

## Volume Contents

### VOL. 21 NOS. 1–2, 2 JANUARY 2003

Special Issue: Extended abstracts from the EFB-ESAB Meeting on Applied Biocatalysis, Trondheim, Norway 2001  
Guest Editor: Jaap A. Jongejan

|                     |   |
|---------------------|---|
| Editorial . . . . . | 1 |
|---------------------|---|

#### Articles

|                                                                                                                                                                                                                                                                                                              |    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Rational engineering of the stability and the catalytic performance of enzymes<br>S. Gåseidnes, B. Synstad (Ås, Norway), J.E. Nielsen (La Jolla, CA, USA) and V.G.H. Eijsink (Ås, Norway) . . . . .                                                                                                          | 3  |
| Enzymatic ester synthesis in ionic liquids<br>P. Lozano, T. De Diego (Murcia, Spain), D. Carrié, M. Vaultier (Rennes, France) and J.L. Iborra (Murcia, Spain) . . .                                                                                                                                          | 9  |
| Reverse micelles, a system for antibody-catalysed reactions<br>E. Franqueville, H. Loutrari, F. Mellou (Athens, Greece), H. Stamatis (Ioannina, Greece), A. Friboulet (Compiègne, France) and F.N. Kolisis (Athens, Greece) . . . . .                                                                        | 15 |
| Cardosin A as a model aspartic proteinase for the study of organic solvent effects. An overview on catalytic and structural aspects<br>A.C. Sarmiento, C. Oliveira (Aveiro, Portugal), E. Pires (Coimbra, Portugal), P. Halling (Glasgow, UK) and M. Barros (Aveiro, Portugal) . . . . .                     | 19 |
| Effect of increasing co-solvent concentration on the stability of soluble and immobilized $\beta$ -galactosidase<br>B.M. Brena, G. Irazoqui, C. Giacomini and F. Batista-Viera (Montevideo, Uruguay) . . . . .                                                                                               | 25 |
| Enzyme inactivation due to Maillard reactions during oligosaccharide synthesis by a hyperthermophilic glycosidase: influence of enzyme immobilisation<br>M.E. Bruins, A.J.H. Thewessen, A.E.M. Janssen and R.M. Boom (Wageningen, The Netherlands) . . . . .                                                 | 31 |
| Hydrolysis of native proteins by keratinolytic protease of <i>Doratomyces microsporus</i><br>J. Friedrich and S. Kern (Ljubljana, Slovenia) . . . . .                                                                                                                                                        | 35 |
| The unique cold-adapted extracellular subtilase from psychrophilic yeast <i>Leucosporidium antarcticum</i><br>M. Pazgier, M. Turkiewicz, H. Kalinowska and S. Bielecki (Stefanowskiego, Poland) . . . . .                                                                                                    | 39 |
| Covalent flavinylation enhances the oxidative power of vanillyl-alcohol oxidase<br>M.W. Fraaije (Groningen, The Netherlands and Pavia, Italy), R.H.H. van den Heuvel (Pavia, Italy and Wageningen, The Netherlands), A. Mattevi (Pavia, Italy) and W.J.H. van Berkel (Wageningen, The Netherlands) . . . . . | 43 |
| Alcohol oxidase from the yeast <i>Pichia pastoris</i> —a potential catalyst for organic synthesis<br>G. Dienys, S. Jarmalavičius, S. Budrienė, D. Čitavičius and J. Sereikaitė (Vilnius, Lithuania) . . . . .                                                                                                | 47 |
| Biocatalytic synthesis of cyclopropanol from cyclopropyl methyl ketone using whole cells of <i>Rhodococcus erythropolis</i><br>P.L. Antoine Overbeeke, P. Schenkels (Delft, The Netherlands), F. Secundo (Milan, Italy) and J.A. Jongejan (Delft, The Netherlands) . . . . .                                 | 51 |
| Enantioselective enzymatic preparation of chiral glutaric monocarboxylic acids and amides<br>E.E. Jacobsen (Trondheim, Norway), B.H. Hoff (Sarpsborg, Norway), A.R. Moen and T. Anthonsen (Trondheim, Norway) . . . . .                                                                                      | 55 |
| Lipase-catalyzed esterification of rutin and naringin with fatty acids of medium carbon chain<br>A. Kontogianni, V. Skouridou, V. Sereti (Athens, Greece), H. Stamatis (Ioannina, Greece) and F.N. Kolisis (Athens, Greece) . . . . .                                                                        | 59 |

