SEPTEMBER 23-27 2024
19 BMOS
BRAZILIAN MEETING ON ORGANIC SYNTHESIS
BENTO GONÇALVES, RS - BRAZIL

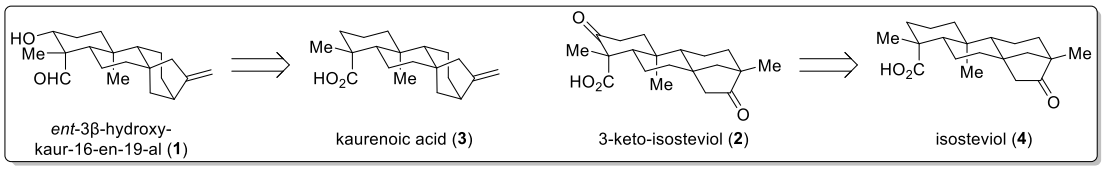
Copper-Mediated C—H Bond Oxidation in Synthetic Studies of Complex Diterpenes

Lucas D.P. Gonçalves,[1*] Julian C.S. Pavan,[2] Vladimir C.G. Heleno,[2] Emilio C. de Lucca Jr.[1*]
1) Instituto de Química, Universidade Estadual de Campinas
2) Núcleo de Pesquisa em Ciências Exatas e Tecnológicas, Universidade de Franca
****e-mail: eluccajr@unicamp.br***

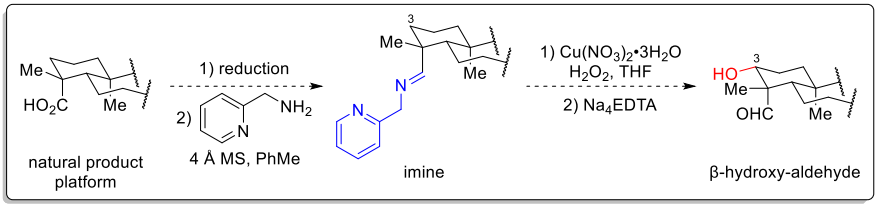
Keywords: *Natural products, Diterpenes, C—H oxidation.*

ABSTRACT

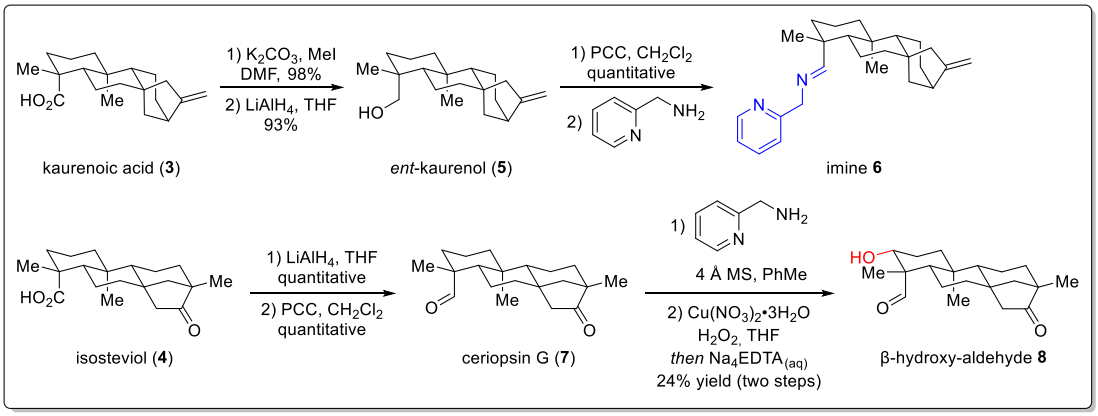
This study aims to investigate a synthetic route to obtain the natural products **1** and **2**,[1] through an oxidation of C—H bonds as the key step. Since these natural products have an *ent*-kaurene (**1**) and *ent*-beyrane (**2**) carbon skeleton, we propose synthesizing them from kaurenoic acid (**3**) and isosteviol (**4**), respectively.



In view of recently reported synthesis of *ent*-trachylobanes through a copper-mediated oxidation of a C—H bond,[2] we propose to use this strategy in the synthesis of natural products **1** and **2**.



By employing these reactions, we have progressed in our efforts to synthesize the natural products. The next steps involve the oxidation of a C—H bond using the kaurenoic acid imine derivative **6**, and the correction of oxidation states to obtain the proper natural products.



ACKNOWLEDGEMENTS

We are grateful to São Paulo Research Foundation (FAPESP), for the financial support for this work (grant 2018/04837-6) and fellowship to L.D.P. Gonçalves (grant 2023/13162-0), FAEPEX, CNPq, and CAPES.

REFERENCES

1. a) Dutra, L. M.; Bomfim, L. M.; Rocha, S. L. A.; Nepel, A.; Soares, M. B. P.; Barison, A.; Costa, E. V.; Bezerra, D. P. *Bioorganic Med. Chem. Lett.* **2014**, *24*, 3315. b) Ejiofor, E. U.; Ako, A. C.; Kube, M. T.; Agwamba, E. C.; Alala, C.; Maduabuchi, K.; Ejiofor, M. *J. Mex. Chem. Soc.* **2024**, *68*, 220.
2. Wein, L. A.; Wurst, K.; Magauer, T. *Angew. Chem. Int. Ed.* **2022**, *61*, e202113829.