

# Contribution to nutritional issues

## Approach

One nutritional issue faced globally is the “double burden of malnutrition,” the coexistence of overnutrition and undernutrition, which can occur in a country or region as well as in an individual. To help resolve this complex issue, the Ajinomoto Group will leverage its food industry expertise in synthesizing the functional benefits of amino acids with various technologies, while utilizing networks developed through other activities to strengthen Group-wide nutritional improvement initiatives.

## Framework

► Integrated Report  
2019 P43

► Group Shared  
Policy on Nutrition

## Food and Nutrition Management

In July 2017, the Ajinomoto Group established the Group Shared Policy on Nutrition and the Nutrition Strategy Guideline based on the policy. These provide a foundation for the Group's business activities to promote “health and well-being.” Since fiscal 2018, a cross-organizational task force headed by a Corporate Senior Vice President has been formulating a comprehensive nutrition strategy with specific commitments along with a system to ensure the strategy is effectively executed.

## Performance

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## Ajinomoto Group Nutrient Profiling System (ANPS)

The Ajinomoto Group is developing its own nutrient profiling system (Ajinomoto Group Nutrient Profiling System: ANPS) as a tool for developing healthy food products and menus. The ANPS will clarify upper and lower intake limit of sensitive and positive nutrients in food based on values recommended by the World Health Organization (WHO) and other independent bodies. Sodium, added sugars, and saturated fat are being considered as sensitive nutrients, and vegetables, fruits, and protein as positive nutrients.

One unique feature of ANPS is that it's designed to be used for menus as well as product reformulation. For menus, the Group is considering setting its own indicators of deliciousness, such as umami, in addition to the above-mentioned nutrient items. For products, the Group is developing ANPS based on existing NPSs (e.g., HSR<sup>[1]</sup>) recommended by international research institutes and experts.

The Group is piloting ANPS in certain regions and, as improvements are made, plans to roll out the system worldwide starting in fiscal 2020.

## Overview of the Ajinomoto Group Nutrient Profiling System (ANPS)

ANPS for menus	Nutrients to reduce to avoid overconsumption: Sodium, added sugars, saturated fat Nutrients to actively consume: Vegetables, fruits, protein (Note: Addition of “deliciousness” indicators (umami, etc.) under consideration)
ANPS for products	Nutrients to reduce to avoid overconsumption: Sodium, added sugars, saturated fat Nutrients to actively consume: Vegetables, fruits, protein (Note: Modifications based on existing NPSs under consideration)

[1] Developed through an industry-academic-government partnership in Australia, the Health Star Rating rates packaged foods by number of stars based on their nutritional profiles.  
<http://www.healthstarrating.gov.au>

## Contribution to Health and Nutritional Issues

### Performance

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### Nutrition Improvement Initiatives by Region

Improving the nutritional balance of consumers' day-to-day diet is critical for addressing issues related to the underconsumption of protein and vegetables and overconsumption of sugar, fat and salt.

Since its founding, the Ajinomoto Group has refined its leading-edge bioscience and fine chemical technologies with research centered on amino acids. The Group continues to propose easy-to-make, delicious and nutritionally balanced meals that leverage its proprietary "deliciousness technologies" and expertise in nutrition designing. For example, the Group offers seasonings to help with eating adequate protein and vegetables; low-salt, low-sugar and low-fat seasonings and processed foods; and supplements for nutrients lacking in meals. It also actively shares basic knowledge and recipes for eating a balanced diet using available ingredients and considering traditional ways of cooking to each country or region worldwide.

