Kohno T, Kubo T, Kaneko Y, Kakuki T, Kakiuchi A, Kurose M, Takano KI, Ogasawara N, Obata K, Nomura K, Miyata R, Konno T, Ichimiya S, Himi T. Regulation of claudin-4 via p63 in human epithelial cells. *Ann NY Acad Sci.* 1405: 25-31, 2017.
- (4) Matsumiya H, Kawata K, Kamekura R, Tsubomatsu C, Jitsukawa S, Asai T, Akasaka S, Kamei M, Yamashita K, Ito F, Kubo T, Sato N, Takano KI, Himi T,

- Ichimiya S. High frequency of Bob1(lo) T follicular helper cells in florid reactive follicular hyperplasia. *Immunol Lett.* 191: 23–30, 2017.
- (5) Kumagai A, Kubo T, Kawata K, Kamekura R, Yamashita K, Jitsukawa S, Nagaya T, Sumikawa Y, Himi T, Yamashita T, Ichimiya S. Keratinocytes in atopic dermatitis express abundant deltaNp73 regulating thymic stromal lymphopoietin production via NF- κ B. *J Dermatol Sci.* (2017 年度日本皮膚科学会 優秀一般演題賞受賞, 2017 年度日本アレルギー学会 Best Presentation Award 受賞)88: 175–183, 2017.
- (6) Nagaya T, Kawata K, Kamekura R, Jitsukawa S, Kubo T, Kamei M, Ogasawara N, Takano T, Himi T, Ichimiya S. Lipid mediators foster the differentiation of T follicular helper cells. *Immunol Lett.* 181: 51–57, 2017.
- (7) Ichimiya S, Kamekura R, Kawata K, Kamei M, Himi T. Functional RNAs control T follicular helper cells. *J Hum Genet.* 62: 81–86, 2017.
- (8) Takano K, Yamamoto M, Ichimiya S, Takahashi H, Himi T. Assessing the usefulness of salivary gland biopsy for diagnosis of type-1 autoimmune pancreatitis. *Mod Rheumatol.* 27: 548–550, 2017.
- (9) Takaki H, Oshiumi H, Shingai M, Matsumoto M, Seya T. Development of mouse models for analysis of human virus infections. *Microbiol Immunol.* 61: 107–113, 2017.
- (10) Takaki H, Takashima K, Oshiumi H, Ainai A, Suzuki T, Hasegawa H, Matsumoto M, Seya T. cGAMP Promotes Germinal Center Formation and Production of IgA in Nasal-Associated Lymphoid Tissue. *Med Sci (Basel).* 5, pii: E35, 2017.

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○Pub Med 掲載論文 (2016 年)

1. Lipid Mediators Foster the Differentiation of T Follicular Helper Cells.
Nagaya T, Kawata K, Kamekura R, Jitsukawa S, Kubo T, Kamei M, Ogasawara N, Takano KI, Himi T, Ichimiya S.
Immunol Lett. 2016 Nov 9. pii: S0165-2478(16)30268-1. doi: 10.1016/j.imlet.2016.11.006. [Epub ahead of print]
PMID: 27838468
2. Functional RNAs control T follicular helper cells.
Ichimiya S, Kamekura R, Kawata K, Kamei M, Himi T.
J Hum Genet. 2016 Aug 4. doi: 10.1038/jhg.2016.88. [Epub ahead of print] Review.
PMID: 27488442
3. Identification of a novel human memory T-cell population with the characteristics of stem-like chemo-resistance.
Murata K, Tsukahara T, Emori M, Shibayama Y, Mizushima E, Matsumiya H, Yamashita K, Kaya M, Hirohashi Y, Kanaseki T, Kubo T, Himi T, Ichimiya S, Yamashita T, Sato N, Torigoe T.
Oncoimmunology. 2016 Jun 8;5(6):e1165376. doi: 10.1080/2162402X.2016.1165376.
PMID: 27471640 Free PMC Article
4. Assessing the usefulness of salivary gland biopsy for diagnosis of type-1 autoimmune pancreatitis.
Takano K, Yamamoto M, Ichimiya S, Takahashi H, Himi T.
Mod Rheumatol. 2016 Jul 18:1-3. [Epub ahead of print] No abstract available.
PMID: 27426059
5. Novel Mechanisms of Compromised Lymphatic Endothelial Cell Homeostasis in Obesity: The Role of Leptin in Lymphatic Endothelial Cell Tube Formation and Proliferation.
Sato A, Kamekura R, Kawata K, Kawada M, Jitsukawa S, Yamashita K, Sato N, Himi T, Ichimiya S.
PLoS One. 2016 Jul 1;11(7):e0158408. doi: 10.1371/journal.pone.0158408.
PMID: 27366905 Free PMC Article

