

PHENACYL/PYRENACYL SULFIDES: NEW PHOTOCHEMICAL THIETANES PRECURSORS

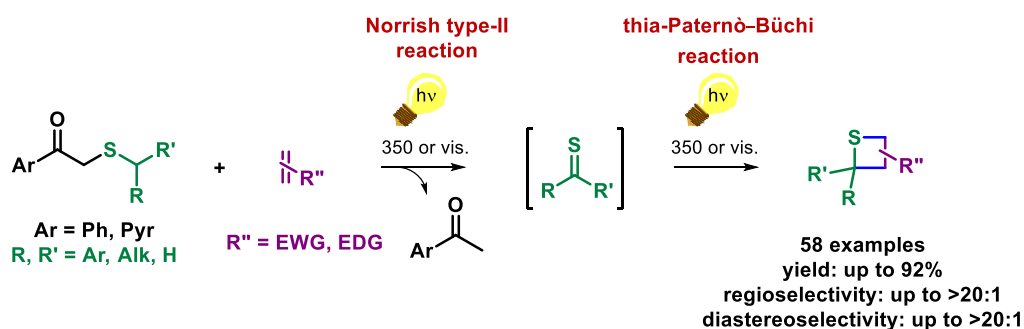


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Photochemical reactions constitute powerful tools for the creation of chemical diversity from simple starting materials.¹ They provide access to specific and complex molecular structures, that are difficult to prepare otherwise.² These transformations induced by light absorption are attractive in the context of sustainable development and they can address this challenge more efficiently when they are incorporated in domino reactions.^{3,4,5} Combined with thermal reactions or even better with other photochemical transformations, this strategy is economical in terms of time, energy, waste and can avoid the isolation of unstable intermediates.

Due to their poor stability, thiocarbonyl compounds have been underexploited chromophores, especially in the so-called « Thia-Paternò-Büchi reaction », a [2+2]-photocycloaddition between excited thione derivatives and alkene partners, to prepare thietanes. Divided into two axes, this presentation will describe a straightforward access to a large collection of four-membered sulfur-containing heterocycles through an innovative two-step domino photochemical reaction including a Norrish II fragmentation of phenacyl⁶ or pyrenacyl sulfides,⁷ which generates thiocarbonyl intermediates *in-situ*, and a thia-Paternò-Büchi reaction with both electron-poor and -rich olefins.



References

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- ⁷ G. Cormier, T. Boddaert *submitted*