# **Characteristics of the Kampo Business**

# Kampo Treatment Expanded through the Building of Evidence

Kampo medicines are pharmaceutical products with multiple components derived from natural substances. Due to this characteristic, it has been considered difficult to show their efficacy and safety scientifically. To establish a position for Kampo formulations as a treatment option, it is necessary to prove the efficacy and safety of Kampo formulations in the field of Western medicine. We have therefore been working to build evidence by conducting basic and clinical research.

Since fiscal 2004, we have focused our resources on drugfostering research. Drug-fostering research is a program for accumulating basic and clinical data to establish evidence for diseases in areas of high medical need that have been resistant to new Western drugs and for which prescription Kampo formulations have demonstrated special efficacy. The program started with three formulations—Daikenchuto, Yokukansan, and Rikkunshito with the subsequent addition of two more—Goshajinkigan and Hangeshashinto. These drug-fostering program formulations are contributing to the expansion of the Kampo market as growth drivers for the Tsumura Group. In fiscal 2016, we established "growing" formulations as new strategic formulations to follow the five drugfostering program formulations. We have been working to gain writeups for these formulations in medical treatment guidelines.\*1

Through the Company's research activities, it has established a foundation for recognition of Kampo formulations as standard treatments\*2 by physicians. This foundation includes qualitative and quantitative improvement in write-ups in treatment guidelines and inclusion of Kampo training-related content in the education models and core curricula for disciplines including medicine, dentistry, pharmacology, and nursing.

# Western medicines Kampo medicines Single component Component A. C. F Metabolites/conjugates a, b, B\*, c, C\*, e... Enzymes DNA Receptor, RNA Lipids

- \*1 A compendium of diagnoses and standard guidance on treatment for each illness, describing the best tests and treatment methods, etc. based on evidence \*2 Optimal treatment methods recommended to most patients, with efficacy and safety
- confirmed based on evidence

## Status of Evidence-Building

As of the end of March 2024

	No.	Formulation name	Integrated analysis (No. of research papers)	RCT (No. of research papers)	Mechanism of action	Study on frequency of side effects	Pharmacokinetics (ADME)*3	Database research (health economics, etc.)
Drug-fostering program formulations	100	Daikenchuto	4	38	0	0	0	0
	54	Yokukansan	5	21	0	0	0	0
	43	Rikkunshito	2	26	0	0	0	0
	107	Goshajinkigan	2	15	0	-	0	-
	14	Hangeshashinto	2	11	0	-	-	0
"Growing" formulations	17	Goreisan	1	12	0	-	-	0
	24	Kamishoyosan	-	7	0	-	-	-
	41	Hochuekkito	-	17	0	In progress	-	-
	108	Ninjin'yoeito	-	2	0	-	-	-
	137	Kamikihito	-	1	0	-	-	-

Notes: 1 🔾 indicates the existence of a relevant academic paper, etc.

11

- 2 Numbers of integrated analysis and RCT papers are collated from 2000 to March 2024.

  \*3 Absorption, Distribution, Metabolism, Excretion: Looking at how a drug acts within the body after being taken

# Supply Chain Management Based on the Characteristics of Raw Material Crude Drugs

Since crude drugs are natural substances, the component content varies depending on factors such as production area, cultivation environment, and processing and storage conditions. However, they must achieve clinical reproducibility in order to become pharmaceutical products, and this is ensured by the stable quality of crude drugs and the technology and expertise to create consistent Kampo products.

The Tsumura Group has built the Kampo value chain, a proprietary supply chain that manages business activities consistently from upstream to downstream to maintain and improve quality. In the upstream process of crude drug cultivation, we control variation in raw material crude drugs by providing guidance on cultivation and processing methods and using only crude drugs that meet Tsumura's quality standards. The component balance of the crude drugs can be further optimized in the formulation process by analyzing and managing the component content data for each lot, then prescribing the ratio of the crude drug lots to be used in the manufacturing process. In the manufacturing process, to minimize changes to the components of the extract, we have developed a proprietary manufacturing line, and we control the system for each formulation to achieve consistency in our final Kampo formulation products.

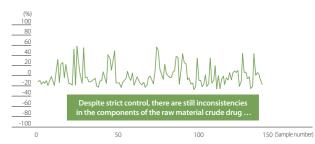
The Group handles 119 types of raw material crude drugs, around 90% of which are procured from China. However, we do not purchase crude drugs from crude drug markets throughout China. By purchasing directly from growers who have acquired Tsumura GACP\*4 certification, we have

built a traceability system that enables us not only to trace information such as which fertilizers or agrochemicals are used and the cultivation history, but also to trace and check all processes up to delivery to the medical institutions, including history information for the Kampo formulation manufacturing process and logistics steps.

