

## COVERSHEET

### 1. Personal details:

**First / Surnames:** Yuichi TAKEUCHI, Ph.D.  
**Nationality:** Japan  
**Place of Birth:** Aichi, Japan  
**Date of Birth** 4<sup>th</sup> September 1982  
**Gender:** Male  
**Office Address:** MTA-SZTE 'Lendület', Oscillatory Neuronal Networks Research Group  
 University of Szeged, Department of Physiology 10 Dóm sqr, Szeged 6720,  
 Hungary  
**Phone:** +36-62-545-373  
**Fax:** +36-62-545-842  
**E-mail:** takeuchi.yuichi@med.u-szeged.hu  
**Web site:** <https://ytake.org/>

### *Current Appointment*

Sep 1 <sup>st</sup> , 2015 – present	Research Assistant Professor Department of Physiology, Faculty of Medicine, University of Szeged, Hungary
Sep 1 <sup>st</sup> , 2015 – present	Adjunct Lecturer Hungarian Medical Universities
Apr 1 <sup>st</sup> , 2018 – present	Research Fellow Department of Neuropharmacology, Graduate School of Pharmaceutical Sciences, Nagoya City University

### 2. Education/Qualifications

#### *Degrees*

2005	B.S. in Pharmaceutical Science Faculty of Pharmaceutical Sciences, Nagoya City University, Nagoya, Japan
2007	M.S. in Pharmaceutical Science Graduate School of Pharmaceutical Sciences, Nagoya City University, Nagoya, Japan
2010	Ph.D. in Science Department of Physiological Sciences, School of Life Science, The Graduate University for Advanced Studies (SOKENDAI), Hayama, Japan

*Licensures*

Nov 28 <sup>th</sup> , 2005	Pharmacist	Japan, No. 399397
Jan 1 <sup>st</sup> , 2016	Physiology Educator	Physiological Society of Japan, No. 160018
Jan 26 <sup>th</sup> , 2017	FELASA C certificate	Federation of European Laboratory Animal Science Associations, No. 63/2017, 035/14
Jan 2 <sup>nd</sup> 2018	Certified Peer Reviewer	Publons Academy

**3. Professional Appointments**

2007–2008	Research Assistant	National Institute of Physiological Sciences, Okazaki, Japan
2009–2010	Research Fellow	Japan Society for the Promotion of Science, Tokyo, Japan
2010–2015	Assistant Professor	Tokyo Women's Medical University, Tokyo, Japan
2016	Research Fellow	The Uehara Memorial Foundation, Japan

**4. Other Appointments and Affiliations:***Professional Societies*

2005–present	Japanese Pharmacological Society	Member
2008–present	The Japan Neuroscience Society	Member
2010–present	The Physiological Society of Japan	Member (2010 – 2020) Councilor (2020–present)
2010–present	Society for Neuroscience	Member
2012–present	Japanese Neural Network Society	Member
2015–present	Asia Pacific Neural Network Society	Member

*Professional Bodies*

Mar 2020–present	The Physiological Society of Japan	Board Member
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**5. Prizes, Awards and other Honors**

2006	First prize of the entrance exam of the Department of Physiological Sciences, School of
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Life Sciences, The Graduate University for Advanced Studies

- 2007 A total exemption from repayment of two-year scholarship by outstanding results and fulfills, Japan Student Services Organization
- 2009 Research Fellowship, Japan Society for the Promotion of Science
- 2009 A partial exemption from repayment of two-year scholarship by outstanding results and fulfills, Japan Student Services Organization
- 2012 Research award, Narishige Neuroscience Research Foundation
- 2012 Medical Research Award, Hiroto Yoshioka Memorial Fund
- 2013 First prize of The Science Research Promotion Fund for young researcher, The Promotion and Mutual Aid Corporation for Private School of Japan
- 2013 Incentive Award for Young Scientist, Physiological Society of Japan
- 2016 Research Fellowship, The Uehara Memorial Foundation
- 2019 Special award for excellent presentation, Annual meeting of Young Neurobehavioral Pharmacologists

## REASEARCH/SCHOLARSHIP

### Peer Reviewed Publications

#### *Original Article*

1. **Takeuchi Y.**, Takasu K., Honda M., Ono H., and Tanabe M. Neurochemical evidence that supraspinally administered gabapentin activates the descending noradrenergic system after peripheral nerve injury. *Eur J Pharmacol* 556 (1-3): 69-74. Nov 3<sup>rd</sup>, 2007. DOI: 10.1016/j.ejphar.2006.10.059.
2. Tanabe M., **Takeuchi Y.**, and Ono H. The supraspinally mediated analgesic effects of zonisamide in mice after peripheral nerve injury are independent of the descending monoaminergic system. *J Pharmacol Sci* 104 (4): 335-340. Aug 1<sup>st</sup>, 2007. DOI: 10.1254/jphs.FP0070827.
3. **Takeuchi Y.**, Takasu K., Ono H., and Tanabe M. (2007) Pregabalin, *S*-(+)-3-isobutylgaba, activates the descending noradrenergic system to alleviate neuropathic pain in the mouse partial sciatic nerve ligation model. *Neuropharmacology* 53 (7): 842-853. Aug 19<sup>th</sup>, 2007. DOI: 10.1016/j.neuropharm.2007.08.013.
4. Nagumo Y., **Takeuchi Y.**, Imoto K., and Miyata M. Synapse- and subtype-specific modulation of synaptic transmission by nicotinic acetylcholine receptors in the ventrobasal thalamus. *Neurosci*

