S. ATHAVALE, S. GAO, Z. LIU, S. C. MALLOJJALA, J. S. HIRSCHI*, F. H. ARNOLD*
(BINGHAMTON UNIVERSITY AND CALIFORNIA INSTITUTE OF TECHNOLOGY, PASADENA, USA)

Biocatalytic, Intermolecular C–H Bond Functionalization for the Synthesis of Enantioenriched Amides
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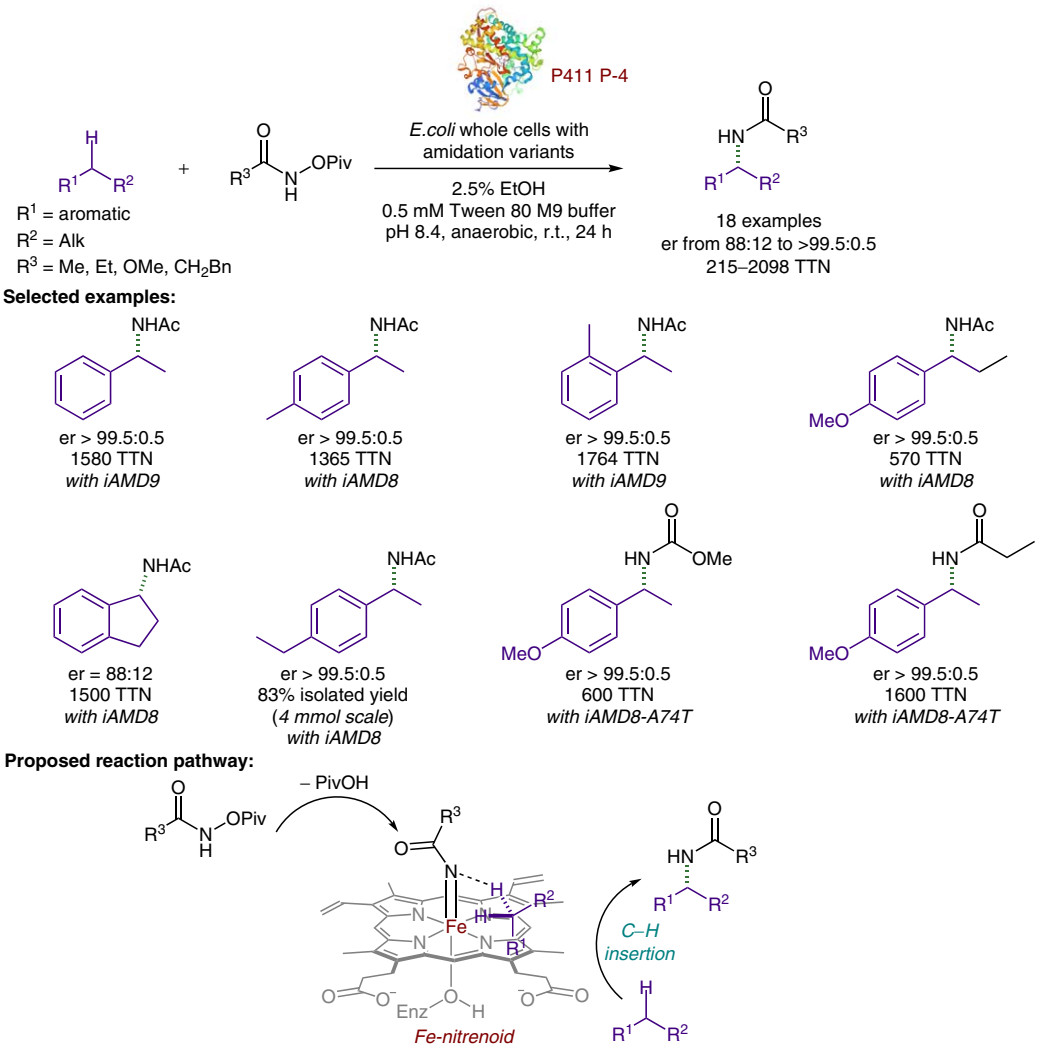
Enzymatic Nitrene Insertion into C–H Bonds for Synthesis of Enantioenriched Amides



Significance: Hirschi, Arnold, and co-workers report a nitrene insertion into benzylic C–H bonds by using engineered heme enzymes. The evolved enzymes transfer nitrenes to various arene-substituted substrates to give the corresponding products in moderate to good total turnover numbers and with good to excellent enantioselectivities.

Comment: The amide group is widely distributed in various natural products, synthetic materials, and pharmaceutical products. In the highlighted method, the authors directly install amides onto alkanes as inexpensive feedstock chemicals. They obtain valuable enantioenriched products in an inexpensive and environmentally friendly way.

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Organo- and Biocatalysis

Key words
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nitrene transfer
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Synfact of the Month