\*4 Tsumura's own crude drug production management guidelines created with reference to the guidelines on good agricultural and collection practices for medicinal plants used by the World Health Organization (WHO)

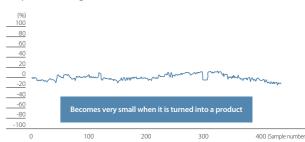
#### [Crude Drug] Shakuyaku (Peony Root) Divergence Distribution

(For peoniflorin divergence (measured value - mean value) ×100 / mean value)

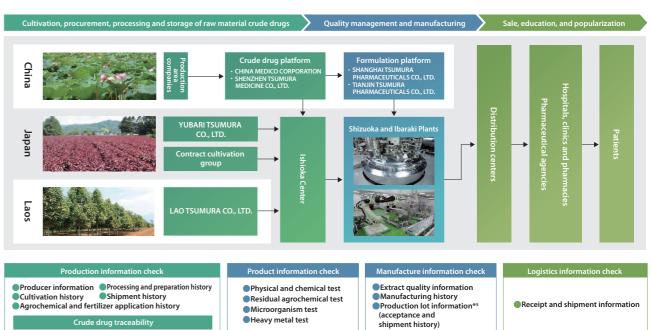


#### [Kampo Formulation] TJ-68 Divergence Distribution

(For peoniflorin divergence (measured value - mean value) ×100 / mean value)



## Kampo Value Chain and Traceability



<sup>\*5</sup> Groups of products made under the same conditions are referred to as a lot. The smallest unit of information when producing products is referred to as production lot information

TSUMURA Integrated Report 2024 12

# **Characteristics of the Kampo Market**

#### **Domestic Market Trends**

The majority of Kampo medicines prescribed at medical institutions in Japan are prescription Kampo formulations, which are covered by health insurance. A total of 148 prescriptions have been approved by the Japanese Ministry of Health, Labour and Welfare. Moreover, prescription Kampo formulations are prescribed based on examination by a physician, and they now used in ordinary treatment by over 80%\*6 of physicians.

The market for prescription Kampo formulations has been expanding steadily since reaching its lowest point in fiscal 1999. In fiscal 2023, the scale of the prescription Kampo formulation market was 187.5 billion yen on a drug price basis, equivalent to approximately 1.6% of the 11.4 trillion yen prescription pharmaceutical market. The Tsumura Group holds an 84.2% share of the prescription Kampo formulation market.

## Approach to the Market

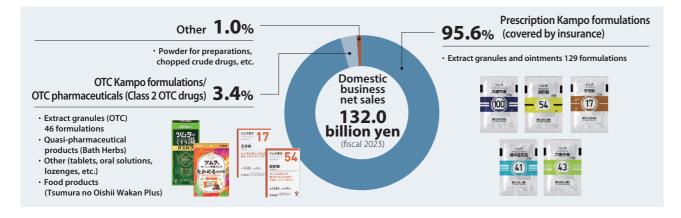
The Tsumura Group manufactures and sells 129 prescription Kampo formulations. With the leading lineup in Japan, we are

able to respond to a wide range of treatment areas. Currently, our products are used in virtually every hospital department.

In addition, Kampo treatment is characterized by the use of various drugs to suit the constitution and condition of each individual patient. It is important to spread the knowledge of Kampo medicine so that even physicians who do not specialize in Kampo are able to prescribe Kampo formulations. Therefore, in addition to providing information to medical professionals on the safety, efficacy, and quality of our products, our MRs\*7 also conduct activities to spread understanding about the establishment of formulations and different uses based on the principles of Kampo medicine. In this way, we aim to realize a medical setting where all patients can receive Kampo treatment suited to them individually, regardless of the medical institution or clinical department.

Moreover, the ratio of prescription Kampo formulations administered is highest for women of all generations, accounting for half the number of elderly patients aged 65 or over. The Group has designated as its key areas geriatric health, which is an acute social issue in Japan, cancer (supportive care), and women's health, and is striving to increase the quantity and quality of the information it provides.

