

Polycyclic Indoline-Benzodiazepines by Electrophilic Additions of α -imino carbenes to Tröger Bases

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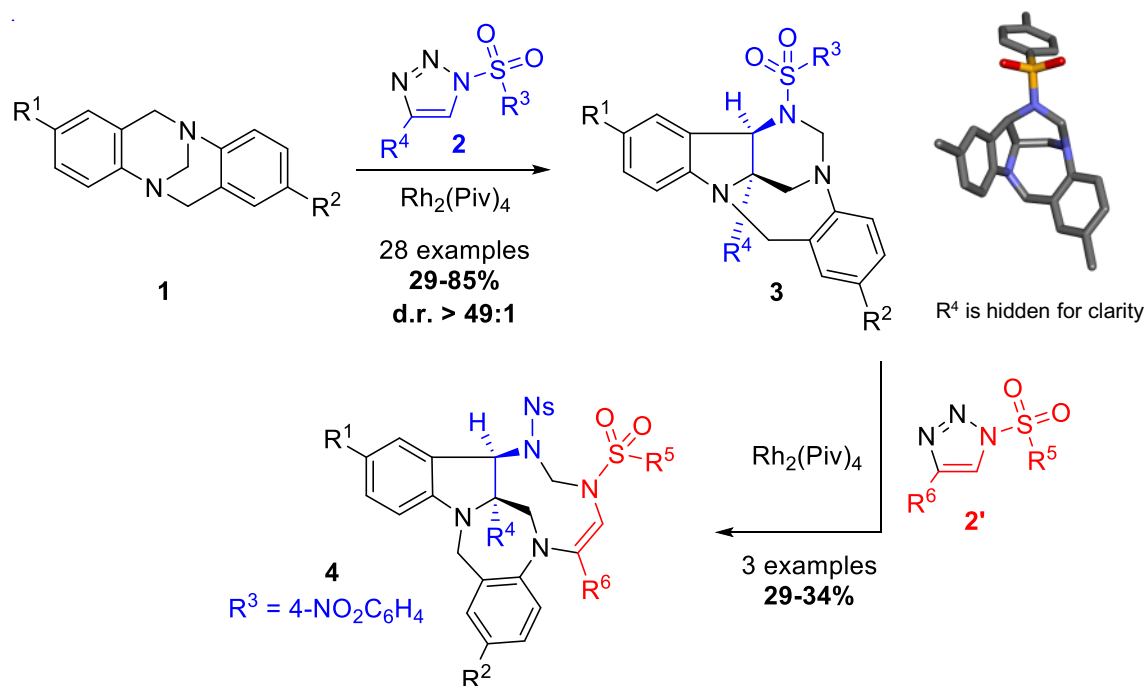
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In the field of Tröger Base (TB) chemistry,^[1] our group has previously reported the addition of reactive electrophilic carbenes to form (configurationally stable) ethano TB by enantiospecific expansion of the methanodiazocine bridge.^[2]

Herein, we investigated the reactivity of TB **1** with α -imino carbenes made by Rh(II)-catalyzed decomposition of *N*-sulfonyl triazoles **2**.^[2] A straightforward access to novel indoline-diazepine polycyclic structures **3** is afforded with yields up to 85% and exclusive diastereoselectivity (*d.r.* > 49:1). Interestingly, when a nosyl group is used as sulfonyl moiety, a double carbene insertion is observed leading to products **4** in 29-34% yields.^[4]



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[4] A Bosmani, A Guarnieri-Ibáñez, S Gouedranche, C Besnard, J Lacour, *Angew. Chem. Int. Ed.* **2018**, 57, 7151-7155