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Studies towards the synthesis of secoiridoids

Shaoping Wu^{a,b,c}, Yongmin Zhang^{a,b,c}, Jyoti Agarwal^{a,b}, Emilie Mathieu^{a,b}, Serge Thorimbert^{a,b,*}, Luc Dechoux^{a,b,*}

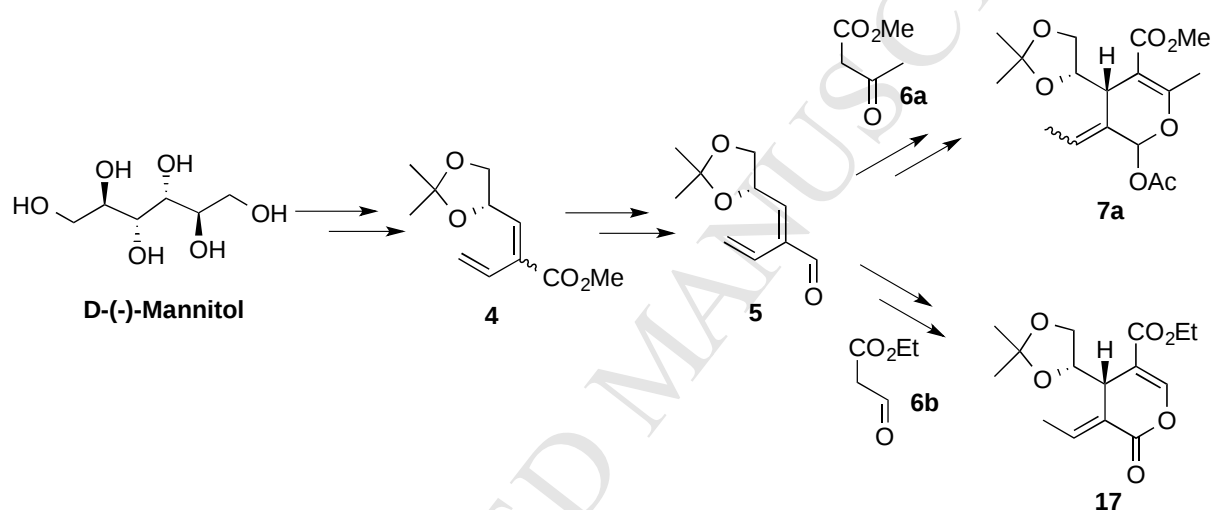
^a Sorbonne Universités, UPMC Univ Paris 06, Institut Parisien de Chimie Moléculaire, UMR 8232, 4 place Jussieu, F-75005 Paris, France

^b CNRS, UMR8232, IPCM, F-75005 Paris, France

^c Biomedicine Key Laboratory of Shaanxi Province, Northwest University, No. 229 Taibai North Road, Xi'an, Shaanxi 710069, PR China

*Corresponding author. Tel.: + 33 1 44 27 30 84; e-mail address: serge.thorimbert@upmc.fr; luc.dechoux@upmc.fr

Graphical Abstract



Abstract: A new approach to secoiridoids, based on the synthesis of the key functionalized intermediates **4** and **5**, is presented. These compounds were tested in formal [3+3] cycloadditions. Acyl-chloride **15** was transformed into enol α,β -unsaturated ester **16** which was involved in a *N*-Heterocyclic Carbene rearrangement to give an advanced precursor **17** in the total synthesis of secoiridoids

Keywords: Secoiridoids / Gentiopicroside / Organocatalysis / [3+3] Cycloadditions / *N*-Heterocyclic-Carbenes.

1. Introduction

The iridoid monoterpenes represent a large family of cyclopentanopyran natural products.^[1] They usually occur as glucoside derivatives. Among them loganin is the biosynthetic precursor of secologanin, a secoiridoid playing an important role in the biosynthesis of indole alkaloids.^[2] Moreover secologanin is also a key intermediate in the biosynthesis of

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