**Res** 69 (3): 203-213. Dec 15<sup>th</sup>, 2010. DOI: 10.1016/j.neures.2010.12.002.

5. **Takeuchi Y.**, Yamasaki M.\*, Nagumo Y.\*, Imoto K., Watanabe M., and Miyata M. Rewiring of afferent fibers in the somatosensory thalamus of mice caused by peripheral sensory nerve transection. *J Neurosci* 32 (20): 6917-6930. May 16<sup>th</sup>, 2012. DOI: 10.1523/JNEUROSCI.5008-11.2012. \*equal contribution.
6. Matsumine H., Sasaki R., **Takeuchi Y.**, Miyata M., Yamato M., Okano T., and Sakurai H. (2014) Vascularized versus non-vascularized island-median nerve grafts in the facial nerve regeneration and functional recovery of rats for facial nerve reconstruction study. *J Reconstr Microsurg* 30 (2): 127-136. Oct 25<sup>th</sup>, 2013. DOI: 10.1055/s-0033-1357500.
7. **Takeuchi Y.**, Asano H., Katayama Y., Muragaki Y., Imoto K., and Miyata M. Large-scale somatotopic refinement via functional synapse elimination in the thalamus of developing mice. *J Neurosci* 34 (4): 1258-1270. Jan 22<sup>nd</sup>, 2014. DOI: 10.1523/JNEUROSCI.3865-13.2014.
8. Matsumine H., **Takeuchi Y.**, Sasaki R., Kazama T., Kano K., Matsumoto T., Sakurai H., Miyata M., and Yamato M. Adipocyte-derived and dedifferentiated fat cells promoting facial nerve regeneration in a rat model. *Plast Reconstr Surg* 134 (4): 686-697. Oct, 2014. DOI: 10.1097/PRS.0000000000000537.
9. Sasaki R., Matsumine H., Watanabe Y., **Takeuchi Y.**, Yamato M., Okano T., Miyata M., and Ando T. Electrophysiologic and functional evaluations of regenerated facial-nerve defect with a tube containing dental pulp cells in rats. *Plast Reconstr Surg* 134: 970-978. Nov, 2014. DOI: 10.1097/PRS.0000000000000602.
10. Matsumine H., Sasaki R., **Takeuchi Y.**, Watanabe Y., Niimi Y., Sakurai H., Miyata M., and Yamato M. Unilateral multiple facial-nerve branch reconstruction using "end-to-side loop graft" supercharged by hypoglossal nerve. *Plast Reconstr Surg Glob Open* 2 (10): e240. Nov 7<sup>th</sup>, 2014. DOI: 10.1097/GOX.0000000000000206.
11. Niimi Y., Matsumine H., **Takeuchi Y.**, Sasaki R., Watanabe Y., Yamato M., Miyata M., and Sakurai H. Effectively axonal-supercharged interpositional-jump graft with an artificial nerve-conduit for rat facial nerve paralysis model. *Plast Reconstr Surg Glob Open* 3 (6): e416. July 8<sup>th</sup>, 2015. DOI: 10.1097/GOX.0000000000000397.
12. **Takeuchi Y.**, Osaki H., Yagasaki Y., Katayama Y., and Miyata M. Afferent fiber remodeling in the somatosensory thalamus of mice as a neural basis of somatotopic reorganization in the brain and ectopic mechanical hypersensitivity after peripheral sensory nerve injury. *eNeuro* 4 (2): e0345-16.2017. May 23<sup>rd</sup>, 2017. DOI: 10.1523/ENEURO.0345-16.2017.
13. Vöröslakos M., **Takeuchi Y.**, Brinyiczki K., Zombori T., Oliva A., Fernández-Ruiz A., Kozák G, Kincses Z. T., Iványi B., Buzsáki G. and Berényi A. Direct effects of transcranial electric

stimulation on brain circuits in rats and humans. *Nat Commun* 9 (1): 483, DOI: 10.1038/s41467-018-02928-3. 2018 Feb 2.

14. **Takeuchi Y. (CA)**, Osaki H., Matsumine H., Niimi Y., Sasaki R. and Miyata M. A method package for electrophysiological evaluation of reconstructed or regenerated facial nerves in rodents. *MethodsX* 5: 283-298. Mar 30<sup>th</sup>, 2018. DOI: 10.1016/j.mex.2018.03.007.
15. Nagy A., **Takeuchi Y.**, and Berényi A. Coding of self-motion induced and self-independent visual motion in the rat dorsomedial striatum. *PLoS Biol* 16 (6): e2004712. June 25<sup>th</sup>, 2018. DOI: 10.1371/journal.pbio.2004712.
16. Niimi Y., Matsumine H., **Takeuchi Y.**, Osaki H., Tsunoda S., Miyata M., Yamato M., and Sakurai H. (2019) A collagen-coated PGA conduit for interpositional-jump graft with end-to-side neurorrhaphy for treating facial nerve paralysis in rat. *Microsurgery* 39 (1): 70-80. Epub Jan 8<sup>th</sup>, 2018.
17. Narushima M., Yagasaki Y., **Takeuchi Y.**, Aiba A., and Miyata M. The metabotropic glutamate receptor subtype 1 regulates development and maintenance of lemniscal synaptic connectivity in the somatosensory thalamus. *PLoS ONE* 14 (12): e0226820. December 27<sup>th</sup>, 2019.

### *Review*

1. Tanabe M., Takasu K., **Takeuchi Y.**, and Ono H. (2008) Pain relief by gabapentin and pregabalin via supraspinal mechanisms after peripheral nerve injury. *J Neurosci Res* 86 (15): 3258-3264. Nov 15<sup>th</sup>, 2008. DOI: 10.1002/jnr.21786.
2. **Takeuchi Y.\*** and Berényi A.\* Oscillotherapeutics – Time-targeted interventions in epilepsy and beyond. *Neurosci Res* 152: 87-107. Jan 16<sup>th</sup>, 2020. DOI: 10.1016/j.neures.2020.01.002.

### *Thesis for Doctoral Degree*

**Takeuchi Y.** Developmental and peripheral nerve injury-induced changes of afferent synapses in the somatosensory thalamus. The Graduate University for Advanced Studies, Kanagawa, Japan. Mar 24<sup>th</sup>, 2010.

