Stanford



Tadashi Takeuchi

Postdoctoral Scholar, Microbiology and Immunology

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Dr. Tadashi Takeuchi is a physician-scientist and postdoctoral scholar in the Sonnenburg Laboratory at Stanford University. He earned his MD and PhD from Keio University, Japan, and completed his residency training in internal medicine and his diabetology fellowship at St. Luke's International Hospital, Japan. Throughout his training, he has studied host–microbe interactions in the intestine with a focus on the influence of dietary nutrients. His PhD studies with Hiroshi Ohno, MD, PhD, at RIKEN IMS, Japan, focused on the impact of dietary short-chain fatty acids on intestinal immunity, culminating in a first-author publication in Nature. Leveraging his expertise in diabetology, he also investigated host–microbe interactions in metabolic disease during his PhD, ranging from mechanistic studies to human multi-omics, resulting in multiple first-author publications in Nature and Cell Metabolism. At Stanford, Dr. Takeuchi integrates clinical training, immunology, computational multi-omics, and bacterial genetics to develop strategies that establish robust, diet-guided colonization by therapeutic commensals. His long-term goal is to translate these insights into microbiome-based interventions for human diseases. His work has been recognized with the NIH K99/R00 Pathway to Independent Award and Stanford School of Medicine Dean's Postdoctoral Fellowship, among multiple early-career awards.

HONORS AND AWARDS

- NIH K99/R00 Pathway to Independent Award, NIH/NIDDK (2026-2030)
- School of Medicine Dean's Postdoctoral Fellowship, Stanford University (2024)
- Young Investigator's Award, The Japanese Intestinal Microbiology Society, (2024)
- Young Investigator's Award, Japanese Society for Immunology (2024)
- Osamu Hayaishi Memorial Scholarship for Study Abroad, Japanese Biochemical Society (2023)
- Young Investigator's Award, Japanese Society for Mucosal Immunology (2022)

PROFESSIONAL EDUCATION

- PhD, Keio University , Microbiology and Immunology (2022)
- MD, Keio University , Medicine (2009)

STANFORD ADVISORS

- Justin Sonnenburg, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Functional Divergence in Gut Clostridia from Hadza Hunter-Gatherers Reveals Diet-Adapted Metabolic Machinery That Shapes Gut Ecology.** *bioRxiv : the preprint server for biology*

Takeuchi, T., Reddy, A., Robinson, E. K., Kotaka, K. M., Higginbottom, S. K., Sonnenburg, E. D., Sonnenburg, J. L.
2026

- **Acetylated cellulose suppresses body mass gain through gut commensals consuming host-accessible carbohydrates.** *Cell metabolism*
  Takeuchi, T., Miyauchi, E., Nakanishi, Y., Ito, Y., Kato, T., Yaguchi, K., Kawasumi, M., Tachibana, N., Ito, A., Shimamoto, S., Matsuyama, A., Sasaki, N., Kimura, et al
  2025

- **Metagenomic immunoglobulin sequencing reveals IgA coating of microbial strains in the healthy human gut.** *Nature microbiology*
  Olm, M. R., Spencer, S. P., Takeuchi, T., Silva, E. L., Sonnenburg, J. L.
  2025

- **Modulation of gut microbiota composition due to early weaning stress induces depressive behavior during the juvenile period in mice.** *Animal microbiome*
  Kamimura, I., Miyauchi, E., Takeuchi, T., Tsuchiya, N., Tamura, K., Uesugi, A., Negishi, H., Taida, T., Kato, T., Kawasumi, M., Nagasawa, M., Mogi, K., Ohno, et al
  2024; 6 (1): 33

- **Microbial Metabolites and Gut Immunology.** *Annual review of immunology*
  Takeuchi, T., Nakanishi, Y., Ohno, H.
  2024; 42 (1): 153-178

- **Improved mouse models of the small intestine microbiota using region-specific sampling from humans.** *bioRxiv : the preprint server for biology*
  Culver, R. N., Spencer, S. P., Violette, A., Lemus Silva, E. G., Takeuchi, T., Nafarzadegan, C., Higginbottom, S. K., Shalon, D., Sonnenburg, J., Huang, K. C.
  2024