#### ■ Major initiatives

#### ● Development and marketing of products that help nutritional improvement

	Measures to reduce salt, sugar, fat	Measures to increase protein, micronutrients, etc.
Japan	<p>Salt reduction</p>  <p>Salt, Japanese flavor seasonings, consommé soup stocks, cup soups, etc.</p> <p>Sugar reduction</p>  <p>Sweeteners, powdered drinks, etc.</p> <p>Fat reduction</p>  <p>Mayonnaise, non-dairy powdered creamer, etc.</p>	 <p>Japanese flavor seasonings, soups, menu-specific seasonings, amino acid supplements, etc.</p> <p>Amino acid prime mix</p>
Southeast Asia	—	 <p>Powdered drinks, amino acid supplements, flavor seasonings, medical foods, etc.</p> <p>Amino acid prime mix</p>
North America	<p>Salt reduction</p>  <p>Frozen foods</p>	 <p>Medical foods, amino acid supplements, frozen foods etc.</p> <p>Amino acid prime mix</p>
South America	<p>Sugar reduction</p>  <p>Powdered drinks</p>	 <p>Amino acid supplements, flavor seasonings, soups, etc.</p> <p>Amino acid prime mix</p>
Europe	—	 <p>Medical foods, frozen foods, etc.</p> <p>Amino acid prime mix</p>

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### Performance

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- *Victory Project*® and *Kachimeshi*® websites (Japanese)
- "AJINOMOTO×SPORTS" (Japanese)
- *Kachimeshi*® Recipe (Japanese)

### ● Meal suggestions, information provision

	Initiatives
Japan	<ul style="list-style-type: none"> <li>· <i>Kachimeshi</i>® · <i>Victory Project</i>® (collaboration with JOC and JPC) · <i>Love Vege</i>® (project to promote vegetable consumption) · "Salt reduction / Optimal salt" · Food education</li> <li>· Measures to address and undernutrition among young women and seniors · <i>AminoIndex</i>™</li> </ul>
Southeast Asia	<ul style="list-style-type: none"> <li>· Nutritionally balanced meal planning · Food education and school lunch assistance · <i>Kachimeshi</i>®</li> <li>· Supporting top athletes</li> </ul>
North America	<ul style="list-style-type: none"> <li>· Promoting reduction of salt with umami · Providing information on medical foods (food therapy)</li> </ul>
South America	<ul style="list-style-type: none"> <li>· Promoting reduction of salt with umami · <i>Kachimeshi</i>® · <i>Victory Project</i></li> </ul>
Europe/Africa	<ul style="list-style-type: none"> <li>· Disseminating information on initiatives to address undernutrition</li> </ul>

## TOPIC

### Meeting with opinion leaders to end malnutrition in Asia

Ajinomoto Co., Inc. is the only Japanese corporate member of the SUN Business Network (SBN), a network of businesses that are part of Scaling Up Nutrition (SUN), a global movement to end malnutrition led by countries and supported by the UN, civic groups, and businesses. The Company also voluntarily participates as a member of the SBN Advisory Group.

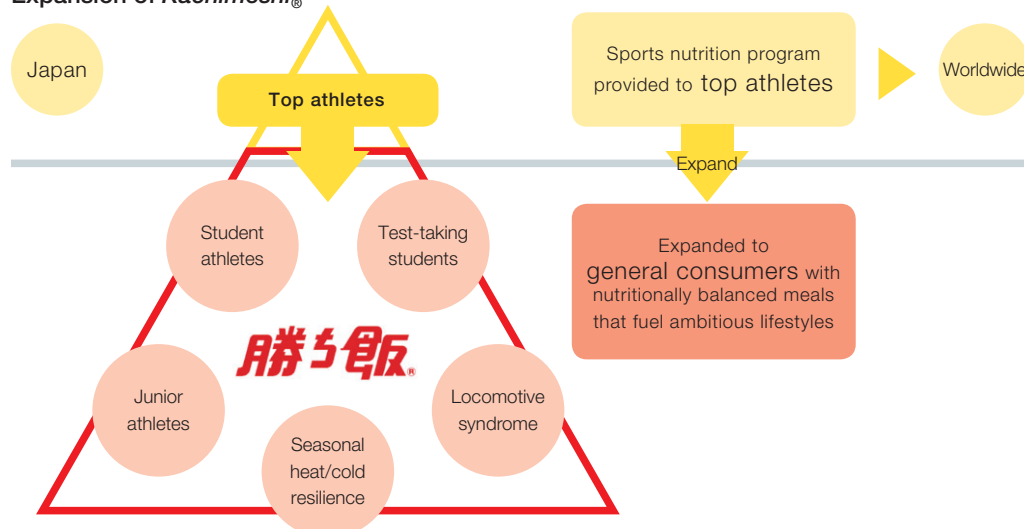
At the SBN Asia Country Gathering held in February 2019, the Company shared examples of Ajinomoto Group initiatives in nutrition improvement and talked with opinion leaders from across the region.

