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## Copper-Catalyzed $\beta$ -Hydroxylation of Abietanes: Synthesis of a C5 Bridgehead Alcohol

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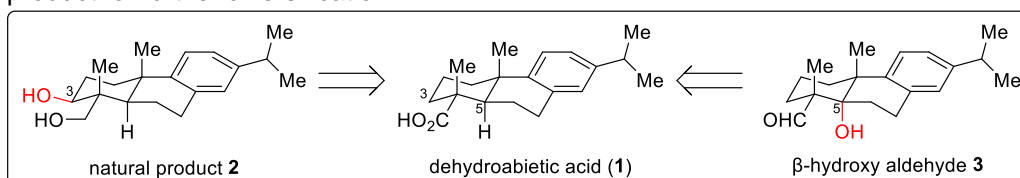
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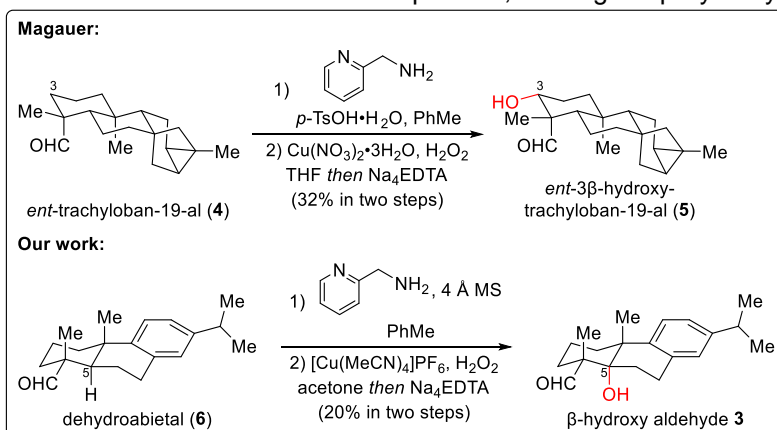
Keywords: Natural Products, Diterpenes, C-H oxidation.

### ABSTRACT

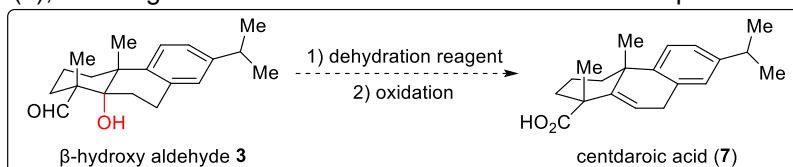
This study investigates a synthetic approach to obtaining complex natural products through the oxidation of C—H bonds. Using a copper-mediated oxidation,<sup>1</sup> we aimed to oxidize the C3 position in dehydroabietic acid (**1**) as a key step to achieve the natural product **2**. Surprisingly, the reaction yielded a bridgehead alcohol, an interesting product for further diversification.



In a recent study,<sup>2</sup> Magauer and co-workers used a copper-catalyzed oxidation to functionalize the C3 position in a natural product derivative. Applying this method to dehydroabietal (**6**), we obtained a bridgehead alcohol at the C5 position. While the directing group in the study of the Magauer group was in axial, ours was equatorial, directing the C—H oxidation towards the C5 position, forming the  $\beta$ -hydroxy aldehyde **3**.



With the oxidized product in hands, we plan a dehydration followed by an oxidation to a carboxylic acid, to yield centdaroic acid (**7**), enabling further functionalization of **1** and other diterpenes.



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