PHOTOCHEMISTRY FOR CONTROLLING BIOLOGICAL FUNCTIONS

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The external control of biologically active substrates/media in a spatially and temporally precise manner has already strongly impacted many fields of Biology. Among the various triggers, light combines high specificity and absence of invasiveness together with easy implementation with conventional microscopes.

In the context of concentration jumps and molecular responses, uncaging is the most favored method to get irreversible photocontrol. Photochromic ligands acting as reversible bistable photoswitches could also provide another opportunity for the control of biological substrates, in particular to analyze dynamic phenomena which cannot be presently investigated with caged compounds. This lecture will present some recent methodological developments in which we have addressed both approaches.