

# Yuji Hara, Ph.D.

Professor

Department of Integrative physiology  
School of Pharmaceutical Sciences, University of Shizuoka  
52-1 Yada, Suruga-ku, Shizuoka 422-8526, Japan

Phone: +81-54-264-5733; Fax: +81-54-264-5909

Email: yhara@u-shizuoka-ken.ac.jp



## **Education and professional positions:**

### **Education**

1997: B.S. and Pharmacist certification

Division of Bioorganic Chemistry, Laboratory of Bioactive Chemistry, Graduate School of Pharmaceutical Sciences, Kyoto University, Japan.

1999: Master's Course

Division of Bioorganic Chemistry, Laboratory of Bioactive Chemistry, Graduate School of Pharmaceutical Sciences, Kyoto University, Japan

2002: Doctoral degree

Division of Molecular and Cellular Physiology, School of Life Science, The Graduate University for Advanced Studies, Japan. (Thesis supervisor: Dr. Yasuo Mori)

### **Professional Activities**

2002-2003 : Postdoctoral fellow

Division of Molecular and Cellular Physiology, Center for Integrative Bioscience, Japan (Mentor: Dr. Yasuo Mori)

2003-2005 : Assistant Professor

Laboratory of Molecular Biology, Department of Synthetic Chemistry and Biological Chemistry, Graduate School of Engineering, Kyoto University, Japan (Mentor: Dr. Yasuo Mori)

2005-2012: Postdoctoral fellow; 2012: Research associate

The Campbell laboratory, Howard Hughes Medical Institute, and the University of Iowa, Roy J. and Lucille A. Carver College of Medicine, Department of Molecular Physiology & Biophysics (Mentor: Dr. Kevin P. Campbell, Ph.D.)

2012-2013: Tenure-track associate professor

Tokyo Women's Medical University Institute for Integrated Medical Sciences (TIIMS),

2013-2021: Associate professor

Department of Synthetic Chemistry and Biological Chemistry, Graduate School of Engineering, Kyoto University

2021-Present: Professor

Department of Integrative physiology, School of Pharmaceutical Sciences, University of Shizuoka

### **Scientific interests:**

1. Roles of membrane proteins activated by physical force in muscle stem cells
2. Development of "mechano-medicine" for neuromuscular diseases
3. Role of phospholipid translocases in physiological systems

### **Selected publications:**

Tsuchiya M, \*Hara Y, Okuda M, Itoh K, Nishioka R, Shiomi A, Nagao K, Mori M, Mori Y, Ikenouchi J, Suzuki R, Tanaka M, Ohwada T, Aoki J, Kanagawa M, Toda T, Nagata Y, Matsuda R, Takayama Y, Tominaga M, \*Umeda M. Cell surface flip-flop of phosphatidylserine is critical for PIEZO1-mediated myotube formation. *Nat. Commun.*, 9, 2049 (2018).

Okuma H, Saito F, Mitsui J, Hara Y, Hatanaka Y, Ikeda M, Shimizu T, Matsumura K, Shimizu J, Tsuji S, Sonoo M. Tubular aggregate myopathy caused by a novel mutation in the cytoplasmic domain of STIM1. *Neurology Genet.* e50 (2016).

Endo Y, Noguchi S, Hara Y, Hayashi YK, Motomura K, Miyatake S, Murakami N, Tanaka S, Yamashita S, Kizu R, Bamba M, Goto YI, Matsumoto N, Nonaka I, Nishino I. Dominant mutations in ORAI1 cause tubular aggregate myopathy with hypocalcemia via constitutive activation of store-operated Ca<sup>2+</sup> channels. *Hum. Mol. Genet.* 24, 637-648 (2015).

Inamori KI, Willer T, Hara Y, Venzke D, Anderson ME, Clarke NF, Guicheney P, Bönnemann CG, Moore SA, Campbell KP. Endogenous Glucuronyltransferase Activity of LARGE or LARGE2 Required for Functional Modification of  $\alpha$ -dystroglycan in Cells and Tissues. *J. Biol. Chem.* 289, 28138-28148 (2014).

Inamori K, Yoshida-Moriguchi T, Hara Y, Anderson ME, Yu L, Campbell KP. Dystroglycan function requires xylosyl- and glucuronyltransferase activities of LARGE. *Science* 335, 93-96 (2012).

Hara Y#, Kanagawa M#, Kunz S, Yoshida-Moriguchi T, Satz JS, Kobayashi YM, Zhu Z, Burden SJ, Oldstone MB, \*Campbell KP. Like-acetylglucosaminyltransferase (LARGE)-dependent modification of dystroglycan at Thr-317/319 is required for laminin binding and arenavirus infection. *Proc. Natl. Acad. Sci. USA.* 108, 17426-17431 (2011). (#: Co-first authors)

Hara Y#, Balci-Hayta B#, Yoshida-Moriguchi T, Kanagawa M, Beltrán-Valero de Bernabé D, Gündeşli H, Willer T, Satz JS, Crawford RW, Burden SJ, Kunz S, Oldstone MB, Accardi A, Talim B, Muntoni F, Topaloglu H, Dinçer P, \*Campbell KP. A dystroglycan mutation associated with limb-girdle muscular dystrophy. *N. Engl. J. Med.* 364, 939-946 (2011). (#: Co-first authors)

Yamamoto S, Shimizu S, Kiyonaka S, Takahashi N, Wajima T, Hara Y, Negoro T, Hiroi T, Kiuchi Y, Okada T, Kaneko S, Lange I, Fleig A, Penner R, Nishi M, Takeshima H, Mori Y. TRPM2-mediated Ca<sup>2+</sup> influx induces chemokine production in monocytes that aggravates inflammatory neutrophil infiltration. *Nat. Med.* 14, 738-747 (2008).

Yoshida T, Inoue R, Morii T, Takahashi N, Yamamoto S, Hara Y, Tominaga M, Shimizu S, Sato Y, Mori Y. Nitric oxide activates TRP channels by cysteine S-nitrosylation. *Nat. Chem. Biol.* 11, 596-607 (2006).

Togashi K, Hara Y, Tominaga T, Higashi T, Konishi Y, Mori Y, Tominaga M. TRPM2 activation by cyclic ADP-ribose at body temperature is involved in insulin secretion. *EMBO J.* 25, 1804-1815 (2006).

Nishida M, Sugimoto K, Hara Y, Mori E, Morii T, Kurosaki T, and Mori Y. Amplification of receptor signaling by Ca<sup>2+</sup> entry-mediated translocation and activation of phospholipase C $\gamma$ 2 in B lymphocytes. *EMBO J.* 22, 4677-4688 (2003).

Hara Y, Wakamori M, Ishii M, Maeno E, Nishida M, Yoshida T, Yamada H, Shimizu S, Mori E, Kudoh J, Shimizu N, Kurose H, Okada Y, Imoto K, and Mori Y. LTRPC2 Ca<sup>2+</sup>-permeable channel activated by changes in redox status confers susceptibility to cell death. *Mol. Cell.* 9, 163-173 (2002).

**Book Chapter**

Hara Y, Campbell KP. Dystroglycan: An Extracellular Matrix Receptor That Links to the Cytoskeleton, *Glycoscience: Biol. Med.* (Springer, invited book chapter), 1245-1251 (2014).