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Market Creation and Development of Swallowing Aid Jelly

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Ryukakusan Co., Ltd.

About Ryukakusan Co., Ltd.

History

創業: 1797年(創薬寛政 9年)頃



藩主: 佐竹義堯

久保田藩(現、秋田県)

知事: 佐竹敬久(21代)



龍・龍腦・龍骨
角・鹿角霜
散・散劑



藥品一切有効賣藥

- ◎ 諸君共 藥料 信用 衛生 水
- ◎ 瓶丁 用 藥品 3 瓶 並 在 瓶
- ◎ 信 知 國 地 理 社 理 同

藥種卸小賣

東京 藤井支店

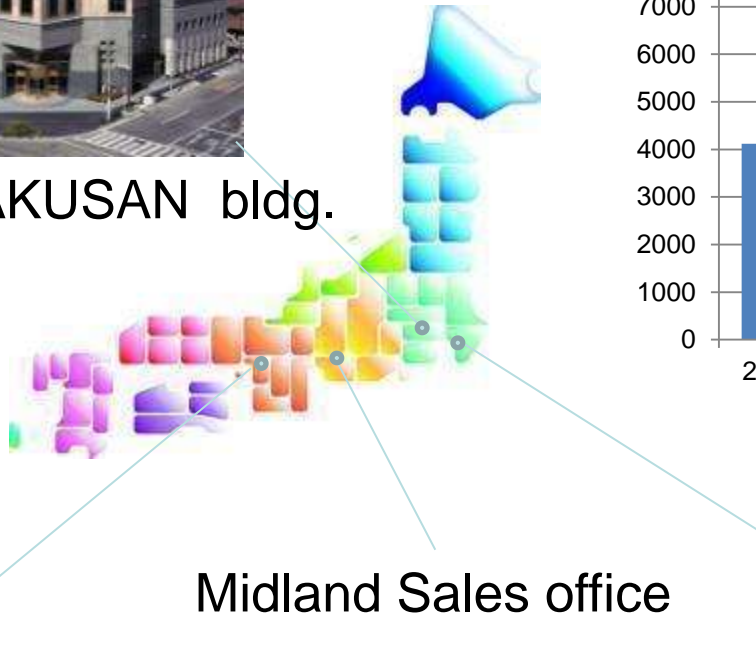


RYUKAKUSAN bldg.

RYUKAKUSAN Co.,Ltd

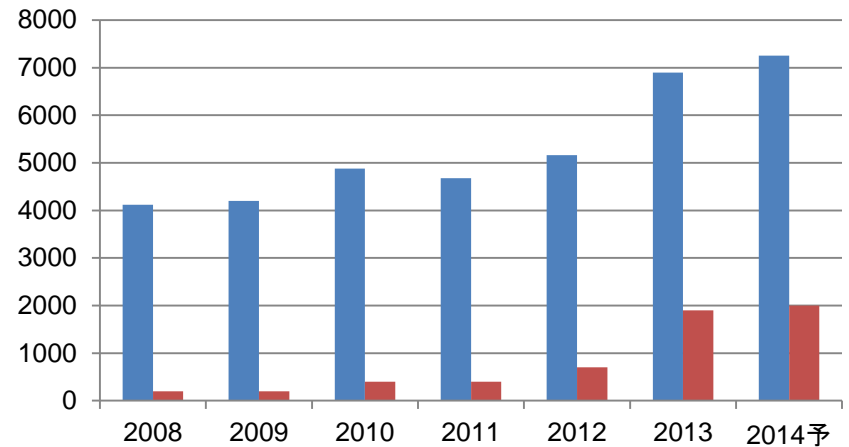
Sales:JP¥6.9billion(US\$64million)

Shareholder:Fujii Family 77%



West area Sales office

Sales & Advertisement.



Chiba Plant (area:33,092m²)



- ◆ **Traditional medicine with reliability and safety based on over 200-year history**
- ◆ **Japan's unique technology**
- ◆ **Our policy:
「We don't imitate,
We are not imitated.」**

- 1) Product characteristics
- 2) Process of market introduction
- 3) Expansion of target domain
- 4) Future development

- 1) **Product characteristics**
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Swallowing Aid Jelly

「Raku Raku Fukuyaku Jelly」 series



Initially started
for the elderly

Development process



In order to solve the difficulty of taking medicines

- **Common knowledge to take medicines with water or hot water**
- **Take medicines with other beverage**
- **Crash medicines**
- **Select feeding tubes, to mix with food**

Crush



feeding tubes



to mix with food











Kleenex
Facial Tissue
71327A









Characteristics of “Swallowing Aid Jelly”

- **Viscosity** to avoid adhering to the inside of mouth
- **No physical interaction** with medicines
- **Ideal solidness and size of crushed jelly** in order to avoid choking over and getting caught in your throat
- **return to the water** in your stomach
- **No artificial coloring / No preservatives**
- **Non-sugar / Non-caloric / Non-allergenic**
- **Drug-level Quality Control**

