

CURRICULUM VITAE

IDENTICAL INFORMATION

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EDUCATION

April/1987-March/1991 School of Food and Nutritional Sciences,
University of Shizuoka
April/1995-March/1998 Graduate School of Nutritional and Environmental
Sciences, University of Shizuoka

Awarded the degree of PhD in food and nutritional
sciences for a thesis entitled "Cellular mechanisms of
small intestinal nutrient transport". Work supervised by
Prof. Yuichi Suzuki.

EMPLOYMENT

June/1991-May/1995 Research Assistant Professor, Laboratory of
Physiology, School of Food and Nutritional Sciences,
University of Shizuoka (1991-1993 Prof. Takeshi
Hoshi, 1993-1995 Prof. Yuichi Suzuki)

April/1998-present Research Assistant Professor, Laboratory of
Physiology School of Food and, Nutritional Sciences,
University of Shizuoka, (Prof. Yuichi Suzuki)

June/1999-March/2002 Research fellow, Cell Biology Program,
The Hospital for Sick Children, Canada,
(Prof. Sergio Grinstein)

April/2002- Sept/2010 Research Assistant Professor, Laboratory of Physiology
School of Food and, Nutritional Sciences,
University of Shizuoka, (Prof. Yuichi Suzuki)

Oct/2010- March/2012 Assistant Professor, Laboratory of Physiology
School of Food and, Nutritional Sciences,
University of Shizuoka

April/2012- Present Associate Professor, Laboratory of Physiology
School of Food and, Nutritional Sciences,
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MEMBERSHIPS

The Japanese Society of Physiology
The Japanese Biochemical Society
The Japanese Society of Digestion and Absorption
The American Physiological Society

PUBLICATIONS

1. Nakamura C, Ishizuka N, Yokoyama K, Yazaki Y, Tatsumi F, Ikumi N, Hempstock W, Ikari A, Yoshino Y and Hayashi H; Regulatory mechanisms of glucose absorption in the mouse proximal small intestine during fasting and feeding, *Scientific Reports* 13, 10838, 2023
2. Hempstock W, Nagata N, Ishizuka N and Hayashi H; The effect of claudin-15 deletion on cationic selectivity and transport in paracellular pathways of the cecum and large intestine, *Scientific Reports* 13, 6799, 2023

3. Ishizuka N, Nagahashi M, Mochida Y, Hempstock W, Nagata N and Hayashi H; Na⁺-dependent intestinal glucose absorption mechanisms and its luminal Na⁺ homeostasis across metamorphosis from tadpoles to frogs, *American Journal of Physiology*, 324, R645-R655, 2023
4. Tanifuji K, Shiozaki Y, Koike M, Uga M, Komiya A, Miura M, Higashi A, Shimohata T, Takahashi A, Ishizuka N, Hayashi H, Ichida Y, Ohtomo S, Horiba N, Miyamoto K and Segawa H; Effects of EOS789, a novel pan-phosphate transporter inhibitor, on phosphate metabolism : Comparison with a conventional phosphate binder. *The Journal of Medical Investigation*, 70, 260-270, 2023
5. Okamoto E, Matsuda S, Yoshino Y, Morikawa Y, Suenami K, Tabuchi Y, Matsunaga T, Hayashi H and Ikari A; Increase in Paracellular Leakage of Amino Acids Mediated by Aging-Induced Reduction of Claudin-4 Expression, *The Journal of Nutrition*, 153, 3360-3372, 2023
6. Furuse M, Nakatsu D, Hempstock W, Sugioka S, Ishizuka N, Furuse K, Sugawara T, Fukazawa Y and Hayashi H, Reconstitution of functional tight junctions with individual claudin subtypes in epithelial cells. *Cell Structure and Function*, 48, 1-17, 2023
7. Hempstock W, Ishizuka N, Hayashi H : Functional Assessment of Intestinal Tight Junction Barrier and Ion Permeability in Native Tissue by Ussing Chamber Technique. *J Vis Exp.*, 171. 2021
8. Hayashi H, Nagai H, Ohba K, Soleimani M and Suzuki Y: Segmental differences in Slc26a3-dependent Cl⁻ absorption and HCO₃⁻ secretion in the mouse large intestine in vitro in Ussing chamber., *J Physiol. Sci.*, 71:5, 2021
9. Hirota C, Takashina Y, Ikumi N, Ishizuka N, Hayashi H, Tabuchi Y, Yoshino Y, Matsunaga T, and Ikari A : Inverse regulation of claudin-2 and -7 expression by p53 and hepatocyte nuclear factor 4α in colonic MCE301 cells, *TISSUE BARRIERS*, 9, 1860409, 2021
10. Hempstock W, Sugioka S, Ishizuka N, Sugawara T, Furuse M, Hayashi H: Angulin-2/ILDR1, a tricellular tight junction protein, does not affect water transport in the mouse large intestine. *Scientific Reports*, 10, 10374 – 10374, 2020
11. Takashina Y, Ishizuka N, Ikumi N, Hayashi H, Manabe A, Hirota C, Tabuchi Y, Matsunaga T, Ikari A: Upregulation of Claudin-7 Expression by Angiotensin II in Colonic Epithelial Cells of Mice Fed with NaCl-Depleted Diets. *Int J Mol Sci.*, 21, 1442, 2020
12. Nakayama M, Ishizuka N, Hempstock W, Ikari A, Hayashi H.: Na⁺-Coupled Nutrient Cotransport Induced Luminal Negative Potential and Claudin-15 Play an Important Role in Paracellular Na⁺ Recycling in Mouse Small Intestine. *Int J Mol Sci*, 21, 376, 2020
13. Ishizuka N, Hempstock W, Hisayoshi Hayashi H.: The Mode of Action of NHE3 Inhibitors in Intestinal Na⁺ Absorption. *Gastroenterology Medicine & Research* 4, 297 - 301, 2019
14. Ishizuka N, Nakayama M, Watanabe M, Tajima H, Yamauchi Y, Ikari A, Hayashi H.: Luminal Na⁺ homeostasis has an important role in intestinal peptide absorption in vivo. *Am J Physiol*, 296, G799-809, 2018

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Review

1. Hayashi H, Szászi K, Grinstein S. Multiple modes of regulation of Na⁺/H⁺ exchangers. *Ann N Y Acad Sci*. 2002, 976:248-58.