## Non-peer Reviewed Publications

### *Book etc.*

1. Miyata M. and **Takeuchi Y.** (2011) Neurophysiology of Body image: Remodeling of the body map. *Clin Neurosci* 29 (8): 895-899. Aug, 2011. Chugai-igakusha. (*Invited, Japanese*)
2. **Takeuchi Y.** (2020) Epilepsy progress: Development of on-demand interventions of epileptic seizures and a quantitative method of seizure susceptibility. *Medical Science Digest* 46 (2): 118-

121, 2020.2. Hokuryukan. (*Invited, Japanese*)

3. **Takeuchi Y.** (2020) Imaging of neuropsychiatric disorders: Revealing neuronal network dynamics underlying behavioral phenotypes of psychiatric disorders. *Medical Science Digest* 46 (6): 906-909, 2020.6. Hokuryukan. (*Invited, Japanese*)

### *Preprints*

1. **Takeuchi Y.**, Harangozó M., Pedraza L., Földi T., Kozák G., and Berényi A. Closed-loop stimulation of the medial septum terminates epileptic seizures. *bioRxiv* 2020.03.09.982827; doi: <https://doi.org/10.1101/2020.03.09.982827>

### *Proceeding and Report*

2. **Takeuchi Y.**, Uchida M., and Miyata M. Neuroanatomical and physiological analyses of afferent fiber rewiring in the ventrobasal thalamus of mice after peripheral nerve injury. *Proceedings of Tokyo Women's Medical University Medical Institute* 32: 20-21. 2012. (*Japanese*)
3. **Takeuchi Y.** and Miyata M. Neuroanatomical analyses of thalamic circuitry rewiring (I). *Proceedings of Tokyo Women's Medical University Medical Institute* 33: 21. Nov 30<sup>th</sup>, 2013. (*Japanese*)
4. **Takeuchi Y.** and Miyata M. Neuroanatomical analyses of thalamic circuitry rewiring (II). *Proceedings of Tokyo Women's Medical University Medical Institute* 34: 16. Nov 30<sup>th</sup>, 2014. (*Japanese*)
5. Miyata M., Matsumine H., Sasaki R., Watanabe Y., **Takeuchi Y.**, Yamato M., and Sakurai H. Functional evaluations of regenerated peripheral nerve. *J Tokyo Wom Med Univ* 84: 130. Aug 25<sup>th</sup>, 2014. (*Japanese*)
6. **Takeuchi Y.** and Miyata M. Neuroanatomical analyses of thalamic circuitry rewiring (III). *Proceedings of Tokyo Women's Medical University Medical Institute* 36: 22-23. Feb 27<sup>th</sup>, 2017. (*Japanese*)

### *Abstract (International)*

1. Tanabe M., **Takeuchi Y.**, Takasu K., and Ono H. Pregabalin supraspinally activates the descending noradrenergic pain inhibitory system after peripheral nerve injury. The 2<sup>nd</sup> International Congress on Neuropathic Pain. Berlin, Germany. June 7-10, 2007. (Abstract #: 166) *Poster*
2. Nagumo Y., **Takeuchi Y.**, Kawakami Y., Imoto K., and Miyata M. Role of nicotinic acetylcholine receptors on synaptic transmission in the ventrobasal thalamic complex. The 36<sup>th</sup> Congress of the International Union of Physiological Sciences. Kyoto, Japan. July 27 - Aug 1, 2009. (Abstract #: P1AM-9-1) *Poster*

3. **Takeuchi Y.**, Nagumo Y., Katayama Y., Imoto K., Kawakami Y., and Miyata M. Transection of the infraorbital nerve induces rewiring of afferent fibers in the somatosensory thalamus of mice. The 40<sup>th</sup> SfN Annual Meeting. San Diego, CA, USA. Nov 13-17, 2010. (Abstract #377.9) *Poster*
4. Nagumo Y., **Takeuchi Y.**, Imoto K., and Miyata M. Synapse- and subtype-specific modulation of synaptic transmission by nicotinic acetylcholine receptors in the ventrobasal thalamus of juvenile mice. The 40<sup>th</sup> SfN Annual Meeting. San Diego, CA, USA. Nov 13-17, 2010. (Abstract #442.7) *Poster*
5. **Takeuchi Y.**, Nagumo Y., and Miyata M. Peripheral sensory nerve transection-induced remodeling of afferent synapses in the somatosensory thalamus of mice. The 8<sup>th</sup> IBRO World Congress of Neuroscience. Florence, Italy. July 14-18, 2011. (Abstract #D063) *Poster*
6. Miyata M. and **Takeuchi Y.** Large-scale somatotopic refinement by synapse elimination in the whisker sensory thalamus of developing mice. The 9<sup>th</sup> FENS Forum of Neuroscience. Milan, Italy. July 5-9, 2014. (Abstract # FENS-1305) *Poster*
7. **Takeuchi Y.**, Katayama Y., and Miyata M. Functional synapse elimination plays a role in large-scale somatotopic refinement in the sensory thalamus of developing mice. The 44<sup>th</sup> SfN Annual Meeting. Washington, DC, USA. Nov 15-19, 2014. (Abstract #398.04) *Poster*
8. Vöröslakos M., Brinyiczki K., Zombori T., **Takeuchi Y.**, Oliva A., Fernández-Ruiz A., Iványi B., Buzsáki G., and Berényi A. Spatially focused, non-invasive, fast pulse electrical stimulation of the brain. The 46<sup>th</sup> SfN Annual Meeting. San Diego, USA. Nov 12-16, 2016. (Abstract #591.16) *Poster*
9. Nagy A., **Takeuchi Y.**, and Berényi A. Processing of passive and motion-induced visual percepts in the rat dorsomedial striatum. The 47<sup>th</sup> SfN Annual Meeting. Washington DC, USA. Nov 11-15, 2017. (Abstract #313.14) *Poster*
10. **Takeuchi Y.** Electrophysiological Evaluations of Reorganized Nervous Systems. The PCS 3rd Global Cell Science and Stem Cell Conference. Budapest, Hungary. July 14-15, 2018. (Abstract #2 in Stem Cell and Stem Cell Therapy) *Oral, Invited*
11. **Takeuchi Y.**, Harangozó M., Pedraza L., Földi T., Kozák G., and Berényi A. Closed-loop stimulation of the medial septum alleviates temporal lobe epilepsy in rats. The 49th NIPS International Symposium. Okazaki, Japan. Dec 5-8, 2018. (Abstract #: P24) *Poster*
12. **Takeuchi Y.**, Harangozó M., Pedraza L., Földi T., Kozák G., and Berényi A. Automated, closed-loop stimulation of the medial septum alleviates temporal lobe epilepsy in rats. The 9th FAOPS Congress. Kobe, Japan. Mar 28-31, 2019 (Abstract #: 1P-281) *Poster*
13. Nagy A., **Takeuchi Y.**, and Berényi A. Coding of self-motion-induced and self-independent visual motion in the rat dorsomedial striatum. IBRO Workshop 2020. Szeged, Hungary. Jan 29, 30, 2020