Temperature and Gel strength

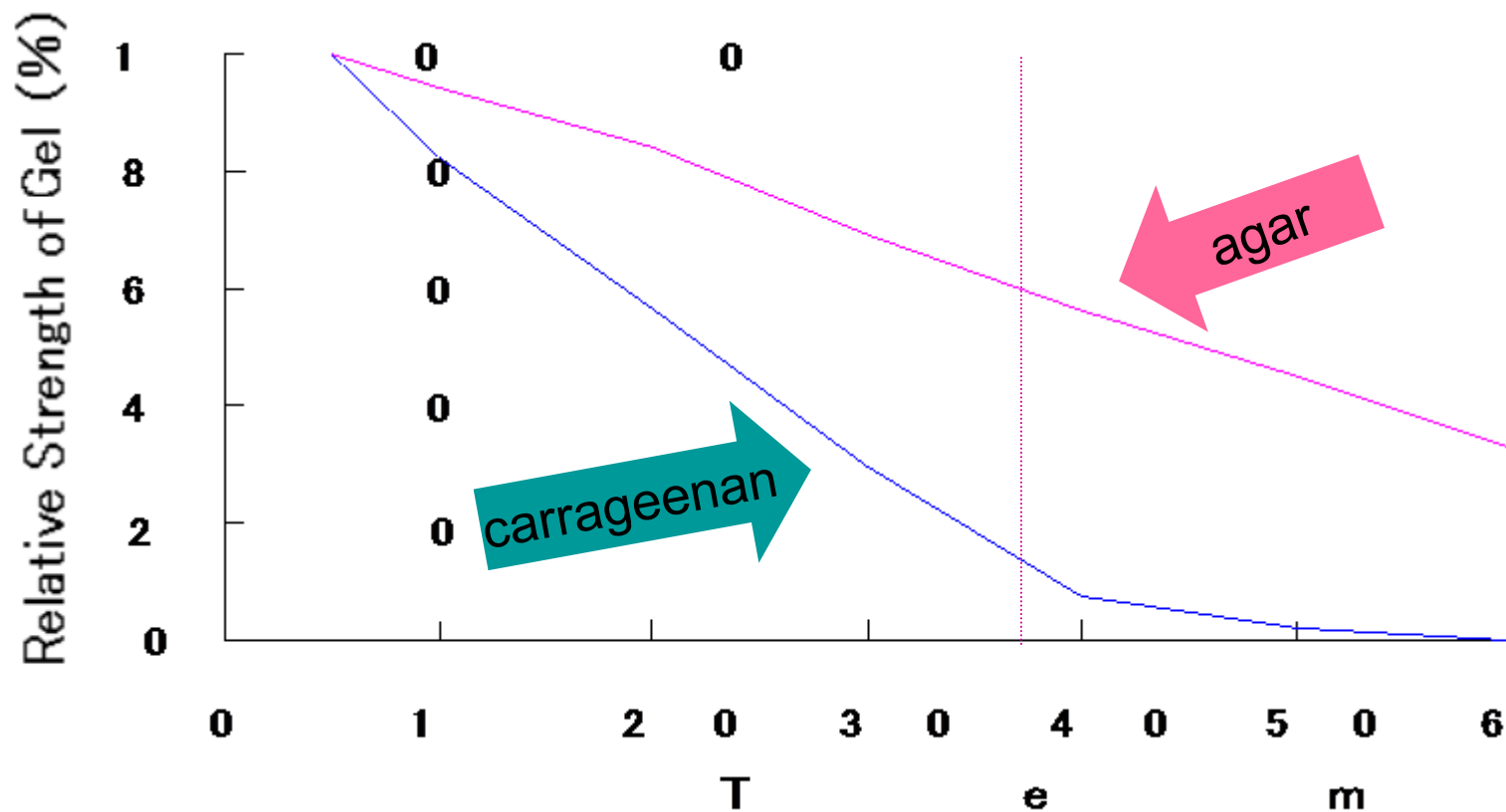


Fig. Relationship between Temp. and Relative Strength of Gel Contain Agar and Carrageenan ●:Agar, ■:Carrageenan

