

**Second Announcement**

**The 10th Takeda Science Foundation  
Symposium on PharmaSciences**

**Mental Illness:**  
Human Biology and  
Preclinical Modeling for Translation

**January 24-25, 2020 Osaka, Japan**

Venue: **Center for Learning and Innovation  
Takeda Pharmaceutical Company Ltd.**

[www.takeda-pharma.jp](http://www.takeda-pharma.jp)



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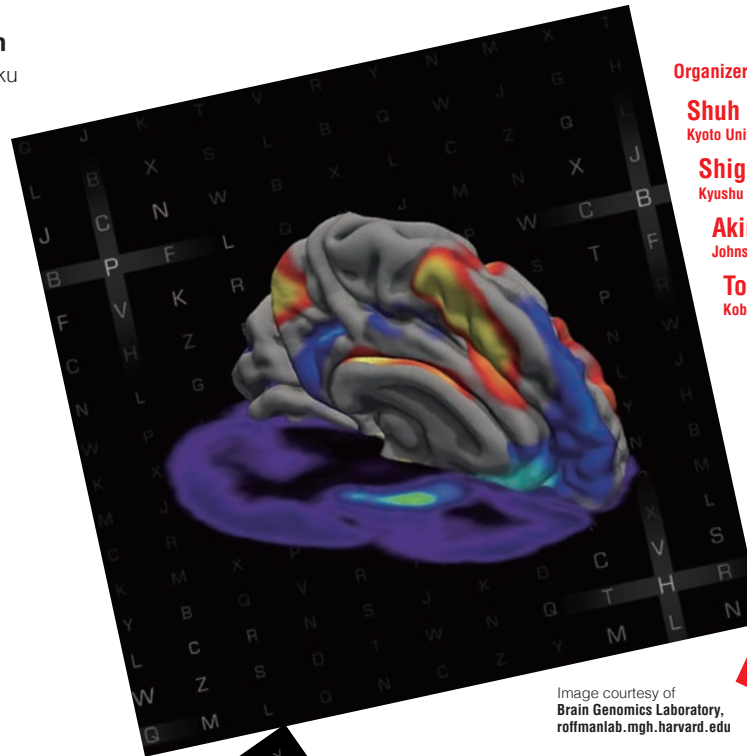


Image courtesy of  
**Brain Genomics Laboratory,**  
[roffmanlab.mgh.harvard.edu](http://roffmanlab.mgh.harvard.edu)

**Organizers**

**Shuh Narumiya**  
Kyoto University, Japan

**Shigenobu Kanba**  
Kyushu University, Japan

**Akira Sawa**  
Johns Hopkins Hospital, U. S. A.

**Tomoyuki Furuyashiki**  
Kobe University, Japan



**Takeda Science Foundation**

Supported by  **The Japanese Pharmacological Society**

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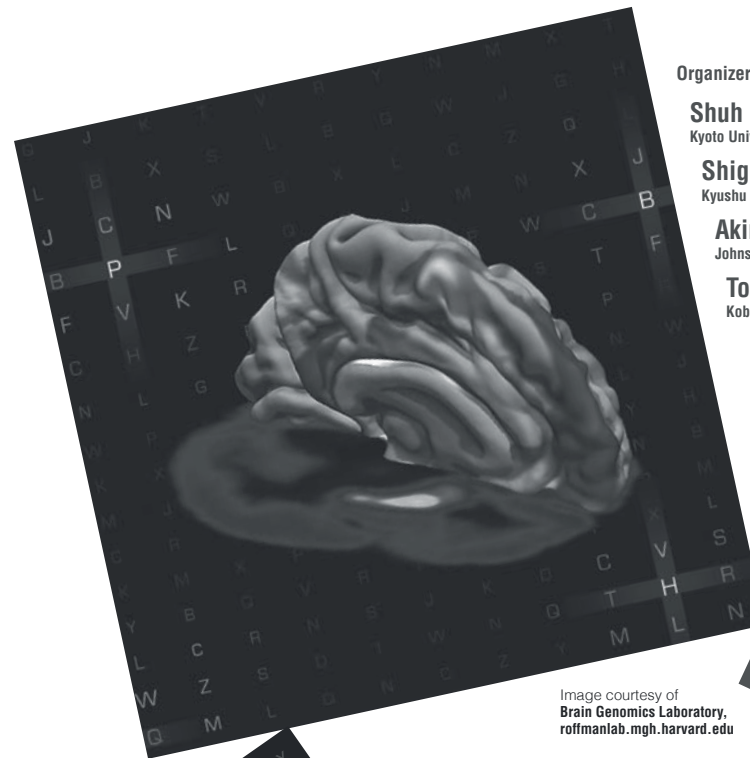


