

## A brief History

**Name :** Makoto Asashima, Ph.D.

**Birth :** Born at Niigata (Japan) in 1944, Sept. 6

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3-40-9 Minami-Otsuka, Toshima-ku, Tokyo 170-0005 Japan

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**Position :**

Institution: Vice President, Tokyo University of Science

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Professor Emeritus

Department of Life Sciences (Biology)

Graduate School of Arts and Sciences, The University of Tokyo

Director

Center of Life Science for Tsukuba Advanced Research Alliance (TARA center),

University of Tsukuba

Emeritus Fellow, Research Center for Stem Cell Engineering

National Institute of Advanced Industrial Science and Technology (AIST)

Academic Adviser

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**Nationality:** Japan

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**Education :**

Graduated from Tokyo University for Education in March, 1967

Finished the graduate courses at the University of Tokyo

Master of Science from The University of Tokyo in March 1969

Doctor of Science from The University of Tokyo in March 1972

**Professional career :**

Research Associate of Institute of Molecularbiology, Free University of Berlin (Germany)

(April 1972-September 1974)

Associate Professor of Yokohama City University, Faculty of Arts and Sciences

(October 1974-December 1985)

Professor at Yokohama City University, Faculty of Arts and Sciences

(January 1985-March 1993)

Professor at The University of Tokyo, Faculty of Arts and Sciences

(April 1993-March 1995)

Professor at The University of Tokyo, Graduate School of Arts and Sciences

(April 1995-January 2003)

Dean and Head at The University of Tokyo, Graduate School of Arts and Sciences

(February 2003-2005)

Vice-President of Science Council of Japan

(Oct. 4, 2005- Sep. 2008)

Director of Life Sciences Network in The University of Tokyo

(Oct. 1, 2005-Mar. 31, 2007)

Director of Center for Structuring Life Sciences in The University of Tokyo

(Apr. 1, 2006-Mar. 31, 2007)

Director, Organ Development Research Laboratory in National Institute of Advanced Industrial Science and Technology (AIST) (Apr.1, 2006-)

Managing Director, Executive Vice President, Visiting Professor in The University of Tokyo

(Apr. 1, 2007-Mar. 31, 2009)

Executive Director of International Association of University (IAU)

(Oct. 1, 2008-Oct. 1, 2012)

Fellow, Organ Development Research Laboratory in National Institute of Advanced Industrial Science and Technology (AIST)

(Apr.1, 2009- Mar. 31, 2010)

Principal Fellow of Center for Research and Development Strategy,

Japan Science and Technology Agency (Aug. 1, 2009-)

Fellow, Director of Research Center for Stem Cell Engineering

National Institute of Advanced Industrial Science and Technology (AIST)

Director of Life Science Center of Tsukuba Advanced Research Alliance ( Apr.1, 2010 ~ )

Japan Society For The Promotion of Science Executive Director (JSPS Oct. 1, 2011 ~)

**Academic activity :**

Japanese Society of Developmental Biology (President 1990 ~ 1995)  
Japanese Society of Zoological Science (President 1990 ~ 1994)  
Japanese Society of Cell Biology (Council)  
Japanese Society of Space Biology (President 1992 ~ 1995)  
Japanese Society of Molecular Biology (Council)  
International Society of Developmental Biologists (Academic council member 1977 ~ 1980)  
Tokyo University Press (Trustee)  
Development Growth and Differentiation (Associate Editor)  
Cell Structure and Function (Editor)  
Int. J. Developmental Biology (Associate editor)  
Zoological Science (Editor)  
Japanese Society of Cancer Research (Council)  
Japanese Society of Regenerative Medicine (Council)  
Scientific Reports (Editor, 2014 ~)