How to use



Put the jelly into
a cup



tablets,
capsule
medicine



powdered
medicine



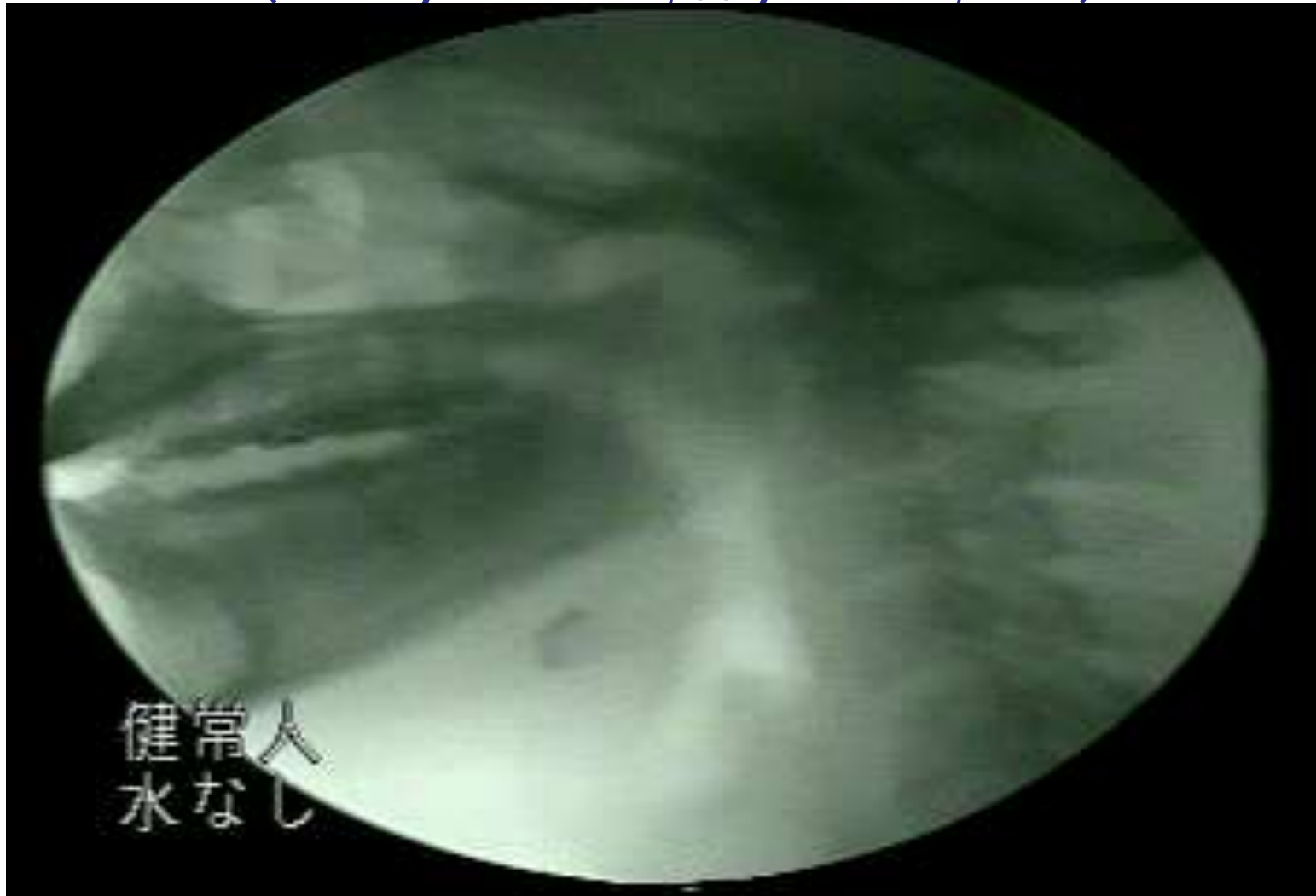
syrup,
liquid
medicine

Test of Safety & Effectivity

- Check of keeping effect (safety against contamination of micro bacteria)
- Japanese Pharmacopoeia disintegration test (equivalence with water)
- Japanese Pharmacopoeia dissolution test (equivalence with water)
- The use evaluation test by healthy Individuals
- The use evaluation test by nursing home
- Radioscopy photographed to healthy individuals
- Radioscopy photographed to the person with dysphagia

Taking barium capsules with saliva

(healthy individual, 38 years old, Male)



Taking barium capsules with 50ml of water

(healthy individual, 38 years old, Male)



Taking barium capsules with 15ml of jelly

(healthy individual, 38 years old, Male)



Taking barium capsules with 50ml of water (parkinsonian syndrome, right-sided paralysis, Female)