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The 10th Takeda Science Foundation  
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## Invitation

Despite significant advances in neuroscience, mental illness is still an enigma. The 10th Takeda Science Foundation Symposium in PharmaSciences on "Mental Illness: Human Biology and Preclinical Modeling for Translation" will discuss how we tackle this enigmatic and debilitating condition. We invite distinguished researchers who study mental illness by various technological approaches and focuses, such as synaptic structure, neural circuits, inflammation, disease trajectory, human brain imaging and computation. We will also learn lessons from the recent discovery that ketamine possesses rapid-acting anti-depressant activity. The aim of this symposium is to make a forum in which invited speakers and attending scientists discuss their findings and construct together a variety of mechanistic hypotheses on mental illness and conceive methodologies to test them by shuttling between preclinical models and humans. So, this is an exciting challenge to develop human disease biology on the most difficult disease area, which ultimately leads to drug discovery in near future. We, the organizing committee, cordially invite you to attend the symposium to exchange ideas and expertise with invited speakers in this challenging endeavour.

Organizing Committee



Chair: Shuh Narumiya  
Professor, Kyoto University, Japan



Shigenobu Kanba  
Professor, Kyushu University, Japan



Akira Sawa  
Professor, Johns Hopkins Hospital, U. S. A



Tomoyuki Furuyashiki  
Professor, Kobe University, Japan

The 10th Takeda Science Foundation  
Symposium on PharmaSciences  
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Tomoyuki Furuyashiki  
Professor, Kobe University, Japan

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## GENERAL INFORMATION

### Date and Site

Date: January 24 - January 25, 2020  
 Site: Center for Learning and Innovation (CLI),  
 Takeda Pharmaceutical Company, Ltd.  
 Address: 50-2 Yamadaminami, Suita  
 Osaka 565-0823, Japan  
 Phone: +81-6-6878-7712  
 Fax: +81-6-6878-7740

Symposium Website: <http://www.takeda-pharma.jp>

### Official Language

The official language of the symposium is English.  
 No simultaneous translation will be provided.

### Registration Desk Opening Hours

- Friday, January 24 08:50 – 18:00
- Saturday, January 25 08:30 – 16:00

### Publication

A Program & Abstracts Book will be distributed to  
 all participants when registering.

### Social Events

All participants are cordially invited to Welcome Reception.

Friday, January 24 18:35 – 20:20

Site: Dining Hall "ODORIKO", 1st Floor  
 Center for Learning and Innovation  
 Takeda Pharmaceutical Company, Ltd.