|                                                                                                                                                                                                                                                                                                    |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| The enantioselectivity of reduction of ethyl 4-halo-3-oxobutanoate catalyzed by <i>Geotrichum candidum</i> depends on the cofactor<br>E. Sundby, M. De Zotti and T. Anthonsen (Trondheim, Norway) . . . . .                                                                                        | 63 |
| Lipase-mediated epoxidation of $\alpha$ -pinene<br>V. Skouridou (Athens, Greece), H. Stamatis (Ioannina, Greece) and F.N. Kolisis (Athens, Greece) . . . . .                                                                                                                                       | 67 |
| Response surface modeling of glycerolysis catalyzed by <i>Candida rugosa</i> lipase immobilized in different polyurethane foams for the production of partial glycerides<br>S. Ferreira-Dias (Lisboa, Portugal), A.C. Correia (Viseu, Portugal) and M.M.R. da Fonseca (Lisboa, Portugal) . . . . . | 71 |
| Response surface modelling of the consumption of bitter compounds from orange juice by <i>Acinetobacter calcoaceticus</i><br>M.H.L. Ribeiro, D. Silveira (Lisbon, Portugal), C. Ebert (Trieste, Italy) and S. Ferreira-Dias (Lisbon, Portugal) . . . . .                                           | 81 |
| Enantioselectivity of <i>Candida rugosa</i> lipase in the hydrolysis of 2-chloropropionic acid methyl ester<br>P.L. Antoine Overbeeke and J.A. Jongejan (Delft, The Netherlands). . . . .                                                                                                          | 89 |
| Guide for Authors . . . . .                                                                                                                                                                                                                                                                        | 93 |
| Announcement . . . . .                                                                                                                                                                                                                                                                             | I  |

## VOL. 21 NO. 3, 16 JANUARY 2003

### Articles

|                                                                                                                                                                                                                                                                                                             |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Microbial C-hydroxylation and $\beta$ -4-O-methylglucosidation of methyl-benzamide 7-azanorbornane ethers with <i>Beauveria bassiana</i><br>H.F. Olivo, T.L. Peeples, M.-Y. Ríos, F. Velázquez, J.-W. Kim and S. Narang (Iowa City, IA, USA). . . . .                                                       | 97  |
| On the mechanism of hydrolysis of hydantoins by D-hydantoinase from <i>Vigna angularis</i> : inhibition studies<br>M.B. Arcuri, S.J. Sabino, O.A.C. Antunes and E.G. Oestreicher (Rio de Janeiro, Brazil). . . . .                                                                                          | 107 |
| Biotransformation of flavone and flavanone by <i>Streptomyces lividans</i> cells carrying shuffled biphenyl dioxygenase genes<br>H.-K. Chun, Y. Ohnishi, K. Shindo (Tokyo, Japan), N. Misawa (Yokohama, Japan and Kamaishi, Japan), K. Furukawa (Fukuoka, Japan) and S. Horinouchi (Tokyo, Japan) . . . . . | 113 |
| Thermodynamics of the lipase-catalyzed transesterification of 1-phenyl-1-alkanols and butyl acetate in organic solvents<br>Y.B. Tewari, D.J. Vanderah (Gaithersburg, MD, USA) and J.D. Rozzell (Pasadena, CA, USA) . . . . .                                                                                | 123 |
| Improved functional properties of trypsin modified by monosubstituted amino- $\beta$ -cyclodextrins<br>M. Fernández (Matanzas, Cuba), A. Fragoso, R. Cao (Havana, Cuba) and R. Villalonga (Matanzas, Cuba) . . . . .                                                                                        | 133 |
| Epoxidation of fatty acids, fatty methyl esters, and alkenes by immobilized oat seed peroxxygenase<br>G.J. Piazza, A. Nuñez and T.A. Foglia (Wyndmoor, PA, USA). . . . .                                                                                                                                    | 143 |
| High-yield enzymatic synthesis of O-allyl $\beta$ -D-galactopyranoside<br>A. Vetere, M. Medeot, C. Campa, I. Donati, A. Gamini and S. Paoletti (Trieste, Italy) . . . . .                                                                                                                                   | 153 |

## VOL. 21 NOS. 4–6, 17 FEBRUARY 2003

### Articles

|                                                                                                                                                                                                                                                                                                                                                 |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Synthesis of nucleotide-activated disaccharides with $\beta$ -galactosidase from <i>Bacillus circulans</i> and $\alpha$ -galactosidase from <i>Bifidobacterium adolescentis</i><br>V. Nieder, S.P. Marx (Aachen, Germany), R.G. Gallego, J.P. Kamerling, J.F.G. Vliegthart (Utrecht, The Netherlands) and L. Elling (Aachen, Germany) . . . . . | 157 |
| Wax esters synthesis from heavy fraction of sheep milk fat and cetyl alcohol by immobilised lipases<br>A. Salis, V. Solinas and M. Monduzzi (Cagliari, Italy) . . . . .                                                                                                                                                                         | 167 |
| Effect of cationic and non-ionic surfactants on the hydrolysis of N-glutaryl-L-phenylalanine catalysed by chymotrypsin iso-enzymes<br>P. Viparelli, F. Alfani and M. Cantarella (Montelucio di Roio, Italy) . . . . .                                                                                                                           | 175 |
| Influence of different silica derivatives in the immobilization and stabilization of a <i>Bacillus licheniformis</i> protease (Subtilisin Carlsberg)<br>L. Ferreira, M.A. Ramos (Coimbra, Portugal), J.S. Dordick (Troy, NY, USA) and M.H. Gil (Coimbra, Portugal) . . . . .                                                                    | 189 |

