



## **Hironori ANDO, Ph.D.**

Professor

Program: Life and Food Sciences

Area: Life Sciences

Sado Marine Biological Station

<http://www.sc.niigata-u.ac.jp/sc/sadomarine/>

### **Professional Expertise**

- 1990 Fellow of the JSPS, Waseda University
- 1991 Postdoctoral fellow, Mitsubishi Kasei Institute of Life Sciences
- 1993 Assistant Professor, Hokkaido University
- 1997-98 Visiting Scientist, University of Toronto
- 2004 Associate Professor, Kyushu University
- 2011 Associate Professor, Niigata University
- 2014 Professor, Niigata University

to date

### **Research Fields of Interest**

Molecular mechanisms of adaptational brain functions have been the focus my research. In particular, I have been interested in neuroendocrine regulation of behavioral and physiological functions in diadromous migratory fish, such as salmonids and puffer fish. These fishes provide excellent animal model for investigating the neuroendocrine mechanisms of coordinated regulation of innate behavior and physiological function, both of which are fundamental to adaptation to environmental conditions. I have been doing research in the neuroendocrine regulation of spawning migration, reproduction, growth, osmoregulation, stress response and biological rhythm of Pacific salmon, grass and tiger puffers.

### **Education**

- 1990: Ph.D. in Animal physiology, Graduate School of Science and Technology, Waseda University, Japan
- 1987: M.S. in Animal physiology, Graduate School of Science and Technology, Waseda University, Japan
- 1985: B.S. in Biology, Waseda University, Japan

### **Professional Societies and Activities**

1. The Japan Society for Comparative Endocrinology
2. The Zoological Society of Japan
3. The Japan Society of Pituitary Research
4. The Asia and Oceania Society for the Comparative Endocrinology
5. The Molecular Biology Society of Japan
6. Society for Neuroscience
7. The Japanese Society of Fisheries Science

## Awards

1. Zoological Science Award, 2009
2. Zoological Science Award, 2011

## Major Publications

### Papers

- [1] "Diurnal and circadian oscillations in expression of kisspeptin, kisspeptin receptor and gonadotrophin-releasing hormone 2 genes in the grass puffer, a semilunar-synchronised spawner.", *Journal of Neuroendocrinology*, (in press), 2014
- [2] "Identification and gene expression analyses of ghrelin in the stomach of Pacific bluefin tuna (*Thunnus orientalis*).", *General and Comparative Endocrinology*, Vol.178, pp.89 – 97, 2012
- [3] "Regulation of temporal and spatial organization of newborn GnRH neurons by IGF signaling in zebrafish", *Journal of Neuroscience*, Vol. 31, pp.11814 – 11824, 2011
- [4] "Neuropeptide Y in tiger puffer (*Takifugu rubripes*): distribution, cloning, characterization and mRNA expression responses to prandial condition.", *Zoological Science*, Vol. 28, pp.882-890, 2011
- [5] "Synchronised expressions of LPXRFamide peptide and its receptor genes: seasonal, diurnal and circadian changes during spawning period in grass puffer.", *Journal of Neuroendocrinology*, Vol.23, pp.39 – 51, 2011
- [6] "Expression of GnRH genes is elevated in discrete brain loci of chum salmon before initiation of homing behavior and during spawning migration.", *General and Comparative Endocrinology*, Vol.168, pp.356 – 368, 2010
- [7] "Elevation of Kiss2 and its receptor gene expression in the brain and pituitary of grass puffer during the spawning season.", *General and Comparative Endocrinology*, Vol.169, pp.48 – 57, 2010
- [8] "Differential expression of three types of gonadotropin-releasing hormone genes during the spawning season in grass puffer, *Takifugu niphobles*.", *General and Comparative Endocrinology*, Vol.167, pp.153 – 163, 2010
- [9] "Aggregating behavior of the grass puffer, *Takifugu niphobles*, observed in aquarium during the spawning period.", *Zoological Science*, Vol.27, pp.559 – 564, 2010
- [10] "Changes in gene expression for GH/PRL/SL family hormones in the pituitaries of homing chum salmon during ocean migration through upstream migration.", *General and Comparative Endocrinology*, Vol.166, pp.537 – 548, 2010
- [11] "Changes in the plasma levels of insulin-like growth factor-I from the onset of spawning migration through upstream migration in chum salmon.", *General and Comparative Endocrinology*, Vol.165, pp.237 – 243, 2010
- [12] "Osmoregulatory responses of expression of vasotocin, isotocin, prolactin and growth hormone genes following hypoosmotic challenge in a stenohaline marine teleost, tiger puffer (*Takifugu rubripes*).", *Comparative Biochemistry and Physiology, Part A*, Vol.154, pp.353 – 359, 2009
- [13] "Synchronized diurnal and circadian expressions of four subtypes of melatonin receptor genes in the diencephalon of a puffer fish with lunar-related spawning cycles.", *Neuroscience*

*Letters*, Vol.462, pp.58 – 63, 2009

[14] "Relationship between melanin-concentrating hormone- and neuropeptide Y-containing neurons in the goldfish hypothalamus.", *Comparative Biochemistry and Physiology, Part A*, Vol.153, pp.3 – 7, 2009

[15] "Stimulatory effects of insulin-like growth factor 1 on expression of gonadotropin subunit genes and release of follicle-stimulating hormone and luteinizing hormone in masu salmon pituitary cells early in gametogenesis.", *Zoological Science*, Vol.25, pp.88 – 98, 2009

[16] "Diurnal expressions of four subtypes of melatonin receptor genes in the optic tectum and retina of goldfish.", *Comparative Biochemistry and Physiology, Part A*, Vol.152, pp.219 – 224, 2009

[17] "Activity of the pituitary-gonadal axis is elevated prior to the onset of spawning migration of chum salmon.", *Journal of Experimental Biology*, Vol.212, pp.56 – 70, 2009

[18] "Inhibitory effect of chicken gonadotropin-releasing hormone II on food intake in the goldfish, *Carassius auratus*.", *Hormones and Behavior*, Vol.54, pp.83 – 89, 2008

[19] "Structure of neurohypophysial hormone genes and changes in the levels of expression during spawning season in grass puffer (*Takifugu niphobles*).", *General and Comparative Endocrinology*, Vol.155, pp.456 – 463, 2008

### Book Chapters

- [1] Ando, H., Ban, M., McCormick, S.D., Urano, A. 2007. "Endocrine disruption in aquatic animals: Mechanisms of action of xenoestrogens in a fish model." *Ecotoxicology and Environmental Sciences*, acb publications, pp.117-125
- [2] Urano, A., Ando, H. 2007. "Molecular aspects of reproductive neuroendocrinology in salmon." *Hormone Biotechnology*, Daya Publishing House, pp.226-237.