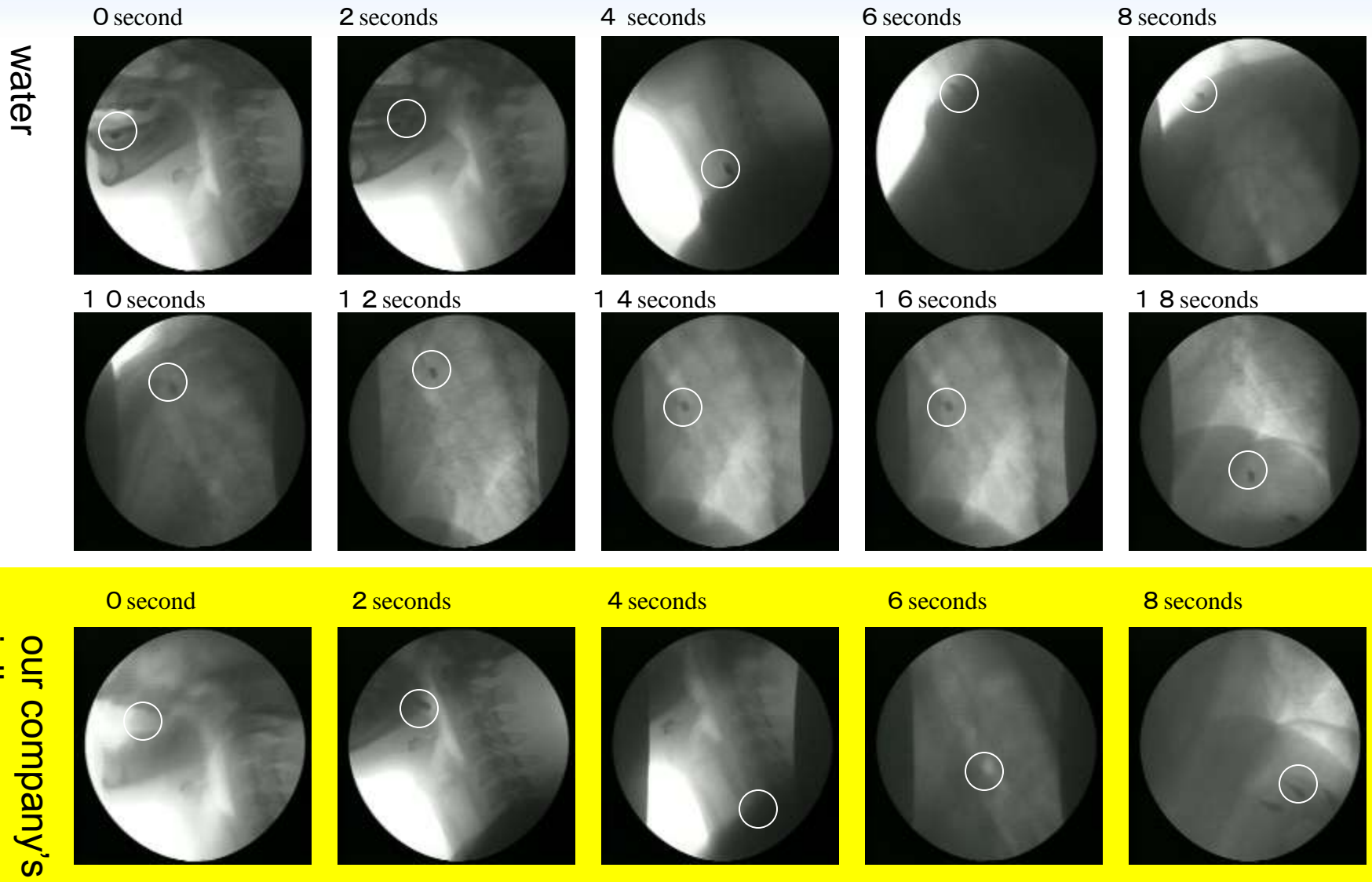


Taking barium capsules with 15ml of jelly

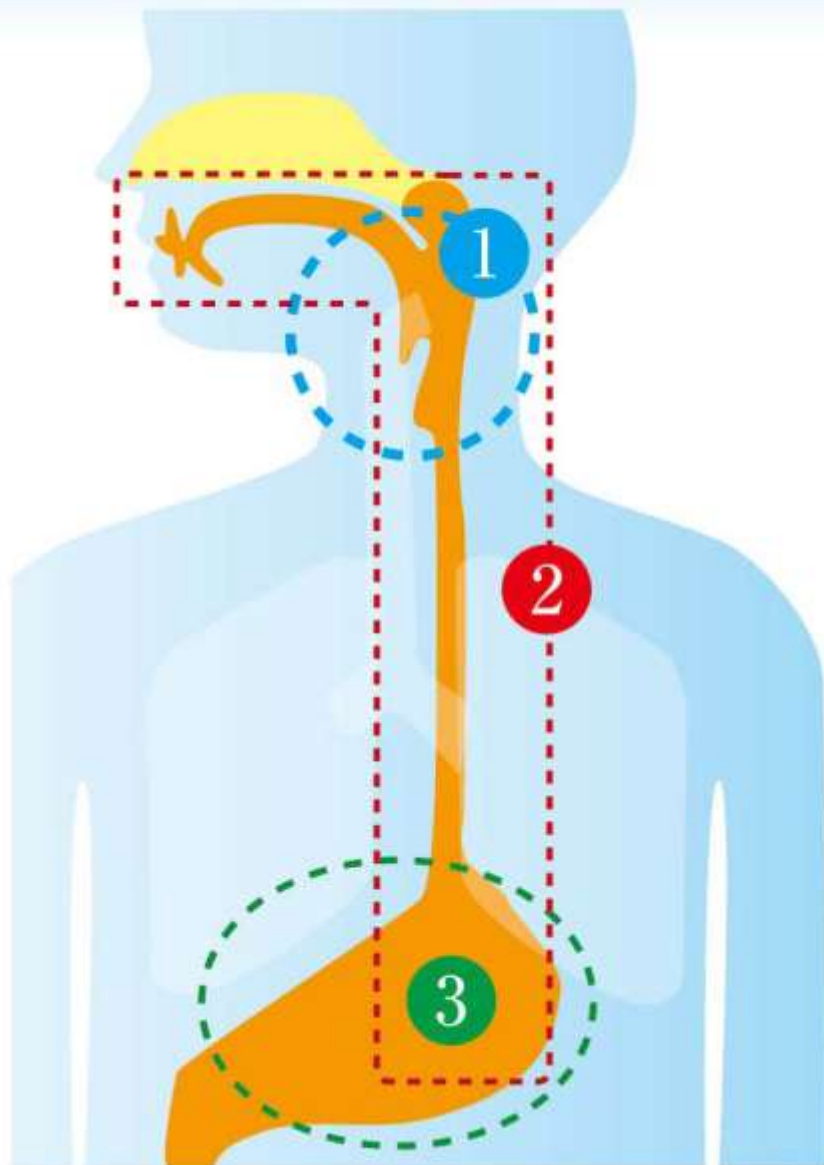
(parkinsonian syndrome, right-sided paralysis, Female)



