

Integrating biocatalysis into organic synthesis

Guest editor: Romas Kazlauskas

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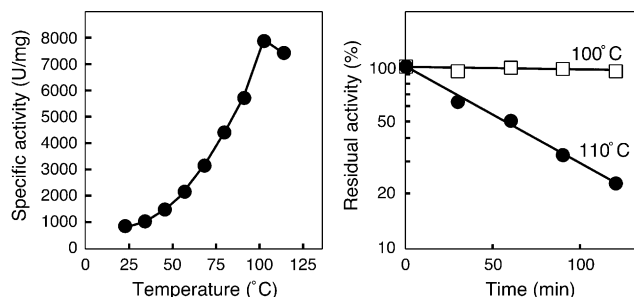
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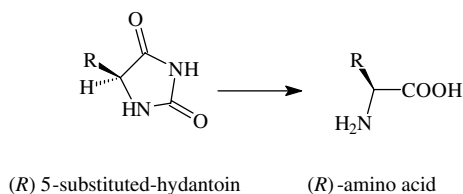
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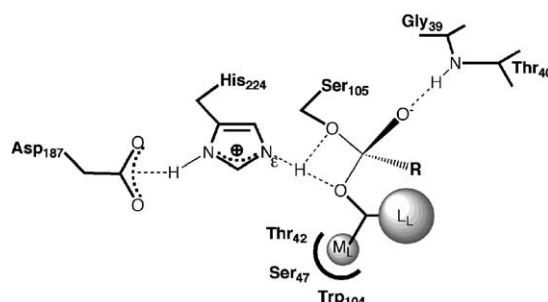
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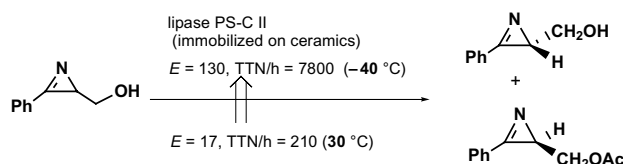


A review of recent progress in hydantoinase biocatalysis, reporting both new reactions and new understanding of the enzyme systems.



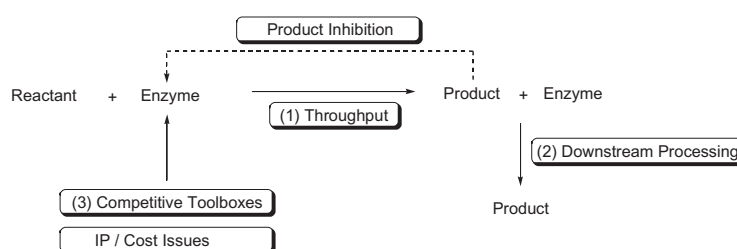
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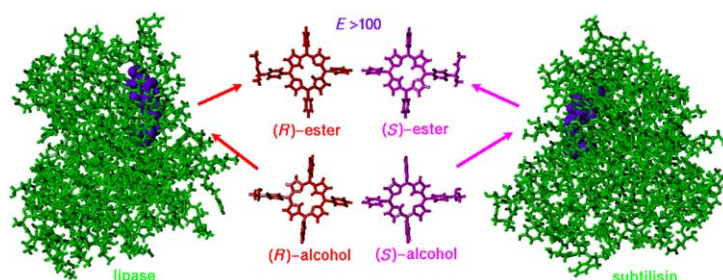
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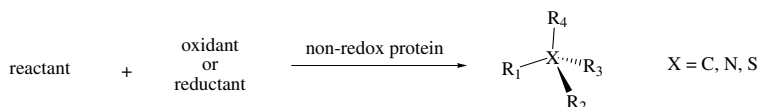
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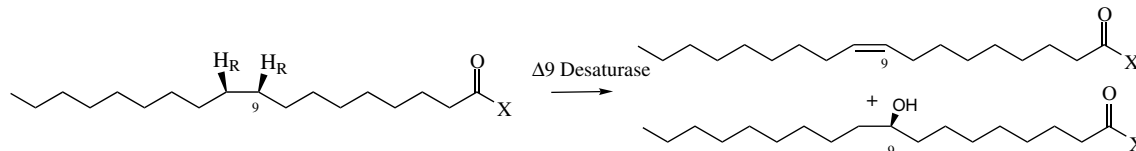
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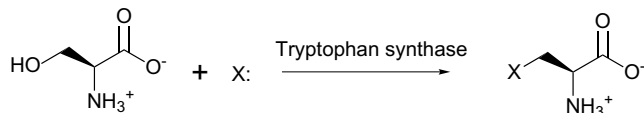
Peter H. Buist



Synthetic applications of tryptophan synthase

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Robert S. Phillips



X:=indoles, azaindoles, thienopyrroles, selenolopyrroles, thiols, selenols, and amines.

