

Abstract

The fascinating molecular structure of indoline alkaloids, especially that of the communesins and perophoramidine (Figure 1), has encouraged the studies towards the total synthesis of the representatives of this alkaloid family, in particular perophoramidine.

Finding methodologies to construct the vicinal quaternary stereocenters with the stereochemistry of perophoramidine is one of the main challenges in planning the total synthesis. In this project, samarium mediated

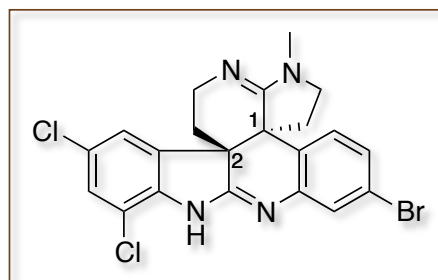


Figure 1 Perophoramidine

reductive dialkylation of isoindigo derivatives and a stepwise procedure involving reduction of isoindigo followed by dialkylation with a chelating base has been employed to explore the strategy. The first mentioned method was unsuccessful and several modifications have been tested without any success. Diastereoselective dialkylation with a chelating base has been successfully employed to construct the vicinal quaternary stereocenters with the stereochemistry of perophoramidine.