Asymmetric Cu-catalyzed 1,2 and 1,4-additions of Grignard reagents

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5. Outlook and perspectives

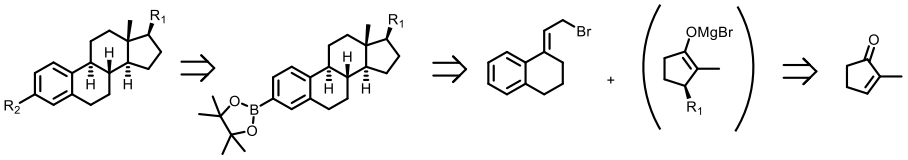
In this thesis, the goal of broadening the scope of the methodology for the Cu-catalysed 1,4- and 1,2-addtions and was accomplished.

We also aimed for the application of this methodoly to organic synthesis. We were pleased to employ our catalytic system to the synthesis of new steroid derivatives.

However, due to time concerns, not all the research and not all the syntheses could be performed. And there are topics in this thesis, in which more research, or more optimization, could be done in the future.

For example, in chapter 3, methodoly to perform enantioselective Cu-catalyzed 1,2-additons to new cyclic substrates was developed. However, due to a lack of time, we were not able to further apply this methodology to total synthesis.

In chapter 4, two steroid derivatives are made. An interesting addition would be the synthesis of more steroid derivatives; either by changing the Grignard reagent in the conjugate addition step, or by having a different functional group in the aromatic ring (scheme 1). Since these molecules are new, and steroids are biologically active molecules, it would be an interesting addition to do biological tests with these new steroid derivatives.



Scheme 1: Retrosynthesis of possible steroid hybrids containing different subsituents R_1 and R_2.