IL-11

Asymmetric synthesis of fluorinated α-aminophosphonic acid derivatives

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α-Aminophosphonic acids as phosphorus analogues of α-amino acids have attracted considerable interest because of their wide spectrum of biological activity. As the bioactivity depends on the absolute configuration of the stereogenic α-carbon atom, the development of suitable methodologies for their preparation in enantiopure form is a topic of great interest. On the other hand, the modification of molecule by fluorine-containing group became almost a standard procedure in the development of new pharmaceuticals. In this context, the elaboration of effective approaches to non-racemic fluorinated α-aminophosphonic acid derivatives is a challenging task. However, well-known synthetic strategies for α-aminophosphonic acids are often unacceptable for their fluorinated analogues. The lecture will present the recent achievements on asymmetric synthesis of fluorinated α-aminophosphonic acids derivatives, developed in our laboratory and summarize the progress in the field described in the literature.

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