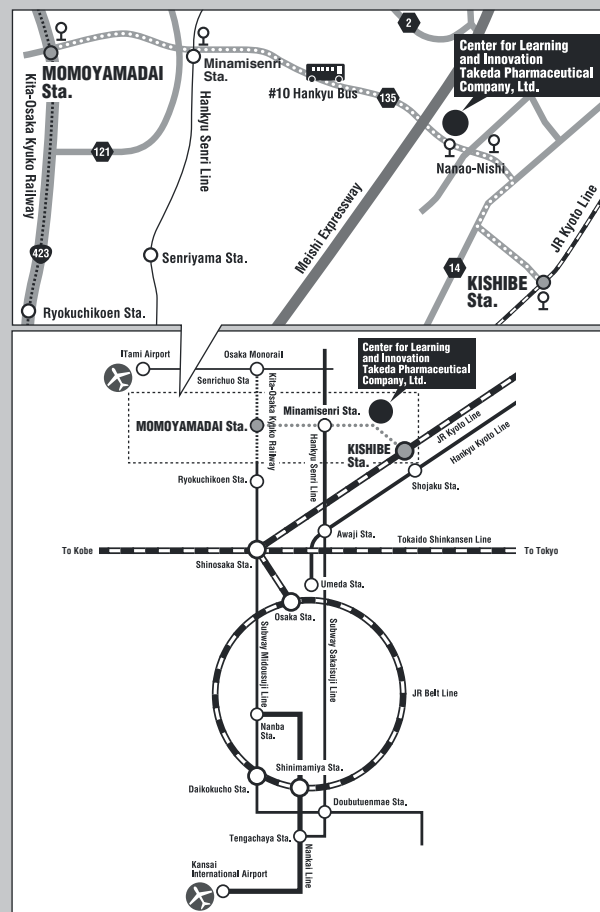
### Lunch

Lunch will be served at the Symposium site  
 on January 24 and 25.

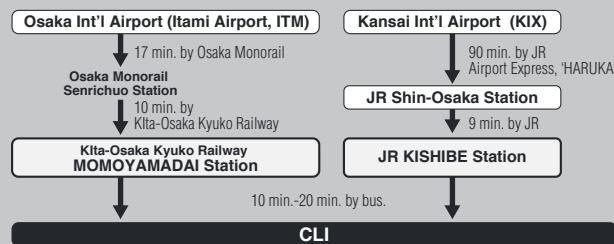
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## ACCESS MAP



### Access to CLI: Center for Learning and Innovation (CLI) Takeda Pharmaceutical Company, Ltd.



FREE Shuttle buses run from JR KISHIBE Station.  
 A timetable will be available at the Symposium website.

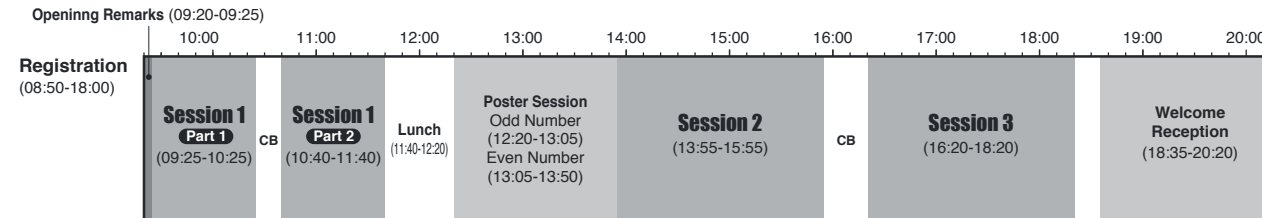
<http://www.takeda-pharma.jp>

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# TIME TABLE

CB: Coffee Break

## Friday, January 24 Symposium Day 1 • Session 1 - Session 3



### Session 1 (09:25-11:40)

**Chairpersons**  
Akira Sawa, U.S.A.  
Anissa Abi-Dargham, U.S.A.

#### Part 1 (09:25-10:25)

**Speakers**  
S1-1 Raquel E. Gur, U.S.A.  
S1-2 Shigenobu Kanba, Japan

#### Part 2 (10:40-11:40)

**Speakers**  
S1-3 Avshalom Caspi, U.S.A.  
S1-4 Toshiaki A. Furukawa, Japan

### Session 2 (13:55-15:55)

**Chairpersons**  
Shigenobu Kanba, Japan  
Raquel E. Gur, U.S.A.

#### Speakers

S2-1 Anissa Abi-Dargham, U.S.A.  
S2-2 Philip McGuire, U.K.  
S2-3 Peter J. Uhlhaas, U.K.  
S2-4 Jun Miyata, Japan

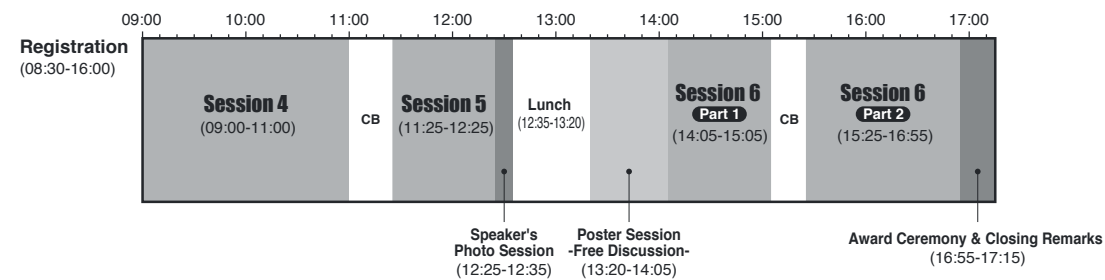
### Session 3 (16:20-18:20)

