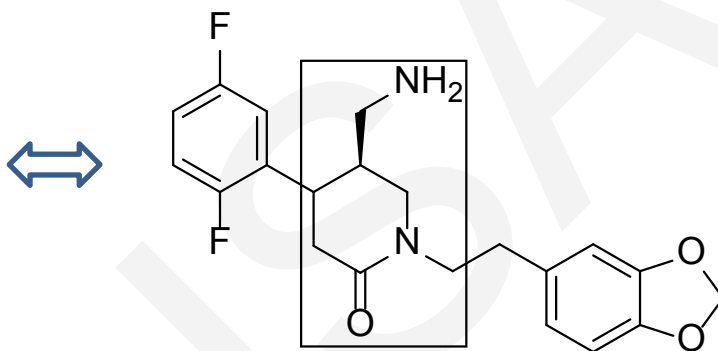
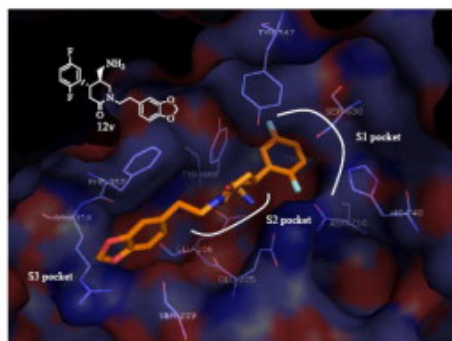


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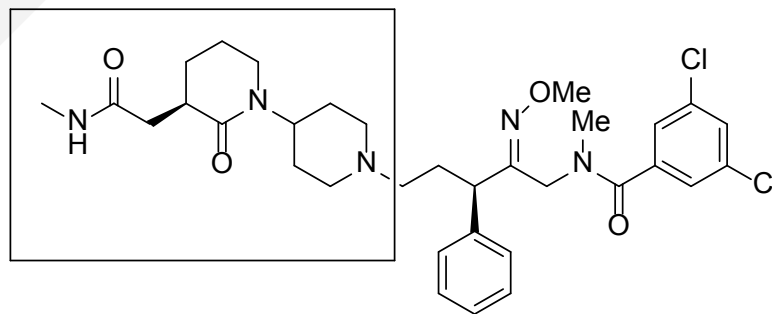
Asymmetric synthesis of N-protected 3-methylpiperidin-2-one and its diastereoisomer

Key words: Asymmetric synthesis, Diastereoisomer, Hydroxyl protection group, D-phenylglycinol

N-protected 3-methylpiperidin-2-one is an important building block for a large variety of bioactive moieties. For example the novel aminomethyl-piperidones below were designed and evaluated as potential DPP-IV inhibitors.

