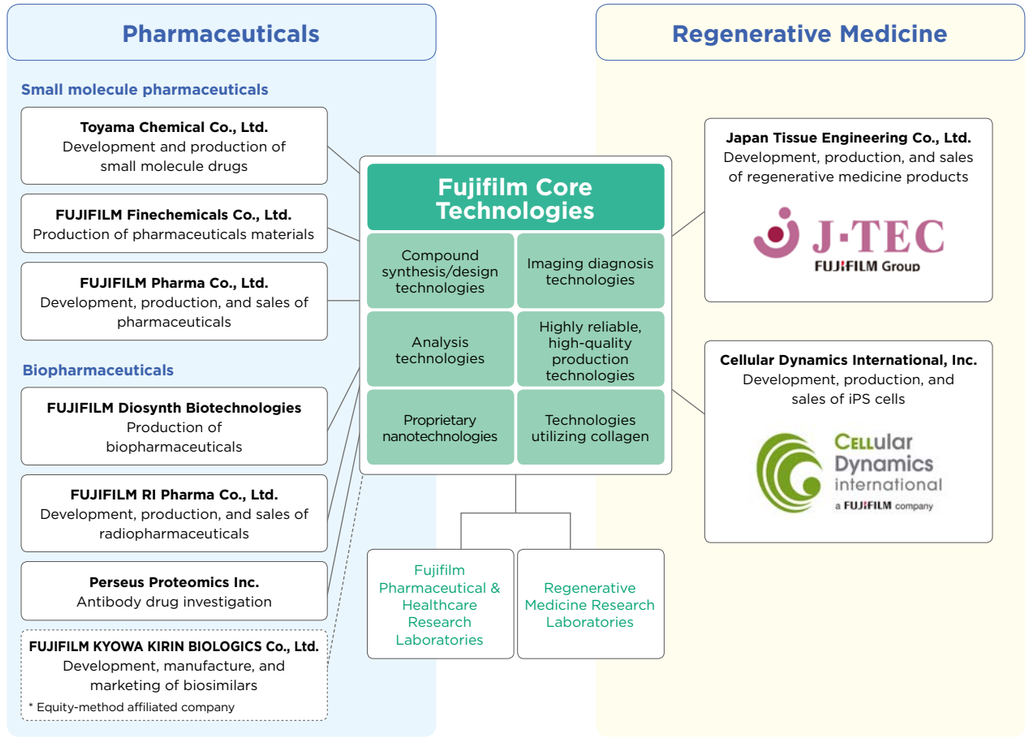
Treatment Field Activities From Drug Discovery Support to Pharmaceutical Development and Regenerative Medicine

Pharmaceuticals / Regenerative Medicine: Responding to Unmet Medical Needs

In the healthcare business field, the pharmaceuticals and regenerative medicine businesses are responsible for the treatment field. In addition to small molecule drugs, such as the therapeutic drugs for infectious diseases supplied by Toyama Chemical Co., Ltd., which was acquired in 2008, the pharmaceuticals business handles biopharmaceuticals, the market for which is expected to grow in the years ahead due to their fewer side effects and greater efficacy. In regenerative medicine, Fujifilm consolidated Japan Tissue Engineering Co., Ltd. (J-TEC), which supplies the first two products approved as regenerative medicines in Japan, and Cellular Dynamics International, Inc. (CDI), which is a leading company in the development and production of iPS cells that are the key to regenerative medicine. Fujifilm is leveraging the synergies between the three companies while proactively developing the business.

