

DSM Science & Technology Awards (NORTH) 2008	
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Interested in bioactive natural products bearing a heterocyclic ring as central motif, we have devised a new technology that allows a rapid access to these compounds. Starting from readily available and simple precursors, we have developed a highly efficient copper-catalysed reductive synthesis of allenes which are converted under gold catalysis into the desired heterocycles. It is noteworthy that the reductive allene formation is closing a preparative gap because most procedures for accessing this important compound class rely on the construction of C-C bonds while the corresponding C-H bond formation was highly underdeveloped. Both methods are environmentally benign and inexpensive, tolerating an abundance of functional groups. As true test for our combined coinage metal catalysis, key intermediates of several potential drugs (anti-bacterial and anti-cancer compounds) were synthesized. Since our reaction pathways also allow an efficient access to potentially useful analogues of these bioactive compounds, structure-reactivity relationships can now be studied.