



ENGLISH TRANSLATION OF JAPANESE-LANGUAGE DOCUMENT

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PRESS RELEASE

For Immediate Release

February 28, 2022

Nippon Becton Dickinson Company, Ltd.
TAIYO Pharma Tech Co., Ltd.

Nippon Becton Dickinson and Taiyo Pharma Tech form a business partnership to begin providing pharmaceutical companies comprehensive support <PFS Total Support Services> for the development of pre-filled syringe drugs

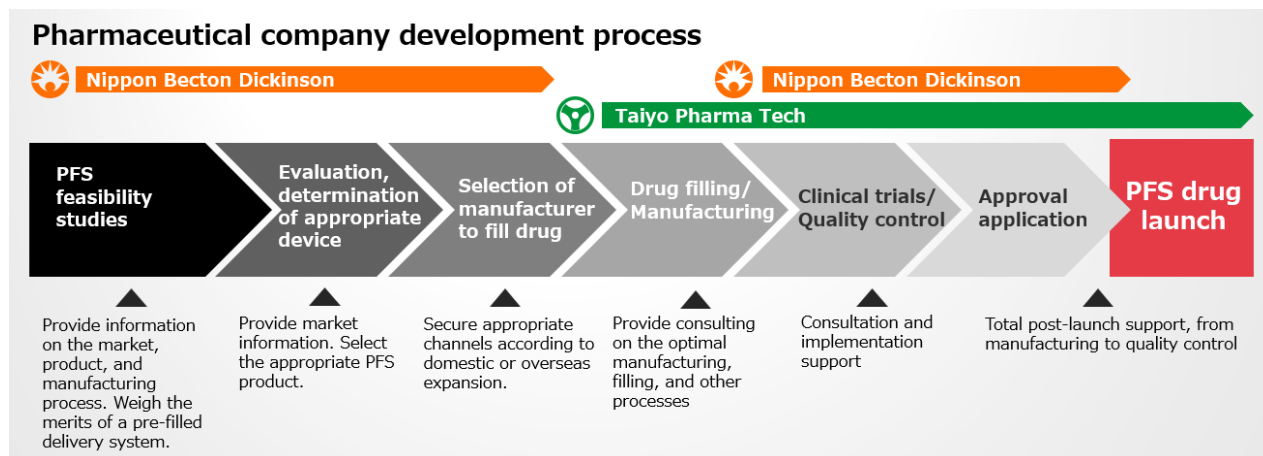
Nippon Becton Dickinson Company, Ltd. (headquarters: Tokyo; President and Representative Director: Tatsuo Achiwa; hereinafter, "BD in Japan") and TAIYO Pharma Tech Co., Ltd. (headquarters: Osaka; President and CEO: Eiji Sato; hereinafter, "Taiyo Pharma Tech") are pleased to announce they have formed a business partnership and will begin providing PFS Total Support Services in March 2022 to support the development of pre-filled syringe (PFS) drugs.

PFS Total Support Services will assist pharmaceutical companies in their efforts to develop new PFS drugs, to offer PFS delivery systems for existing drugs, and to expand into the global market. The Services will offer one-stop, comprehensive support from device development, filling, manufacturing, clinical trials and post-sales support.

PFS delivery systems are pre-filled syringes with the drug already filled into the syringe, labeled with the drug name, the dosage amount, the expiration date, and other information on the barrel portion of the syringe. PFS delivery systems shorten the time needed to prepare the drug for administration and reduce the risk of contamination. They also contribute to preventing misadministration or other errors.

In recent years, drug development using new modalities is progressing worldwide. Biologics, in particular, antibody drugs, are becoming the mainstream of new drugs. For example, global sales of monoclonal antibodies are expected to grow to 300 billion yen* by 2025. As these biologics are best stored in glass containers for drug stability, BD's glass pre-filled syringes are used by more than 500 pharmaceutical companies around the world.

When pharmaceutical companies begin to consider whether to provide a drug as a pre-filled syringe, many seek to outsource it to a CDMO (Contract Development and Manufacturing Organization) because of their expertise and knowledge about PFS delivery systems. With our newly launched service, Taiyo Pharma Tech, which has extensive experience and technologies related to manufacturing PFS formulations will meet the pre-filled syringe drug manufacturing needs of pharmaceutical companies by offering the filling, assembly, and other aspects of the manufacture of PFS drugs.



The number of Japanese pharmaceutical companies expanding globally is increasing yearly. In countries with a well-established pre-filled syringe drug market, these companies must determine how to acquire drug approval, develop formulations for the export market, and set up sales networks by working with a trustworthy CDMO that has a strong grasp of local markets and trends. With PFS Total Support Services, we will harness BD's vast global network and expertise to support pharmaceutical companies' globalization efforts.

BD in Japan and Taiyo Pharma Tech will strive to expand the market for pre-filled syringe drugs and contribute to the further development of healthcare by supporting pharmaceutical companies in the areas of new drug development, development of pre-filled syringe drugs and overseas expansion.

*Global revenues of monoclonal antibodies:

Lu, R., Hwang, Y., Liu, I. et al. Development of therapeutic antibodies for the treatment of diseases. *J Biomed Sci* 27, 1 (2020).

<https://doi.org/10.1186/s12929-019-0592-z>

<https://www.globenewswire.com/news-release/2019/10/10/1928253/0/en/Biologics-Market-To-Reach-USD-625-6-Million-By-2026-Reports-And-Data.html>

[Glossary]

Pre-filled syringe drugs (PFS drugs)

Medicines used for injections are typically packaged in glass containers called ampules or vials. For administration, the drug must first be drawn into a syringe. Pre-filled syringe drugs come with the drug already filled into the syringe, labeled with the drug name, the

calibration, the expiration date, and other information, so that it is ready to use at the healthcare site.

CDMO (Contract Development and Manufacturing Organization)

Pharmaceutical product development and manufacturing support operations. A CDMO serves other companies in the pharmaceutical industry on an outsourcing contract basis by providing support in such areas as drug development and drug manufacturing.