#### **Domestic Business Product Lineup**

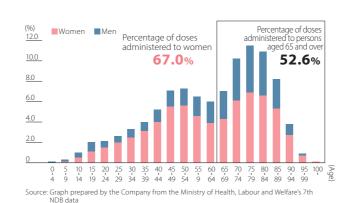


## **Prescription Kampo Formulation Market Trend** (Drug Price Basis)



13

#### Ratio of Prescription Kampo Formulations Administered



## **Characteristics of the Traditional Chinese Medicine Market**

#### **Classification of Traditional Chinese Medicines**

Traditional Chinese medicines are a general expression for medication that has been used by traditional Chinese medicine for over 2,700 years. Like Kampo medicines, it is manufactured using raw materials from nature, such as plants, animals, and minerals. Traditional Chinese medicine is based on classical theory, but with each era, its efficacy with common diseases has been tested, and new treatment methods have been incorporated into the system. As a result, a large number of formulations have been created, and traditional Chinese medicinal products have been continuously developed.

In traditional Chinese medicine, treatments are classified into traditional Chinese medicinal products and traditional Chinese drug pieces. There are also health foods that are made using crude drugs for healthcare (prevention).

#### **Traditional Chinese Medicine Market Trends**

The traditional Chinese medicine market in China is valued at approximately 16 trillion yen, making it more than 60 times the size of the Japanese market for Kampo products and crude drugs. Within this, the market for traditional Chinese medicinal products is around 11 trillion yen, and the market for raw material crude drugs and traditional Chinese medicine drug pieces is around 5 trillion yen. Traditional Chinese medicinal products have been formulated from ancient times until the modern era, with approximately 9,000 formulations approved in China. Of these, the Pharmacopoeia of the People's Republic of China\*8 listed approximately 1,600 formulations, while approximately 300 formulations originate from the principal classics.\*9 There are around 600 types of traditional Chinese medicine drug pieces commonly used in traditional Chinese clinics. These have been made through improvement processing\*10 of raw materials for traditional Chinese medicines.

The Chinese government's policy is to focus on the development of traditional Chinese medicines based on classical prescriptions, and to support and reinforce R&D and quality improvement of traditional Chinese medicines. There are around 1,600 companies that manufacture traditional Chinese medicines, so the level of concentration in the market is not so high. However, groups of traditional Chinese medicine manufacturers are gradually being formed.

## Approach to the Market

The Healthy China 2030 initiative promoted by the Chinese government places importance on both modern medicine and Chinese medicine. It promotes the development of rules regarding traditional Chinese medicine production and also encourages expanding the scale of production. Within traditional Chinese medicines also, the key to the development of traditional Chinese medicinal products is standardization, and the Chinese government views the standardization of traditional Chinese medicinal products as a priority issue. The Tsumura Group seeks to achieve the standardization of traditional Chinese medicinal products and contribute to the development of the traditional Chinese medicine industry. We will do this by using our technologies and expertise related to safety, efficacy, and consistency, which have been honed in the Kampo business.

In addition, with regard to the sale of raw material crude drugs and drug pieces, we will contribute to the citizens of China and healthcare by supplying high-value-added services using high-quality crude drugs.

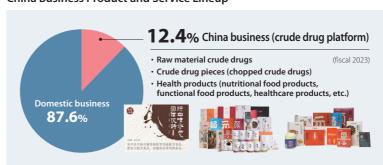
- \*8 A pharmaceutical product code promulgated by the Chinese National Medical Products Administration to guarantee the quality of pharmaceutical products by the state and guarantee the safety, efficacy, and quality control of drugs for use by the public
- \*9 Treatments included in ancient medical texts compiled in the Qing dynasty and earlier \*10 Processing by methods including steaming, boiling, and frying



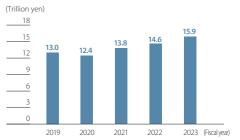
Source: Created by Tsumura from data provided by the Chinese National Medical Products
Administration, Chinese Ministry of Industry and Information Technology, and National Bureau of Statistics of China data Converted at 1 RMB = 19.93 yen (as of December 31, 2023)

trillion yen

## **China Business Product and Service Lineup**



## **Traditional Chinese Medicine Market Trend**



Notes: 1 Converted at 1 RMB = 19.93 yen (as of December 31, 2023) 2 Chinese Ministry of Industry and Information Technology and National Bureau of Statistics of China data

TSUMURA Integrated Report 2024 14

<sup>\*6</sup> Source: Japan Kampo Medicines Manufacturers Association, 2011 Survey on the Status of

<sup>\*7</sup> Medical Representatives