

## Volume Contents

### VOL. 29 (1–6), 21 JUNE 2004

Special Issue: Proceedings of the 6th International Symposium on Biocatalysis and Biotransformations – BIOTRANS'03

Guest Editors: V. Křen, L. Martínková and D. Walterová

Editorial . . . . .	1
<b>Articles</b>	
Benzimidazole as deazapurine analogue for microbial transglycosylation L. Bentancor, J.A. Trelles, M. Nóbile, E.S. Lewkowicz and A.M. Iribarren (Buenos Aires, Argentina) . . . . .	3
Kinetic and modelling studies on the lipase catalysed enantioselective esterification of (±)-perillyl alcohol V. Skouridou, E.D. Chrysinia (Athens, Greece), H. Stamatis (Ioannina, Greece), N.G. Oikonomakos and F.N. Kolisis (Athens, Greece) . . . . .	9
Lactones 20 [1]: Biohydroxylation of saturated bicyclic $\gamma$ -lactones with the substituted cyclohexane system W. Gładkowski, M. Grabarczyk, M. Konopka and C. Wawrzeńczyk (Wrocław, Poland) . . . . .	13
Optimization of androstenedione production in an organic–aqueous two-liquid phase system A. Staebler (Germany and Lisbon, Portugal), A. Cruz, W. van der Goot, H.M. Pinheiro, J.M.S. Cabral and P. Fernandes (Lisbon, Portugal) . . . . .	19
Microbial deracemisation of aromatic $\beta$ -hydroxy acid esters S.K. Padhi, N. Ganesh Pandian and A. Chadha (Chennai, India) . . . . .	25
Impact of surfactants on the biotransformation of methyl ricinoleate into $\gamma$ -decalactone by <i>Yarrowia lipolytica</i> M. Aguedo, Y. Waché, F. Coste, F. Husson and J.-M. Belin (Dijon, France) . . . . .	31
Preparation of an (–)-ephedrine intermediate through asymmetric reduction of 1-phenyl-1,2-propanedione by anaerobically pre-treated baker's yeast E. Lourenço, J.A.R. Rodrigues and P.J.S. Moran (Campinas, Brazil) . . . . .	37
Baker's yeast mediated asymmetric reduction of cinnamaldehyde derivatives L.C. Fardelone, J. Augusto, R. Rodrigues and P.J.S. Moran (Campinas, Brazil) . . . . .	41
Asymmetric synthesis of arylselenoalcohols by means of the reduction of organoseleno acetophenones by whole fungal cells L.H. Andrade, Á.T. Omori, A.L.M. Porto and J.V. Comasseto (São Paulo, Brazil) . . . . .	47
Deracemization of aryl ethanols and reduction of acetophenones by whole fungal cells of <i>Aspergillus terreus</i> CCT 4083, <i>A. terreus</i> CCT 3320 and <i>Rhizopus oryzae</i> CCT 4964 J.V. Comasseto, L.H. Andrade, Á.T. Omori, L.F. Assis and A.L.M. Porto (São Paulo, Brazil) . . . . .	55
Acylation of natural flavonoids using lipase of candida antarctica as biocatalyst M. Ardhaoui (Vandoeuvre-les-Nancy, France), A. Falcimaigne (Pulnoy, France), J.-M. Engasser (Vandoeuvre-les-Nancy, France), P. Moussou, G. Pauly (Pulnoy, France) and M. Ghoul (Vandoeuvre-les-Nancy, France) . . . . .	63
Influence of the alkyl-substituted silane precursor on sol–gel encapsulated lipase activity C.M.F. Soares, O.A. dos Santos, J.E. Olivo (Maringa, Brazil), H.F. de Castro (Lorena, Brazil), F.F. de Moraes and G.M. Zanin (Maringa, Brazil) . . . . .	69
Investigation of kinetics of immobilized liver esterase by flow calorimetry F. Malík, V. Štefuca and V. Bálež (Bratislava, Slovak Republic) . . . . .	81
Fungus $\beta$ -glycosidases: immobilization and use in alkyl- $\beta$ -glycoside synthesis M. Gargouri, I. Smaali (Tunis, Tunisia), T. Maugard, M.D. Legoy (La Rochelle, France) and N. Marzouki (Tunis, Tunisia) . . . . .	89
Regioselective enzymatic acylation of polyhydroxylated sesquiterpenoids A. Intra, A. Bava, G. Nasini and S. Riva (Milan, Italy) . . . . .	95
Application of bacteria and fungi as biocatalysts for the preparation of optically active hydroxyphosphonates P. Kafarski and B. Lejczak (Wrocław, Poland) . . . . .	99
A study in UF-membrane reactor on activity and stability of nitrile hydratase from <i>Microbacterium imperiale</i> CBS 498-74 resting cells for propionamide production M. Cantarella (L'Aquila, Italy), L. Cantarella (Cassino, Italy), A. Gallifuoco, R. Frezzini, A. Spera and F. Alfani (L'Aquila, Italy) . . . . .	105
Biotransformation of $\beta$ -amino nitriles: the role of the <i>N</i> -protecting group M. Preiml, H. Hönig and N. Klempier (Graz, Austria) . . . . .	115
Asymmetric transformation of enol acetates with esterases from <i>Marchantia polymorpha</i> K. Shimoda, N. Kubota (Oita, Japan), T. Hirata and T. Kawano (Higashi-Hiroshima, Japan) . . . . .	123
Enzymatic alcoholysis of 3',5'-di- <i>O</i> -acetyl-2'-deoxynucleosides	