|                                                                                                                                                                                                                                                                                                                                          |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Modulation of <i>Mucor miehei</i> lipase properties via directed immobilization on different hetero-functional epoxy resins. Hydrolytic resolution of ( <i>R,S</i> )-2-butyryl-2-phenylacetic acid<br>J.M. Palomo, G. Muñoz, G. Fernández-Lorente, C. Mateo, M. Fuentes, J.M. Guisan and R. Fernández-Lafuente (Madrid, Spain) . . . . . | 201 |
| Oxidation of both termini of <i>p</i> - and <i>m</i> -xylene by <i>Escherichia coli</i> transformed with xylene monooxygenase gene<br>T. Maruyama, H. Iida and H. Kakidani (Kanagawa, Japan) . . . . .                                                                                                                                   | 211 |
| Fusion of family VI cellulose binding domains to <i>Bacillus halodurans</i> xylanase increases its catalytic activity and substrate-binding capacity to insoluble xylan<br>S.L. Mangala, F.S. Kittur, M. Nishimoto (Ibaraki, Japan), K. Sakka, K. Ohmiya (Tsu, Japan), M. Kitaoka and K. Hayashi (Ibaraki, Japan) . . . . .              | 221 |
| Microbiological transformations 52. Biocatalysed Baeyer–Villiger oxidation of 1-indanone derivatives<br>M.C. Gutiérrez, V. Alphand and R. Furstoss (Marseille, France) . . . . .                                                                                                                                                         | 231 |
| Influence of the spacer length on the activity of enzymes immobilised on nylon/polyGMA membranes. Part 1. Isothermal conditions<br>A. De Maio, M.M. El-Masry, M. Portaccio, N. Diano, S. Di Martino, A. Mattei, U. Bencivenga and D.G. Mita (Naples, Italy) . . . . .                                                                    | 239 |
| Influence of the spacer length on the activity of enzymes immobilised on nylon/polyGMA membranes. Part 2: Non-isothermal conditions<br>A. De Maio, M.M. El-Masry, P. De Luca, V. Grano, S. Rossi, N. Pagliuca, F.S. Gaeta, M. Portaccio and D.G. Mita (Naples, Italy) . . . . .                                                          | 253 |
| Biotransformation of the fungistatic compound ( <i>R</i> )-(+)-1-(4'-chlorophenyl)propan-1-ol by <i>Botrytis cinerea</i><br>A.J. Bustillo, J. Aleu, R. Hernández-Galán and I.G. Collado (Cádiz, Spain) . . . . .                                                                                                                         | 267 |
| Activity studies of glucose oxidase immobilized onto poly( <i>N</i> -vinylimidazole) and metal ion-chelated poly( <i>N</i> -vinylimidazole) hydrogels<br>N. Pekel, B. Salih and O. Güven (Ankara, Turkey) . . . . .                                                                                                                      | 273 |
| Enhancement of the thermostability and catalytic activity of D-stereospecific amino-acid amidase from <i>Ochrobactrum anthropi</i> SV3 by directed evolution<br>H. Komeda, N. Ishikawa and Y. Asano (Toyama, Japan) . . . . .                                                                                                            | 283 |
| Electrochemical characterization of lignin peroxidase from the white-rot basidiomycete <i>Phanerochaete chrysosporium</i><br>M. Oyadomari (Fukuoka, Japan), H. Shinohara (Okayama, Japan), T. Johjima, H. Wariishi and H. Tanaka (Fukuoka, Japan) . . . . .                                                                              | 291 |
| Immobilization on Eupergit C of cyclodextrin glucosyltransferase (CGTase) and properties of the immobilized biocatalyst<br>M. Teresa Martín, F.J. Plou, M. Alcalde and A. Ballesteros (Madrid, Spain) . . . . .                                                                                                                          | 299 |

## Letter

|                                                                                                                                                                                                  |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Ferulic acid esterase from <i>Humicola Insolens</i> catalyzes enantioselective transesterification of secondary alcohols<br>N.S. Hatzakis, D. Daphnomili and I. Smonou (Crete, Greece) . . . . . | 309 |
| Erratum . . . . .                                                                                                                                                                                | 313 |
| Author Index . . . . .                                                                                                                                                                           | I   |
| Subject Index . . . . .                                                                                                                                                                          | V   |
| Volume contents . . . . .                                                                                                                                                                        | XI  |