Studies toward the first total synthesis of Floribundane B

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INTRODUCTION

Floribundane A and Floribundane B are new iridoids recently isolated by de Mendoça and coworkers from barks and trunks of *Hymenodictyon floribundum B. L. Rob.* The trunk has been used on Angola's folk medicine for the treatment of fever[1].

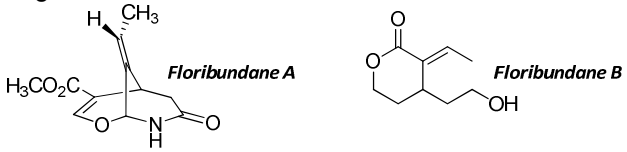
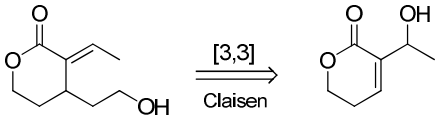


Figure 1. Structures of Floribundane A and B.

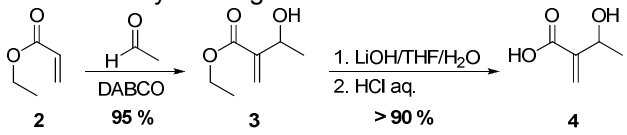
Due to our interest to synthesize new lactones with promising biological activities and the absence of a total synthesis of this molecule, we started synthetic studies aiming the total synthesis of Floribundane B. Our retrosynthetic analysis has the hydroxylactone **1** as the key intermediate and this abstract reports our former results.



Scheme 1. Retrosynthetic analysis for Floribundane B.

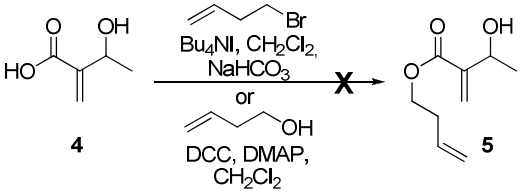
RESULTS AND DISCUSSION

The Baylis-Hillman's adduct **3** was obtained in 95% yield, and this result is in according to the literature[2]. The adduct **3** was submitted to hydrolysis to affords the acid **4** in yields higher than 90%.



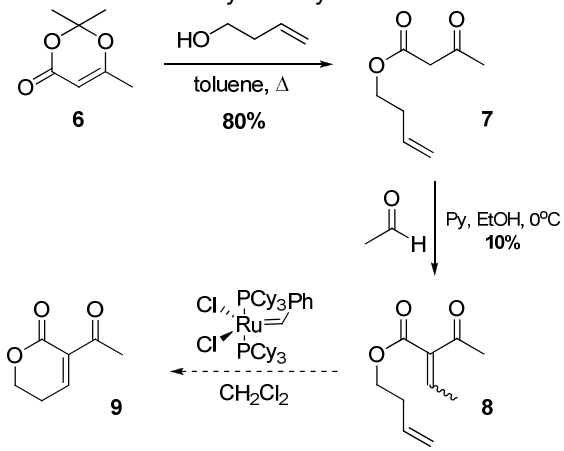
Scheme 2. Synthesis of intermediate 4.

Attempts to prepare the diene **5** by direct alkylation of **4** or it's activation by DCC followed by but-3-en-1-ol treatment failed.[3]



Scheme 3. Attempts to prepare diene **5**.

Due to these difficulties to prepare the desired diene, a new strategy to get an equivalent diene based on Knoevenagel condensation was started. The intermediate **7** was obtained in 80% yield from **6** and its condensation with acetaldehyde gave the desired diene **8** in only 10 % yield.[4, 5]



Scheme 4. New strategy to Floribundane B synthesis.

CONCLUSION

The diene **8** could be prepared in modest yield by Knoevenagel condensation of **7** and acetaldehyde. The optimization of this reaction and the ring closing metathesis to prepare the lactone **9** are ongoing in our lab and is a promising synthetic route to the first total synthesis of Floribundane B.

ACKNOWLEDGEMENTS

CAPES CNPq 60 ANOS ProIC-DPP-UnB PPGQ-IQ-UnB

REFERENCES

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