

Overview of Business Segments | Health Care Domain



Health Care

Health Care Domain

Going beyond the treatment of disease, MCHC will develop the health care business for the realization of society in which all people live long, healthy lives

Major Businesses and Products

Health Care

FY2017 Revenue **¥556.6** billion

FY2017 Core Operating Income **¥81.2** billion

Pharmaceuticals



Remicade

Simponi

Imusera

Autoimmune diseases area

In the autoimmune diseases area, our company has strong sales foundation based on a trust relationship with medical professionals, which has been established through one of our main products, *Remicade* (indication: inflammatory autoimmune diseases such as rheumatoid arthritis). We will continue to maintain the largest market share in this area by maximizing the advantages of both *Remicade* and *Simponi* (indication: rheumatoid arthritis, and others).



Tenelia

Canaglu

Canalia

Diabetes and kidney diseases area

In the diabetes and kidney diseases area, we aim to obtain evidence and expand sales channels for *Tenelia* Tablets and *Canaglu* Tablets, the Japan's first treatment for type 2 diabetes mellitus discovered by Mitsubishi Tanabe Pharma, and for *CANALIA* Combination Tablets*, a combination of *Tenelia* Tablets and *Canaglu* Tablets, and we plan to establish our presence in this area.

* Approved July 2017, launched in September 2017



Lexapro

Radicut

Central nervous system diseases area

In the central nervous system diseases area, the antidepressant *Lexapro* was additionally approved for the treatment of social anxiety disorder in November 2015. Centering on its effect on anxiety, we will further promote this drug, reinforcing the sales base in this area for the launch of new drugs in the future.



Influenza vaccine

Tetrabik

Varicella vaccine

Vaccines

MCHC and the Research Foundation for Microbial Diseases of Osaka University founded BIKEN Co., Ltd., a joint venture for the production of vaccines, which started operation in September 2017. We plan to double or triple production of varicella vaccine and to increase total vaccine production by 20-30% by 2019. We will also enhance the production platform for vaccines that are in greater demand and help further stabilize the supply of vaccines.



SWOT Analysis

S
Strengths

W
Weaknesses

O
Opportunities

T
Threats

Pharmaceuticals

- | | | | |
|--|---|--|---|
| <ul style="list-style-type: none"> ■ Capabilities for drug discovery and IKUYAKU (drug fostering and evolution) in the pharmaceutical business ■ Presence in focus areas including autoimmune diseases | <ul style="list-style-type: none"> ■ Global business expansion (in North America in particular) has been in progress | <ul style="list-style-type: none"> ■ Diversification of medical needs ■ Expanding demand in the health care domain due to global aging | <ul style="list-style-type: none"> ■ Declining success rate for new drug development and increasing R&D costs due to stricter drug approval process ■ Various measures to control medical expenditures by governments |
|--|---|--|---|

Life Science

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|---|---|--|--|
| <ul style="list-style-type: none"> ■ Broad business foundation covering from sick care to healthcare and life care ■ Strong market position in the capsule business ■ Provide total solutions in clinical testing area | <ul style="list-style-type: none"> ■ Various products and services that meet customers' needs are insufficient | <ul style="list-style-type: none"> ■ Upward trend in the use of big data through health and medical ICT ■ Government incentives to maintain health, to prevent serious disease cases and to restrain medical expenditure ■ Enhancing health awareness such as self-medication | <ul style="list-style-type: none"> ■ Lack of economic incentives in the healthcare business |
|---|---|--|--|

Life Science



Clinical testing/diagnostic reagents and instruments/capsule business/active pharmaceutical ingredients and intermediates

Drug discovery solutions

We offer clinical trial services that support the pharmaceutical development process and the manufacturing of active pharmaceutical ingredients and intermediates. We also provide high-quality, high-performance hard capsules such as HPMC capsules, the world's first HPMC capsules made of plant-derived materials, and pharmaceutical machinery using our knowhow of manufacturing technology.



Jibun Karada Club

Health and medical ICT

Through the provision of clinical testing services, the sale of diagnostic reagents and diagnostic instruments, and the provision of self-health check service, *Jibun Karada Club*, we offer solutions not only to "cure disease" but also to "prevent disease."



Muse cell

Next-generation healthcare

We are promoting next-generation medical business such as regenerative medicine. In January 2018, we began exploratory clinical trials of a Muse cell-based formulation for patients with acute myocardial infarction. The formulation uses Muse cells which were discovered by a team led by Professor Mari Dezawa of Tohoku University. For the commercialization of the Muse cell-based formulation, we plan to start operations the LSII Regenerative Medicine Center (tentative name), a cell processing facility, in January 2019 (see pages 15 and 16).

