

Einladung zum 82. ZEBET-Seminar

Basics and application of multicolour bioluminescence systems

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National Institute of Advanced Industrial Science and Technology (AIST), Japan
“Overview of bioluminescence systems and their probes”

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“Development of a multicolor luciferase assay system for the analysis of clock gene expression”

In the post genome era, reporter assay systems are used widely to study promoters, interactions between promoters and transcription factors, signal transduction and other cellular activities. Reporter assays are also applied to drug and toxicity screening in vitro, in cells and in vivo. Of the reporter genes known to date, luciferases, enzymes that catalyze bioluminescence reactions, are used most frequently. Bioluminescence is a simple reaction that is triggered by the addition of luciferin solution, and the equipment for measuring light intensity is simple. In this seminar, we introduce our multicolour luciferase system using multiple bioluminescence probes. One example is a multicolor reporter assay using beetle luciferases that emit various colors with a firefly luciferin can observe the dynamics of three gene expressions in the cells. Furthermore, our secreted Cypridina luciferase is a good reporter enzymes because these luciferases secreted into the medium can use to trace the time course of sequential gene expression. The secreted luciferase assay with a suitable perfusion system can be used to reveal the timing of drug supply or the influence and effect of a drug over the long term. By selecting the most appropriate bioluminescence system, the researcher can study the underlying molecular mechanisms of a physiological system.

TERMIN: Montag, 18. März 2013, 14:00 Uhr

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