6. Bob1 limits cellular frequency of T-follicular helper cells.

Yamashita K, Kawata K, Matsumiya H, Kamekura R, Jitsukawa S, Nagaya T, Ogasawara N, Takano K, Kubo T, Kimura S, Shigehara K, Himi T, Ichimiya S.

Eur J Immunol. 2016 Jun;46(6):1361-70. doi: 10.1002/eji.201545499. Erratum in: Eur J Immunol. 2016 Aug;46(8):2054.

PMID: 27080143 Free PMC Article

7. Narrow-Band Ultraviolet B Phototherapy Ameliorates Acute Graft-Versus-Host Disease of the Intestine by Expansion of Regulatory T Cells.

Hashimoto A, Sato T, Iyama S, Yoshida M, Iyata S, Tatekoshi A, Kamihara Y, Horiguchi H, Murase K, Kawano Y, Takada K, Miyanishi K, Kobune M, Ichimiya S, Kato J.

PLoS One. 2016 Mar 31;11(3):e0152823. doi: 10.1371/journal.pone.0152823.

PMID: 27031239 Free PMC Article

8. Clinicopathological analysis of salivary gland tissue from patients with IgG4-related disease.

Takano K, Nomura K, Abe A, Kamekura R, Yamamoto M, Ichimiya S, Takahashi H, Himi T.

Acta Otolaryngol. 2016 Jul;136(7):717-21. doi: 10.3109/00016489.2016.1154605.

PMID: 27007955

9. Clarithromycin prevents human respiratory syncytial virus-induced airway epithelial responses by modulating activation of interferon regulatory factor-3.

Yamamoto K, Yamamoto S, Ogasawara N, Takano K, Shiraishi T, Sato T, Miyata R, Kakuki T, Kamekura R, Kojima T, Tsutsumi H, Himi T, Yokota S.

Pharmacol Res. 2016 Sep;111:804-14. doi: 10.1016/j.phrs.2016.07.033.

PMID: 27468646

10. Role of Crosstalk between Epithelial and Immune Cells, the Epimmunome, in Allergic Rhinitis Pathogenesis.

Kamekura R, Yamashita K, Jitsukawa S, Nagaya T, Ito F, Ichimiya S, Himi T.

Adv Otorhinolaryngol. 2016;77:75-82. doi: 10.1159/000441878. Review.

PMID: 27116609

11. Studies of Tonsils in Basic and Clinical Perspectives: From the Past to the Future.

Yamashita K, Ichimiya S, Kamekura R, Nagaya T, Jitsukawa S, Matsumiya H, Takano K, Himi T.

Adv Otorhinolaryngol. 2016;77:119-24. doi: 10.1159/000441902. Review.

PMID: 27116026

12. Expression and Localization of Human Defensins in Palatine Tonsils.

Kamekura R, Imai R, Takano K, Yamashita K, Jitsukawa S, Nagaya T, Ito F, Hirao M, Tsubota H, Himi T.

Adv Otorhinolaryngol. 2016;77:112-8. doi: 10.1159/000441888.

PMID: 27115892

13. 14-3-3 Proteins regulate Akt Thr308 phosphorylation in intestinal epithelial cells.

Gómez-Suárez M, Gutiérrez-Martínez IZ, Hernández-Trejo JA, Hernández-Ruiz M, Suárez-Pérez D, Candelario A, Kamekura R, Medina-Contreras O, Schnoor M, Ortiz-Navarrete V, Villegas-Sepúlveda N, Parkos C, Nusrat A, Nava P.

Cell Death Differ. 2016 Jun;23(6):1060-72. doi: 10.1038/cdd.2015.163.