### Support for healthy living and conditioning with *Kachimeshi*®

Since 2003, Ajinomoto Co., Inc. has provided conditioning support in the form of food and amino acids to world-class athletes through the *Victory Project*®, a partnership with the Japanese Olympic Committee. The Company has concentrated this knowledge into *Kachimeshi*® for general consumers in Japan. This program supports healthy living and conditioning by sharing health and nutrition information as well as easy, delicious meal plans arranged by theme at stores of major retailers, restaurants, and company cafeterias.

Outside Japan, in fiscal 2018, the Ajinomoto Group started nutrition support activities for top athletes in Southeast Asia, and entered into partnership with the Brazilian Olympic Committee. The Group will support top athletes in each country with a *Kachimeshi*® program adapted to local ingredients and dietary culture.

### Expansion of *Kachimeshi*®



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### Performance

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#### Support for national nutrition initiative in the Philippines

In 2018, AJINOMOTO PHILIPPINES CORPORATION (APC) developed a two-week menu consisting of 37 recipes as a part of *Pinggang Pinoy*®, a nutrition improvement initiative of the Philippine government and initiated an education program “*Mag-Pinggang Pinoy Tayo!*” In addition, APC developed 40 nutritionally balanced healthy recipes that incorporate food groups recommended in the government dietary standards.

The initiatives began by extracting the most popular foods from those prepared and eaten in the Philippines and then identifying through analysis those nutrients that tend to be under and overconsumed relative to national dietary standards. The nutritional analysis utilized a-Menu, the Ajinomoto Group’s own database on local daily meals and nutritional balance data. Based on the analysis, the company supports the government initiative by developing delicious, nutritionally balanced, affordable and easy-to-cook recipes and communicating through social media and product packages ways consumers can solve nutritional issues while enjoying their daily meals.



Recipe book

### TOPIC

#### Nutritionally balanced meal ideas for every region

- Ajinomoto Co., Inc.’s Tokyo Branch is partnering with the local government (Shinjuku City, Tokyo) and retailers to suggest *Kachimeshi*® meals targeting a higher intake of vegetables for city residents. In fiscal 2018, in addition to these recipe suggestions, the Company also held a locomotive syndrome screening event at supermarkets.
- Ajinomoto (Malaysia) Berhad encourages vegetable intake and low sodium diet among consumer by using umami seasoning *AJI-NO-MOTO*® in various promotional activities such as “Mix, Mix, Ready” campaigns and scientific exhibition to promote healthy living.
- AJINOMOTO CO., (THAILAND) LTD. published cookbooks for food distributors and consumers, offering ideas for preparing easy, nutritious recipes (number of subscribers: 13,000).



Japan



Malaysia



Thailand

## Contribution to Health and Nutritional Issues

### Performance

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### Efforts to Resolve Excessive Intake

#### Salt reduction

The Ajinomoto Group offers products and recipes that use umami to help consumers reduce their salt intake while still enjoying the deliciousness and satisfaction of food.

In 2018, *Ajinomoto KK Consommé (low-salt)* won the gold award in the 4th Reduced-Salt Food Product Awards<sup>[1]</sup> hosted by the Japanese Society of Hypertension (JSH). Since 2014, Ajinomoto Co., Inc. has been partnering with local government and distributors to promote reduced and proper salt intake in Japan's Tohoku region. Iwate Prefecture, where the Company promotes reduced-salt products at stores and holds salt-reduction seminars for dieticians and others on Salt Reduction / Optimal Salt Day each month, has reduced salt intake by 10 to 20% over a four-year period (2012, 2016 National Health and Nutrition Survey). This salt-reduction initiative with government and distributors is being expanded to 32 prefectures, with the suggestion of reduced-salt recipes using local ingredients and salt-reduction seminars serving to raise awareness in each community.