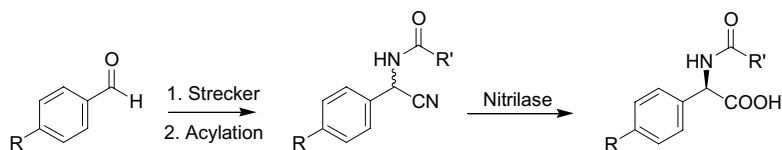
Tryptophan synthase has been used in the synthesis of a wide variety of tryptophan analogs, as well as other unnatural L-amino acids.

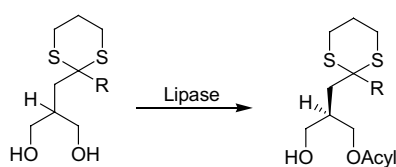
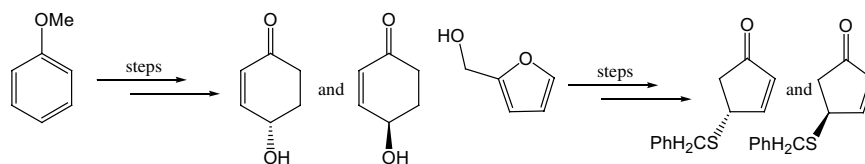
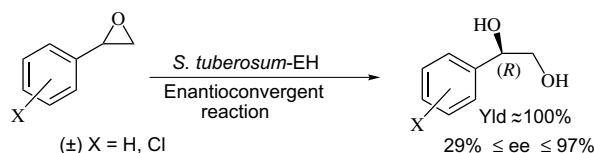
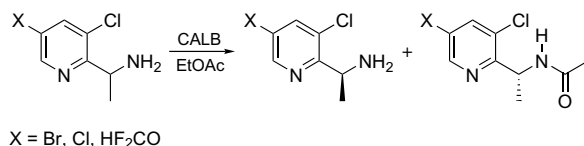
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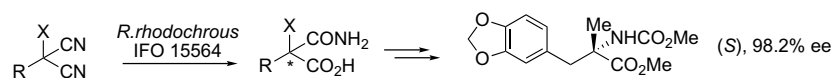




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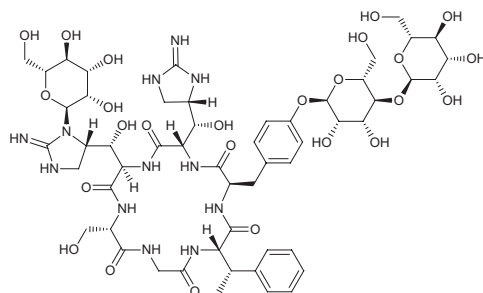
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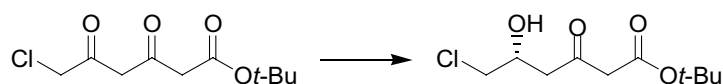
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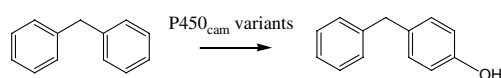
Michael Wolberg, Iwona A. Kaluzna, Michael Müller* and Jon D. Stewart*

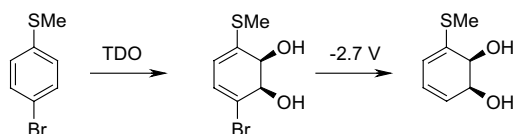


Rapid identification of cytochrome P450_{cam} variants by in vivo screening of active site libraries

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Robert E. Speight, Fred E. Hancock, Chris Winkel, Hanamanthsa S. Bevinakatti, Manish Sarkar, Sabine L. Flitsch and Nicholas J. Turner*