Radioscopy photographed to healthy individuals



Behavior in the Body



1

Stress on the throat when swallowing.

When medicines are taken with “jelly”, the throat does not experience any stress.

2

Time to reach the stomach.

Enable people having difficulty swallowing with water to swallow easily with jelly.

With water : 18 seconds

With jelly : 8 seconds

3

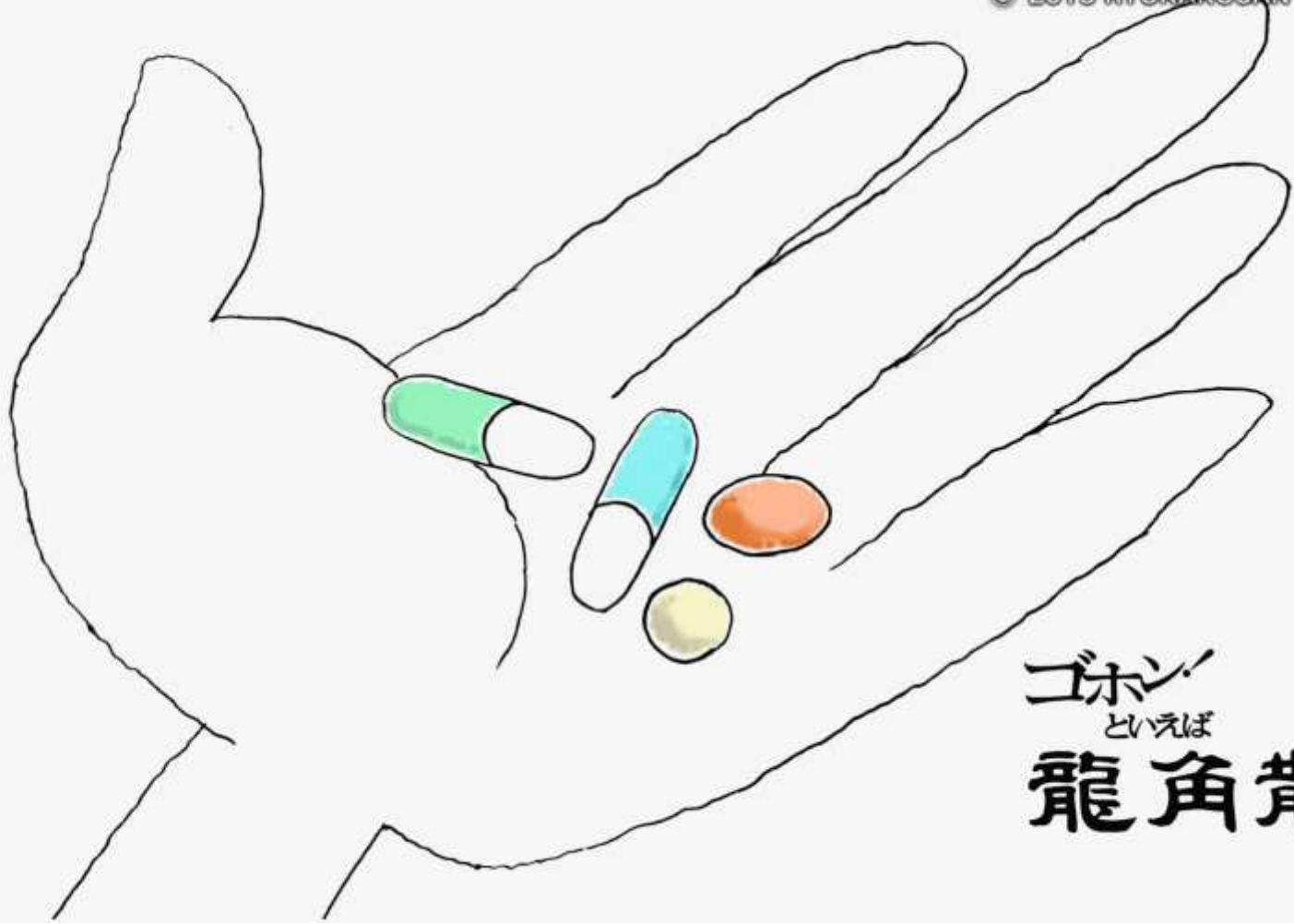
Disintegration test and elution test after having reached the stomach.