[1] Awarded to reduced-salt food products listed on the JSH website that are recognized as making an outstanding contribution to reduced salt intake.

#### Sugar reduction

The Ajinomoto Group has utilized its amino acid production technologies in the use of two amino acid sweeteners, aspartame and advantame, which are roughly 200 and 20,000-40,000 times sweeter than sugar, respectively. Selective use of high-intensity sweeteners can meet consumers' sugar-reduction needs without sacrificing the taste of sweetness, and the Group provides these sweetness applications to businesses across the food and beverage industry. The Group also markets products developed to support sugar reduction and appropriate sugar intake. These include *Pal Sweet*®, a smooth-tasting low-calorie sweetener with zero sugar, *Refresco FIT*, a powdered juice that uses aspartame and is sold in Brazil and *PAL SWEET DIET*® for B to B that enhances the taste of food with natural sweetness.

#### Fat reduction

The Ajinomoto Group has identified substances that impart a rich taste and deep flavor to cooking, and calls this function "kokumi." It is increasingly understood that kokumi serves to compensate for the sensation of fat in foods. Utilizing this function, the Group has developed and markets *Pure Select*®, *Koku Uma*®, *Mayonnaise*, which has the same rich taste as regular mayonnaise due to a proprietary manufacturing method and 65% fewer calories (compared to the Company's regular mayonnaise), as well as a low-fat-type *Marim*® creaming power with 50% less fat.

## Contribution to Health and Nutritional Issues

### Performance

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► The Ajinomoto Foundation

► Sustainability Data Book 2018 P26

### Efforts to End Malnutrition

#### Contribution to nutritional issues in infants and toddlers

The Ajinomoto Group is helping to eliminate malnutrition in weaning children in the Republic of Ghana through donation to the Ajinomoto Foundation's Ghana Nutrition Improvement Project.

#### Contribution to nutritional issues from early childhood to adolescence

The Ajinomoto Group is actively working to resolve the nutritional issues of children and adolescents in many countries and regions.

In Vietnam, many children suffer from stunted growth and low body weight especially in rural areas, while a growing number of children in urban areas are overweight and obese. To resolve these issues, AJINOMOTO VIETNAM CO., LTD. launched the School Meal Project in 2012 to apply ideas from Japan's school lunch system. Working with central government ministries, including the Ministry of Education and Training, and the Ministry of Health, the company has been carrying out a range of activities to deploy well-balanced school meals nationwide. The project has developed and provided school-meal menu books and food and nutrition education materials; developed and implemented a menu-making software (adopted in 3,048 schools in fiscal 2018); set up model kitchens which has accepted tours from over 500 schools and organizations with over 1,700 guests from all over Vietnam. The project offered nutritionally balanced school meals to 1.286 million elementary school children by the end of fiscal 2018.

In Indonesia, the high percentage of children with low body weight, stunted growth and anemia is a serious social problem. PT AJINOMOTO INDONESIA implemented a school meal project in partnership with the Department of Nutrition at Institut Pertanian Bogor University. The ten-month program provided nutritionally-balanced school lunches and taught diet and nutrition to teenage students, and has led to more balanced nutritional intakes, lifestyle changes and the improvement of anemic conditions of the students.



(left)  
Children eating school lunch (Vietnam)  
(right)  
Model kitchen (Vietnam)



Students eating school lunch (Indonesia)

#### Dealing with nutritional issues in young women (Japan)

In Japan, weight loss has become noticeably more common among women in their 20s and 30s. Unhealthy weight loss has been linked to poor health, risk of obesity in future offspring, risk of diabetes due to insufficient muscle mass and risk of falling and bone fracture in old age. To address the nutritional issues in young women, Ajinomoto Co., Inc. has been conveying the importance of eating a well-balanced diet to professionals at conferences and seminars.



