

Journal of Molecular Catalysis B: Enzymatic 21 (2003) V-X



www.elsevier.com/locate/molcatb

Subject Index

A. oryzae β-galactosidase

High-yield enzymatic synthesis of O-allyl β -D-galactopyranoside 153

Acinetobacter calcoaceticus

Response surface modelling of the consumption of bitter compounds from orange juice by *Acinetobacter calcoaceticus* 81 Acylation rate

Lipase-catalyzed esterification of rutin and naringin with fatty acids of medium carbon chain 59

Affinity gels

Activity studies of glucose oxidase immobilized onto poly(*N*-vinylimidazole) and metal ion-chelated poly(*N*-vinylimidazole) hydrogels 273

Alcohol oxidase

Alcohol oxidase from the yeast *Pichia pastoris*—a potential catalyst for organic synthesis 47

Alcoholysis

Wax esters synthesis from heavy fraction of sheep milk fat and cetyl alcohol by immobilised lipases 167

Aldehyde

Alcohol oxidase from the yeast *Pichia pastoris*—a potential catalyst for organic synthesis 47

O-Allyl β-D-galactopyranoside

High-yield enzymatic synthesis of O-allyl β -D-galactopyranoside 153

Ammonolysis

Enantioselective enzymatic preparation of chiral glutaric monocarboxylic acids and amides 55

Aryl cation radical

Electrochemical characterization of lignin peroxidase from the white-rot basidiomycete *Phanerochaete chrysosporium* 201

Atmospheric pressure chemical ionization mass spectrometry

Epoxidation of fatty acids, fatty methyl esters, and alkenes by immobilized oat seed peroxygenase 143

Autolysis

Rational engineering of the stability and the catalytic performance of enzymes 3

Avena sativa

Epoxidation of fatty acids, fatty methyl esters, and alkenes by immobilized oat seed peroxygenase 143

7-Azanorbornanes

Microbial *C*-hydroxylation and β-4-*O*-methylglucosidation of methyl-benzamide 7-azanorbornane ethers with *Beauveria bassiana* 97

Bacillus halodurans

Fusion of family VI cellulose binding domains to *Bacillus halodurans* xylanase increases its catalytic activity and substrate-binding capacity to insoluble xylan 221

Baeyer-Villiger oxidation

Microbiological transformations 52. Biocatalysed Baeyer-Villiger oxidation of 1-indanone derivatives 231

Basidiomycete

Electrochemical characterization of lignin peroxidase from the white-rot basidiomycete *Phanerochaete chrysosporium* 291

Beauveria bassiana

Microbial *C*-hydroxylation and β-4-*O*-methylglucosidation of methyl-benzamide 7-azanorbornane ethers with *Beauveria bassiana* 97

Benzyl alcohol

Thermodynamics of the lipase-catalyzed transesterification of 1-phenyl-1-alkanols and butyl acetate in organic solvents 123

Biocatalysis

On the mechanism of hydrolysis of hydantoins by D-hydantoinase from *Vigna angularis*: inhibition studies 107

Biocatalytic membranes

Influence of the spacer length on the activity of enzymes immobilised on nylon/polyGMA membranes. Part 1. Isothermal conditions 239

Influence of the spacer length on the activity of enzymes immobilised on nylon/polyGMA membranes. Part 2: Non-isothermal conditions 253

Biotransformation

Biotransformation of flavone and flavanone by *Streptomyces lividans* cells carrying shuffled biphenyl dioxygenase genes 113

Biotransformation of the fungistatic compound (*R*)-(+)-1-(4'-chlorophenyl)propan-1-ol by *Botrytis cinerea* 267

Biphenyl dioxygenase

Biotransformation of flavone and flavanone by *Streptomyces lividans* cells carrying shuffled biphenyl dioxygenase genes 113 *Botrytis cinerea*

Biotransformation of the fungistatic compound (*R*)-(+)-1-(4'-chlorophenyl)propan-1-ol by *Botrytis cinerea* 267

1-Butanol

Thermodynamics of the lipase-catalyzed transesterification of 1-phenyl-1-alkanols and butyl acetate in organic solvents 123

Butyl acetate

Thermodynamics of the lipase-catalyzed transesterification of 1-phenyl-1-alkanols and butyl acetate in organic solvents 123

VI Subject Index

(R,S)-2-Butyroyl-2-phenylacetic acid

Modulation of *Mucor miehei* lipase properties via directed immobilization on different hetero-functional epoxy resins. Hydrolytic resolution of (*R*,*S*)-2-butyroyl-2-phenylacetic acid 201

Candida antarctica

Lipase-mediated epoxidation of α-pinene 67

Candida antarctica lipase B

Enzymatic ester synthesis in ionic liquids 9

Candida rugosa lipase

Enantioselectivity of *Candida rugosa* lipase in the hydrolysis of 2-chloropropionic acid methyl ester 89

N-Carbamoyl-D-phenylglycine

On the mechanism of hydrolysis of hydantoins by D-hydantoinase from *Vigna angularis*: inhibition studies 107

Cellulose binding domains

Fusion of family VI cellulose binding domains to *Bacillus halodurans* xylanase increases its catalytic activity and substrate-binding capacity to insoluble xylan 221

Chemical grafting

Influence of the spacer length on the activity of enzymes immobilised on nylon/polyGMA membranes. Part 1. Isothermal conditions 239