PMID: 26846144

○その他の論文

亀倉隆太

ヒト臨床検体を用いた研究がもたらすアレルギー性鼻炎の新規治療戦略

日鼻誌 2016;55:66-69

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○Pub Med 掲載論文 (2015 年)

1. Kamekura R, Nava P, Feng M, Quiros M, Nishio H, Weber DA, Parkos CA, Nusrat A.
Inflammation-induced desmoglein-2 ectodomain shedding compromises the mucosal barrier.
Mol Biol Cell. 2015;26:3165-77.
2. Kamekura R, Shigehara K, Miyajima S, Jitsukawa S, Kawata K, Yamashita K, Nagaya T,
Kumagai A, Sato A, Matsumiya H, Ogasawara N, Seki N, Takano K, Kokai Y, Takahashi H, Himi T,
Ichimiya S.
Alteration of circulating type 2 follicular helper T cells and regulatory B cells underlies the
comorbid association of allergic rhinitis with bronchial asthma.
Clin Immunol. 2015;158:204-11.
3. Aoki S, Iwai A, Kawata K, Muramatsu D, Uchiyama H, Okabe M, Ikesue M, Maeda N, Uede T.
Oral administration of the Aureobasidium pullulans-derived β -glucan effectively prevents the
development of high fat diet-induced fatty liver in mice.
Scientific reports 2015. 5; 10457. doi: 10.1038/srep10457. PMCID :PMC4503978
4. Kawata K, Iwai A, Muramatsu D, Aoki S, Uchiyama H, Okabe M, Hayakawa S, Takaoka A,
Miyazaki T.
Stimulation of macrophages with the β -glucan produced by aureobasidium pullulans promotes the
secretion of tumor necrosis factor-related apoptosis inducing ligand (TRAIL).
PLoS One 2015 Apr 13;10(4):e0124809.doi:10.1371/journal.pone.0124809. PMCID:PMC4395393
5. Yamashita K, Kawata K, Matsumiya H, Kamekura R, Jitsukawa S, Nagaya T, Ogasawara N,
Takano K, Kimura S, Shigehara K, Himi T, Ichimiya S.
Bob1 regulates cellular frequency of T follicular helper cells.
European Journal of Immunology, 2016, in press.

○その他論文 (2015 年)

1. 亀倉隆太、氷見徹夫、一宮慎吾
Tfh 細胞サブセットと病態形成.
臨床免疫・アレルギー科 63: 214-217, 2015

2. 亀倉隆太、氷見徹夫、一宮慎吾
アレルギー性鼻炎の病態形成におけるエピイムノームの役割.
アレルギーの臨床 35(8): 57-63, 2015

3. 亀倉隆太、氷見徹夫、一宮慎吾
エピイムノームを標的としたアレルギー性鼻炎の新しい治療戦略.
アレルギーの臨床 35(13):58-64, 2015.

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○Pub Med 掲載論文 (2014 年)

