Synthesis of (R/S)-2-hydroxy-5-methyl-hexan-3-one, sinomone issued by Araceae species: *P. acutatum* and *T. ulei*

Everaldo F. Santos Filho, Artur C. D. Maia, Daniela M. A. F. Navarro, Jefferson L. Princival*

Departamento de Química Fundamental, CCEN, UFPE, 50670-901, Recife-PE, Brasil

*princivalj@yahoo.com.br

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**INTRODUCTION**

In the northeast of Brazil, the strongly fragrant Araceae species: *Taccarum ulei* and *Philodendron acutatum* emit a floral scent called (S)-2-hydroxy-5-methyl-hexan-3-one ([S]-1). This compound ([S]-1) is highly attractive to night active pollinators scarab beetles of the tribe Cyclocephalini (Figure 1).

Herein, we describe the synthesis of the racemic acyloin ([R/S]-1) from the aminoacid *L*-leucine as starting material.

**RESULTS AND DISCUSSION**

Initially, the α-hydroxycarboxylic acid 3 was prepared by diazotization reaction of the commercially available *L*-leucine (2) in excellent yield (94%) (Scheme 1).

The selective esterification of 3 using boric acid as catalyst, in methanol, at room temperature provided the α-hydroxyester 4 in 81% yield (Scheme 2).

The treatment of 4 with lithium aluminum hydride, under reflux, led to reduction of the carboxylic ester to provide 1,2-diol 5 in 80% yield (Scheme 3).

Finally, the 1,2-diol was oxidized under Swern conditions followed by 1,2-addition of MeMgl leading to (R/S)-1, in 44% yield over 2 steps (Scheme 4).

Currently in progress in the lab, is the enzymatic deracemization of compound (R/S)-1 using the lipase CALB to obtain the floral scent (S)-α-hydroxyketone, (S)-1 (Scheme 5).

The synthesis of compound (R/S)-1 was realized in 4 steps with 27% yield from *L*-leucine (2) as starting material.

**CONCLUSION**

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**REFERENCES**
