Synthesis of \( \alpha \)-Amino Acid Derivatives by Biomimetic Transamination

**Significance:** Shi and co-workers have developed a methodology to synthesize \( \alpha \)-amino acid derivatives 3 from \( \alpha \)-keto esters 2, catalyzed by cinchona alkaloid derivative 1. This is the first catalytic highly enantioselective synthesis of \( \alpha \)-amino acid derivatives 3 via biomimetic transamination. The proton of the ammonium ion in the transition state is delivered to the \( si \)-face of the substrate, affording the \( (R) \)-\( \alpha \)-amino ester as the major enantiomer.

**Comment:** Optically active \( \alpha \)-amino acids and their derivatives are an important class of molecules in biology and in organic synthesis. However, it remains a challenge to develop highly enantioselective syntheses of them to date. Here, a very efficient method for the synthesis of \( \alpha \)-amino acid derivatives via biomimetic transamination has been reported, which also illustrates the synthetic potential of organocatalytic biomimetic transamination.