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Late-Stage Molecular Editing Enabled by Ketone Chain-Walking Isomerization
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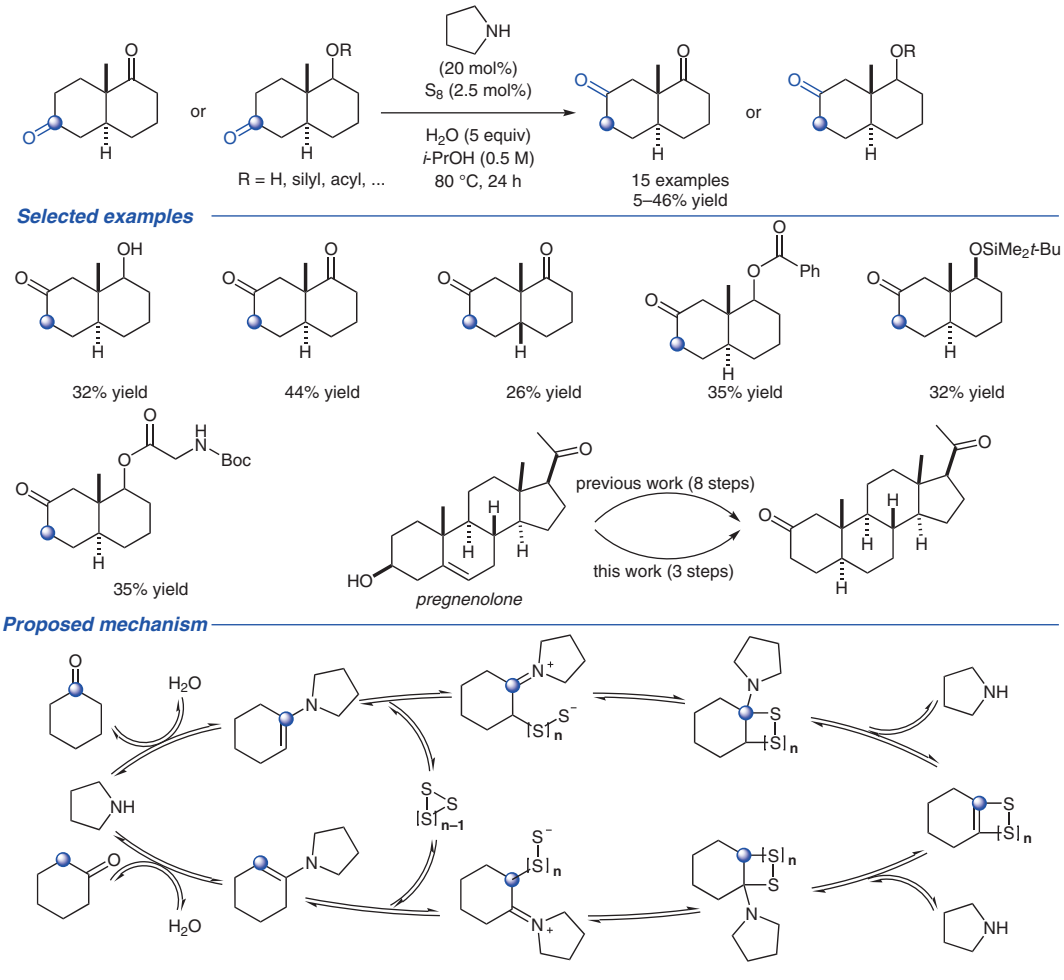
Ketone Chain-Walking Isomerization by Organocatalysis



Significance: The Morandi group developed a novel and simple method for isomerizing cyclic ketones. To perform this reversible transition, widely available and affordable pyrrolidine and elemental sulfur are used as catalysts. The isomerization of several steroids was demonstrated to access new steroids by using this remarkable ketone chain-walking technique.

Comment: Modifying the placement of functional groups is arguably difficult since it necessitates reversible cleavage and the transposition of strong bonds. Inspired by the Willgerodt–Kindler reaction, the authors succeeded in brilliantly designing a method for the ketone chain-walking isomerization of cyclic ketones enabled by an organocatalyst in combination with elemental sulfur. This low-cost, ecologically friendly approach has the potential to be widely used in the future.

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Category
Organo- and Biocatalysis

Key words
isomerization
organocatalysis
chain-walking
sulfur
ketone
reversible transition

Synfact of the Month