

Chair

2.10.2 **Laboratory:** AJINOMOTO Integrative Research for Advanced Dieting

Member: Associate Professor Kondoh, Takashi, Ph.D.

 Assistant Professor Yamazaki, Hanae, Ph.D.; Matsunaga, Tetsuro, Ph.D.

A. Research Activities (20010.4-2011.3)

A-1. Main Subjects

a) Mechanisms of palatability by dried-bonito dashi

“Bonito” is a fish that swims their whole life without taking rest and, therefore they might have some power of inexhaustible energy. Ingestion of dried-bonito dashi is effective for recovery from fatigue, and make skin more beautiful. Such physiological functions might contribute to palatability of dried-bonito dashi on cuisines. We are investigating the mechanisms.

b) Involvement of brain reward circuit activation

We are investigating activation of brain reward circuit by measuring dopamine release in the nucleus accumbens in response to ingestion of dried-bonito dashi in rats.

c) Relationships between dietary habits and autonomic/gastrointestinal functions

We are investigating the contribution of genetic polymorphism, lifestyle-related diseases and food habits on autonomic nervous function in young healthy volunteers. In addition, we are exploring the effects of dried-bonito dashi ingestion on gastric movement and autonomic nervous function.

A-2.Publications and presentations

a) Publications

Books

- Yamazaki H: State of art science to elucidate the genuine taste in Kyoto -Palatability of dried-bonito broth-, Food Chemicals, 26(5): 36-40 (2010).

Original Papers(including book-reviews)

- Kondoh T., M. Kameishi, H.N. Mallick, T. Ono and K. Torii: Lysine and arginine reduce the effects of cerebral ischemic insults and inhibit glutamate-induced neuronal activity in rats. *Front. Integr. Neurosci.* Jun 14, 4:18, 1-10 (2010) .

- Kondoh T., Y. Ueta and K. Torii: Pre-treatment of adrenomedullin suppresses cerebral edema caused by transient focal cerebral ischemia in rats detected by magnetic resonance imaging. *Brain Res. Bull.* 84: 69-74 (2010).

- Mallick H. N., T. Kondoh, H. Nishijo, T. Ono and K. Torii: Glycine enhances glutamate-induced excitation in ventromedial hypothalamic neurons of awake rats. *Indian J. Physiol. Pharmacol.* 54: 355-360 (2010).

Reviews

- Yamazaki H., K. C. Zawulich and W. S. Zawulich: Physiologic implications of phosphoinositides and phospholipase C in the regulation of insulin secretion *J. Nutr. Sci. Vitaminol.* 56: 1-8 (2010).

- Tomoe M., T. Kondoh, and K. Torii: Umami substance suppresses obesity, *Clinical Nutrition*, 117(2), 165-175 (2010).

b) Conference and seminar papers presented

- The 64th Annual Meeting of the Japan Society of Nutrition and Food Science: 2 Presentations

- The 8th International Symposium on Molecular and Neural Mechanisms of Taste and Olfactory Perception (ISMNTOP): 2 Presentations

- The 25th Japanese Spices Research: 1 Presentation

- The 7th ENS Research: 1 Presentation

- The 88th Annual Meeting of the Physiological Society of Japan: 2 Presentations

- Workshop of Osaka Dietetic Association: 1 Presentation

- Seminar at Ajinomoto Pharmaceuticals: 1 Presentation

- Ifia/HFE Japan 2010 seminar: 1 Presentation

- Symposium of Frontier Science Organization at Kanazawa University: 1 Presentation

- The 37th Symposium on Chemistry and Biology: 1 Presentation

- Annual Meeting of the Japan Society for Bioscience, Biotechnology, and Agrochemistry 2011: 2 Presentation

A-3.Off-campus activities 1

Membership in academic societies

- Kondoh, Takashi, Ph.D. : The Japanese Pharmacological Society (academic councilor), The Japanese Association for the Study of Taste and Smell (academic councilor)

A-3.Off-campus activities 2

Research grants

1. Grants-in-aid for Scientific Research(KAKENHI)

- Grant-in-aid for Young Scientists (B) provided by the Ministry of Education, Culture, Sports, Science and Technology, Japan : Yamazaki, Hanae, Ph.D. : The physiological mechanism of rewarding effect of sugar intake in term of energy intake signal

- Grant-in-aid for Young Scientists (B) provided by the Ministry of Education, Culture, Sports, Science and Technology, Japan : Matsunaga, Tetsuro, Ph.D. : Multifaceted assessment of association of autonomic nervous system function with genetic polymorphisms and lifestyle-relayed factors in young Japanese subjects

A-4.International cooperations and overseas activities 1

International joint research, overseas research surveys

- Postingestive effects of dashi (Dr. Ivan E. de Araujo, Yale University, USA)

B.Educational Activities (20010.4-2011.3)

B-1.On-campus teaching

a) Courses given

- Undergraduate level: Pocket Seminar "Integrative Research for Advanced Dieting" (Kondoh, Yamazaki, Matsunaga)
- Graduate level: Biological Food Science (Kondoh), Lecture at the prof. kinsuke Tsuda's laboratory (Matsunaga)

B-2.Off-campus teaching etc.

Part-time lecturer

- Kondoh, Takashi: Nagoya City university School of Medicine (Physiology)

Open lectures, etc.

- Kondoh, Takashi: Workshop of Osaka Dietetic Association, Osaka, Lecturer

- Kondoh, Takashi: Seminar for Academic Prize, Ajinomoto Pharmaceuticals Co., Inc., Lecturer

- Kondoh, Takashi: Symposium on Chemistry and Biology, Japan Society for Bioscience, Biotechnology and Agrochemistry, Kyoto

- Kondoh, Takashi: Top Meeting, Ajinomoto Co., Inc., Sapporo, Lecturer

- Kondoh, Takashi: Top Meeting, Ajinomoto Co., Inc., Nagoya, Lecturer

- Kondoh, Takashi: Top Meeting, Ajinomoto Co., Inc., Fukuoka, Lecturer

- Kondoh, Takashi: Seminar at Kagoshima University, Kagishima University, Lecturer

- Kondoh, Takashi: Seminar at Toyama University, Toyama University, Lecturer

- Yamazaki, Hanae: Ifia/HFE Japan 2010 Seminar, Tokyo, Lecturer

B-3.Overseas teaching 2

Lectures and seminars

- Yamazaki, hanae, Ph.D.

Event of Dashi in Bangkok - An Introductory Guide To Traditional Japanese Cuisine(Open Lecture) :
Kyoto University(Thailand)