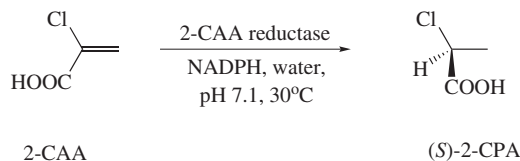




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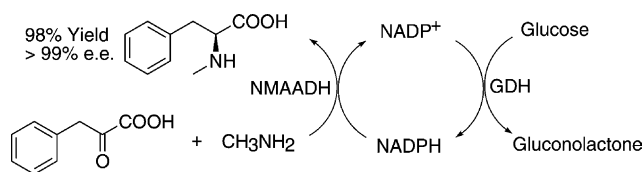
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Enzymatic synthesis of *N*-methyl-L-phenylalanine by a novel enzyme, *N*-methyl-L-amino acid dehydrogenase, from *Pseudomonas putida*

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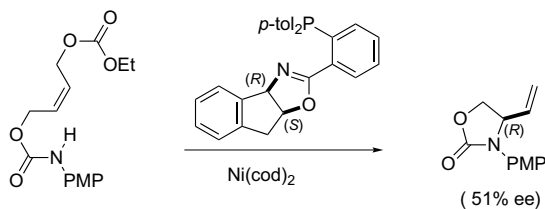
Hisashi Muramatsu, Hisaaki Mihara, Ryo Kakutani, Mari Yasuda, Makoto Ueda, Tatsuo Kurihara and Nobuyoshi Esaki*



In situ enzymatic screening (ISES) of P,N-ligands for Ni(0)-mediated asymmetric intramolecular allylic amination

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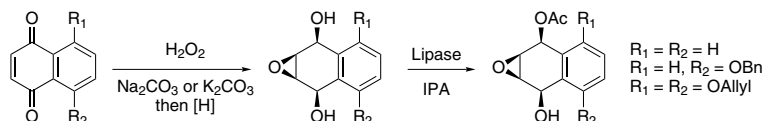
David B. Berkowitz,* Weijun Shen and Gourhari Maiti



Enzymatic desymmetrization/resolution of epoxydiols derived from 1,4-naphthoquinone, 5-hydroxy-1,4-naphthoquinone and 5,8-dihydroxy-1,4-naphthoquinone

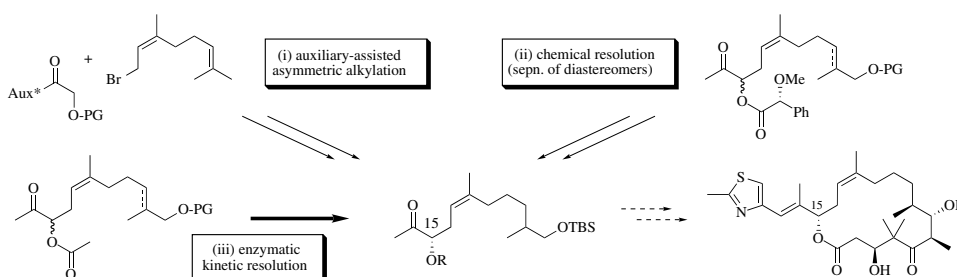
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Russell L. Betts, Sean T. Murphy and Carl R. Johnson*


Synthesis and resolution of a key building block for epothilones: a comparison of asymmetric synthesis, chemical and enzymatic resolution

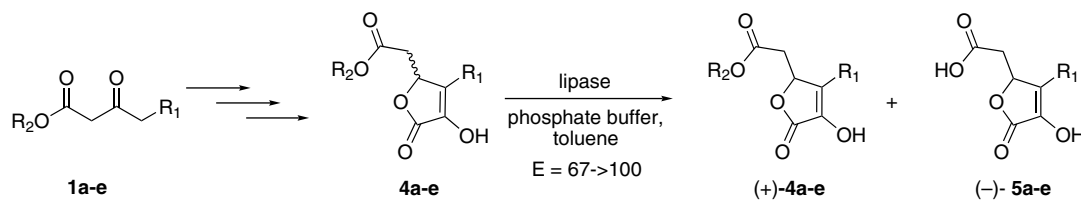
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Günther Scheid, Eelco Ruijter, Monika Konarzycka-Bessler, Uwe T. Bornscheuer* and Ludger A. Wessjohann*


