

Asymmetric Total Synthesis of *Martinella* Alkaloids

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Due to the novel hexahydropyrrolo[3,2-*c*]quinoline nuclei as well as their potential-use in medicinal chemistry, two alkaloids martinelllic acid (**1**) and martinelline (**2**), isolated by Merck's chemists from the root bark of tropical plant *Martinella iquitosensis*, have attracted considerable attention from synthetic community.

To date, however, there has only been one reported asymmetric total synthesis of (–)-martinelllic acid (**1**) by Ma's group, in which they pointed out that synthetic (–)-**1** exhibits a considerably large value in its specific rotation compared with natural (–)-**1**, indicating that **1** may be partially racemic or a highly diluted solution was used when Merck's chemists measured its specific rotation. Thus, the issue on the elucidation of the absolute configurations of **1** and **2** is still the subject of serious arguments. Herein, we describe the first asymmetric total synthesis of (–)-martinelline (**2**) and the second total synthesis of (–)-martinelllic acid (**1**) employing the tandem Mukaiyama-Mannich reaction/aminal cyclization as a key step which support the suggestion of Ma's group that natural *Martinella* alkaloids are partially racemic.