Lunchon seminar of the Japan Academy of Midwifery

#### Nutrition seminar for midwife (Indonesia)

PT AJINOMOTO INDONESIA, Indonesia Midwives Association and the Indonesian Association of Fitness and Sports Nutritionist jointly hosted nutrition seminars for midwife. The six seminars attended by 1,500 women discussed balanced nutrition and food safety for pregnant women, MSG safety regulation and the role of midwife in the first 1,000 days of life.



Nutrition seminar for midwife



## Contribution to Health and Nutritional Issues

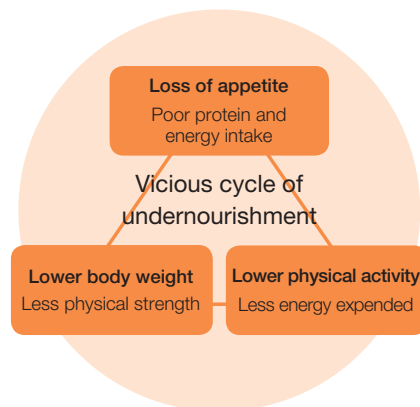
### Performance

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#### Dealing with nutritional issues in seniors (Japan)

Seniors may not be able to eat adequately due to declining physical functions and loss of appetite as they age. Less food intake causes body weight to decrease and muscular and physical strength to deteriorate, which may then lead to lower physical activity, less appetite and a vicious cycle of undernourishment. To prevent this, Ajinomoto Co., Inc. leverages its protein and amino acid nutrition expertise, and strives to publicly disseminate nutritional knowledge to people with health problems. The Company will continue to partner with specialists, providing information for immediate use to healthcare providers, registered dietitians and pharmacists as guidance tools as well as conducting training to foster deeper understanding.

#### Vicious cycle of undernourishment

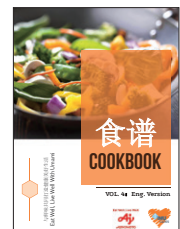


#### Three keys to prevent undernourishment



#### Elderly Dietary Improvement Project (Malaysia)

Ajinomoto (Malaysia) Berhad partnered with the International Medical University to promote healthy dietary intake that enhance the well-being of elderly people. Fifty-four elderly people participated in the program which enabled them to enjoy delicious and balanced meals with lower sodium intake through umami application. In addition, two cookbooks which contains 56 nutritionally-balanced and low sodium menus, each with 45% less sodium were created for the seniors' continuous usage.



#### Collaboration to support local health (Japan)

In collaboration with the local government and drugstores, Ajinomoto Co., Inc. is working to improve the nutrition of seniors. Using the Eat Well Check Sheet 10 developed internally, the Company analyzes the number of checks and responses to a questionnaire on dietary lifestyle, offers appropriate advice from registered dietitians based on the results, and suggests appropriate products to support the health of the elderly.



Eat Well Check Sheet 10

### TOPIC

#### Distribute the latest food and health topics to nutrition experts (Japan)

Ajinomoto Co., Inc. released its food and health communication website "Ajicollab" for dietitians and registered dietitians in April 2019. The Company will further promote the dissemination and enlightenment of health and nutritional knowledge, by disseminating information on food and amino acids based on science in a timely manner.

► Ajicollab  
(Japanese)

## Contribution to Health and Nutritional Issues

### Approach

### Functions and Technological Applications of Amino Acids

Given that umami-producing glutamic acid is an amino acid, the Ajinomoto Group has expanded its business by developing leading-edge bioscience and fine chemical technologies through research centered on amino acids. By providing products and services that utilize the functions of amino acids with unique technological applications, the Group contributes to realize greater wellness for people all around the world.

#### Amino acids and health

Roughly 20% of the human body is composed of proteins. These proteins—more than 100,000 of them—are formed of long, uniquely assembled chains of just 20 kinds of amino acids. For this reason, amino acids serve critical, life-sustaining functions. They are the building blocks of muscle, skin, hair, and blood. They help protect and regulate the body as hormones, enzymes, and antibodies. And they also provide energy for movement.

