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Science teachers get a lesson in development

October 23, 2009 – The RIKEN CDB held its recurring course of high school science teachers in conjunction with the Japanese Society of Developmental Biologists on October 3 and 4. This is the second time the course, which is aimed at making a contribution to high school education in the biological sciences, has been held since its launch last year.

This year's main themes were the use of chicken embryos as a classroom material, and organizer transplant experiments, which were introduced through lectures and lab work. On the first day, Prof. Sadao Yasugi of Kyoto Sangyo University spoke on the history of and recent developments in organizer research, followed by a live demonstration of organizer transplantation using frog embryos by Mikihito Shibata and Masaki Takeuchi. This experiment is described in many high school textbooks, but for many of the participants it was the first time for them to see it performed.

Kimiko Fukuda of Tokyo Metropolitan University next led lab work on the use of the chicken embryo, teaching fundamentals of chicken biology, and methods for obtaining fertilized eggs, and extracting and observing embryos. On seeing how eggs are relatively easy and inexpensive to obtain and work with, several teacher participants commented that they would like to use them in their own classes. After learning the basics, the teachers got to try their hands at an organizer experiment in chicken, transferring this signaling center from one embryo to another in the hopes of inducing a secondary body axis.

On day two, Hitoshi Niwa of the RIKEN CDB spoke on the study of pluripotent stem cells that led to the induced pluripotent stem (iPS) cell breakthrough, focusing on the first identification of cellular pluripotency, and the derivation of embryonic stem cells as milestones on the road that led to the iPS cell technology. Afterwards, the participants went to check the results of their organizer

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experiments from the previous day, and did an experiment on introducing GFP into chicken embryos.

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