

Hiroki R. Ueda takes science gold medal

April 28, 2005 – Hiroki R. Ueda (Team Leader; Laboratory for Systems Biology) was named one of this year's three winners of the Tokyo Techno Forum 21 gold medal. This is the eleventh year that the medals have been awarded to young scientists for breakthrough contributions to their fields. The prize was awarded at a ceremony in Tokyo earlier this month.



Hiroki R. Ueda, with 2005 Tokyo Techno Forum 21 gold medal

Ueda was recognized for his work on deciphering the network of genetic activity underlying biological clocks. These natural time-keeping mechanisms set an internal rhythm within the body that follows a cycle with a period of approximately 24 hours. As a graduate student, Ueda studied circadian genes in the fruit fly *Drosophila* as well as the genetic regulation of the mammalian (mouse) biological clock.

At the CDB as well, Ueda's work has focused on the network of mouse clock genes. A collaborative study conducted with colleagues at Yamanouchi Pharmaceutical and the University of Tokyo led to the development of a "molecular timetable" of body time based on the sampling of gene expression levels at specific time points. Other work published earlier in 2005 reported the identification of central players of a network of genes in the mouse that regulates daily biological rhythms.

Ueda's application of a comprehensive systems biology approach to the study of circadian genetics promises to improve the way we understand timekeeping in the human body as well, and represents a major step toward the fulfillment of the longstanding dream of scientists and physicians: to put a face on the body's clock. It is hoped that studies such as these will one day allow doctors to tailor drug administration to a patient's individual body time, which would be of great benefit in optimizing efficacy and reducing adverse effects.