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Host: Niels Reichardt

Sugars & proteins: post-translational editing



Wednesday, 9th October
12.00 p.m.

CIC biomaGUNE - Seminar Room

Our work studies the interplay of biomolecules – proteins, sugars and their modifications.

Synthetic Biology's development at the start of this century may be compared with Synthetic Organic Chemistry's expansion at the start of the last; after decades of isolation, identification, analysis and functional confirmation, the future logical and free-ranging redesign of biomacromolecules offers tantalizing opportunities. This lecture will cover past and emerging areas in our group in the chemical manipulation of biomolecules with an emphasis on new bond-forming and bond-breaking processes compatible with biology.

(i) New methods: the development of precise methods that may be applied to biology at a post-translational level, generating minimal 'scars' or 'traces' (ideally 'trace'-less), could allow broad control of function. The development of chemo- and regio-selective methods with potential to post-translationally 'edit' biology in this way, applied under benign conditions to redesign and reprogramme the structure and function of biomolecules, will be presented.

(ii) 'Synthetic Biologics' and their applications: biomimicry; functional recapitulation; effector [drug/agrochemical/gene/radio-dose] delivery; selective protein degradation; inhibitors of pathogen interactions; non-invasive presymptomatic disease diagnosis; probes and modulators of *in vitro* and *in vivo* function illustrate possible resulting technologies.

