

**UK-Japan Open Lecture Event**  
**“Epigenetics and transcription in the brain”**

16th December 2014  
Embassy of Japan in the UK

**-Programme-**

- 15:45- Registration**
- 16:15-16:30 Opening remarks**  
Mr Hiroshi Matsuura, Minister (Economic), Embassy of Japan in the UK  
Mr Andrew Jackson, Head of Science, Innovation and Climate Department,  
Deputy Chief Scientific Advisor, Foreign and Commonwealth Office
- 16:30-17:00 Professor Tony Kouzarides** (Gurdon Institute, University of Cambridge)  
*‘Epigenetic pathways and their misconduct in cancer’*
- 17:00-17:10 Q&A
- 17:10-17:40 Dr Tadafumi Kato** (RIKEN Brain Science Institute)  
*‘Epigenetics and mental disorders: from myth to evidence’*
- 17:40-17:50 Q&A
- 17:50-18:00 Dr Adrian Moore** (RIKEN Brain Science Institute)  
*‘The UK and Japan, creating a powerful partnership for brain research and brain health’*
- 18:00-20:00 Networking reception**

- Abstracts and Biographies -

**Professor Tony Kouzarides**

Professor of Cancer Biology, Cancer Research UK Gibb Fellow  
Deputy Director, Gurdon Institute, University of Cambridge

*Epigenetic pathways and their misconduct in cancer*

Epigenetics involves the regulation of our genes using processes that do not change our DNA sequences. These processes and pathways have been recognised at the molecular level only in the last 20 years. Only now is their impact being recognised, and in addition, their misconduct in disease. The presentation will focus on what these processes are, how they affect our genes and how their influence is misregulated in cancer.

Biography

1978-1981: B.Sc. in Genetics, University of Leeds

1981-1984: Ph.D. in Virology, University of Cambridge

1984-1986: Postdoctoral fellow, MRC Laboratory of Molecular Biology, Cambridge.

1986-1989: Postdoctoral fellow, New York University Medical Centre, New York

1989-1991: Research Associate, Department of Pathology, Cambridge University.

1991-1996: Senior Research Associate, Gurdon Institute, University of Cambridge.

1996-1999: Reader, Gurdon Institute, University of Cambridge.

1999-2000: Professor of Molecular Cancer Biology, Gurdon Institute, University of Cambridge

2000- Current position

## **Dr Tadafumi Kato,**

Senior Team Leader, Lab for Molecular Dynamics of Mental Disorders,  
RIKEN Brain Science Institute

### *Epigenetics and mental disorders: from myth to evidence*

Recent progress in genetic studies of mental disorders including mood disorders and schizophrenia showed the role of genetic factors in these disorders. On the other hand, epidemiological studies have also suggested that gene environment interaction plays a role in the etiology of these mental disorders. Recent progress in epigenetics have suggested that long lasting gene expression changes caused by DNA modifications as a result of early environmental stress might be related to mental disorders. Whereas methylation of cytosine residue at CpG site is the most established DNA modification, recent discovery of methylation at non-CpG sites and hydroxymethylation of cytosine residue in the brain also draw attention. Based on the story that early environment is “memorized” in the form of DNA modification, many interesting hypotheses have been proposed in the last decade. Despite extensive studies in this context, however, few findings are well established by robust replication by multiple studies. This could be ascribed to various experimental methodologies that can measure different aspects of DNA modifications, heterogeneity of cell types in the brain and blood, research strategies (comprehensive or hypothesis-driven), among others. In this presentation, I will introduce the evidence supporting the possible role of epigenetics in mental disorders and discuss current controversies and future directions.

### Biography

- 1988 : M.D. in University of Tokyo
- 1995 : Ph.D. in Shiga Univ. of Med. Sci.
- 1988- 1989: Resident, Dept of Neuropsychiatry, University of Tokyo Hospital
- 1995- 1996: International Visiting Fellow, Dept of Psychiatry, Univ of Iowa
- 1989 - 1997: Assistant Professor, Dept of Psychiatry, Shiga Univ. of Medical Science
- 1997- 1999: Assistant Professor, Dept of Neuropsychiatry, University of Tokyo
- 1999- 2000: Lecturer, Dept of Neuropsychiatry, University of Tokyo
- 2001: Team Leader, Lab. for Molecular Dynamics of Mental Disorders, RIKEN Brain Science Institute
- 2009-: Current position