M.A. Zinni, S.D. Rodríguez, R.M. Pontiggia, J.M. Montserrat, L.E. Iglesias and A.M. Iribarren (Buenos Aires, Argentina) . . . . .	129
Influence of the sol–gel chemistry on the activity of a lipase encapsulated in a silica aerogel S. Maury, P. Buisson, A. Perrard and A.C. Pierre (Villeurbanne, France) . . . . .	133
Lipase-catalysed deacetylation of androstane and pregnane derivatives: influence of ring D substitution A.C. Bruttomesso and A. Baldessari (Buenos Aires, Argentina) . . . . .	149
Sugar ester synthesis by a mycelium-bound <i>Mucor circinelloides</i> lipase in a micro-reactor equipped with water activity sensor T. Antczak, J. Patura, M. Szczesna-Antczak, D. Hiler and S. Bielecki (Lodz, Poland) . . . . .	155
Stabilization of an intracellular <i>Mucor circinelloides</i> lipase for application in non-aqueous media M. Szczesna-Antczak, T. Antczak, M. Rzycka, Z. Modrzejewska, J. Patura, H. Kalinowska and S. Bielecki (Lodz, Poland) . . . . .	163
Microbial models of animal drug metabolism. Part 5. Microbial preparation of human hydroxylated metabolites of irbesartan V. Alexandre, S. Ladril, M. Maurs and R. Azerad (Paris, France) . . . . .	173
Organic phase effect in the biphasic bioconversion of substituted naphthalenes by engineered <i>E. coli</i> containing <i>P. fluorescens</i> N3 dioxygenase G. Sello, S. Bernasconi, F. Orsini, M. Tansi, E. Galli, P. Di Gennaro and G. Bestetti (Milano, Italy) . . . . .	181
Medium optimization for the production of the aroma compound 2-phenylethanol using a genetic algorithm M.M.W. Etschmann, D. Sell and J. Schrader (Frankfurt/Main, Germany) . . . . .	187
Process development of methylenedioxyphenyl-acetone chiral bioreduction B. Erdélyi, A. Szabó, L. Birincsik and Á. Hoschke (Budapest, Hungary) . . . . .	195
Characterization of an enriched lipoxygenase extract from <i>Aspergillus niger</i> in terms of specificity and nature of flavor precursors production C.E. Hall (Ste-Anne de Bellevue, Canada), F. Husson (Dijon, France) and S. Kermasha (Ste-Anne de Bellevue, Canada) . . . . .	201
Biocatalytic conversion of unnatural substrates by recombinant almond R-HNL isoenzyme 5 R. Weis (Graz, Austria), P. Poechlauer (Austria), R. Bona (Graz, Austria), W. Skranc, R. Luiten, M. Wubbolts (Austria), H. Schwab and A. Glieder (Graz, Austria) . . . . .	211
Regioselective enzymatic acylation of <i>N</i> -acetylhexosamines P. Simeruská, A. Pišvejcová, M. Kuzma, P. Sedmera, V. Křen (Prague, Czech Republic), S. Nicotra and S. Riva (Milano, Italy) . . . . .	219
Nitrile biotransformation by <i>Aspergillus niger</i> R. Šnajdrová, V. Kristová-Mylerová (Prague, Czech Republic), D. Crestia (Aubière, France), K. Nikolaou, M. Kuzma (Prague, Czech Republic), M. Lemaire, E. Gallienne, J. Bolte (Aubière, France), K. Bezouška (Prague, Czech Republic), V. Křen and L. Martínková (Prague, Czech Republic) . . . . .	227
$\beta$ - <i>N</i> -Acetylhexosaminidase-catalysed synthesis of non-reducing oligosaccharides J. Rauvolfová, M. Kuzma, L. Weignerová, P. Fialová, V. Přikrylová, A. Pišvejcová, M. Macková and V. Křen (Prague, Czech Republic) . . . . .	233
Cellobiose phosphorylase from <i>Cellulomonas uda</i> : gene cloning and expression in <i>Escherichia coli</i> , and application of the recombinant enzyme in a ‘glycosynthase-type’ reaction B. Nidetzky, R. Griessler (Graz, Austria and Vienna, Austria), A. Schwarz (Graz, Austria) and B. Splechtna (Vienna, Austria) . . . . .	241
Control of the nitrile-hydrolyzing enzyme activity in <i>Rhodococcus rhodochrous</i> IFO 15564: preferential action of nitrile hydratase and amidase depending on the reaction condition factors and its application to the one-pot preparation of amides from aldehydes M. Kashiwagi, K.-I. Fuhshuku and T. Sugai (Yokohama, Japan) . . . . .	249
Enzymatic synthesis of <i>N</i> -acetylglucosaminobioses by reverse hydrolysis: characterisation and application of the library of fungal $\beta$ - <i>N</i> -acetylhexosaminidases J. Rauvolfová, L. Weignerová, M. Kuzma, V. Přikrylová, M. Macková, A. Pišvejcová and V. Křen (Prague, Czech Republic) . . . . .	259
Peptide deformylase as biocatalyst for the synthesis of enantiomerically pure amino acid derivatives T. Sonke, B. Kaptein (Geleen, The Netherlands), A.F. Volker Wagner (Heidelberg, Germany), P.J.L.M. Quaedflieg (Geleen, The Netherlands), S. Schultz (Heidelberg, Germany), S. Ernste, A. Schepers, J.H.M. Mommers and Q.B. Broxterman (Geleen, The Netherlands) . . . . .	265
Author Index . . . . .	279
Subject Index . . . . .	283
Volume contents . . . . .	289