Structure of the Fujifilm Group Pharmaceuticals/Regenerative Medicine Business



Fujifilm Technologies That Function in Pharmaceuticals and Regenerative Medicine Businesses

Fujifilm Technologies		Examples of Utilization
Compound synthesis and design technologies that gave rise to new materials in the development of photographic film	→	In making synthesis processes more efficient and prolonging compound stability in the development of pharmaceuticals
Analysis technologies that have been honed through the analytical evaluation of photographs	→	In elucidating mechanisms of action in the development of pharmaceuticals and improving and accelerating the accuracy and speed of development
Proprietary nanotechnologies that deliver stability to locations by refining or functionally combining constituents	→	In making medicines alcohol-free, microneedle formulations, making suspension agents transparent, and extending shelf life
Highly reliable, high-quality production technologies	→	In making the production processes of pharmaceuticals more efficient and more stable
Research into collagen, the main raw material for photographic film	→	In the development of recombinant peptides that form the scaffolds for cell growth and propagation in regenerative medicine

Pharmaceuticals: Growth Strategies Deployed from a Medium-to-Long-Term Perspective

In Fujifilm's pharmaceuticals business, contract manufacturing of biopharmaceuticals is currently driving growth. Steadily making progress with the development of new drugs in response to unmet medical needs, such as anti-cancer agents and drugs for the treatment of Alzheimer's disease, new drugs in the pipeline are expected to start contributing to profits from FY2019/3.

STAGE 1 To FY2018/3 Contract manufacturing of biopharmaceuticals driving growth

The contract manufacturing of biopharmaceuticals market is expected to grow by an annual rate of 8%. FUJIFILM Diosynth Biotechnologies, which became a consolidated subsidiary in 2011, developed the high-productivity *Apollo*™ cell production technology and is responding to burgeoning demand by expanding its cost-competitive capabilities and increasing its production capacity. Having acquired the U.S. company Kalon Biotherapeutics LLC in 2014, which possesses strengths in the manufacture of vaccines, Fujifilm is responding to high-mix, low-volume production needs for pharmaceuticals.

STAGE 2 From FY2019/3 Contributing to profits by making new drugs available on the market

In fields with high unmet medical needs, Fujifilm is conducting R&D with the aim of making unique, top-selling drugs available on the market that have new mechanisms of action. The current status of the main pipeline is listed below.

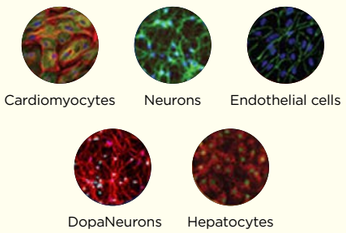
Development Number	Action / Indication	Features / Status of Development
T-705	Anti-influenza drug	Approved in Japan as *Avigan*® Tablet in March 2014 Undergoing phase III clinical trials in the United States
T-817MA	Alzheimer's disease drug	Undergoing phase II clinical trials in Japan and the United States In the United States, undergoing clinical development with Alzheimer's Disease Cooperative Study
FF-10501	Therapeutic drug for relapsed or refractory myelodysplastic syndromes (MDS)	Phase I clinical trials in Japan ended. Undergoing phase I clinical trials in the United States*
FF-10502	Therapeutic drug for advanced or recurrent gastric cancer / ovarian cancer	Undergoing phase I clinical trials in the United States*
FF-21101	Therapeutic drug for advanced or recurrent non-small cell lung cancer / pancreatic cancer	Undergoing phase I clinical trials in the United States*

* Clinical development promotion under way with MD Anderson Cancer Center (United States)

Regenerative Medicine: Initiatives in Drug Discovery Support That Utilize iPS Cells

In the development of new agents, before testing them on people (clinical trials), animals and others are used for the screening of compounds, verifying absorption and distribution in the body and excretion status as well as the presence or absence of toxins. For these processes, CDI supplies cells differentiated from iPS cells to many users, including pharmaceutical companies and research organizations. Conducting experiments that utilize human cells from the early stages of new drug development contributes to a higher rate of development success and saves cost in check. CDI is changing the way drugs are discovered and anticipating a significant surge in demand for iPS cells.

In the years to come, in addition to new drug discovery support, Fujifilm will leverage its technologies, harness the synergies within the Group by joining forces with both J-TEC and CDI, and drive the industry as a leading company in regenerative medicine.



CDI maintains a wide-ranging product lineup of differentiated cells, such as cardiomyocytes and neurons, derived from iPS cells.