

SEPTEMBER
23-27TH
2024

19TH BMO S

BRAZILIAN MEETING
ON ORGANIC SYNTHESIS
BENTO GONÇALVES, RS - BRAZIL

Palladium(II)-Catalyzed C–H Arylation of 1,4-Naphthoquinones, α -Tetralones and Benzophenones Derivatives

José M. da C. Tavares Junior,¹ Renata G. Almeida,¹ Guilherme A. M. Jardim,¹ and Eufrânio N. da Silva Júnior^{1*}

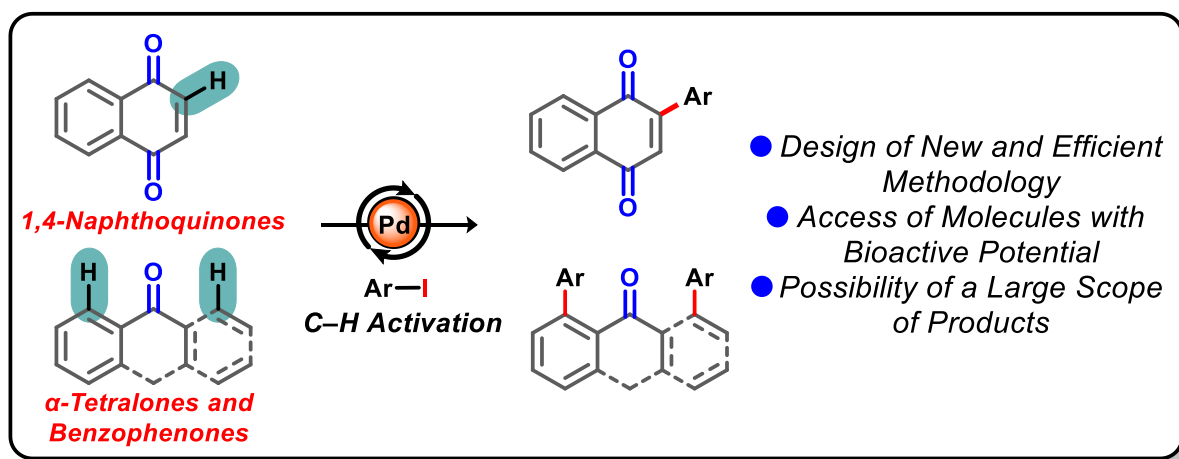
¹ Department of Chemistry, Federal University of Minas Gerais, UFMG, 31270-901, Brazil

*e-mail: eufranio@ufmg.br

Keywords: C-H activation, palladium(II), methodology

ABSTRACT

The activation of C–H bonds for functionalizing organic molecules represents a contemporary platform in organic synthesis, demonstrating unparalleled efficiency in the late-stage functionalization of medicinal prototypes and marketed pharmaceuticals.¹ Consequently, new methodologies are constantly being developed to achieve highly potent synthetic techniques for forming new C–C or C–heteroatom bonds.² Transition metal catalysis (TM catalysis) is frequently employed to facilitate these transformations and has experienced exponential growth, enabling the late-stage introduction of desired substituents and the construction of complex molecular motifs.³ In this work, we developed a methodology for the selective C–H activation of 1,4-naphthoquinones, α -tetralones and benzophenones using palladium(II) salt and various aryl iodides, yielding arylsubstituted derivatives. This approach not only provides a robust tool for synthesizing structurally diverse and complex compounds but also expands the scope of palladium(II)-catalyzed C–H activation, thereby opening new avenues for the development of derivatives with bioactive potential.



ACKNOWLEDGEMENTS

This research was funded by grants from CNPq, CAPES, FAPEMIG and INCT-Catálise.

REFERENCES

[1] Guillemard, L. Ackermann, L. Johansson, M. J. Late-stage *meta*-C–H alkylation of pharmaceuticals to modulate biological properties and expedite molecular optimisation in a single step. *Nat. Commun.* **2024**, *15*(3349), 3349-3359. [2] Murai, M. Takai, K. Unsymmetrical Difunctionalization of Two Different C–H Bonds in One Pot Under Transition-Metal Catalysis. *Synthesis* **2019**, *51*(01), 40-54. [3] Huang, Z. Lumb, J. P. Phenol-Directed C–H Functionalization. *ACS Catal.* **2019**, *9*(1), 521-555.