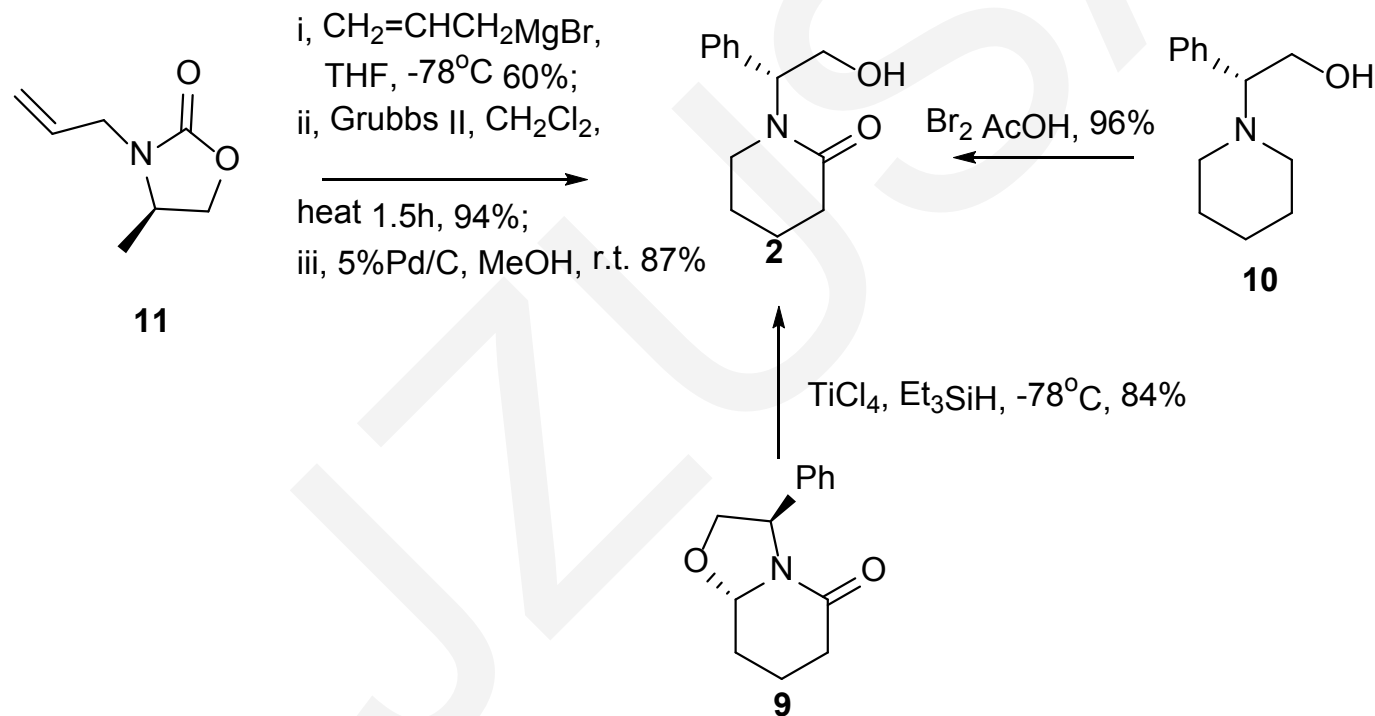


5-Substituted 1-methyl-2-pyridones were evaluated as an active agent against benign prostatic hyperplasia (BPH) or prostate cancer. And another piperidin-2-one derivative Sch206272 is a potent NK1/NK2 antagonist, which leads to a new approach to cure asthma.