*(#84) Poster*

14. Pedraza L, Sierra R, **Takeuchi Y**, Kozák G, Peijin A, Barcsai L, Berényi A. CLOSED-LOOP MANIPULATION OF HIPPOCAMPAL RIPPLES REDUCE PERSISTENT FEAR EXPRESSION IN ANIMAL MODEL OF POSTTRAUMATIC-STRESS DISORDER. IBRO Workshop 2020. Szeged, Hungary. Jan 29, 30, 2020 (#86) *Poster*
15. Li Q, **Takeuchi Y**, Kozák G, Ohsawa M, Harangozó M, Berényi A. The functional role of altered olfactory network synchrony in the development of depression. IBRO Workshop 2020. Szeged, Hungary. Jan 29, 30, 2020 (#87) *Poster*
16. **Takeuchi Y**, Harangozó M, Pedraza L, Földi T, Kozák G, and Berényi A. A closed-loop proxy-intervention of epileptic seizures. IBRO Workshop 2020. Szeged, Hungary. Jan 29, 30, 2020 (#89) *Poster*
17. Narushima M., Yagasaki Y., **Takeuchi Y.**, Aiba A., and Miyata M. The metabotropic glutamate receptor subtype 1 regulates development and maintenance of lemniscal synaptic connectivity through cortical activity in the somatosensory thalamus. FENS Meeting 2020. Glasgow, U. K. July 11<sup>th</sup> – 15<sup>th</sup>, 2020.

*Abstract (Domestic)*

1. **Takeuchi Y.**, Tanabe M., Honda M., and Ono H. Gabapentin supraspinally accelerates spinal noradrenalin turnover in a murine neuropathic pain model. The 79<sup>th</sup> Annual Meeting of The Japanese Pharmacological Society. Yokohama, Japan. Mar 8-10, 2006. (Abstract #: P3K-64) *Poster*
2. **Takeuchi Y.**, Ono H., and Tanabe M. Pregabalin supraspinally activates the descending noradrenergic pain inhibitory system after peripheral nerve injury. The 80<sup>th</sup> Annual Meeting of The Japanese Pharmacological Society. Nagoya, Japan. Mar 14-16, 2007. (Abstract #: P1-039) *Poster*
3. Nagumo Y., **Takeuchi Y.**, Imoto K., Kawakami Y., and Miyata M. Role of acetylcholine on sensory synaptic transmission in the mouse ventrobasal thalamus. The 81<sup>th</sup> Annual Meeting of The Japanese Pharmacological Society. Yokohama, Japan. Mar 17-19, 2008. (Abstract #: P2I-72) *Poster*
4. Miyata M., Nagumo Y., **Takeuchi Y.**, Imoto K., and Kawakami Y. Acetylcholine distinctly regulates on synaptic transmission in the ventrobasal thalamus. The 85<sup>th</sup> Annual Meeting of the Physiological Society of Japan. Tokyo, Japan. Mar 25-27, 2008. (Abstract #: 2P-F-047) *Poster*
5. **Takeuchi Y.**, Imoto K., and Miyata M. Development of lemniscus synapses on the mice ventrobasal thalamus. The 31<sup>st</sup> Annual Meeting of the Japan Neuroscience Society. Tokyo, Japan. July 9-11, 2008. (Abstract #: P3-e20) *Poster*



6. Nagumo Y., **Takeuchi Y.**, Kawakami Y., Imoto K., and Miyata M. Neuromodulatory effect of acetylcholine on synaptic transmissions in the ventrobasal thalamic nucleus. The 31<sup>st</sup> Annual Meeting of the Japan Neuroscience Society. Tokyo, Japan. July 9-11, 2008. (Abstract #: P3-c15) *Poster*
7. **Takeuchi Y.**, Imoto K., and Miyata M. Transection of infraorbital nerve induces multiple innervations of lemniscal fibers onto the relay neuron in the adult mice somatosensory thalamus. The 32<sup>nd</sup> Annual Meeting of the Japan Neuroscience Society. Nagoya, Japan. Sep 16-18, 2009. (Abstract #: P2-b30) *Poster*
8. **Takeuchi Y.**, Nagumo Y., Katayama Y., Imoto K., Kawakami Y., and Miyata M. Peripheral nerve transection-induced remodeling of afferent synapses in the somatosensory thalamus of mice. The 33<sup>rd</sup> Annual Meeting of the Japan Neuroscience Society. Kobe, Japan. Sep 2-4, 2010. (Abstract #: P3-b05) *Poster*
9. Miyata M. and **Takeuchi Y.** Synaptic rewiring and compositional changes in glutamate receptors at thalamic lemniscal synapses in the developmental process. The 88<sup>th</sup> Annual Meeting of the Physiological Society of Japan. Yokohama, Japan. Mar 28-30, 2011. (Abstract #: P1-C-2-3) *Symposium*
10. **Takeuchi Y.**, Narushima M., and Miyata M. The developmental switch in AMPA receptor subunit composition at lemniscal synapses in the somatosensory thalamus of mice. The 88<sup>th</sup> Annual Meeting of the Physiological Society of Japan. Yokohama, Japan. Mar 28-30, 2011. (Abstract #: P1-352) *Poster*
11. **Takeuchi Y.**, Narushima M., and Miyata M. Postnatal development of the lemniscal fiber-relay neuron system in the somatosensory thalamus of mice. The 34<sup>th</sup> Annual Meeting of the Japan Neuroscience Society. Yokohama, Japan. Sep 14-17, 2011. (Abstract #: P3-k15) *Poster*
12. **Takeuchi Y.**, Uchida M., and Miyata M. Structural changes of lemniscal axon terminals after the peripheral sensory nerve transection of mice. The 35<sup>th</sup> Annual Meeting of the Japan Neuroscience Society. Nagoya, Japan. Sep 18-21, 2012. (Abstract #: P3-c08) *Poster*
13. **Takeuchi Y.** and Miyata M. Information tuning via synapse elimination in the whisker sensory thalamus of developing mice. The 90<sup>th</sup> Annual Meeting of the Physiological Society of Japan. Tokyo, Japan. Mar 27-29, 2013. (Abstract #: 2PK-047) *Poster*
14. **Takeuchi Y.** and Miyata M. Somatotopic tuning along with synapse elimination in the whisker sensory thalamus of developing mice. The 36<sup>th</sup> Annual Meeting of the Japan Neuroscience Society. Kyoto, Japan. June 20-23, 2013. (Abstract #: P3-1-143) *Poster*
15. **Takeuchi Y.**, Katayama Y., and Miyata M. Transection of the whisker sensory nerve reorganizes topographical wiring of afferent fibers in the whisker sensory thalamus of mice. The 91<sup>st</sup> Annual Meeting of the Japan Neuroscience Society. Tokyo, Japan. Sep 16-18, 2014. (Abstract #: P3-1-143) *Poster*