Of the amino acids that compose proteins, nine cannot be synthesized within the body and must be obtained through food or other means. These “essential amino acids” all have the effect of stimulating muscle development, and leucine in particular promotes protein synthesis and limits protein breakdown by acting as a switch to signal muscle development. Evidence has shown that consuming amino acids high in leucine, even in small amounts, triggers muscle synthesis more than consuming protein itself.

#### Evidence-based nutritional and health value propositions

Based on world-class scientific expertise on amino acids, the Ajinomoto Group develops and markets products that support comfortable lifestyles for consumers, and also provides amino acid formulations and product design solutions to business customers. Adding various amino acid functions to food products broadens the health and nutritional value of amino acids by making it possible for consumers to conveniently obtain amino acids in their diet. The Group calls this B2B2C approach the downstream strategy (brand + inside strategy) and is implementing it in and outside Japan.

Based on this strategy, the Group offers to business customers Amino Acid Prime Mix, a new line of optimally formulated amino acid ingredients for food and beverage products.

### Performance

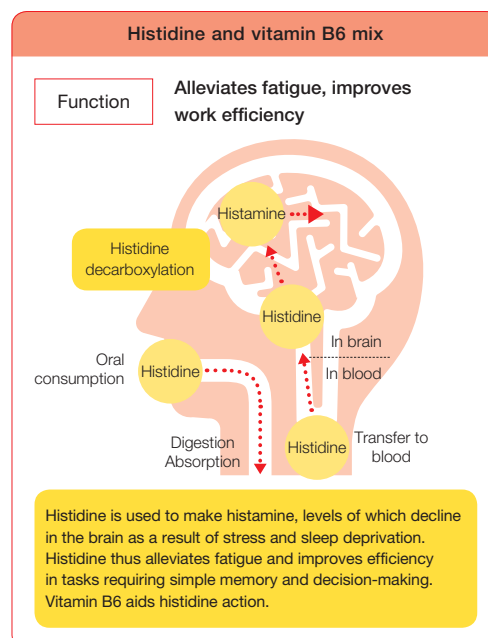
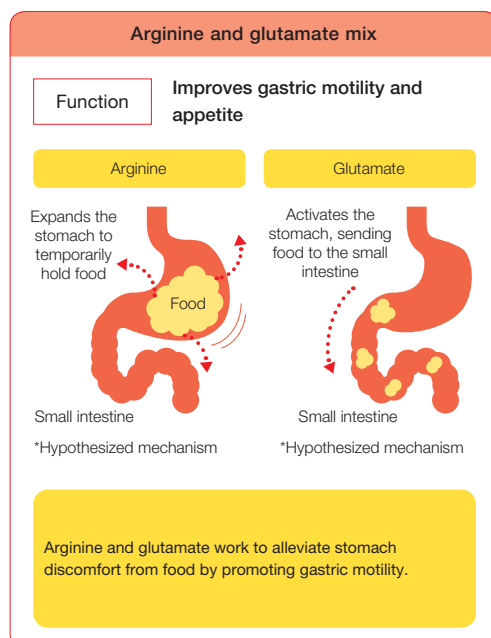
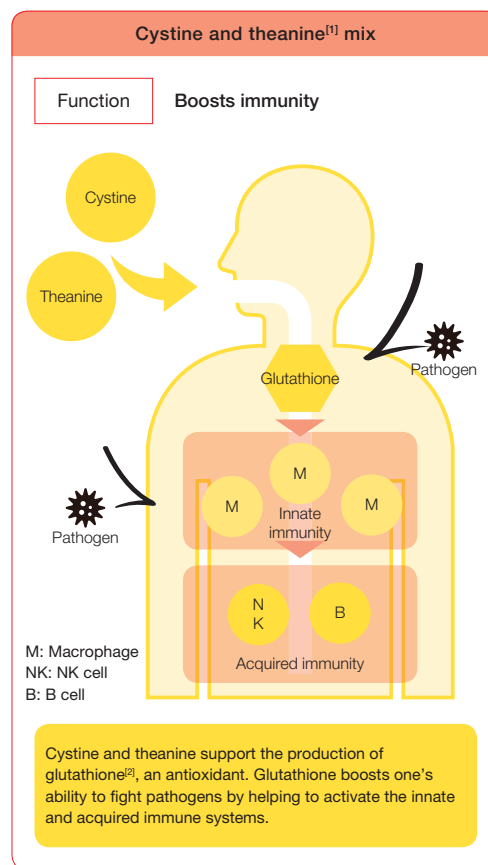
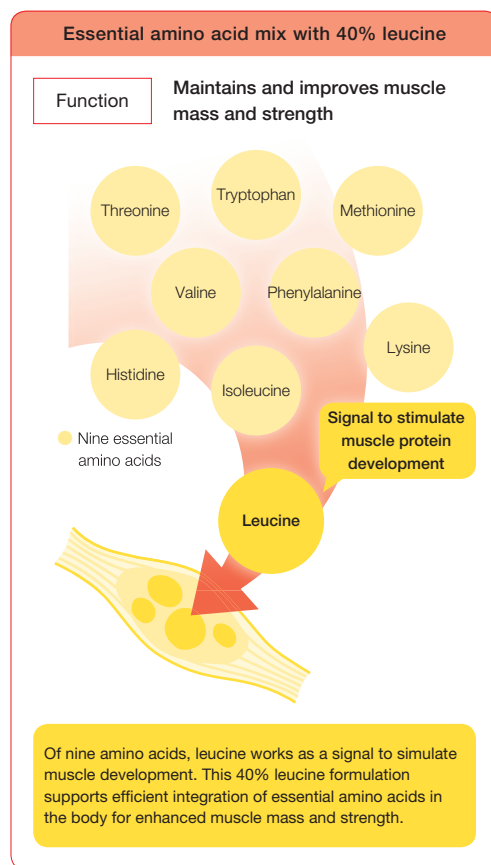
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► Sustainability Data  
Book 2018 P30