Lipase-catalyzed highly enantioselective kinetic resolution of racemic α -hydroxy butenolides

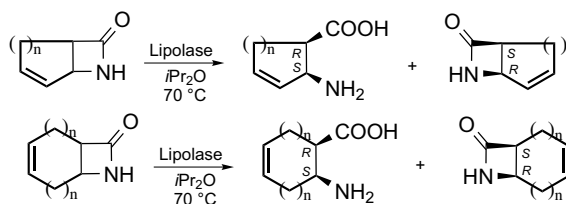
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Anett Kirschner, Peter Langer* and Uwe T. Bornscheuer*


Advanced procedure for the enzymatic ring opening of unsaturated alicyclic β -lactams

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Enikő Forró and Ferenc Fülöp*

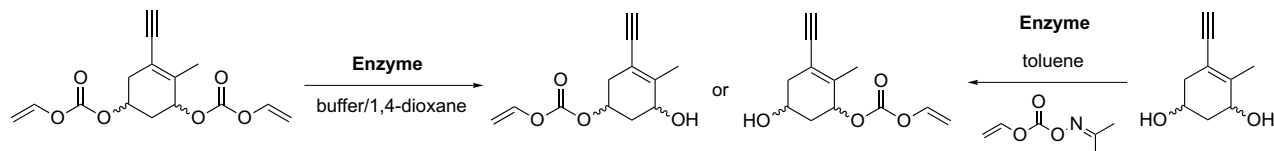


Racemic unsaturated alicyclic β -lactams ($n = 1,2$) were resolved through lipase (*Candida antarctica* lipase B)-catalysed enantioselective ring opening ($E > 200$).

Regioselective enzymatic syntheses of C-3 and C-5 carbonate A-ring stereoisomeric precursors of vitamin D

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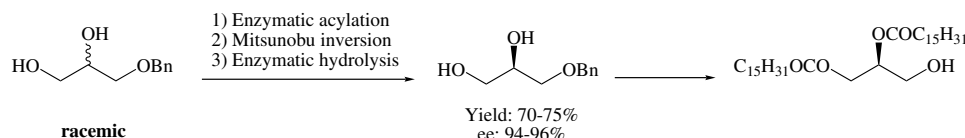
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Efficient chemoenzymatic enantioselective synthesis of diacylglycerols (DAG)

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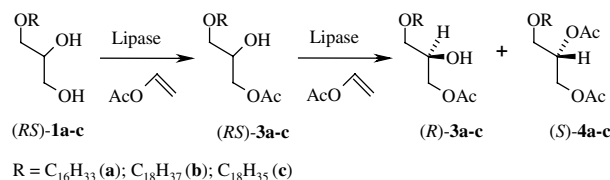
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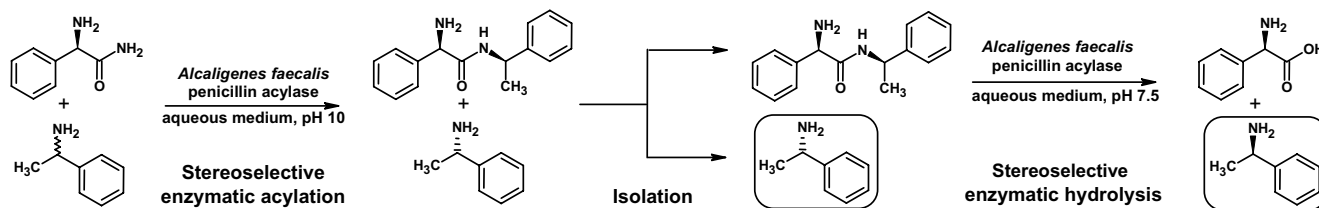
Arnar Halldorsson, Pall Thordarson, Bjorn Kristinsson, Carlos D. Magnusson and Gudmundur G. Haraldsson*



An ‘easy-on, easy-off’ protecting group for the enzymatic resolution of (±)-1-phenylethylamine in an aqueous medium