* The LSII Regenerative Medicine Center (tentative name), cell processing facility

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Health Care APTSIS 20

Policies

Worldwide growth in pharmaceutical business
Establish and improve the health and medical business utilizing ICT and the regenerative medicine products

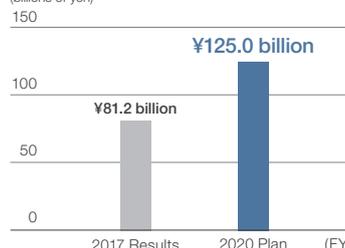
Key Strategies

- ▶ Promote the development of overseas pharmaceutical business mainly in the U.S.
- ▶ Strengthen capabilities for drug discovery
- ▶ Maximize values of new drugs and priority products by strengthening capabilities of IKUYAKU (drug fostering and evolution) and marketing
- ▶ Expand the healthcare and medical business utilizing ICT
- ▶ Expand the regenerative medicine business
- ▶ Improve profitability and global expansion of the capsule business

Planned Figures (APTSIS 20 Original planned figures)

Core Operating Income

(billions of yen)



Investment amount
(Five-year plan, total)

¥560.0 billion*

R&D investment
(Five-year plan, total)

¥440.0 billion*

* In November 2017, MCHC announced that it would increase investments and loans by 200 billion yen and R&D investments by 25 billion yen on a company-wide basis.

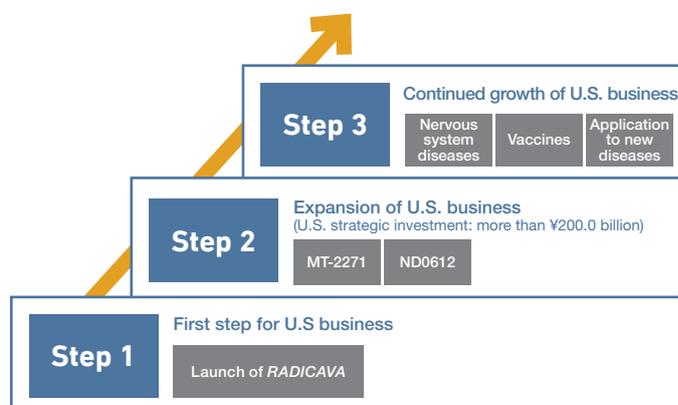
Growth Strategies in Pharmaceutical Business

As the health care company in the MCHC Group, Mitsubishi Tanabe Pharma has set the target revenue of ¥500.0 billion and core operating income of ¥100.0 billion for FY2020 under its medium-term management plan "Open Up the Future" and has also set out four strategic priorities for achieving the following objectives.

Four strategic priorities	FY2020 objectives	FY2017 results
Maximizing pipeline value	<ul style="list-style-type: none"> ■ Late-stage drug candidate objective: 10 candidates ■ R&D investment: ¥400.0 billion (over medium-term management plan period) 	<ul style="list-style-type: none"> ▶ Progress of 5 products
Strengthening IKUYAKU (drug fostering and evolution) and marketing	<ul style="list-style-type: none"> ■ Domestic revenue objective: ¥300.0 billion ■ New drug and priority product sales ratio: 75% 	<ul style="list-style-type: none"> ▶ ¥309.3 billion ▶ 63%
Accelerating U.S. business development	<ul style="list-style-type: none"> ■ U.S. revenue objective: ¥80.0 billion ■ U.S. strategic investment: more than ¥200.0 billion (over medium-term management plan period) 	<ul style="list-style-type: none"> ▶ <i>Radicava</i> ¥12.3 billion (launched in August 2017) ▶ Acquisition of <i>NeuroDerm</i> (around ¥120.0 billion)
Reforming operational productivity	<ul style="list-style-type: none"> ■ Cost reduction objective: ¥20.0 billion (compared to FY2015) ■ Number of employees in Japan: 5,000 employees 	<ul style="list-style-type: none"> ▶ ¥14.0 billion (compared to FY2015) ▶ 5,158 employees

Roadmap for accelerating U.S. business development

We launched *Radicava* for the treatment of amyotrophic lateral sclerosis (ALS) in August 2017 and made *NeuroDerm Ltd.* into a wholly owned subsidiary in October, thus acquiring product candidates such as ND0612 for Parkinson's Disease. In addition to such business development in the nervous system diseases area, we are in the process of developing MT-2271, a new seasonal influenza vaccine made using novel technology (see page 62) and aim to obtain approval during the period of the medium-term management plan.