## Contribution to Health and Nutritional Issues

### Amino Acid Prime Mix ingredients



- [1] An amino acid found in tea leaves. A derivative of glutamic acid, theanine when consumed is broken down into glutamic acid and ethylamine in the body.
- [2] An important antioxidant for many living organisms, glutathione is formed by joining three amino acids, glutamic acid, cysteine, and glycine, in that order. The amino acid cystine alone increases glutathione levels, but adding the glutamic acid derivative theanine increases glutathione levels even more significantly.

## Contribution to Health and Nutritional Issues

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### TOPIC

#### Improving QOL with medical food products leveraging amino acid functions

Driven by its founding desire to improve nutrition with delicious food, the Ajinomoto Group utilizes its expertise in amino acids and food to contribute to a better quality of life for people facing various health challenges.

Ajinomoto Cambrooke, Inc. (previously Cambrooke Therapeutics, Inc.), manufactures and markets medical food products for patients with amino acid metabolism disorders. Most medical foods offered to patients with metabolism disorders are lacking in palatability and variety. However, since 2017, when Ajinomoto Cambrooke Inc. became a Group subsidiary, the company has been offering a diverse lineup of more delicious and nutrient-dense products by applying the Group's knowledge of the nutritional and physiological functions of amino acids as well as its "deliciousness technologies." In 2018, the company expanded operations from North America and Europe into China.

Since its founding in 2000, Ajinomoto Cambrooke Inc. has emphasized in-person communication between patients, their families and medical experts and has held seminars and other events for patients in the countries and regions where it operates. In fiscal 2018, the company held cooking classes for patients in four major cities in Australia, and around 120 people participated.

By leveraging Group strengths, the Group will continue to bring the joy of food to more patients and help improve QOL for them and their families.



Ajinomoto Cambrooke's medical foods for China



An example of menu made in cooking classes