

BIKEN

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BIKEN

THE RESEARCH FOUNDATION FOR MICROBIAL DISEASES OF OSAKA UNIVERSITY

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April 2026 issue



Our Mission & Vision

Protecting Precious Lives around the World through Excellent Vaccines

"To protect the people in Japan from infectious diseases, there must also be an infectious disease research institute in Osaka, the nation's western gateway to the world." In the 1930s, when measures against infectious diseases were still under development in Japan, the strong passion of bacteriologist Dr. Tenji Taniguchi motivated many people. As a result, the Research Foundation for Microbial Diseases of Osaka University (BIKEN Foundation) was established, thanks to a donation from philanthropist Mr. Gendo Yamaguchi. Since then, we have placed great importance on collaboration with academia and an unwavering commitment to quality. In doing so, we have developed and supplied many of Japan's first vaccines while also providing advanced clinical laboratory testing services.

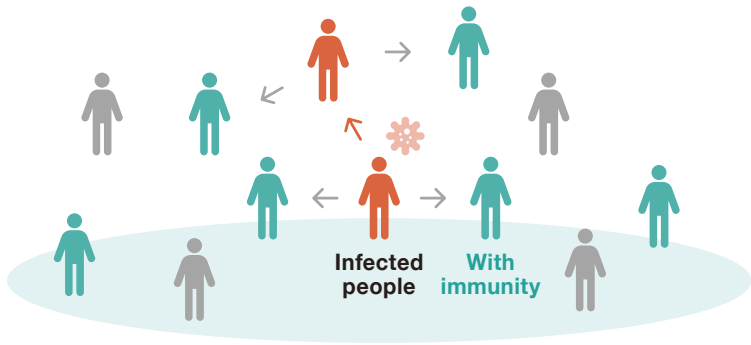
To usher in a healthy future where people are free from the fear of diseases

We pursue a future where people can enjoy the peace of mind that comes from living free from the fear of infectious diseases. Through our proprietary R&D capabilities and biotechnology, we will continue delivering innovations that meet society's expectations.

Prevent Spread of Infectious Diseases
by Providing as Many People as Possible with Vaccines
to Develop Immunity

Vaccination is primarily intended to prevent infectious diseases and protect individual health. The incidence of infectious diseases decreases as the number of people with immunity to that disease increases, which leads to a decreased risk for infection and protection of people who cannot undergo vaccination for various reasons.

*[Reference] Guidance of Vaccination 2024-2025



Type of vaccines

Vaccines are made from pathogens (such as viruses and bacteria) or components derived from them. Through vaccination, the body develops immunity against these pathogens. Vaccines used in Japan can be mainly classified as live vaccines, inactivated vaccines, and toxoids. In recent years, mRNA vaccines and viral vector vaccines have also been approved for use.

Live vaccines Live vaccines are attenuated forms of toxic live viruses and bacteria. Vaccination with these vaccines will confer immunity similar to that acquired by a natural infection. Examples: Varicella vaccine, MR vaccine	Inactivated vaccines Inactivated vaccines are made from virus particles and bacteria cultured and treated with heat or formalin and other agents for elimination of pathogenicity or detoxication. Examples: Influenza HA vaccine, Japanese encephalitis vaccine, pneumococcal vaccine
Toxoids Toxoids are made by isolating toxins produced by bacteria and detoxifying them. By producing immunity to the toxins in advance, they suppress the onset of diseases caused by the toxins at the time of infection with bacteria. Examples: Tetanus toxoid, Diphtheria toxoid	mRNA vaccines Messenger RNA (mRNA) vaccines are inoculated as genetic information of a virus. When the mRNA is taken into human body cells, the viral surface spike proteins are produced to develop immunity to the virus. Example: COVID-19 vaccine
Viral vector vaccines Viral vector vaccines are made by inserting genetic information of a virus into a detoxified virus. When the genetic information is taken into human body cells, the viral surface spike proteins are produced to develop immunity to the virus. Example: COVID-19 vaccine	

Vaccines have supported and will continue to
support the society

Unlike medicines that treat diseases, vaccines are drugs that prevent them. They protect people from the threat of infectious diseases. Smallpox has been eradicated worldwide, and efforts toward the eradication of polio are currently underway. Diseases such as Japanese encephalitis, which once claimed many lives, are now routinely vaccinated against in Japan. Gradually, we are becoming a society where it is taken for granted that people do not contract such diseases. However, threats from emerging and re-emerging pathogens persist. Even now, excellent vaccines are sought around the world, and the battle between infectious diseases and humanity continues.