1. [Kubo T¹](#), [Sugimoto K²](#), [Kojima T³](#), [Sawada N⁴](#), [Sato N⁴](#), [Ichimiya S⁵](#).
Tight junction protein claudin-4 is modulated via Np63 in human keratinocytes.
[Biochem Biophys Res Commun](#). 2014 Dec 12;455(3-4):205-11. doi: 10.1016/j.bbrc.2014.10.148. Epub 2014 Nov 4.
2. [Kubo T¹](#), [Kamekura R²](#), [Kumagai A³](#), [Kawata K⁴](#), [Yamashita K²](#), [Mitsuhashi Y²](#), [Kojima T⁵](#), [Sugimoto K¹](#), [Yoneta A⁶](#), [Sumikawa Y⁶](#), [Yamashita T⁶](#), [Sato N¹](#), [Himi T⁷](#), [Ichimiya S⁴](#).
Np63 Controls a TLR3-Mediated Mechanism That Abundantly Provides Thymic Stromal Lymphopoietin in Atopic Dermatitis.
[PLoS One](#). 2014 Aug 29;9(8):e105498. doi: 10.1371/journal.pone.0105498. eCollection 2014.
3. [Tsukahara T¹](#), [Emori M²](#), [Murata K³](#), [Hirano T⁴](#), [Muroi N⁴](#), [Kyono M⁴](#), [Toji S⁵](#), [Watanabe K⁵](#), [Torigoe T⁶](#), [Kochin V⁶](#), [Asanuma H⁷](#), [Matsumiya H⁸](#), [Yamashita K⁸](#), [Himi T⁸](#), [Ichimiya S⁹](#), [Wada T²](#), [Yamashita T²](#), [Hasegawa T⁷](#), [Sato N⁶](#).
Specific targeting of a naturally presented osteosarcoma antigen, papillomavirus binding factor Peptide, using an artificial monoclonal antibody.
[J Biol Chem](#). 2014 Aug 8;289(32):22035-47. doi: 10.1074/jbc.M114.568725. Epub 2014 Jun 24.
4. [Nava P¹](#), [Kamekura R²](#), [Quirós M²](#), [Medina-Contreras O³](#), [Hamilton RW²](#), [Kolegraff KN²](#), [Koch S⁴](#), [Candelario A⁵](#), [Romo-Parra H⁶](#), [Laur O²](#), [Hilgarth RS²](#), [Denning TL³](#), [Parkos CA⁷](#), [Nusrat A⁷](#).
IFN γ -induced suppression of β -catenin signaling: evidence for roles of Akt and 14.3.3.
[Mol Biol Cell](#). 2014 Oct 1;25(19):2894-904. doi: 10.1091/mbc.E13-09-0512. Epub 2014 Jul 30.
5. [Jiang K¹](#), [Rankin CR](#), [Nava P](#), [Sumagin R](#), [Kamekura R](#), [Stowell SR](#), [Feng M](#), [Parkos CA](#), [Nusrat A](#).
Galectin-3 regulates desmoglein-2 and intestinal epithelial intercellular adhesion.
[J Biol Chem](#). 2014 Apr 11;289(15):10510-7. doi: 10.1074/jbc.M113.538538. Epub 2014 Feb 24.
6. [Kamekura R¹](#), [Kolegraff KN¹](#), [Nava P²](#), [Hilgarth RS¹](#), [Feng M¹](#), [Parkos CA¹](#), [Nusrat A¹](#).
Loss of the desmosomal cadherin desmoglein-2 suppresses colon cancer cell proliferation through EGFR signaling.

[Oncogene](#). 2014 Sep 4;33(36):4531-6. doi: 10.1038/onc.2013.442. Epub 2013 Oct 28.

7. [Muramatsu D](#)¹, [Kawata K](#)², [Aoki S](#)¹, [Uchiyama H](#)³, [Okabe M](#)³, [Miyazaki T](#)⁴, [Kida H](#)⁵, [Iwai A](#)².
Stimulation with the *Aureobasidium pullulans*-produced β -glucan effectively induces
interferon stimulated genes in macrophage-like cell lines.
[Sci Rep](#). 2014 Apr 24;4:4777. doi: 10.1038/srep04777.

○その他論文（2014年）

1. 亀倉隆太、氷見徹夫、一宮慎吾
Tfh細胞サブセットと病態形成
臨床免疫・アレルギー科 2015、印刷中

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○Pub Med 掲載論文 (2013 年)

1. [Sugimoto K](#), [Takasawa A](#), [Ichimiya S](#), [Murata M](#), [Kimura H](#), [Aoyama T](#), [Gille JJ](#), [Kuroda N](#), [Shimizu H](#), [Hasegawa T](#), [Sawada N](#), [Furuya M](#), [Nagashima Y](#).
Multifocal and microscopic chromophobe renal cell carcinomatous lesions associated with 'capsulomas' without FCLN gene abnormality. ([Pathol Int.](#) 2013 Oct;63(10):510-5. doi: 10.1111/pin.12099. Epub 2013 Oct 18.)
2. [Nava P](#), [Kamekura R](#), [Nusrat A](#).
Cleavage of transmembrane junction proteins and their role in regulating epithelial homeostasis. *Tissue Barriers*. 2013 Apr 1;1(2):e24783. Review.
3. [Kamekura R](#), [Kolegraff KN](#), [Nava P](#), [Hilgarth RS](#), [Feng M](#), [Parkos CA](#), [Nusrat A](#).
Loss of the desmosomal cadherin desmoglein-2 suppresses colon cancer cell proliferation through EGFR signaling.(*Oncogene*. 2013 Oct 28. doi: 10.1038/onc.2013.442. [Epub ahead of print])