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Abstract

A short and efficient synthesis of high enantiopurity (–)-D-erythro-sphingosine has been achieved in 71% yield over 6 steps from N-Boc-L-serine. The key steps are high yield, racemization-free, palladium-catalyzed, copper(I)-mediated coupling of the thiophenyl ester of N-Boc-O-TBS L-serine with E-1-pentadecenyl boronic acid and the highly diastereoselective reduction of the resulting peptidyl ketone with LiAl(O-t-Bu)3H. Using this concise route (–)-D-erythro-sphingosine can be prepared on large scale and in high enantio and diastereopurity (ee >99%, de up to 99%).