Global eradication plan

Smallpox 1958—The global smallpox eradication plan was implemented. A thoroughgoing vaccination drive was conducted worldwide. 4million people^{*1} 1958 Estimated number of deaths (worldwide) Eradication^{*1} Eradicated in May 1980	Polio 1988—The global polio eradication plan was implemented. An effort to promote vaccination worldwide led to a reduction in the number of cases by 99%. Polio has almost been eradicated worldwide. 350thousand cases^{*2} 1988 Number of cases (worldwide) 99cases^{*3} 2024 Number of cases by wild poliovirus (worldwide)
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History of Infectious Disease Prevention in Japan

Diphtheria 1948 Vaccination started. 49,864patients^{*4} 1946 Number of patients 0cases^{*4} 2023 Number of reported cases	Japanese encephalitis 1954 Recommendation of vaccination started. 5,196patients^{*4} 1950 Number of patients 6cases^{*4} 2023 Number of reported cases
Polio 1961 Routine vaccination with inactivated vaccine 1964 Routine vaccination with live attenuated vaccine 5,606patients^{*4} 1960 Number of patients 0cases^{*4} 2023 Number of reported cases	Measles 1978 Routine vaccination started. Verified as having measles elimination in 2015.^{*5} 181,303patients^{*4} 1947 Number of patients 28cases^{*4} 2023 Number of reported cases

^{*1} [Reference] Japan Institute for Health Security website (<https://id-info.jihs.go.jp/diseases/ta/smallpox/010/smallpox-intro.html>) [As of Nov 6, 2025]
^{*2} [Reference] WHO Poliomyelitis fact sheet (<https://www.who.int/news-room/fact-sheets/detail/poliomyelitis>) [As of Nov 6, 2025]
^{*3} [Reference] WHO Global Polio Eradication Initiative (<https://polioeradication.org/wild-poliovirus-count/>) [As of Nov 6, 2025]
^{*4} [Reference] Japanese Association of Vaccine Industries, Vaccine Basics 2025.
^{*5} [Reference] Ministry of Health, Labor and Welfare website (<https://www.mhlw.go.jp/stf/houdou/0000134573.html>) [As of Nov 6, 2025]

BIKEN's Vaccine Development, Producing a Number of "Japan's First" Vaccines

BIKEN is a pioneer venture that was established in the Osaka University (now the University of Osaka) based on the philosophy and passion of a young bacteriologist, Dr. Tenji Taniguchi, and with the cooperation of a businessman and donor, Mr. Gendo Yamaguchi. Driven by the strong passion to "provide excellent vaccines, free people from the fear of infectious diseases, and protect lives," we developed several "Japan's first vaccines*" as a pioneer of vaccine development. We also contribute to the efforts to eradicate infectious diseases by licensing and transferring technologies all over the world.

*Including the case in which a product of another company was approved and launched on the same day

List of Japan's First Vaccines produced by BIKEN

- 1963 Oral poliovirus vaccine (Japan Live Polio Vaccine Laboratory, Ltd.)
- 1970 Freeze-dried live attenuated measles vaccine
Contribution to the prevention and elimination of measles in Japan and the world
We developed the vaccine using an unprecedented technique called passage on the chorioallantoic membrane. Introduction of routine vaccination, supply to the UNICEF, and licensing of technologies to Brazil and Indonesia greatly contributed to the prevention of measles worldwide and the elimination of measles in Japan (2015).
- 1975 Freeze-dried live attenuated rubella vaccine
- 1986 Freeze-dried live attenuated varicella vaccine
World's first varicella vaccine developed in Japan
The world's first varicella vaccine was developed by BIKEN. Our live attenuated varicella virus (Oka strain) was approved by the WHO as the first strain suitable for vaccine production.
- 2005 Freeze-dried live attenuated measles, rubella combined vaccine
- 2009 Freeze-dried cell culture-derived Japanese encephalitis vaccine
- 2012 Adsorbed diphtheria-purified pertussis-tetanus-inactivated polio (Sabin strain)* combined vaccine
We developed the world's first inactivated polio vaccine using attenuated poliovirus.
*at the time of approval
- 2016 Indication expansion of freeze-dried live attenuated varicella vaccine
Prevention of herpes zoster in adults aged 50 years and older
- 2023 Diphtheria-pertussis-tetanus-inactivated polio-Hib combined vaccine



