GESELLSCHAFT DEUTSCHER CHEMIKER

KOLLOQUIUM

Wintersemester 2018/2019

Titel

Optical and Chemical Control of Biological Processes in Cells and Animals

Vortragender

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Abstract

Nature regulates biological processes, such as signal transduction, protein function, and gene expression, with high spatial and temporal precision. In order to study and understand these processes, equally precise external control is required. Chemical and physical perturbation methods are uniquely suited to provide a similar level of precision. In particular, light represents an excellent tool for this purpose, as it can be easily regulated in timing, location, wavelength, and amplitude, thereby enabling high-resolution control of biological processes.

We are developing chemical and optical tools to A) control protein function through genetic code expansion with unnatural amino acids that can be activated with light and small molecules, and to B) control nucleic acid function through synthetic installation of light-cleavable chromophores and through pharmacological modifiers of nucleic acid processing. We have applied these approaches to the conditional control of microRNA function, DNA recombination, gene editing, RNA polymerization, RNA translation, cell signaling, and other essential biological processes in human cells and in zebrafish embryos.

Ort

Chemie HS 3– Campus Nord, Otto-Hahn-Straße 6
Anfahrt: http://gdch.chemie.uni-dortmund.de

Zeit

Mittwoch, 16.01.2019, 17:00 Uhr st

Kaffeerunde: ab 16.15 Uhr (Seminarraum C2-02-326)

Meet the Prof. für Studierende im Anschluss an den Vortrag

gez. Professor Dr. Daniel Rauh
Gesellschaft Deutscher Chemiker
Ortsverband Dortmund