- Meeting of the Physiological Society of Japan. Kagoshima, Japan. Mar 16-18, 2014. (Abstract #: 1P-104) *Poster*
16. **Takeuchi Y.** and Miyata M. Large-scale somatotopic reorganization via remodeling of thalamic afferent synapses after peripheral sensory nerve injury. The 37<sup>th</sup> Annual Meeting of the Japan Neuroscience Society. Yokohama, Japan. Sep 11-13, 2014. (Abstract #: S1-C-2-3) *Symposium*
  17. **Takeuchi Y.**, Katayama Y., and Miyata M. A neural circuit mechanism of large-scale somatotopic reorganization in the thalamus after transection of the whisker sensory nerve of mice. The 37<sup>th</sup> Annual Meeting of the Japan Neuroscience Society. Yokohama, Japan. Sep 11-13, 2014. (Abstract #: P2-173) *Poster*
  18. **Takeuchi Y.**, Nagumo Y., Osaki H., and Miyata M. Peripheral nerve injury changes neuronal firing patterns in the somatosensory thalamus of unanesthetized mice. The 92<sup>nd</sup> Annual Meeting of the Physiological Society of Japan. Kobe, Japan. Mar 21-23, 2015. (Abstract #: P3-182) *Poster*
  19. Nagumo Y., **Takeuchi Y.**, Osaki H., and Miyata M. Enhanced tonic GABA currents after peripheral nerve injury contribute to inhibition of neuronal activity and subsequent remodeling of medial lemniscal fibers in the somatosensory thalamus. The 92<sup>nd</sup> Annual Meeting of the Physiological Society of Japan. Kobe, Japan. Mar 21-23, 2015. (Abstract #: P3-205) *Poster*
  20. **Takeuchi Y.**, Nagumo Y., Osaki H., Katayama Y., and Miyata M. Large-scale somatotopic reorganization associated with afferent fiber rewiring in the whisker sensory thalamus. The 38<sup>th</sup> Annual Meeting of the Japan Neuroscience Society. Kobe, Japan. July 28-31, 2015. (Abstract #: 3P217) *Poster*
  21. Nagumo Y., **Takeuchi Y.**, and Miyata M. Remodeling of somatosensory thalamic neural circuit and allodynia-like mechanical hypersensitivity after the peripheral nerve. The 38<sup>th</sup> Annual Meeting of the Japan Neuroscience Society. Kobe, Japan. July 28-31, 2015. (Abstract #: 3P224) *Poster*
  22. Miyata M., **Takeuchi Y.**, and Katayama Y. Large-scale somatotopic refinement via experience-dependent synapse elimination in the whisker sensory thalamus. The 38<sup>th</sup> Annual Meeting of the Japan Neuroscience Society. Kobe, Japan. July 28-31, 2015. (Abstract #: 2S09p-1) *Symposium*
  23. Miyata M., **Takeuchi Y.**, and Osaki H. Large-scale somatotopic reorganization with afferent fiber remodeling in the mice whisker sensory thalamus after peripheral sensory nerve injury. The 93<sup>rd</sup> Annual Meeting of the Physiological Society of Japan. Sapporo, Japan. Mar 22-24, 2016. (Abstract #: 2P-078) *Poster*
  24. **Takeuchi Y.**, Harangozó M., Pedraza L., Földi T., Kozák G., and Berényi A. Real-time control of epileptic seizures via on-demand deep brain stimulation. The 28th Meeting of Young Researchers' Society of Neurobehavioral Pharmacology. Hyogo, Japan. Mar 13, 2019. (Abstract

#3) *Symposium*

25. **Takeuchi Y.**, Harangozó M., Pedraza L., Földi T., Kozák G., and Berényi A. A closed-loop proxy-intervention of epileptic seizures. Jisedai-Nou Symposium. Tokyo, Japan. Dec 18-20, 2019. (Byotai #: 7) *Poster*
26. **Takeuchi Y.**, Harangozó M., Pedraza L., Földi T., Kozák G., and Berényi A. Closed-loop stimulation of the medial septum terminates epilepsy seizures in rats. The 93th Annual Meeting of the Japan Pharmacological Society. Yokohama, Japan. Mar 16-18, 2020. (Abstract #: 3-O-103) *Oral*

*Scientific Essay*

1. **Takeuchi Y.** (2013) Report of the 36<sup>th</sup> Annual Meeting of Japanese Neuroscience Society. Neuroscience News of the Japan Neuroscience Society 195: 10. (*Japanese*)
2. **Takeuchi Y.** (2015) Exciting scientific experience. *J Physiol Soc Japan* 77: 6-7. (*Invited, Japanese*)

*Dataset Repository*

1. **Takeuchi Y.** (2017) Three-dimensional dendritic morphology of somatosensory thalamic neurons in developing mice: Takeuchi Archive. NeuroMorpho.org. URL: <http://www.neuromorpho.org/bylab.jsp> (*Invited*)
2. **Takeuchi Y.** (2017) Three-dimensional axonal morphology of principle neurons in the principle trigeminal nucleus of mice: Takeuchi Archive. NeuroMorpho.org. <http://www.neuromorpho.org/bylab.jsp> (*Invited*)
3. **Takeuchi Y.** (2017) LaserDiodeStabilizerCircuit. figshare. <https://doi.org/10.6084/m9.figshare.5419195>
4. **Takeuchi Y.** (2017) FootshockCircuit. figshare. <https://doi.org/10.6084/m9.figshare.5421613>
5. **Takeuchi Y.** (2017) ActiveBandPassFilter. figshare. <https://doi.org/10.6084/m9.figshare.5455702>
6. **Takeuchi Y.** (2018) CMAPMethods. Mendeley Data, v1. <http://dx.doi.org/10.17632/9g5n35fd3f.1>
7. **Takeuchi Y.** (2018) RetrogradeMotorNeuronLabeling. figshare. <https://doi.org/10.6084/m9.figshare.5445199>
8. **Takeuchi Y.** (2018) TaskController. figshare. <https://doi.org/10.6084/m9.figshare.6154751>
9. **Takeuchi Y.** (2018) RatHeadFixRestraintSystem. figshare.