Dr. Tenji Taniguchi
(third person from the left, front row)



Freeze-dried live attenuated measles vaccine (at that time)



Freeze-dried live attenuated varicella vaccine (at that time)



Scan the QR code for details.



Built on the Campus of Osaka University as a University Spin-off. 90 Years of History in Vaccine Development and Production



Dr. Tenji Taniguchi



Mr. Gendo Yamaguchi

The story of BIKEN began in the 1930s, a time when Japan's infectious disease countermeasures were under development. At that time, a young bacteriologist named Dr. Tenji Taniguchi believed that "To protect the people in Japan from infectious diseases, there must also be an infectious disease research institute in Osaka, the nation's western gateway to the world." Driven by this passion, and thanks to a donation from Mr. Gendo Yamaguchi, the Research Foundation for Microbial Diseases of Osaka University (BIKEN Foundation) was established in 1934. At that time, the university startup was considered innovative for its business model, with the Osaka University research institute (currently, the Research Institute for Microbial Diseases) conducting basic research, while BIKEN Foundation handled applied research, vaccine manufacturing, testing, and supply. The BIKEN Foundation developed many of Japan's first vaccines, including the world's first varicella vaccine, developed in Japan.

In 2017, the manufacturing division was separated to establish BIKEN Co., Ltd., a joint venture with Mitsubishi Tanabe Pharma Corporation (now Tanabe Pharma Corporation), to further strengthen its production capabilities. Now, after 90 years of growth in both scale and organization, BIKEN continues to uphold its founding spirit — to keep challenging innovation and contribute to a healthy society — by striving for new vaccine development and high-quality vaccine production.

*In April 2026, following significant progress in strengthening its manufacturing infrastructure, the joint venture agreement was terminated, making BIKEN Co., Ltd. a wholly owned subsidiary of the BIKEN Foundation.



Our Challenge to Develop “World’s First Vaccines Developed in Japan”!

BIKEN's proprietary biotechnologies and expertise have been cultivated over many years of vaccine development and manufacturing. Combined with the rapidly advancing field of immunology, this unlocks new possibilities for vaccine development. BIKEN conducts fundamental vaccine research at its headquarters on the campus of the University of Osaka, while applied research and product development are carried out at the Kanonji Institute, Seto Center (Kagawa Prefecture).

Basic vaccine research (Suita, Osaka Prefecture)

The strength of the BIKEN Group lies in its close collaboration with academia, including the Research Institute for Microbial Diseases, a partnership that dates back to its founding. At its headquarters, in collaboration with the University of Osaka institutions, BIKEN conducts basic research aimed at vaccine development with an outlook of more than 10 years into the future. Passionate researchers work tirelessly to discover vaccine candidates and create new vaccine leads that are eagerly awaited both in Japan and around the world.

Applied and industrial research (Kanonji, Kagawa Prefecture)

New vaccine candidates emerging from research require a number of process development steps, such as establishing manufacturing methods and quality testing procedures, before they can be commercialized. At the BIKEN Technology Research Center, applied research and industrialization research are seamlessly connected, enabling the smooth commercialization of new vaccine candidates. In addition, the center actively works to improve commercialized vaccines to make them even safer and easier to use — such as by developing combination vaccines and new delivery devices that reduce the burden of vaccination.

Behind-the-scenes story of the world's first vaccine development

The world's first varicella vaccine was developed by Dr. Michiaki Takahashi, Professor Emeritus at the University of Osaka. It all began when his 3-year-old son suffered from a severe case of chickenpox. Driven by the desire to help prevent chickenpox through vaccination, Dr. Takahashi developed the varicella vaccine, which has since been used in more than 80 countries worldwide.