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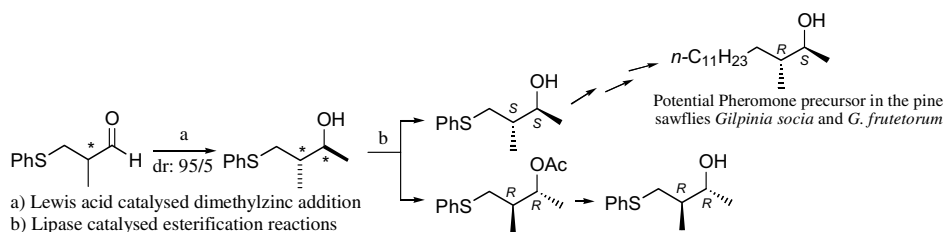
Dorel T. Guranda, Andrey I. Khimiuk, Luuk M. van Langen, Fred van Rantwijk, Roger A. Sheldon and Vytas K. Švedas*



Enantiopure building blocks for the synthesis of 3-methyl-2-alkanols. Diastereoselective methylmetal addition to a chiral 2-methylaldehyde followed by lipase catalysed esterification

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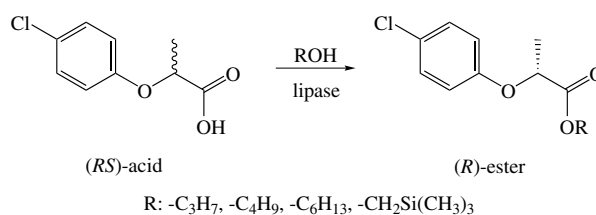
Michael Larsson, Jimmy Andersson, Rong Liu and Hans-Erik Högborg*



Enantioselective esterification of (*RS*)-2-(4-chlorophenoxy)propionic acid via *Carica papaya* lipase in organic solvents

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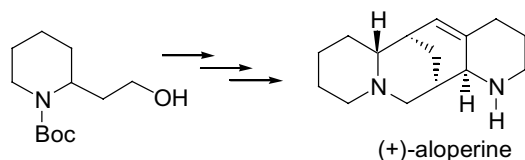
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Enzyme assisted enantioselective synthesis of the alkaloid (+)-aloperine