No difference from taking with water in the speed of disintegration and the rate of elution.

Does not affect the medicine’s effects in the body.

Shows the same pharmacokinetics as taking with water.

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といえぼ
龍角散

- 1) Product characteristics
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2) Process of Market Introduction

- Initially developed business limited in the field of medical nursing care.
 - Prevented an erroneous swallowing under the supervision and guidance by specialists such as doctors, nurses, pharmacists, care workers and etc.
 - Distributed samples at exhibitions of medical nursing care.
 - Performed presentation at medical and nursing conferences and received a patent.
- (Eliminate inferior copycat products)
- Corporate with pharmaceutical manufacturers at pharmaceutical conferences.

Award Received



The APSTJ
Pharmaceutical
Encouragement Award



The Ando Momofuku Award
Invention/Discovery Award



The JILL
Invention Encouragement
Award



Patents have been acquired in various countries and regions world wide including Japan

35 countries and 1 region

Contents which, first of all, attached importance to a safety for people using it.

1. Jelly for taking medicines
2. Ingredients which do not affect the medicine's effect
3. Safe qualities which do not stick or choke in the throat
4. Qualities which do not interfere with the effectiveness of medicines
5. Low calories / No sugar
(safely usable for people who have diabetes or restriction of calories)
6. Agar is used



Japan



U. S. A.



Australia



China



Hong Kong



Korea

(Taiwan, EU, Canada, and so on)

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3) Expansion of Target Domain

- Expanded to infants due to complaints about its taste.
- Field of pediatric medicine and route of dispensing pharmacy (behind the counter)
- Expanded route to ordinary drugstores upon request of distribution industry
- Started the TV commercial aimed at infants in 2002
- Expanded to people taking a lot of tablets and started TV commercial in 2013
- Started TV commercial for recipients of Herbal medicine