<https://doi.org/10.6084/m9.figshare.5466355>

10. **Takeuchi Y.** (2018) MouseHeadFixRestraintSystem. figshare.  
<https://doi.org/10.6084/m9.figshare.6154877>
11. **Takeuchi Y.** (2018) OnHeadFaradayCage. figshare.  
<https://doi.org/10.6084/m9.figshare.6160181>
12. **Takeuchi Y.** (2018) InfraredMotionDetector. figshare.  
<https://doi.org/10.6084/m9.figshare.6160226>
13. **Takeuchi Y.** and Berényi A. (2020) Closed-loop stimulation of the medial septum terminates epileptic seizures. Mendeley Data, <https://data.mendeley.com/datasets/k9hwm7p33x/1>

### *Code Repository*

1. **Takeuchi Y.** (2017) CMAPAnalysis v1.0.0. Zenodo. <https://doi.org/10.5281/zenodo.800747>
2. **Takeuchi Y.** (2017) tUtility v1.0.0. Zenodo. <https://doi.org/10.5281/zenodo.803404>
3. **Takeuchi Y.** (2017) miniAna v1.0.0. Zenodo. <https://doi.org/10.5281/zenodo.804083>
4. **Takeuchi Y.** (2017) tSort v1.0.0. Zenodo. <https://doi.org/10.5281/zenodo.805588>
5. **Takeuchi Y.** (2017) tNeuroshare v1.0.0. Zenodo. <https://doi.org/10.5281/zenodo.805705>
6. **Takeuchi Y.** (2017) tClamp16 v0.0.0-alpha. Zenodo. <https://doi.org/10.5281/zenodo.805901>
7. **Takeuchi Y.** (2017) tClamp18 v0.1.0-alpha. Zenodo. <https://doi.org/10.5281/zenodo.805897>
8. **Takeuchi Y.** (2017) NiDaqControlPanel v1.0.0. Zenodo.  
<https://doi.org/10.5281/zenodo.810332>
9. **Takeuchi Y.** (2017) APDetector v1.0.0. Zenodo. <https://doi.org/10.5281/zenodo.815577>
10. **Takeuchi Y.** (2017) RStatisticalTests v1.0.0. Zenodo. <https://doi.org/10.5281/zenodo.817654>
11. **Takeuchi Y.** (2017) LaserDiodeStabilizer v1.0.0. Zenodo.  
<https://doi.org/10.5281/zenodo.897718>
12. **Takeuchi Y.** (2017) CueFearConditioning v1.0.0. Zenodo.  
<https://doi.org/10.5281/zenodo.897730>
13. **Takeuchi Y.** (2018) PMVmemAnalysis v1.0.0. Zenodo.  
<https://doi.org/10.5281/zenodo.1220169>
14. **Takeuchi Y.** (2018) SM2CInjection v1.0.0. Zenodo. <https://doi.org/10.5281/zenodo.1220362>

15. **Takeuchi Y.** (2018) TaskController v1.0.0. Zenodo. <https://doi.org/10.5281/zenodo.xxxxx>

## GRANT RECEIVED

1. Afferent-input-dependent thalamic circuit plasticity. JSPS, KAKENHI: Grant-in-Aid for JSPS Fellows (Grant# 09J00032), Role: PI, Period: 2009–2010, Total cost: US \$7,000
2. Electrophysiological and neuroanatomical analyses of peripheral nerve transection-induced multiple-innervation of lemniscal fibers in the somatosensory thalamus of mice. JSPS KAKENHI: Grant-in-Aid for Research Activity Start-up (Grant# 22800063), Role: PI, Duration: 2010–2012, Total cost: US \$25,350
3. Remodeling of afferent axon terminals in the thalamus after peripheral nerve injury. Tokyo Women's Medical University-Medical Research Grant, Role: PI, Period: 2010–2011, Total cost: US \$6,800
4. Functional and neuroanatomical analyses of afferent fiber remodeling in the thalamus after peripheral nerve injury. Narishige Neuroscience Research Foundation, Research Award, Role: PI, Period: 2012–2013, Total cost: US \$3,000
5. Membrane properties underlying abnormal thalamic firing after deafferentation. Casio Science Promotion Foundation: Research Grant, Role: PI, Period: 2012–2013, Total cost: US \$10,000
6. GluA2 glutamate receptor subunit as a target of phantom pain gene therapy. Terumo Life Science Foundation: Medical and Health Enhancement Program Subsidy, Role: PI, Period: 2012–2013, Total cost: US \$10,000.
7. Functional evaluation of reconstructed/regenerated facial nerves. Hiroto Yoshioka Memorial Fund for Medical Research Award, Role: Co-PI, Period: 2012–2013, Total cost: US \$10,000
8. Generation of Cre mouse which codes facial somatosensory map in the trigeminal nucleus. National Institute of Genetics: NIG Collaborative Research Program (2012-A-71), Role: Co-PI, Period: 2012–2013, Total cost: US \$1,880
9. Genetic visualization of central circuitry rewiring after peripheral nerve injury. The Promotion and Mutual Aid Corporation for Private School of Japan: The Science Research Promotion Fund, Role: PI, Period: 2013–2014, Total cost: US \$5,000
10. Large-scale somatotopic reorganization in the thalamus after peripheral nerve injury. Tokyo Women's Medical University: Medical Research Grant, Role: PI, Period: 2014–2015, Total cost: US \$7,000
11. Generation of Cre mouse which codes facial somatosensory map in the trigeminal nucleus. National Institute of Genetics: NIG Collaborative Research Program (2014-A-82), Role: Co-PI,