To Protect Precious Lives

From infants to the elderly, vaccines are used to protect people of all ages against infectious diseases. As biological products, vaccines require advanced technology and know-how to maintain consistent quality and production control. At BIKEN, professionals across various fields work together to fulfill the responsibility of ensuring a stable supply of high-quality vaccines.

Supplying Reliable Quality Products to the market under strict controls

Due to their nature of being administered to healthy individuals to prevent infectious diseases, vaccines require exceptionally high quality control and are designated as medicines subject to national testing. Each section approaches vaccine production with a commitment to quality that has been passed down throughout BIKEN's history.

Manufacturing areas are maintained at high levels of cleanliness, and only personnel with specialized training, knowledge, and technical expertise are involved in production. More than 250 rigorous quality control tests are conducted, including random sampling inspections of incoming raw materials, intermediates, and bulk solutions during manufacturing. Once vaccines pass these stringent tests, they are filled into vials and undergo visual and automated inspection. The packaged products are strictly temperature-controlled and delivered to medical institutions nationwide through distributors.

Culture / Purification



Filling



Inspection



Released products





Dr. Tenji Taniguchi

Protecting the Health of Local Communities From In-vitro Diagnostics to Genomic Analysis Technology

Integrating proprietary clinical laboratory technology with insights from vaccine research and development, the Biomedical Science Center conducts clinical testing, participates in research projects with universities and other research institutions, and supports the training of healthcare professionals, in addition to developing in-vitro diagnostic products.

Furthermore, in collaboration with the Research Institute for Microbial Diseases at the University of Osaka, BIKEN-RIMD NGS laboratory is advancing the development of genomic analysis technology. The laboratory achieved the CAP (College of American Pathologists) accreditation — the global standard for quality management in clinical laboratory testing — in April 2025.

Laboratory Tests



Genomic Analyses



Research Activities



Support for Education



Nurturing the Next Generation of Bioscience Researchers

With the goal of improving public health, BIKEN carries out a variety of academic support programs from a long-term perspective. One such initiative is the BIKEN Taniguchi Scholarship Program, which was established in 1962 in the spirit of BIKEN's first director, Dr. Tenji Taniguchi, and his belief in "cultivating professionals for the future." This grant-based scholarship program has supported more than 770 young researchers to date. Since 2020, it has provided support for both Japanese and international doctoral students specializing in microbial diseases.

BIKEN also supports the development of outstanding young faculty members at the University of Osaka who conduct cutting-edge research in bioscience-related fields, sharing the vision of Doctoral Program in Microbiology and Immunology, which aims to cultivate the next generation of leaders in infectious disease and immunology research worldwide.





THE RESEARCH FOUNDATION FOR MICROBIAL DISEASES OF OSAKA UNIVERSITY

- Date of Establishment : June 6, 1934
- Basic fund : JPY500.05 million
- Number of Employees : 1,014; As of April 1, 2026
- Total asset amount : JPY214.3 billion; As of March 31, 2026
- Representative : YONEDA Yoshihiro ; Director General
- Offices : Suita City, Osaka
- Activities : Research on microbial diseases
Manufacture and supply of vaccines and other biological products
Aid to academic research
Clinical test services

Director General : YONEDA Yoshihiro

Director : SATO Naobumi / MURAKAMI Seiichi / TANAKA Takashi /

MANABE Sadao / MOCHIZUKI Naoki / KUSAO Koichi / INOSE Kumie

Corporate Auditor : MITSUNARI Kenji (Full-time) / SENZAKI Ikutoshi



BIKEN Co., Ltd.

- Start of operations : September 1, 2017
- Capital : JPY100 million
- Number of Employees : 709; As of April 1, 2026
- Representative : TANAKA Takashi ; President & Representative Director
- Offices : Kanonji City, Kagawa Prefecture
- Activities : Manufacture and supply of vaccines and other biological products

President & Representative Director : TANAKA Takashi

Director : MANABE Sadao / SAMIZO Kosuke / SATO Naobumi / KUSAO Koichi

Auditor : WAKE Hiroshi (Full-time)

