Enantioselective Hydroamination of Unactivated Internal Olefins

Significance: Previous hydroaminations of alkenes have been achieved with a restricted range of substrates (for example, styrenes or terminal olefins). Here, the authors succeed in asymmetric hydroamination of nonactivated internal olefins. This system provides ready access to various α-branched chiral amines with high enantioselectivities (≥96% ee).

Comment: Electron-rich hydroxylamines are used as aminating reagent to suppress undesired reductions of hydroxylamines. The late-stage modification of pharmaceutical compounds is also demonstrated.

Selected examples:

Proposed reaction mechanism:

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