Period: 2014–2015, Total cost: US \$1,830

12. Molecular mechanisms underlying development and maintenance of thalamic remodeling after peripheral nerve injury. JSPS, KAKENHI: Grant-in-Aid for Young Scientists (B) (Grant# 25870757), Role: PI, Period: 2013–2016, Total cost: US \$42,900
13. Development of a new therapeutic approach for epileptic seizures by transcranial electrical stimulation. The Uehara Memorial Foundation, Research Fellowship, Role: PI, Period: 2016, Total cost: US \$36,000
14. Real-time closed-loop interventions of epileptic seizures by non-invasive deep brain stimulation. JSPS, KAKENHI: Fostering Joint International Research (B) (Grant# 18KK0236), Role: PI, Period: 2018–2022, Total cost: US \$179,400
15. Real-time closed-loop interventions of epileptic seizures by non-invasive deep brain stimulation. The Kanae Foundation for the Promotion of Medical Science, Foreign Study Grants, Role: PI, Period: 2019–2020, Total cost: US \$ 10k
16. On-demand transcranial interventions of epileptic seizures. Life Science Foundation, Research Grant, Role: PI, Period: 2019–2020, Total cost: US \$ 10k
17. Development of a quantification method of seizure susceptibility using brain-wide electrical spatiotemporal dynamics. JSPS, KAKENHI: Grant-in-Aid for Scientific Research (B) (Grant# 19H03550), Role: PI, Period: 2019–2024, Total cost: US \$171,600
18. Revealing neuronal network dynamics underlying behavioral phenotypes of psychiatric disorders by solving inverse problems. JSPS, KAKENHI: Grant-in-Aid for Scientific Research on Innovative Areas (Grant# 19H05224), Role: PI, Period: 2019–2021, Total cost: US \$57,200

## Invited Talks

- |      |   |
|------|---|
| 2012 | Invited speaker, Japan Health Sciences Foundation, Tokyo, Japan   |
| 2014 | Invited symposiast, The 37 <sup>th</sup> Annual Meeting of the Japan Neuroscience Society, Yokohama, Japan                          |
| 2015 | Invited speaker, University of Szeged, Szeged, Hungary<br>F1000Research 2017, 6:350 (slides) (doi: 10.7490/f1000research.1113811.1) |
| 2017 | Invited speaker, MathWorks Asia Research Summit 2017, Tokyo, Japan  |
| 2018 | Invited speaker, PCS 3rd Global Cell Science and Stem Cell Conference, Budapest, Hungary  |

- 2018 Invited speaker, Osaka City University, Osaka, Japan
- 2018 Invited speaker, The Pharmaceutical Society of Japan, Tokai Branch @ Nagoya City University, Nagoya, Japan
- 2018 Invited speaker, Seminar @ National Institute of Physiological Sciences
- 2019 Invited speaker, Seminar @ University of Szeged, Szeged, Hungary
- 2019 Invited speaker, Seminar @ Osaka City University, Osaka, Japan
- 2019 Invited speaker, Seminar @ Tokyo Women's Medical University, Tokyo, Japan

### **Contributed Talks**

- 2006 The 27<sup>th</sup> Annual Meeting of Japanese Narcotics Research Conference, Wakayama, Japan
- 2012 Young Researchers' Forum of Physiology, Tokyo, Japan
- 2012 National Institute for Physiological Sciences, Okazaki, Japan
- 2013 Young Researchers' Forum of Physiology, Tokyo, Japan
- 2019 The 28<sup>th</sup> Meeting of Young Researchers' Society of Neurobehavioral Pharmacology, Hyogo, Japan

### **Relevant Experience**

- 2005 Patch-Clamp Training Course; National Institute for Physiological Sciences, Okazaki, Japan; Daily practice for 1 wk
- 2006 Slice Patch-Clamp Training Course; National Institute for Physiological Sciences, Okazaki, Japan; Daily practice for 1 wk
- 2013 Advanced Brain Research by Optical Measurements and Manipulations; The 13<sup>th</sup> Summer School of Physiological Society of Japan, Tokyo, Japan; 1 day session
- 2014 Matlab Fundamentals; Mathworks Japan, Tokyo, Japan; 3 day practice
- 2014 Diffusion Tensor Imaging Analysis (Linux introduction/DTI TBSS/DTI tractography); Comprehensive Brain Science Network, Tokyo, Japan; 1 day practice
- 2017 FELASA Accredited Education and Training Course, "Animal experiments theory and practice – level C (Ref No.:035/2014)", Szeged, Hungary, 80 h lectures and practices

2018      Publons Academy



## TEACHING and TRAINING

### Teaching Contributions on Undergraduate Courses

- 2010–2013    Practical of Hematology (Osmotic fragility and Coagulation cascade); Tokyo Women's Medical University; 4<sup>th</sup> year undergraduate students; 2 × 4-hr sessions per wk for 2 wks
- 2010–2013    Practical of Physiology (Spirometry); Tokyo Women's Medical University; 2<sup>nd</sup> year undergraduate students; 2 × 4-hr sessions per wk for 3 wks
- 2012           Tutor of Problem Based Learning; Tokyo Women's Medical University; 1<sup>st</sup> year undergraduate students; 2 × 2-hr sessions per wk for 6 wks
- 2012–2013    Practical of Physiology (Spirometry); Tokyo Women's Medical University; graduate students for biomedical course; 2 × 2-hr sessions in a day
- 2013–2014    Tutor of Team-Based Learning; Tokyo Women's Medical University; 1<sup>st</sup> year undergraduate students; 2 × 2-hr sessions per wk for 6 wks
- 2013           Supervision of Basic Medical Research; Tokyo Women's Medical University; 3<sup>rd</sup> year undergraduate student (Sawako Kamo); Daily mentorship for 3 wks
- 2014           Practical of Physiology (In silico Simulation of Cardiac Ion Channels); Tokyo Women's Medical University; 2<sup>nd</sup> year undergraduate students; 2 × 4-hr sessions per wk for 3 wks
- 2015           Problem-Based Learning; Tokyo Women's Medical University; 1<sup>st</sup> year undergraduate students; 4 × 2-hr sessions
- 2016–2018    Medical Physiology Seminar I; University of Szeged; 2<sup>nd</sup> year undergraduate students; 14 × 2-h sessions during the 1st semester
- 2016–2018    Medical Physiology Seminar II; University of Szeged; 2<sup>nd</sup> year undergraduate students; 15 × 2-h sessions during the 2nd semester
- 2019           Internship training, University of Szeged; 4<sup>th</sup> year undergraduate students; 8 weeks full-type

### Teaching Contributions on Postgraduate Courses

- 2013           Practical of Pain Research (Formalin test and Immunohistochemistry of spinal sections); Tokyo Women's Medical University; Tokyo Women's Medical University; graduate students; Daily practice for a week
- 2012–2014    Practical of Respiratory Medicine for Bio-Medical Curriculum; 4 × 2-h sessions

## Educational Publications

1. **Takeuchi Y.** (2017) Physiological Education and Japanese Medical Students in University of Szeged. *J Physiol Soc Japan* 79: 8-15. (Peer Reviewed, Japanese).

