UniSysCat - Colloquium

Prof. Asier Unciti-Broceta

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Start Time: Wednesday, May 17, 2023 05:15 pm

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and via Zoom

Bioorthogonal intermingling between prodrugs and metal catalysts

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Performing abiotic reactions in biological settings, so-called bioorthogonal chemistry, has challenged us to search for novel biocompatible transformations for over two decades. The use of nonbiological transition metals such as Pd and Au makes possible to generate supra-stoichiometric amounts of xenobiotics in living systems in a non-enzymatic fashion, which has opened new avenues in chemical biology and biomedicine. Capitalising on the biocompatibility of these metals and their unique catalytic properties, our lab has led the exploration of heterogeneous catalysis for the site-specific “manufacture” of therapeutic agents in specific anatomical locations (e.g. inside tumours or the brain). In contrast to classical biolabile prodrugs, whose activation process relies on metabolic pathways, an efficient bioorthogonally-activated prodrug therapy is entirely dependent on the distinct catalytic properties of the metal and, by definition, drug precursors should remain intact in the absence of the metal source. In this talk, I will present our last advances on the design and application of bioorthogonal prodrugs and catalysts to elicit spatially controlled pharmacological activity.

Prof. Dr. Juri Rappsilber

Organizer