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From simple chemical building blocks to biological active molecules

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The development of new synthetic strategies for the synthesis of biologically active products characterized by a reduced number of steps and high efficiency is an important goal in modern pharmaceutical chemistry. In this lecture, some particularly interesting examples of the synthesis of bioactive molecules realized in a multicomponent fashion starting from very simple and largely available building blocks, under mild and sustainanable conditions, will be illustrated, with special emphasis on catalytic processes. In particular, the catalytic syntheses of new heterocycles with antitumor activity (ζ-lactame, cyclic urea, spiro-isoindolinisoxazolidine and furofuranone derivatives), antibacterial activity (benzofurofuranone derivatives), and herbicidal activity (benzofuran, coumarin, and isobenzofuranimine derivatives) will be discussed.

Biography

Raffaella Mancuso completed her PhD in "Methodologies for the Development of Molecules of Pharmacological Interest" at the University of Calabria in 2006. After a Post-doc stage at Iowa State University with Prof. Richard Larock (2008), she came back to University of Calabria working on organic synthesis. In 2012, she joined the group of Prof. Daniel Solé (University of Barcelona) working on novel syntheses of heterocycles. She is currently the recipient of a research grant from the University of Calabria working with Prof. Bartolo Gabriele on the synthesis of bioactive molecules. Her current scientific production include 58 papers and 2 patents.

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