

Development of New Synthetic Reactions for Nitrogen-containing Compounds and Its Application

Takeaki Naito
(Kobe Pharmaceutical University)

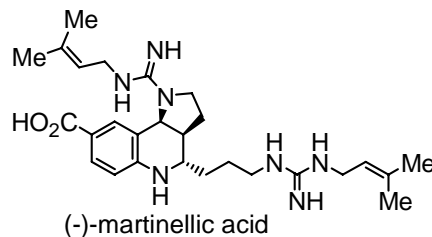
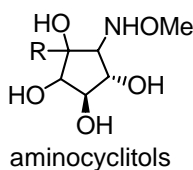
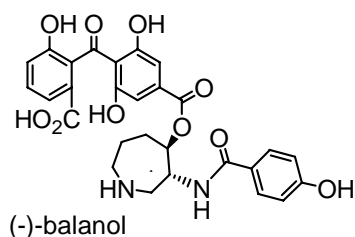
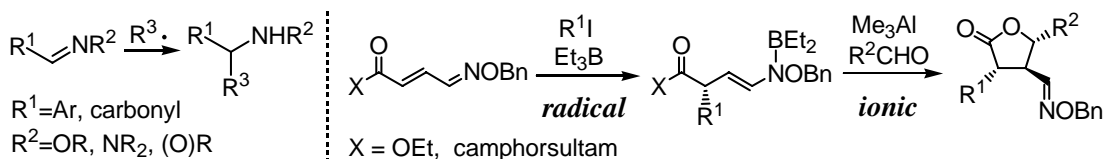
In order to explore an efficient synthetic method for nitrogen-containing compounds, we have developed novel bond forming reactions via the route involving atom-economical addition reactions and also applied to the synthesis of biologically active compounds.

(1) Development of reductive photocyclization reaction and its application

Reductive photocyclization reaction of enamides was newly developed and successfully applied to the synthesis of monoterpene indole alkaloids (ajmalicine, hirsutine, and others), methyl lysergate, and pseudodistomin.

(2) Development of radical addition reaction and its application

Inter and intramolecular radical addition reactions of tin-, silicon-, and carbon-radical to the imines were developed to produce various types of amino compounds.



(3) Development of nucleophilic addition reaction of thiols and its application

Stereoselective nucleophilic addition of thiols and stereoselective elimination of the corresponding sulfoxides achieved the synthesis of nitrogen-containing compounds.

