Diversity-Oriented Synthesis of Heterocycles and Macrocycles by Controlled Reactions of Oxetanes with α-Iminocarbenes

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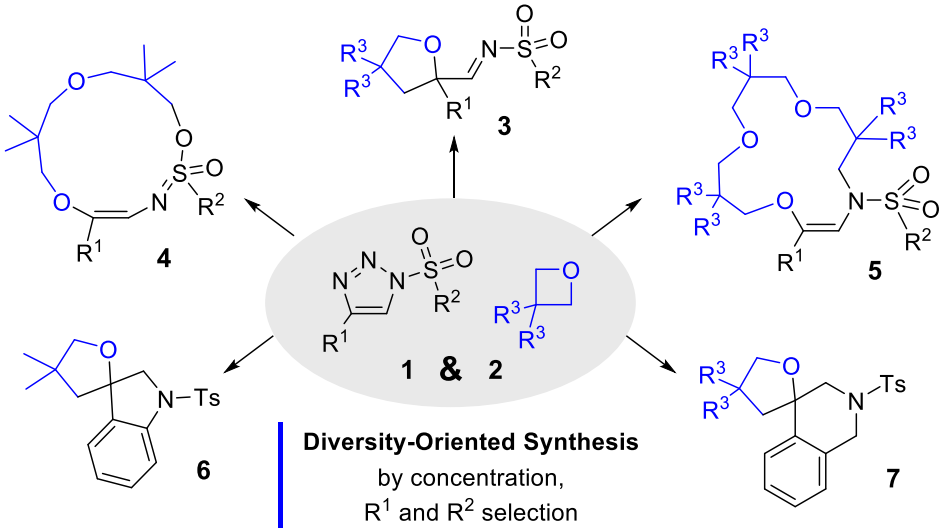
N-Sulfonyl-1,2,3-triazoles are known to decompose under metal catalyzed reaction conditions leading to electrophilic *α*-imino carbenes.[1] These intermediates undergo many original processes, from cyclopropanations[2] to ylide forming reactions and subsequent transformations.[3]

Herein, we report the Rh(II)-catalyzed reaction of sulfonyl triazoles **1** with oxetanes **2**.[4] Depending on reaction conditions or substrate selection, 2-imino tetrahydrofurans **3**, 13-membered sulfonimidates **4** and 15-membered aza-macrocycles **5** are generated selectively *via* formal [1+4], [5+4+4] and [3+4+4+4] condensations of α-imino carbenes and oxetanes, respectively. Straightforward syntheses of spiro N-heterocycles such as indoline **6** and tetrahydroquinoline **7** are achieved by means of Buchwald-Hartwig and Pictet-Spengler cyclizations, completing effectively the product diversity.



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