



# Health and Pharmaceuticals

## The Challenge

**Amino acids are a basic building block of all life forms. Ajinomoto is determined to be more proactive in clarifying the diverse functions and benefits of amino acids in the health and pharmaceutical sectors as well as with people around the world.**

## Supporting Amino Acid Research Worldwide

Amino acids are known to perform a variety of functions in the bodies of all creatures including humans, however, much is yet to be elucidated. Through a deeper understanding of the role of amino acids in biological systems, novel usages for helping recover, maintain, and improve health are expected to be discovered.

In order to contribute to healthy lives by taking advantage of amino acids, the Ajinomoto Group has been conducting research in collaboration with universities and outside research institutions, in addition to in-house activities. Moreover, to further explore the diverse functions of amino acids, the group has been operating the Ajinomoto Amino Acid Research Program (3ARP) since fiscal 2005. 3ARP provides research grants totaling approximately US\$2 million per year worldwide to encourage research of the biological aspects of amino acids.

Through 3ARP, Ajinomoto has been able to support the advancement of research in diverse fields around the world. In addition to the discovery of a novel function of amino acids in controlling blood sugar levels, studies of

functions related to such processes as obesity control, bone formation, and immunity are advancing ahead. Some research results have been published in academic literature, and more discoveries are expected as the program continues.

In addition to applying research results in new product development, the Ajinomoto Group will further encourage the use of amino acids to benefit the health of people around the world.

### Ajinomoto Amino Acid Research Program (3ARP)

1. Application eligibility:  
Investigators of amino acid research from anywhere in the world
2. Reviewing committee:  
Expert scientists in this field  
5 to 8 research grants awarded annually  
(average of 150 applications per year)
3. Support period: 2 years
4. Announcement of research grants:  
*Science* magazine and *Nature* journal of science
5. Web site: [www.3arp.ajinomoto.com](http://www.3arp.ajinomoto.com)

## Amino Acids in Healthcare Foods

Japan's rapidly aging population is raising a variety of issues relating to nutritional support and the improvement of quality of life at medical and nursing care facilities and in at-home care settings. In fact, poor nutrition is often the cause of ailments such as bedsores, as well as the reason behind perpetual fatigue that could lead to a bedridden lifestyle. The Ministry of Health, Labour and Welfare of Japan has warned that nearly 40 percent of elderly hospital inpatients and care facility residents suffer from poor nutrition. Today, there is an immense need for great-tasting science-based nutrition that can be eaten with enjoyment in medical and nursing settings that care for the elderly.

In April 2008, Ajinomoto established Ajinomoto Nutrition Foods Co., Ltd., in order to make use of the know-how it has cultivated in the fields of amino acids, pharmaceuticals, and food to address these issues. The aim of the company is to provide nutritional management support in

healthcare facilities and at-home care settings, through the delivery of products and services that can only come from Ajinomoto. The Ajinomoto Group will continue to strengthen its group-wide efforts in the area of healthcare foods.



### Lysine Project

#### Fighting nutritional problems in developing countries through the power of amino acids

In May 2008, the Europe & Africa Division of Ajinomoto Co., Inc., completed lysine-fortification experiments in a poor, semi-rural area of Ghana, West Africa, as part of a larger Lysine Project. Lysine is an essential amino acid. The goal of these experiments was to demonstrate that lysine fortification can improve nutrition and health in regions where the normal diet is believed to provide insufficient protein. Started in fiscal 2007, the Lysine Project is being conducted jointly with the International Nutrition Foundation, an American NGO working on nutritional problems in developing countries, and with the collaboration of the University of Ghana and other organizations.

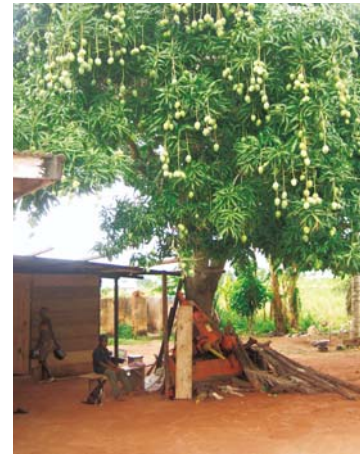
#### Moving toward the realization of lysine-fortified foods

During the course of the lysine-fortification experiments, blood samples were taken and the results are currently being studied. The participants in the experiments were very cooperative and stated during the experiment period that they felt the lysine fortification had improved their health and had the effect of increasing the appetites of their children.

In addition to working on the lysine-fortification experiments, the company's Europe & Africa Division also collaborated with the University of Ghana in conducting a survey to identify what kind of foods could actually be fortified with lysine. In the future, Ajinomoto would like to develop lysine-fortified foods and deliver them to the people who need them for the Lysine Project. Presently, Ajinomoto has started contacting local governments and the United Nations (e.g., the Food and Agricultural Organization of the United Nations [FAO]) with the aim of obtaining their cooperation toward the realization of this goal.



A meeting and seminar at the University of Ghana



A village where the Lysine Project was implemented



Blood samples are taken from a woman to analyze her health status.

Food

Health & pharmaceuticals

Food resources & the environment

Human resources development

Partnerships