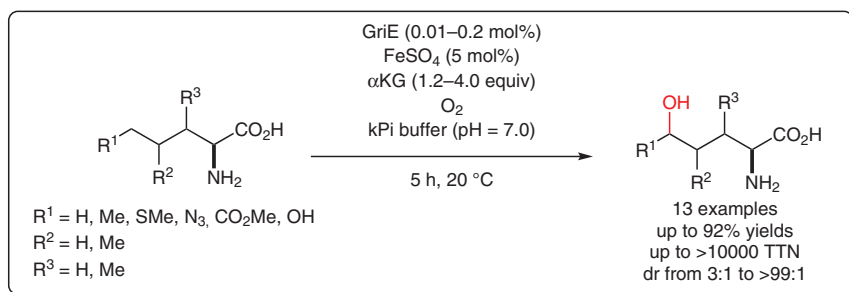
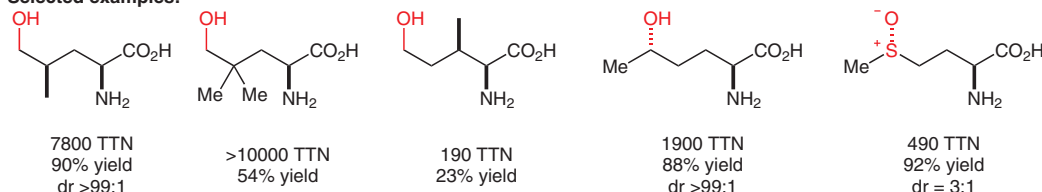


C. R. ZWICK, III, H. RENATA* (THE SCRIPPS RESEARCH INSTITUTE, JUPITER, USA)
 Remote C–H Hydroxylation by an α -Ketoglutarate-Dependent Dioxygenase Enables Efficient Chemoenzymatic
 Synthesis of Manzacidin C and Proline Analogues
J. Am. Chem. Soc. **2018**, *140*, 1165–1169.

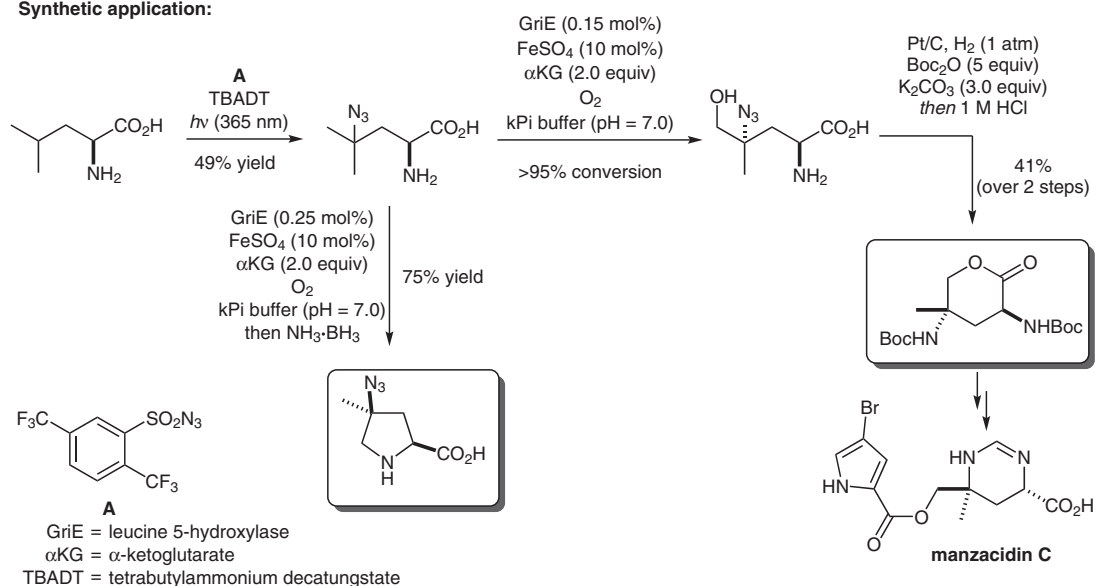
Chemoenzymatic Distal C–H Hydroxylation



Selected examples:



Synthetic application:



Significance: Zwick and Renata report the chemoenzymatic hydroxylation of the δ -position of aliphatic amino acids. By using an α -ketoglutarate-dependent dioxygenase, the desired products could usually be obtained in high yield and with high selectivity. This novel methodology was applied to the formal total synthesis of manzacidin C and proline analogues.

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 DOI: 10.1055/s-0037-1609367; Reg-No.: B01418SF

Comment: C–H bond functionalization of distal bonds within amino acids represents a major challenge in organic synthesis. Transition-metal-catalyzed systems are typically limited to functionalization of the β -position whereas the δ -position can be functionalized by Hofmann–Löffler–Freitag-type reactions.