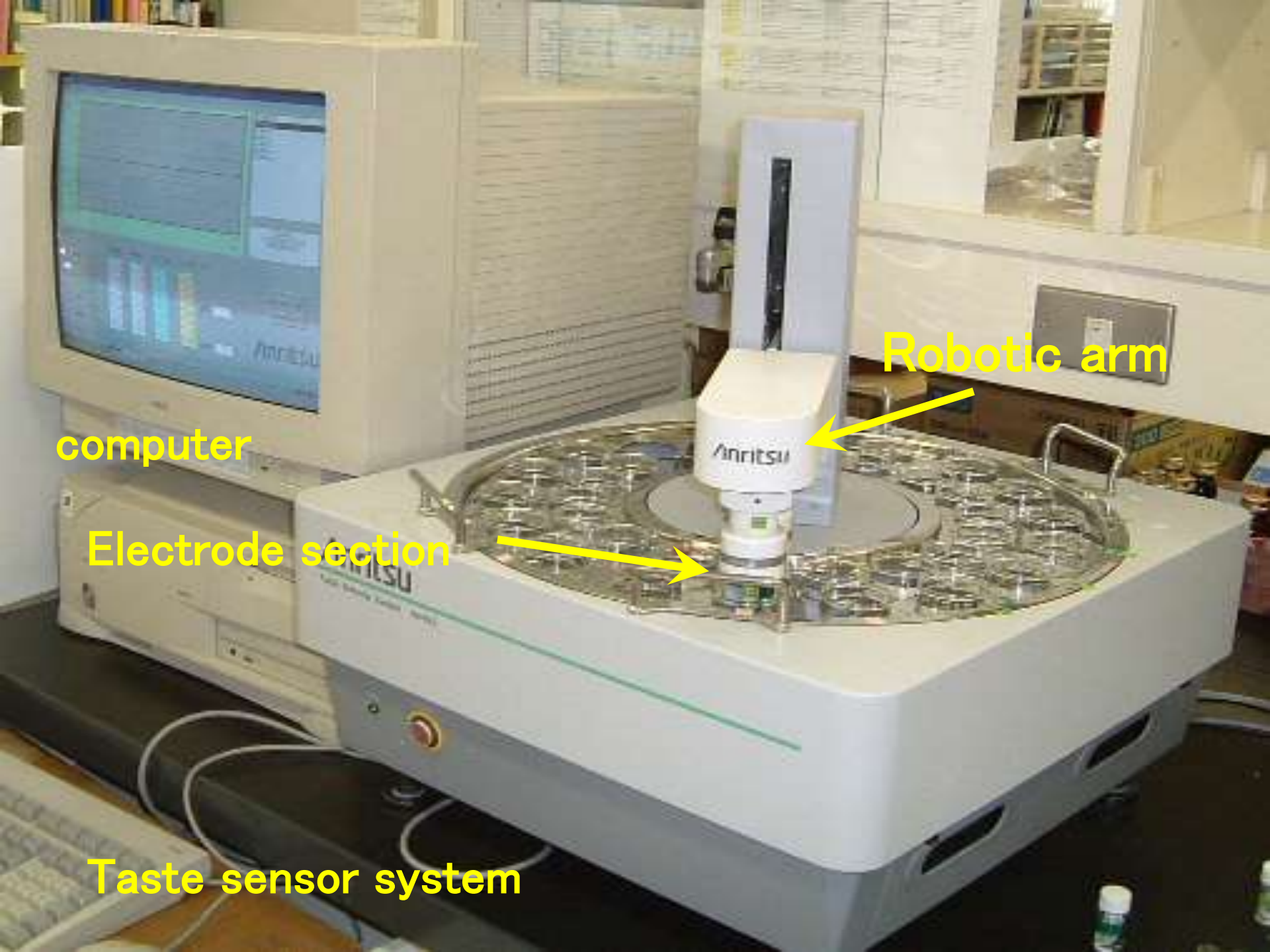


Swallowing Aid Jelly for “bitter-taste masking”

Masking of bitter taste of medicines
(effective for macrolide antibiotic and steroid medicines)

- **Prevent medicines from melting in the mouth**
Neutrality, Design of viscosity
- **Taste sensor of taste buds (bitter taste)**
Control of difference in potential