- **Analysis of Peripherally Derived Treg in the Intestine.** *Methods in molecular biology (Clifton, N.J.)*
  Takeuchi, T., Ohno, H.
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- **Gut microbial carbohydrate metabolism contributes to insulin resistance.** *Nature*
  Takeuchi, T., Kubota, T., Nakanishi, Y., Tsugawa, H., Suda, W., Kwon, A. T., Yazaki, J., Ikeda, K., Nemoto, S., Mochizuki, Y., Kitami, T., Yugi, K., Mizuno, et al
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- **Fatty acid overproduction by gut commensal microbiota exacerbates obesity.** *Cell metabolism*
  Takeuchi, T., Kameyama, K., Miyauchi, E., Nakanishi, Y., Kanaya, T., Fujii, T., Kato, T., Sasaki, T., Tachibana, N., Negishi, H., Matsui, M., Ohno, H.
  2023; 35 (2): 361-375.e9

- **Human gut microbiota and its metabolites impact immune responses in COVID-19 and its complications.** *Gastroenterology*
  Nagata, N., Takeuchi, T., Masuoka, H., Aoki, R., Ishikane, M., Iwamoto, N., Sugiyama, M., Suda, W., Nakanishi, Y., Terada-Hirashima, J., Kimura, M., Nishijima, T., Inooka, et al
  2022

- **A Japanese Herbal Formula, Daikenchuto, Alleviates Experimental Colitis by Reshaping Microbial Profiles and Enhancing Group 3 Innate Lymphoid Cells.** *Frontiers in immunology*
  Shi, Z., Takeuchi, T., Nakanishi, Y., Kato, T., Beck, K., Nagata, R., Kageyama, T., Ito, A., Ohno, H., Satoh-Takayama, N.
  2022; 13: 903459

- **High-throughput identification and quantification of single bacterial cells in the microbiota.** *Nature communications*
  Jin, J., Yamamoto, R., Takeuchi, T., Cui, G., Miyauchi, E., Hojo, N., Ikuta, K., Ohno, H., Shiroguchi, K.
  2022; 13 (1): 863

- **Reciprocal regulation of IgA and the gut microbiota: a key mutualism in the intestine.** *International immunology*
  Takeuchi, T., Ohno, H.
  2021; 33 (12): 781-786

- **Acetate differentially regulates IgA reactivity to commensal bacteria.** *Nature*

Takeuchi, T., Miyauchi, E., Kanaya, T., Kato, T., Nakanishi, Y., Watanabe, T., Kitami, T., Taida, T., Sasaki, T., Negishi, H., Shimamoto, S., Matsuyama, A., Kimura, et al
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- **CD8+ regulatory T cells are critical in prevention of autoimmune-mediated diabetes.** *Nature communications*
  Shimokawa, C., Kato, T., Takeuchi, T., Ohshima, N., Furuki, T., Ohtsu, Y., Suzue, K., Imai, T., Obi, S., Olia, A., Izumi, T., Sakurai, M., Arakawa, et al
  2020; 11 (1): 1922
- **Recurrent cardiovascular events in patients with newly diagnosed acute coronary syndrome: Influence of diabetes and its management with medication.** *Journal of diabetes and its complications*
  Komaru, Y., Takeuchi, T., Suzuki, L., Asano, T., Urayama, K. Y.
  2020; 34 (3): 107511
- **Understanding the immune signature fingerprint of peritoneal dialysis-related peritonitis.** *Kidney international*
  Takeuchi, T., Ohno, H., Satoh-Takayama, N.
  2017; 92 (1): 16-18
- **Comparison of cardiovascular disease risk associated with 3 lipid measures in Japanese adults.** *Journal of clinical lipidology*
  Takeuchi, T., Nemoto, K., Takahashi, O., Urayama, K. Y., Deshpande, G. A., Izumo, H.
  2014; 8 (5): 501-9
- **Cancer metastasis is accelerated through immunosuppression during Snail-induced EMT of cancer cells.** *Cancer cell*
  Kudo-Saito, C., Shirako, H., Takeuchi, T., Kawakami, Y.
  2009; 15 (3): 195-206