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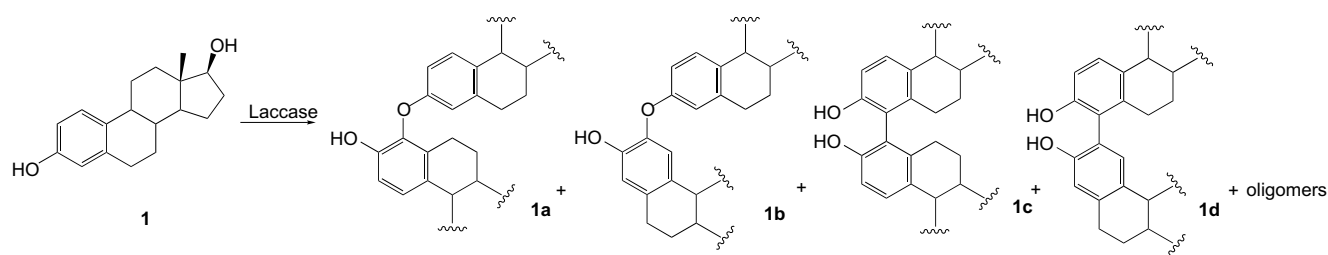
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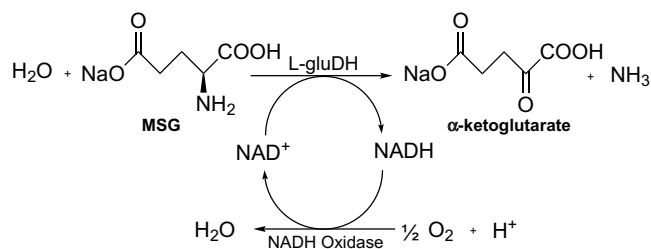
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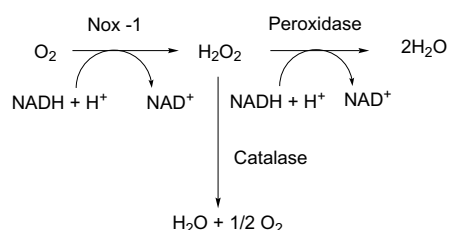
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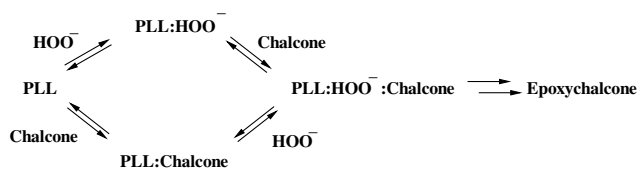
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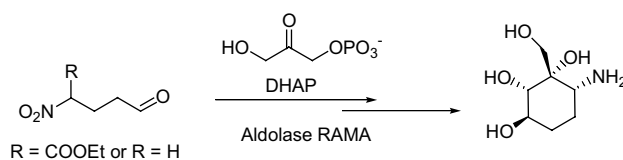
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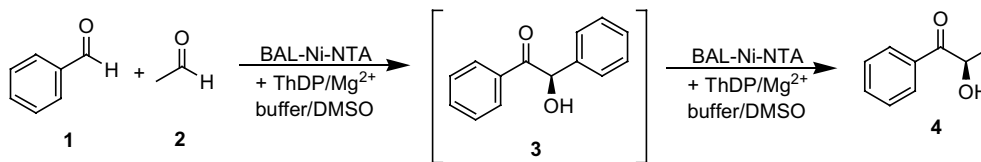
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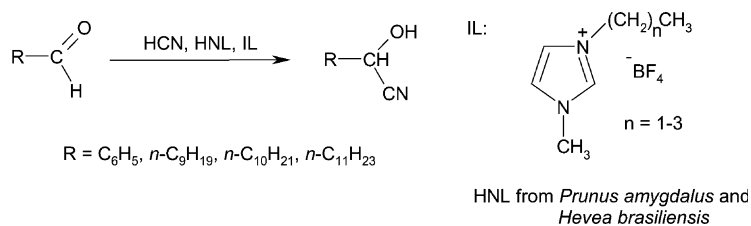
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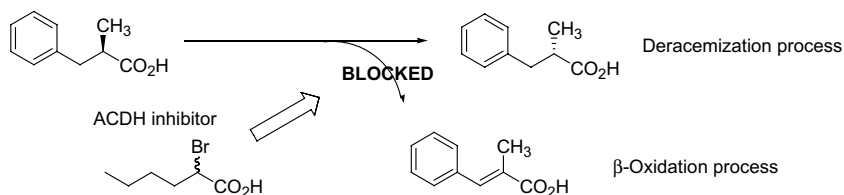
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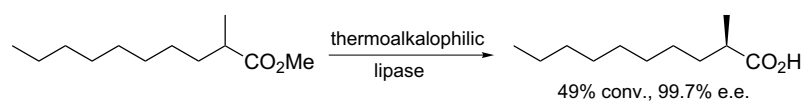
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Highly enantioselective recombinant thermoalkalophilic lipases from *Geobacillus* and *Bacillus* sp

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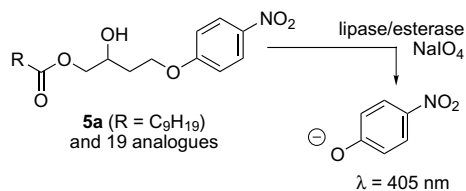
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Universal chromogenic substrates for lipases and esterases

Johann Grognum, Denis Wahler, Erich Nyfeler and Jean-Louis Reymond*

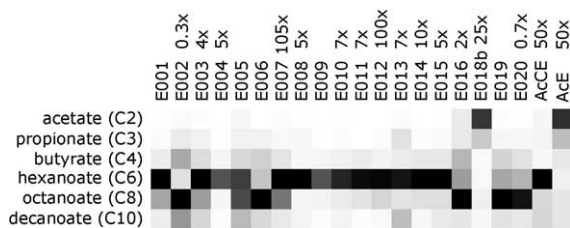
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Mapping the substrate selectivity and enantioselectivity of esterases from thermophiles

Neil A. Somers and Romas J. Kazlauskas*

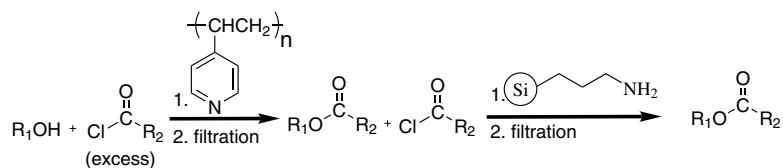
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