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ABSTRACT

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Catalytic transformations of indoles: recent achievements and new perspectives for the synthesis of complex indole derivatives
Valentina Pirovano, Elisa Brambilla, Elisabetta Rossi, Giorgio Abbiati

CATALYTIC TRANSFORMATIONS OF INDOLES: RECENT ACHIEVEMENTS AND NEW PERSPECTIVES FOR THE SYNTHESIS OF COMPLEX INDOLE DERIVATIVES

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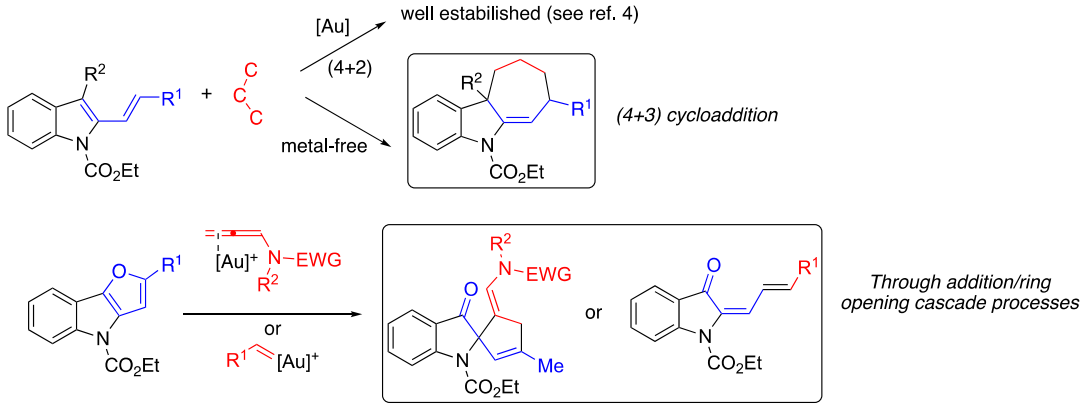
Transformation of simple indoles into (polycyclic) complex scaffolds has become the object of intensive studies in synthetic organic chemistry due to ubiquitous occurrence of indole core in the structure of relevant molecules.[1] In particular, catalytic-promoted manipulation of indoles have become an incomparable tool to increase indole structural complexity working under exceedingly mild conditions and in a regio- and stereo-controlled fashion.[2] In this context we reported in the last years the synthesis of complex carbazole derivatives through gold-catalyzed (4+2) cycloaddition reactions of vinylindoles with different π-systems[3] and the functionalization of structurally simple indoles with challenging metal-activated electrophiles.[4] Taking into account these premises, this oral communication will deal with our recent achievements in the field of cycloaddition reactions involving vinylindoles as 4π systems and in gold-catalyzed cascade reactions on indole-based scaffolds. In particular we were able to extend cycloaddition of vinylindoles besides (4+2) processes to synthetize cyclohepta[*b*]indoles. Moreover, we explored the reactivity of 4*H*-furo[3,2-*b*]indoles with gold-activated π-systems to synthetize 2-spiro-3-oxindoles and 2-alkenyliden-indolin-3-ones selectively.[5] Advantages of our methods as well as limitations and future perspectives will be discussed.



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