**Chairpersons**  
Tomoyuki Furuyashiki, Japan  
Jonathan Kipnis, U.S.A.

#### Speakers

S3-1 Mitsuo Kawato, Japan  
S3-2 Akiko Hayashi-Takagi, Japan  
S3-3 Kay M. Tye, U.S.A.  
S3-4 Ko Kobayakawa, Japan

## Saturday, January 25 Symposium Day 2 • Session 4 - Session 6



### Session 4 (09:00-11:00)

**Chairpersons**  
Akiko Hayashi-Takagi, Japan  
John H. Krystal, U.S.A.

#### Speakers

S4-1 Jonathan Kipnis, U.S.A.  
S4-2 Jonathan Godbout, U.S.A.  
S4-3 Tomoyuki Furuyashiki, Japan  
S4-4 Edward T. Bullmore, U.K.

### Session 5 (11:25-12:25)

**Chairperson**  
Avshalom Caspi, U.S.A.

#### Speakers

S5-1 Akira Sawa, U.S.A.  
S5-2 Kerry J. Ressler, U.S.A.

### Session 6 (14:05-16:55)

**Chairpersons**  
Shuh Narumiya, Japan  
Edward T. Bullmore, U.K.

#### Part 1 (14:05-15:05)

**Speakers**  
S6-1 John H. Krystal, U.S.A.  
S6-2 Kenji Hashimoto, Japan

#### Part 2 (15:25-16:55)

**Speakers**  
S6-3 Conor Liston, U.S.A.  
S6-4 Atsushi Kamiya, U.S.A.  
S6-5 Fred H. Gage, U.S.A.

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# SYMPOSIUM PROGRAM (as of end of November)

**DAY 1** Friday, January 24

09:20-09:25 **Opening Remarks**  
**Shuh Narumiya** Kyoto University, Japan

## **Session 1** General Introduction: Towards Human Biology

Chairpersons

**Akira Sawa** Johns Hopkins Hospital, U.S.A.

**Anissa Abi-Dargham** Stony Brook University, U.S.A.

09:25-11:40

**Part 1** 09:25-10:25

**S1-1** 09:25-09:55

The Contribution of Genes and Environment to the Evolution of Psychosis

**Raquel E. Gur** University of Pennsylvania, U.S.A.

**S1-2** 09:55-10:25

An integrated view of Complex psychiatric phenotypes

**Shigenobu Kanba** Kyushu University, Japan

10:25-10:40 Coffee Break

**Part 2** 10:40-11:40

**S1-3** 10:40-11:10

Charting mental disorders from childhood to midlife

**Avshalom Caspi** Duke University, U.S.A.

**S1-4** 11:10-11:40

Evidence synthesis: Present and future

**Toshiaki A. Furukawa** Kyoto University, Japan

11:40-12:20 **Lunch**

12:20-13:50 **Poster Session**

**Odd Number** 12:20-13:05 **Even Number** 13:05-13:50

## **Session 2** Imaging & Computation

Chairpersons

**Shigenobu Kanba** Kyushu University, Japan

**Raquel E. Gur** University of Pennsylvania, U.S.A.

13:55-15:55

**S2-1** 13:55-14:25

New insights into the topography and mechanisms of dopaminergic alterations in schizophrenia

**Anissa Abi-Dargham** Stony Brook University, U.S.A.

**S2-2** 14:25-14:55

Biological factors related to the onset of psychosis

**Philip McGuire** King's College London, U.K.

**S2-3** 14:55-15:25

E/I-balance and gamma-band oscillations across illness-stages in Schizophrenia:

Using Magnetoencephalography to identify circuit dysfunctions and biomarkers

**Peter J. Uhlhaas** Charite Universitätsmedizin Berlin, Germany

**S2-4** 15:25-15:55

Saliency account of delusion and hallucination

**Jun Miyata** Kyoto University, Japan

15:55-16:20 Coffee Break

## **Session 3** Synaptic / Neural Circuit Mechanisms

Chairpersons

**Tomoyuki Furuyashiki** Kobe University, Japan

**Jonathan Kipnis** University of Virginia, U.S.A.

16:20-18:20

**S3-1** 16:20-16:50

Computational neuroscience approach to mental disorders

**Mitsuo Kawato** Advanced Telecommunications Research Institute International (ATR), Japan

**S3-2** 16:50-17:20

Multi-scale Understanding of Synaptic Pathology of Psychiatric Disorders

**Akiko Hayashi-Takagi** RIKEN Center for Brain Science, Japan

**S3-3** 17:20-17:50

Neural Circuit Mechanisms of Emotional and Social Processing

**Kay M. Tye** The Salk Institute for Biological Studies, U.S.A.

**S3-4** 17:50-18:20

Innate fear odors elicit a physiological crisis mode that promotes survival in life-threatening situations

**Ko Kobayakawa** Kansai Medical University, Japan

18:35-20:20 **Welcome Reception**

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## SYMPOSIUM PROGRAM (as of end of November)

DAY 2 Saturday, January 25

### Session 4 Inflammation & Mental Illness

Chairpersons

**Akiko Hayashi-Takagi** RIKEN Center for Brain Science, Japan  
**John H. Krystal** Yale University school of Medicine, U.S.A.

09:00-11:00

**S4-1** 09:00-09:30

Meningeal immunity and lymphatics in CNS function and dysfunction

**Jonathan Kipnis** University of Virginia, U.S.A.

**S4-2** 09:30-10:00

Psychological Stress and Prolonged Anxiety:  
Key interactions between Microglia, Monocytes, and Endothelial cells

**Jonathan Godbout** The Ohio State University, U.S.A.

**S4-3** 10:00-10:30

Stress and innate immune responses in the brain

**Tomoyuki Furuyashiki** Kobe University, Japan

**S4-4** 10:30-11:00

Inflammation and depression

**Edward T. Bullmore** University of Cambridge, U.K.

11:00-11:25 Coffee Break

### Session 5 Disease Trajectory

Chairperson

**Avshalom Caspi** Duke University, U.S.A.

11:25-12:25

**S5-1** 11:25-11:55

Looking for critical mediators in major mental illnesses:  
early detection and intervention

**Akira Sawa** Johns Hopkins Hospital, U.S.A.

**S5-2** 11:55-12:25

Next Generation Therapeutics of Anxiety and PTSD:  
neural circuitry & cell-type specific approaches to  
amygdala functioning and threat processing

**Kerry J. Ressler** McLean Hospital, U.S.A.

12:25-12:35 **Speaker's Photo Session**

12:35-13:20 **Lunch**

13:20-14:05 **Poster Session -Free Discussion-**

### Session 6 Translation

Chairpersons

**Shuh Narumiya** Kyoto University, Japan  
**Edward T. Bullmore** University of Cambridge, U.K.

14:05-16:55

**Part 1** 14:05-15:05

**S6-1** 14:05-14:35

Rapid-Acting Antidepressants: New treatments, new hope,  
and new insights into the brain

**John H. Krystal** Yale University school of Medicine, U.S.A.

**S6-2** 14:35-15:05

Quo Vadis Ketamine Enantiomers?

**Kenji Hashimoto** Chiba University, Japan

15:05-15:25 Coffee Break

**Part 2** 15:25-16:55

**S6-3** 15:25-15:55

Sustained rescue of prefrontal circuit dysfunction by  
antidepressant-induced postsynaptic spine formation

**Conor Liston** Weill Cornell Medicine, U.S.A.

**S6-4** 15:55-16:25

Development and Stress: Exploring Novel Drugs Targeting  
Inflamed Brain for Psychiatric Disorders

**Atsushi Kamiya** Johns Hopkins University, U.S.A.

**S6-5** 16:25-16:55

Modeling Neuropsychiatric Disorders using Human Stem Cells

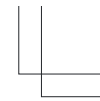
**Fred H. Gage** The Salk Institute for Biological Studies, U.S.A.

16:55-17:15 **Award Ceremony & Closing Remarks**

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