RIGIDIFICATION OF FLUORESCENT IMIDAZOLONES THROUGH CARBON-CARBON BOND FORMATION

Saisai Zhang, Laurent Bischoff, Christophe Hoarau

Bât IRCOF N°40, rue Lucien Tesnière - 76130 MONT-SAINT-AIGNAN

Following our previous work[1-4] on the construction and late-stage functionalization of imidazolones, we are now focusing on post-rigidification of fluorescent, 4-arylidene-imidazolones. In the literature, it was shown that rigidification of such structures via the use of ketone precursors[5] or borylation[6] could lead to a dramatic increase in quantum yields. In this work, we present the first late-stage rigidification via the formation of two additional carbon-carbon bonds.

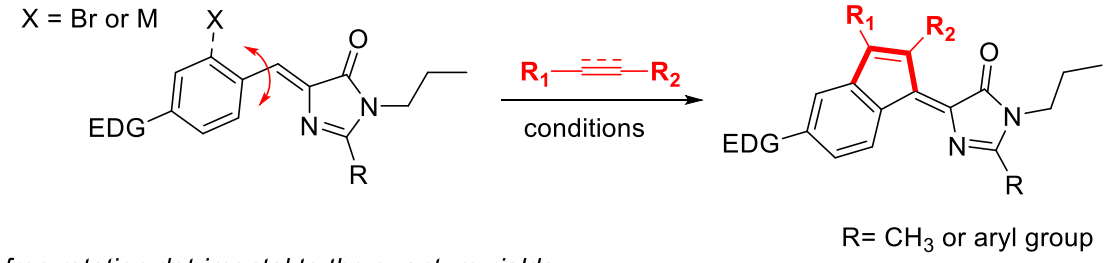

Figure 1: Imidazolone rigidification reaction *via* creation of carbon-carbon bonds

After thorough optimization of the reaction conditions, we now have in our hands an efficient tool for the construction of rigidified fluorescent imidazolones. The high diversity of substituents encompassing the newly-formed 5-membered ring led us to a wide range of new compounds exhibiting photophysical properties currently tested in our laboratory.

References

[1]Frippiat, S.; Sarre, C.; Baudequin, C.; Hoarau, C.; Bischoff, L. *J. Org. Chem.* **2022**, 87(11), 7464-7473
[2]Frippiat, S.; Leterrier, C.; Baudequin, C.; Hoarau, C.; Bischoff, L. *Synlett* **2020**, *31*(12), 1211-1215
[3]Muselli, M. ; Baudequin, C. ; Hoarau, C.; Bischoff, L. *Chem. Eur. J.* **2016**, *22*(16), 5520-5524
[4]Muselli, M. ; Baudequin, C. ; Hoarau, C.; Bischoff, L. *Chem. Commun.* **2015**, *51*(4), 745-748
[5]Chou, P.-T. et al *J. Am. Chem. Soc.* **2014**, 136, 33, 11805–11812
[6]Wu, L.; Burgess, K. *J. Am. Chem. Soc.* **2008**, 130, 12, 4089–4096