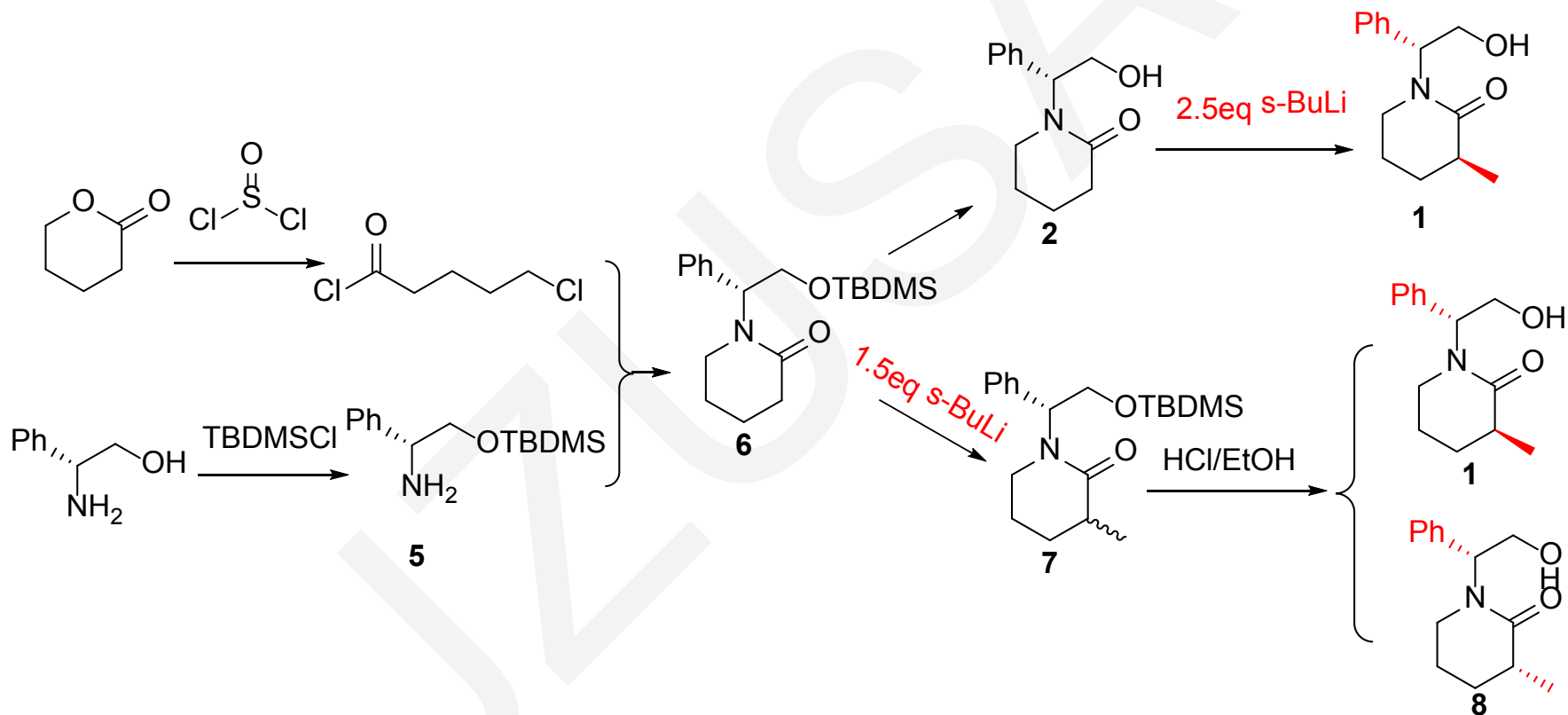
Sch206272

Methods for the preparation of enantiomerically pure piperidin-2-one or 3-substituted piperidin-2-one have been reported by many researchers. Scheme 1 are different ways of synthesizing compound **2** with harsh conditions. And we synthesized compound **2** with different conditions.



Scheme 1. Synthesis of compound 2 with conventional methods.

Scheme 2 is the integral synthetic route of compound 2, compound 1 and its diastereoisomer with less sec-Butyllithium and milder conditions.



Scheme 2 Synthesis of compound 2 with new method.

The configuration of compound **2**, compound **1** and its diastereoisomer compound **8** have been identified by HPLC in the article. And the absolute configuration of compound **8** are shown below.

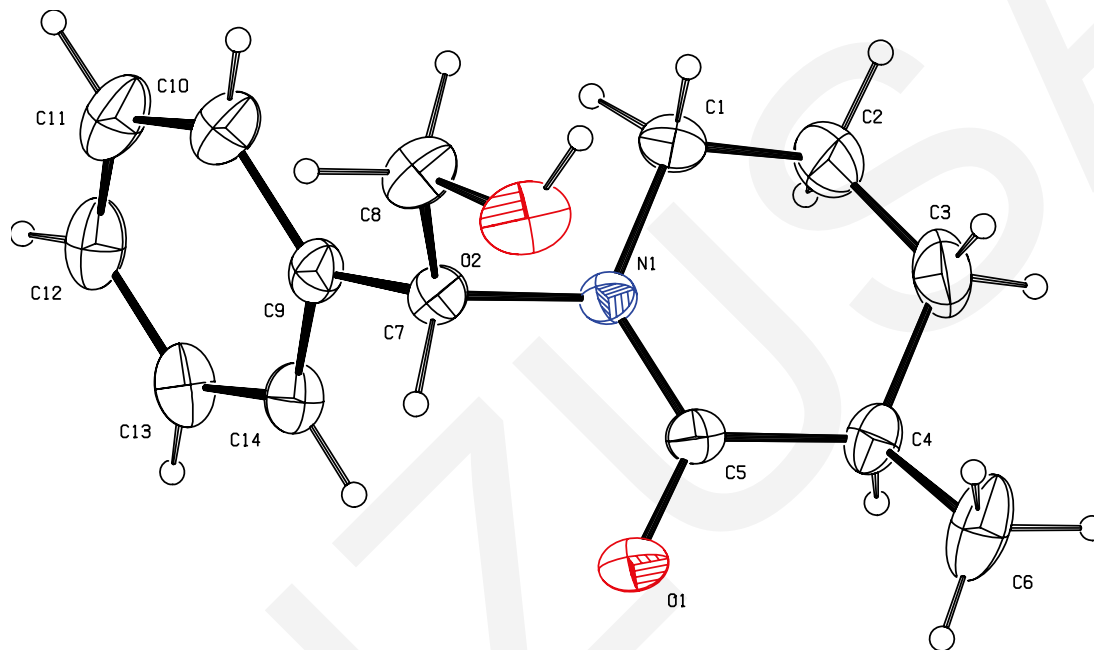


Fig. 2 Absolute configuration of compound 8