Elly Tanaka joins the IMP as Senior Scientist

The internationally recognized biologist Elly Tanaka has taken up a position as Senior Scientist at the Research Institute of Molecular Pathology (IMP) in Vienna. Together with her team, she will study the regeneration of injured body parts.

One of the animals that the Tanaka-group will use for their studies is the Mexican salamander axolotl. Salamanders have the remarkable ability to regrow lost limbs and can even repair their spinal cords when injured. Fish and frogs can regenerate parts of their bodies, but to a much lesser extent. In the course of evolution, this ability seems to have been gradually lost and in mammals, only some rare traces remain.

Elly Tanaka's research aims to identify the mechanisms underlying limb and spinal cord regeneration in the axolotl as a model for how regeneration occurs in vertebrates. Key questions address the nature of the stem cells that are responsible for the regeneration process and the signals that initiate it, following an injury. Comparing the salamander-cells to those in frogs and mice will shed light on how mammals have lost regeneration capabilities.

One of the defining features of regeneration is the ability of stem cells to form three-dimensional tissue. The Tanaka-group has succeeded in growing embryonic stem cells of mice into spinal cord tissue and to induce human embryonic stem cells to form tissues of the eye. Generating these tissues helps them understand the principles of how the spinal cord develops and the mechanisms of retinal disease.

"The field of regeneration biology has always fascinated me", says Elly Tanaka. "Today's advanced technologies have finally made the topic much more accessible. At the same time, research with stem cells has progressed dramatically. The time is now ripe to connect the two fields."

At the Vienna Biocenter - where the IMP is located – several research groups focus on cell biology or stem cell biology. The ability to interact and collaborate with them is one of the biggest assets for Elly Tanaka. She also points out the supreme infrastructure that the Vienna Biocenter offers. "With its fantastic core facilities and the expertise of the people running them, the VBC is certainly one of the most attractive places to do research in molecular biology."

"Elly Tanaka's arrival is a highlight for the IMP", comments IMP Scientific Director Jan-Michael Peters. "By continuing her work on tissue regeneration and extending it from using the axolotl as a model organism to mouse and human embryonic stem cells, she will introduce a new research theme to the institute. The fact that she decided in favor of the IMP against competing offers from leading institutions in the USA demonstrates the international significance of the IMP."

About Elly Tanaka

Prof. Elly Tanaka studied Biochemistry at Harvard University and obtained her PhD in the lab of Marc Kirschner at UCSF. For her Postdoctoral research, she moved to the UK where she worked with Jeremy Brockes at University College, London. From 1999 to 2008, Elly Tanaka held a group leader-position at the Max Planck Institute of Molecular Cell Biology and Genetics in Dresden. In 2008, she was promoted to full professor at the TU Dresden. For the past two years, she acted as director of the DFG Center for

Regenerative Therapies, Dresden.

About the IMP
The Research Institute of Molecular Pathology (IMP) in Vienna is a basic biomedical research institute largely sponsored by Boehringer Ingelheim. With over 200 scientists from 37 nations, the IMP is committed to scientific discovery of fundamental molecular and cellular mechanisms underlying complex biological phenomena. Research areas include cell and molecular biology, neurobiology, disease mechanisms and computational biology.

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