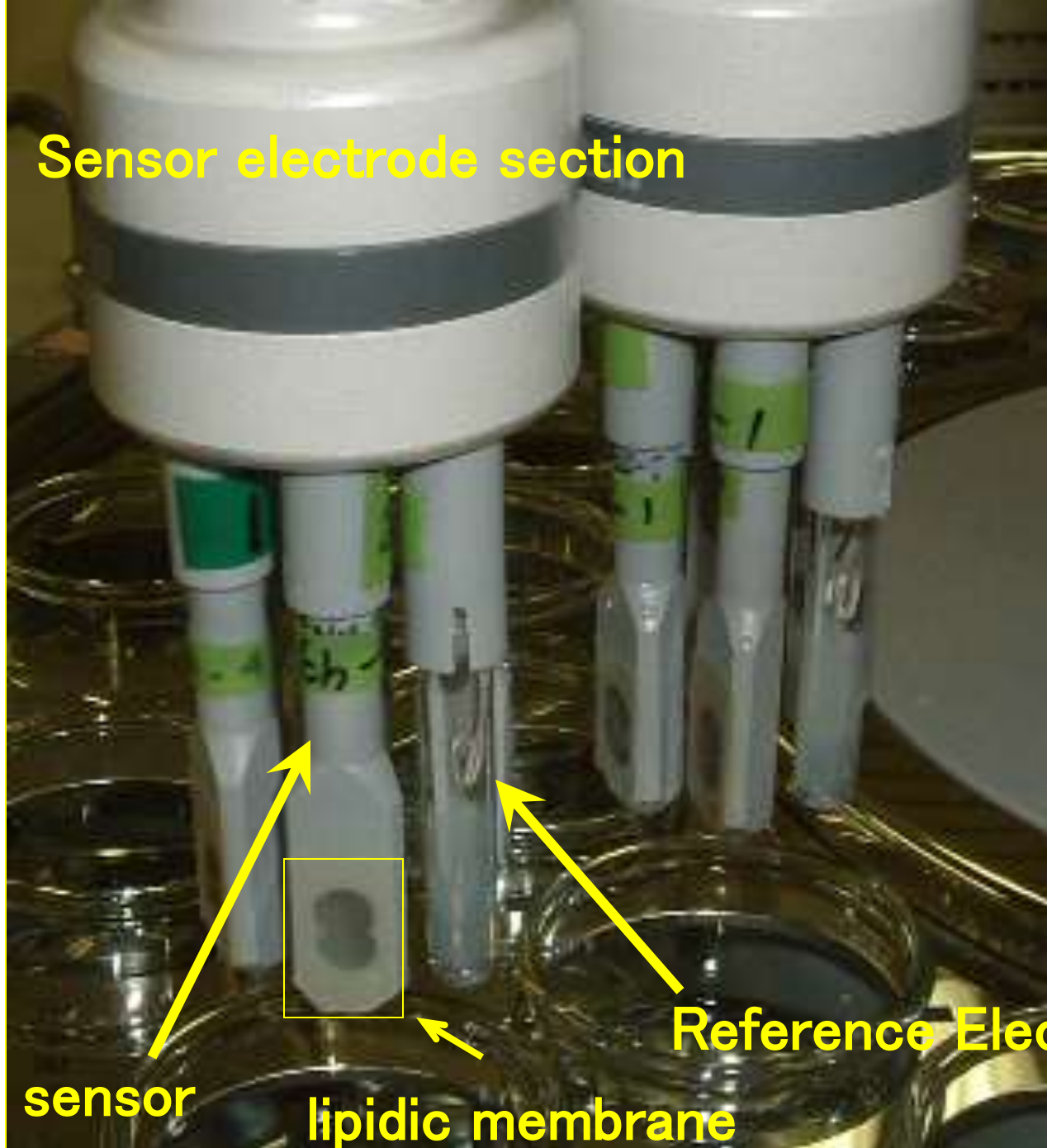
computer

Robotic arm

Electrode section

Taste sensor system

Sensor electrode section

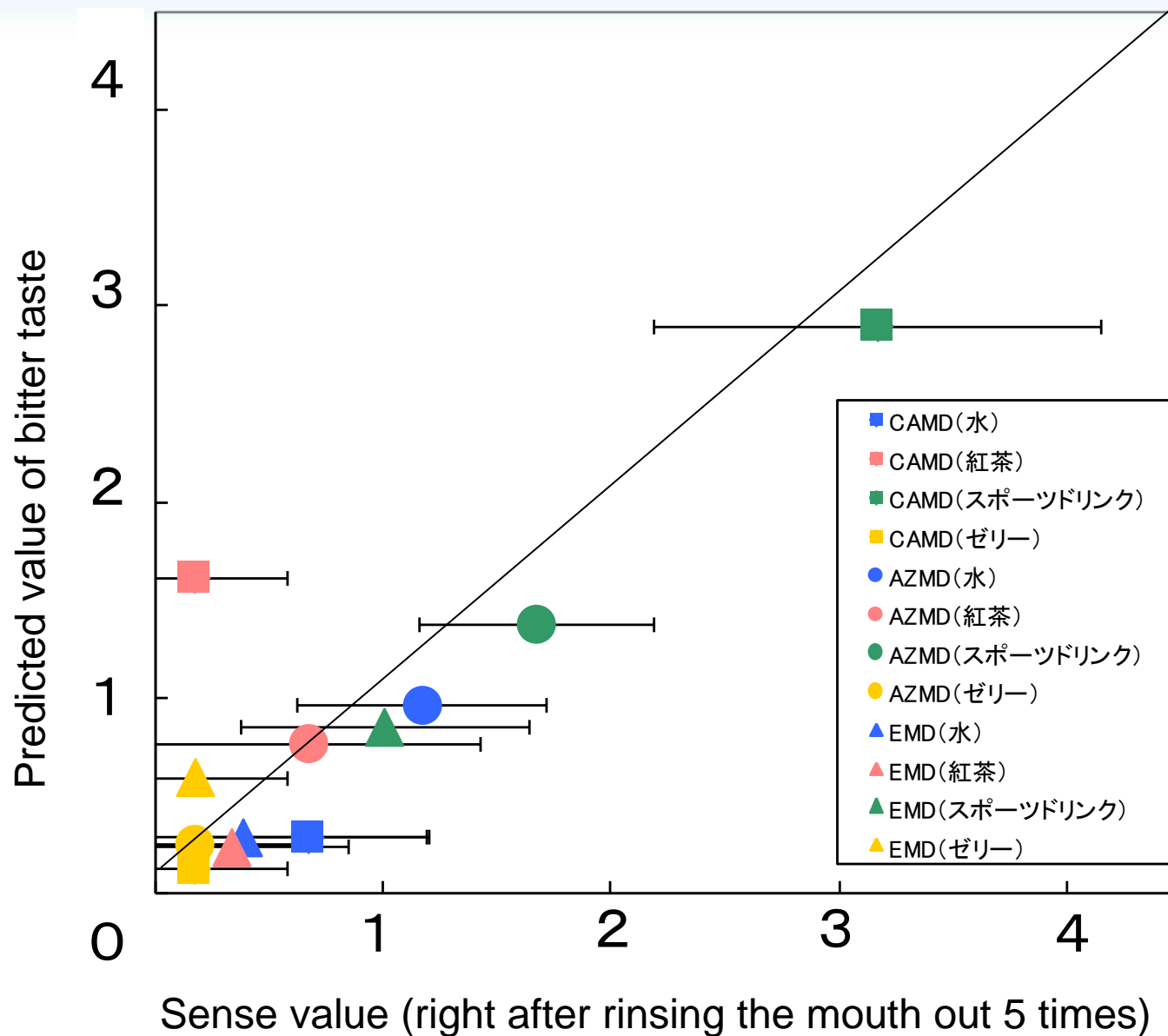


sensor

lipidic membrane

Reference Electrode

Sensor measurement (after taste)



TVCF - Swallowing Aid Jelly (Chocolate flavor)



Raku Raku Fukuyaku Jelly for herbal medicine



Completes the taste with flavor and taste of herbal medicine

How to use of the jelly for herbal medicine





“Stick type” package for single use



Lemon flavor

Lemon flavor

Strawberry flavor

Peach flavor

Grape flavor

Easy to use, well reasoned – patent received

Right size for encasing tablets and jelly can be taken out easily.



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4) Future Development

- Enhance convenience and expand the applications
- Plan expansion of overseas business based on the market introduction and development in Japan
(Test-market has already been conducted in Taiwan)

Patent received - Swallowing Aid Jelly

「Raku Raku Fukuyaku Jelly series」



Initially started for the elderly



Lemon flavor



Lemon flavor



Peach flavor



Grape flavor



Strawberry flavor



Lemon flavor

Specialized use

Recommended for taking powdered medicine

for herbal medicine



Strawberry chocolate flavor



Coffee Jelly flavor

for antibiotic medicine



Chocolate flavor