

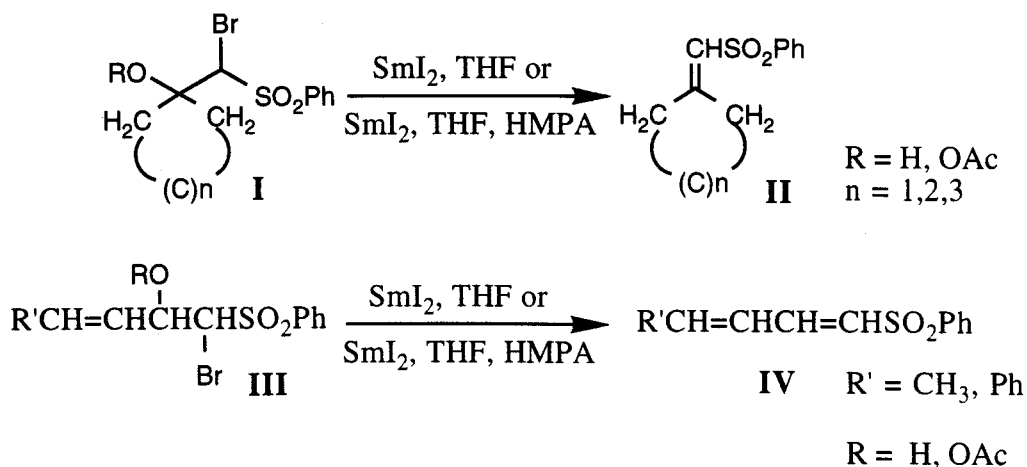
Thesis Title	Part I Samarium Iodide Mediated Reduction of α -Halo- β -Hydroxy Phenyl Sulfone Derivatives. Part II Addition of α -Phenylsulfonyl Radical to Aromatic Ring: Synthesis of Protoberberine Ring System.
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ABSTRACT

Part I

The reaction of samarium(II) iodide in THF, in the presence and absence of HMPA, with α -bromo- β -hydroxy phenyl sulfones and α -bromo- β -acetoxy phenyl sulfone derivatives was studied. The major products from these reaction were the corresponding vinyl sulfones. 1-Phenylsulfonyl-1,3-butadiene system has been successfully synthesized by this procedure (Scheme I).

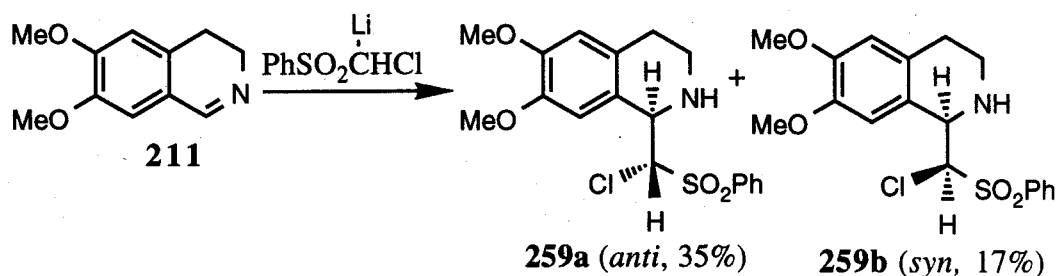
Scheme I



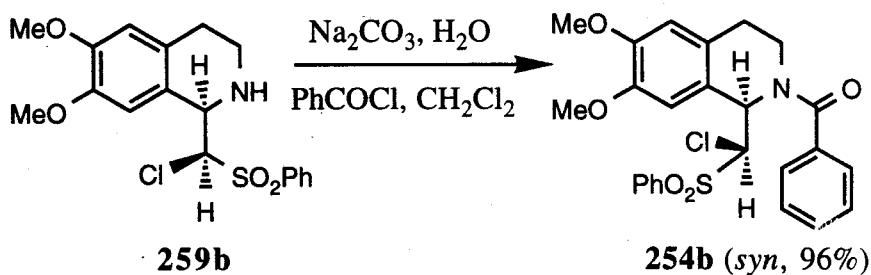
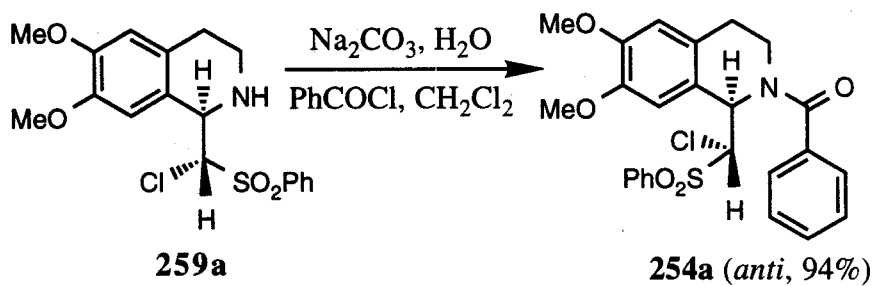
It was found that the addition of HMPA did not improve the yield of the reaction. On the contrary, in the case of the reaction of samarium(II) iodide with α -bromo- β -hydroxy phenyl sulfones, the addition of HMPA caused the lowering of the yields of the vinyl sulfones. α -Bromo- β -acetoxy phenyl sulfone derivatives gave better yields of the corresponding vinyl sulfones than the α -bromo- β -hydroxy phenyl sulfone derivatives.

Part II

The addition of α -lithio chloromethyl phenyl sulfone to 3,4-dihydro-6,7-dimethoxyisoquinoline (**211**) gave a diastereomeric mixture **259a** (*anti*) and **259b** (*syn*) in the ratio of about 2: 1.



Benzoylation of compounds **259a** and **259b** gave the products **254a** (*anti*) and **254b** (*syn*) in high yield.



The reaction of **254b** (*syn*) with $n\text{-Bu}_3\text{SnH/AIBN}$ gave oxoprotoberberine (**255**) and the reduction product **256**. Under the same reaction condition, **254a** gave only the reduction product **256**.