## Relevant Experience

2019 FAOPS2019 & ADInstruments, Teaching Workshop, Kobe, Japan; Daily practice for two days. Kobe, Japan, March 27-28.

## Code Repository

1. **Takeuchi Y.** (2017) physiology-examiner v1.0.0 [Data set]. Zenodo.  
<http://doi.org/10.5281/zenodo.583685>

## MD/PhD course Advisor

Harangozó M. and Földi T. (2017) MTA-SZTE „Lendület“ Oszcillatorikus Neuronhálózatok Kutatócsoport - SZTE ÁOK Élettani Intézet; A temporális lebeny epilepszia rohamainak közvetett csillapítása a neuromodulátoros rendszerek optogenetikai modulációjával. Co-Advisor

Harangozó M. (2018) MTA-SZTE „Lendület“ Oszcillatorikus Neuronhálózatok Kutatócsoport - SZTE ÁOK Élettani Intézet; A temporális lebeny epilepszia kezelése sejtvonalspecifikus ”proxy” ingerléssel. Nov 14<sup>th</sup> Co-Advisor

## GENERAL CONTRIBUTION

### Reviews of Research Articles

#### *Pre-publication Peer Review*

Dec 10<sup>th</sup> 2017 Neuroscience Research

Sep 28<sup>th</sup>, 2019 Neuropsychopharmacology Reports

Nov 13<sup>th</sup>, 2019 Neuropsychopharmacology Reports

#### *Post-publication Peer Review*

2017	Publons	<a href="https://publons.com/publon/462513/">https://publons.com/publon/462513/</a>
Jan 2 <sup>nd</sup> 2018	Publons	<a href="https://publons.com/publon/1605916/">https://publons.com/publon/1605916/</a>
Jan 2 <sup>nd</sup> 2018	Publons	<a href="https://publons.com/publon/1605917/">https://publons.com/publon/1605917/</a>
Jan 2 <sup>nd</sup> 2018	Publons	<a href="https://publons.com/publon/1605918/">https://publons.com/publon/1605918/</a>

### Symposium organization etc.

July 29<sup>th</sup> 2020 Symposium: Cutting-edge closed-loop and non-invasive brain stimulation technologies for neurological and psychiatric disorders (1S06a). The Japan Neuroscience Society. The 43rd Annual Meeting of the Japan Neuroscience Society (Kobe) 29 Jul 2020

Travel Grant: Brain Science Foundation, 250,000 JPY for Eran Stark

Travel Grant: The Nagai Foundation Tokyo, 250,000 JPY for Mihály Vöröslakos

### Panelist etc.

March 29<sup>th</sup> 2019 9<sup>th</sup> FAOPS Congress, Meet the Lectures, Facilitator

### Research Training Course

2008.11.01 Instructor of Slice Patch-Clamp Training Course; National Institute for Physiological Sciences, Okazaki, Japan; Graduate students and Young researchers; Daily practice for 1 week

## Laboratory Supervisory

### *Technicians*

- 2010–2015 Supervision of technicians; Tokyo Women's Medical University; 1<sup>st</sup> year undergraduate students; Daily mentorship for 12 months
- 2015–present Supervision of technicians; University of Szeged; Daily mentorship for 12 months

### *Undergraduate Students*

- 2011–2012 Mei Uchida; Waseda University (@ Tokyo Women's Medical University)
- 2013 Sawako Kamo; Tokyo Women's Medical University, School of Medicine
- 2016–2017 Yasuko Takai; Faculty of Medicine, University of Szeged
- 2016–2017 Jun Takai; Faculty of Medicine, University of Szeged
- 2016–2019 Tamás Földi; Faculty of Medicine, University of Szeged
- 2016–2019 Márk Harangozó; Faculty of Medicine, University of Szeged
- 2019 Yusei Nakayama; Faculty of Engineering, Toyohashi University of Technology

### *Graduate Students*

- 2012–2014 Mei Uchida; Waseda University (@ Tokyo Women's Medical University)
- 2015–2018 Mihály Vöröslakos; Faculty of Medicine, University of Szeged
- 2015–2018 Anett Nagy; Faculty of Medicine, University of Szeged
- 2017–2019 Lizeth Pedraza; University of Szeged, Department of Physiology
- 2019 Takashi Kikukawa; Graduate School of Pharmaceutical Sciences, Nagoya City University
- 2019–2020 Livia Barcsai, Faculty of Medicine, University of Szeged

## Teaching Contributions

- 2015–2019 Tutorial of Medical Physiology I; Hungary Medical Office; 2<sup>nd</sup> year undergraduate students; 14 × 2-h sessions during the 1st semester
- 2015–2019 Tutorial of Medical Physiology II; Hungary Medical Office; 2<sup>nd</sup> year undergraduate students; 14 × 2-h sessions during the 2nd semester
- 2015–2019 Tutorial of Medical Pharmacology I; Hungary Medical Office; 4<sup>th</sup> year undergraduate students; 14 × 2-h sessions during the 1st semester
- 2015–2019 Tutorial of Medical Pharmacology II; Hungary Medical Office; 4<sup>th</sup> year undergraduate students; 14 × 2-h sessions during the 2nd semester

## Teaching Committee and Organization

- 2015 Segment 2 Tutorial School of Medicine, Tokyo Women's Medical

	Committee Member	University
2015	Tutorial Committee Organizing Member	School of Medicine, Tokyo Women's Medical University

**Outreach activities**

2008 Nov 1 <sup>st</sup>	Open-lab	National Institute of Physiological Sciences
2014 Sep 20 <sup>th</sup>	Open-lab	School of Medicine, Tokyo Women's Medical University
2016 Nov 26 <sup>th</sup>	Open-lab	Department of Physiology, University of Szeged, Hungary