**Prizes**

1. Prize of Japanese Society of Zoological Science in 1990
2. Prize of Inoue Academic Foundation (with gold medal) in 1990
3. Prize of Kihara Memorial Academic Foundation (Silver Flower design with gold frame) in 1994
4. Siebold Prize (Germany; President Weiszeker) in 1994
5. Toray Science Prize (with gold medal) in 1999
6. Mochida Medical Science Prize (with gold medal) in 1999
7. Naito Memorial Science Prize (with gold medal) in 2000
8. Prize of Japanese Society of Bioindustry in 2000
9. Uehara Prize (with gold medal) in 2000
10. Japan Academy Prize and Imperial Special Prize (with silver pot) from Society of Japan Academy in 2001
11. The world Technology Award (Biotechnology)
12. The Prince Hitachi Prize for comparative oncology (with special medal) in 2002
13. Achievement Prize for Space Biology (2007)
14. Erwin-Stein-Preises (Germany: Erwin-Stein-Stiftung) in 2008
15. Distinguished person from Japanese Government (2008)
16. Achievement Prize for Regeneration Medicine (2013)

**Professional :** Developmental Biology, Cell Biology, Organogenesis

1. Mechanism of egg development using from experimental biology to molecular biology
2. Control of Organogenesis *in vitro*
3. Molecular biology of cell differentiation and embryonic development.
4. Cloning and analysis of organ specific genes and early embryonic development

**Honor**

1. Honorary citizen of Sado city

2. Emeritus professor of the University of Tokyo.
3. Emeritus professor of the Yokohama city University
4. Persons of cultural merits
5. Honorary member of Japanese Society of Inflammation and Regeneration
6. Special honorary member of Japanese regeneration medical society
7. Honorary member of Japanese Space Biological Society
8. Emeritus fellow of National Institute of Advanced Industrial Science and Technology (AIST)
9. Emeritus member of Japanese Humboldt Association
10. Honorary member of Japan Soc. for Cell Biology
11. Honorary member of Japan Zoological Soc. of Japan

### **Main achievements**

- ( 1 ) Identification of the activin as the mesoderm induction factor and development of new developmental biology
- ( 2 ) Various organogenesis and proof of the concept of the gradient that are derived by activating
- ( 3 ) The formation of the body axis structure with parts level characteristics such as the head or the trunk tail structure from an undifferentiated cell
- ( 4 ) Analysis of the formation such as kidney and the heart from an undifferentiated cell and the mechanism
- ( 5 ) Genetic analysis to participate in central nerve formation from an undifferentiated cell
- ( 6 ) Proof of transplant and the functionality from an undifferentiated cell to a nephridium and the living body whom I formed of the heart
- ( 7 ) Analysis of the pancreatic formation from an undifferentiated cell and its mechanism
- ( 8 ) Elucidation of organogeny and the cascade of the expression of each gene cluster order which is an organ-specific about it
- ( 9 ) Functional analysis by the formation and the transplant of the sensory organs such as eyes
- ( 1 0 ) Newly genetic discovery and naming with the organogeny
- ( 1 1 ) The formation of the pancreas having internal secretion, the exocrine gland from a mouse embryonic stem cell
- ( 1 2 ) The formation of the breathing epithelium including a cardiac muscle cell and the ciliated cell from a mouse embryonic stem cell
- ( 1 3 ) Identification of new genetic (TIF-1 $\beta$ ) maintaining non-differentiation of the embryonic stem cell of the mouse
- ( 1 4 ) Identification of the activator of the stem cell in the sea lion of the mature form mouse
- ( 1 5 ) Differentiation control of the nerve from a mouse olfactory epithelium stem cell and the pancreas
- ( 1 6 ) Discovery of the new biomarker of the undifferentiation voluntinism of the human ES,iPS cell

### **Books :**

1. Development and its Mechanism (Idemitsu Press, in 1983)
2. Modern biology (Riko-Gakusha, in 1988)
3. Developmental biology (Asakura-Press, in 1996)
4. Mechanism of Developmental Biology (Iwanami-Press, in 1998)
5. Fundamental of Molecular biology (Shokabo-Press, in 2000)

Other 20 books

**Papers :** over 399 original papers

**Invited lectures:**

In Japan: over 83 times

overseas: over 43 times

**Hobby :** book reading and walk