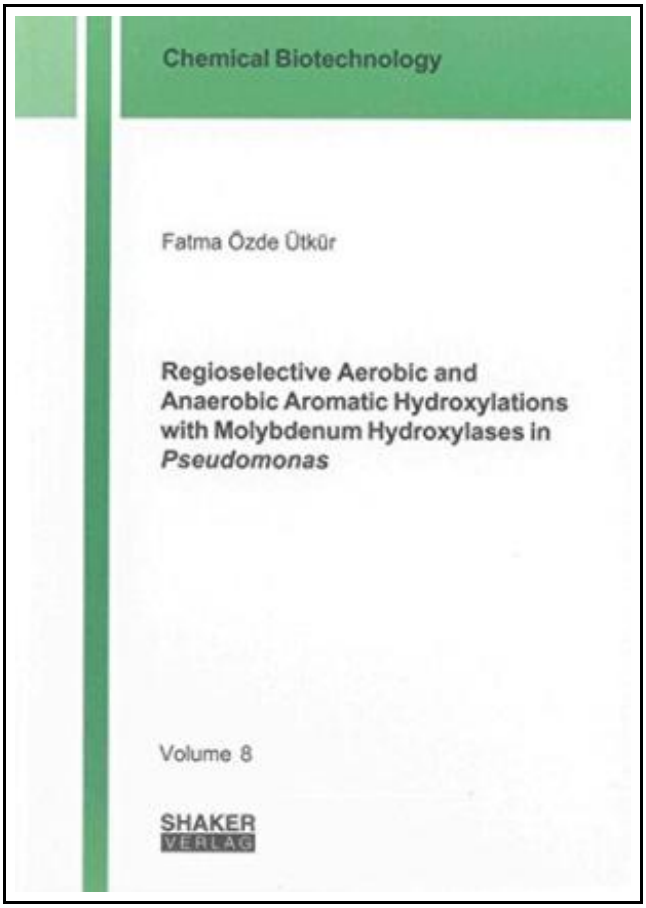
Regioselective Aerobic and Anaerobic Aromatic Hydroxylations with Molybdenum Hydroxylases in Pseudomonas



Filesize: 8.43 MB

Reviews

Very useful to any or all group of men and women. It is writter in basic words instead of difficult to understand. I realized this ebook from my i and dad recommended this publication to understand.
(Althea Fahey MD)

REGIOSELECTIVE AEROBIC AND ANAEROBIC AROMATIC HYDROXYLATIONS WITH MOLYBDENUM HYDROXYLASES IN PSEUDOMONAS

DOWNLOAD PDF

Shaker Verlag Apr 2012, 2012. Buch. Book Condition: Neu. 21x14.8x cm. Neuware - Among many other interesting reactions, molybdenum (Mo) hydroxylases catalyze regioselective hydrocarbon oxyfunctionalizations, for which typically oxygenases are employed in synthetic applications. However, oxygenase-based processes are often limited by oxygen mass transfer, cofactor regeneration, and/or enzyme instability due to the formation of reactive oxygen species. As Mo-hydroxylases produce, rather than consume reducing equivalents during substrate hydroxylation and use water, rather than molecular oxygen as oxygen donor, these enzymes have a high potential for overcoming limitations encountered with oxygenases. The potential and feasibility of these enzymes for preparative applications was investigated in the frame of this thesis with quinoline 2-oxidoreductase (Qor) and quinaldine 4-oxidase (Qox) serving as model enzymes. Up-to-date, several Mo-hydroxylases have been described, but rarely applied on industrial scale. For specific quinaldine hydroxylation to 4-hydroxyquinaldine, different Qox-based biocatalysts, reaction conditions, and key process parameters have been evaluated. The use of 1-dodecanol as carrier solvent and Qox-containing P. putida KT2440 as biocatalyst enabled high productivities (~0.4 g ltot -1 h-1) in a 0.5-L bioreactor setup without active aeration. Further evaluation of the key process parameters showed that inhibition by 1-dodecanol and the product was the most critical factor affecting process performance. As a proof of concept, the Qox-based process was coupled to downstream processing, including supercritical carbon dioxide treatment for breaking the stable emulsion followed by liquid-liquid extraction and crystallization allowing the isolation of 138 mg product with high purity (>99.9%). Furthermore, completely anaerobic quinoline hydroxylation was achieved with nitrate as electron acceptor using Qor-containing P. putida 86 expressing the nitrate reductase genes of P. aeruginosa. The achieved rate (7 U gCDW -1) shows the remarkable potential of Mohydroxylase-containing whole cells for O2-independent C-H oxyfunctionalizations. In conclusion, the development of an efficient integrated process and the first...

Read Regioselective Aerobic and Anaerobic Aromatic Hydroxylations with Molybdenum Hydroxylases in Pseudomonas Online
Download PDF Regioselective Aerobic and Anaerobic Aromatic Hydroxylations with Molybdenum Hydroxylases in Pseudomonas

See Also

Programming in D

Ali Cehreli Dez 2015, 2015. Buch. Book Condition: Neu. 264x182x53 mm. This item is printed on demand - Print on Demand Neuware - The main aim of this book is to teach D to readers...

Download PDF »

Index to the Classified Subject Catalogue of the Buffalo Library; The Whole System Being Adopted from the Classification and Subject Index of Mr. Melvil Dewey, with Some Modifications . (Paperback)

Rarebooksclub.com, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.This historic book may have numerous typos and missing text. Purchasers can usually...

Download PDF »

Hands Free Mama: A Guide to Putting Down the Phone, Burning the To-Do List, and Letting Go of Perfection to Grasp What Really Matters! (Paperback)

ZONDERVAN, United States, 2014. Paperback. Book Condition: New. 211 x 137 mm. Language: English . Brand New Book. Rachel Macy Stafford s post The Day I Stopped Saying Hurry Up was a true phenomenon on...

Download PDF »

Adobe Indesign CS/Cs2 Breakthroughs

Peachpit Press, 2005. Softcover. Book Condition: Neu. Gebraucht - Sehr gut Unbenutzt. Schnelle Lieferung, Kartonverpackung. Abzugsfähige Rechnung. Bei Mehrfachbestellung werden die Versandkosten anteilig erstattet. - Adobe InDesign is taking the publishing world by storm and...

Download PDF »

The Java Tutorial (3rd Edition)

Pearson Education, 2001. Softcover. Book Condition: Neu. Gebraucht - Sehr gut Unbenutzt. Schnelle Lieferung, Kartonverpackung. Abzugsfähige Rechnung. Bei Mehrfachbestellung werden die Versandkosten anteilig erstattet. - Praise for "The Java' Tutorial, Second Edition" includes: "This book...

Download PDF »