Growth Strategies in Life Science Business

Drug discovery solutions

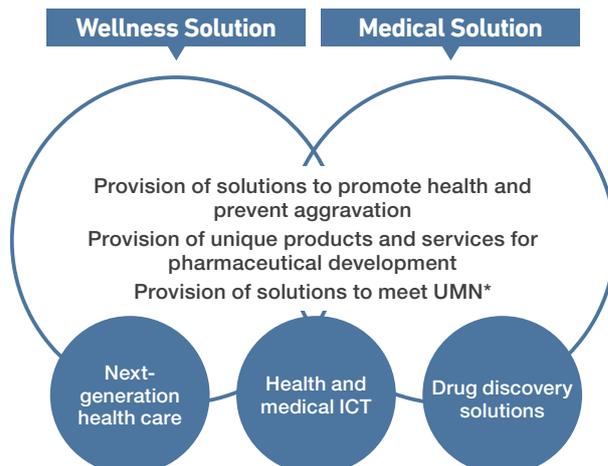
We will consolidate the pharmaceutical business (active pharmaceutical ingredients and intermediates, capsules, etc.) and the drug discovery support business (non-clinical trials, clinical trials) and we will also provide high added value one-stop solutions to pharmaceutical companies through alliances with other organizations.

Health and medical ICT

We will create a growing business by using ICT to organically link diverse products and services ranging from clinical testing to diagnostic reagents, diagnostic instruments, health check-ups and the *Jibun Karada Club* blood test kit.

Next-generation health care

We aim to address unmet medical needs by providing next-generation medical care including regenerative medicine to patients with diseases that are difficult to cure with currently available technologies. In FY2017, we began clinical trials of a Muse cell-based formulation for patients with acute myocardial infarction. We plan to start clinical trials for another indication during FY2018.



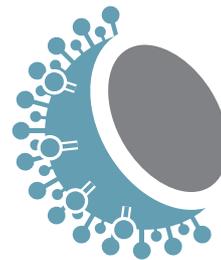
* Unmet Medical Needs

Step 2 (MT-2271) of U.S. business development: Virus-like Particle (VLP)-based vaccine

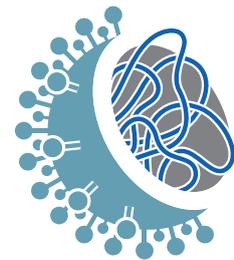
What is a VLP-based vaccine?

A VLP is similar to a wild-type virus and is expected to be highly immunogenic (effective). Medicago Inc., a subsidiary of Mitsubishi Tanabe Pharma based in Quebec, Canada, uses recombinant DNA techniques to produce vaccines and, therefore, all that is needed to start vaccine production is information on the genetic makeup of epidemic strain. Since Medicago also has a transient expression manufacturing platform, it can produce vaccines much more quickly than traditional egg-based influenza vaccine production.

Medicago is a biopharmaceutical company which is at the forefront of the research and development of new vaccines using infiltrated leaf tissue with virus-like particles (VLPs*). Medicago has proprietary technologies for the production, the efficient extraction and purification of those VLPs. In September 2017, Medicago began a phase III clinical study for seasonal influenza vaccine with its plant-derived VLP-based in seven countries including Canada, the U.S., Europe and Asia. The U.S. seasonable influenza vaccine market is worth around ¥240.0 billion and Medicago aims to obtain approval during FY2019.



VLP



Influenza virus

Features and advantages of VLP-based vaccine production

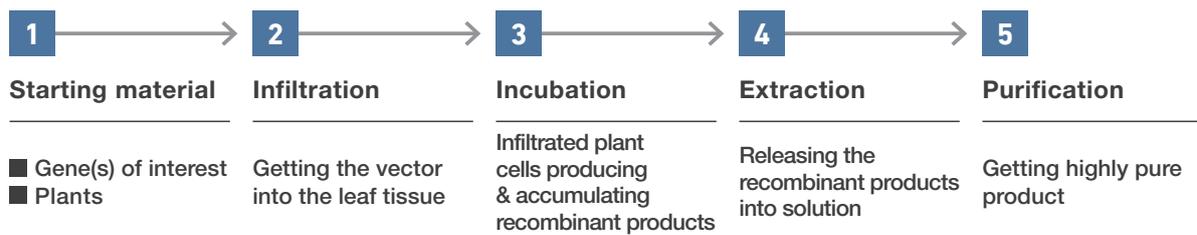
Vaccines in 5-6 weeks

Clinical-grade influenza vaccines ready in 5-6 weeks after strain identification.

10M doses in one month

In 2012, Medicago demonstrated the ability to produce 10 million doses of a plant-based H1N1 influenza vaccine in one month.

Transient Plant-Based Expression System



Solutions for Environmental and Social Issues

Technology supporting the 2020 Tokyo Olympic and Paralympic Games

The drug discovery business of Life Science Institute, Inc. was certified as a doping test organization by the International Olympic Committee (IOC) in 1985 and since then it has conducted doping test. The Life Science Institute is the only laboratory in Japan certified by the World Anti-Doping Agency (WADA). At the 2020 Tokyo Olympic and Paralympic Games, we will apply advanced technologies to meet WADA requirements which have become even stricter since the detection of organized doping.