Influence of the spacer length on the activity of enzymes immobilised on nylon/polyGMA membranes. Part 2: Non-isothermal conditions 253

Chiral GLC

Enantioselective enzymatic preparation of chiral glutaric monocarboxylic acids and amides 55

Chitinase

Rational engineering of the stability and the catalytic performance of enzymes 3

(R)-(+)-1-(4'-Chlorophenyl)propan-1-ol

Biotransformation of the fungistatic compound (R)-(+)-1-(4'-chlorophenyl)propan-1-ol by Botrytis cinerea 267

2-Chloropropionic acid methyl ester

Enantioselectivity of *Candida rugosa* lipase in the hydrolysis of 2-chloropropionic acid methyl ester 89

$\alpha\text{-}Chymotrypsin$

Enzymatic ester synthesis in ionic liquids 9

Clostridium stercorarium

Fusion of family VI cellulose binding domains to *Bacillus halodurans* xylanase increases its catalytic activity and substrate-binding capacity to insoluble xylan 221

Conformational engineering

Modulation of *Mucor miehei* lipase properties via directed immobilization on different hetero-functional epoxy resins. Hydrolytic resolution of (*R*,*S*)-2-butyroyl-2-phenylacetic acid 201

Coronaric acid

Epoxidation of fatty acids, fatty methyl esters, and alkenes by immobilized oat seed peroxygenase 143

Covalent flavoprotein

Covalent flavinylation enhances the oxidative power of vanillylalcohol oxidase 43

Covalent immobilization

Modulation of *Mucor miehei* lipase properties via directed immobilization on different hetero-functional epoxy resins.

Hydrolytic resolution of (R,S)-2-butyroyl-2-phenylacetic acid 201

Immobilization on Eupergit C of cyclodextrin glucosyltransferase (CGTase) and properties of the immobilized biocatalyst 299

β-Cyclodextrin

Improved functional properties of trypsin modified by monosubstituted amino- β -cyclodextrins 133

Cyclodextrin glucanotransferase

Immobilization on Eupergit C of cyclodextrin glucosyltransferase (CGTase) and properties of the immobilized biocatalyst 299

Cyclodextrins

 $Immobilization \ on \ Eupergit \ C \ of \ cyclodextrin \ glucosyltransferase \ (CGTase) \ and \ properties \ of \ the \ immobilized \ biocatalyst \ 299$

Cyclopropanol

Biocatalytic synthesis of cyclopropanol from cyclopropyl methyl ketone using whole cells of *Rhodococcus erythropolis* 51

Cyclopropyl methyl ketone

Biocatalytic synthesis of cyclopropanol from cyclopropyl methyl ketone using whole cells of *Rhodococcus erythropolis* 51

p-Amino acids

On the mechanism of hydrolysis of hydantoins by D-hydantoinase from *Vigna angularis*: inhibition studies 107

D-Amino-acid amidase

Enhancement of the thermostability and catalytic activity of D-stereospecific amino-acid amidase from *Ochrobactrum anthropi* SV3 by directed evolution 283

O-Demethylation

Microbial C-hydroxylation and β -4-O-methylglucosidation of methyl-benzamide 7-azanorbornane ethers with *Beauveria bassiana* 97

D-Hydantoinase

On the mechanism of hydrolysis of hydantoins by D-hydantoinase from *Vigna angularis*: inhibition studies 107

Doratomyces microsporus

Hydrolysis of native proteins by keratinolytic protease of *Doratomyces microsporus* 35

D-Phenylalanine

Enhancement of the thermostability and catalytic activity of pstereospecific amino-acid amidase from *Ochrobactrum anthropi* SV3 by directed evolution 283

Electrochemical analysis

Electrochemical characterization of lignin peroxidase from the white-rot basidiomycete *Phanerochaete chrysosporium* 291

Electron impact mass spectrometry

Epoxidation of fatty acids, fatty methyl esters, and alkenes by immobilized oat seed peroxygenase 143

Electrostatics

Rational engineering of the stability and the catalytic performance of enzymes 3

Enantiomeric ratio

Enantioselectivity of *Candida rugosa* lipase in the hydrolysis of 2-chloropropionic acid methyl ester 89

Enantioselective hydrolyses

Enantioselective enzymatic preparation of chiral glutaric monocarboxylic acids and amides 55

Subject Index VII

Enantioselective reduction

The enantioselectivity of reduction of ethyl 4-halo-3-oxobutanoate catalyzed by *Geotrichum candidum* depends on the cofactor 63

Enantioselectivity

Enantioselectivity of *Candida rugosa* lipase in the hydrolysis of 2-chloropropionic acid methyl ester 89

Ferulic acid esterase from *Humicola Insolens* catalyzes enantioselective transesterification of secondary alcohols 309

Enthalpy

Thermodynamics of the lipase-catalyzed transesterification of 1-phenyl-1-alkanols and butyl acetate in organic solvents 123

Enzymatic synthesis

Synthesis of nucleotide-activated disaccharides with β -galactosidase from *Bacillus circulans* and α -galactosidase from *Bifidobacterium adolescentis* 157

Enzyme

Enzyme inactivation due to Maillard reactions during oligosaccharide synthesis by a hyperthermophilic glycosidase: influence of enzyme immobilisation 31

Effect of cationic and non-ionic surfactants on the hydrolysis of N-glutaryl-L-phenylalanine catalysed by chymotrypsin isoenzymes 175

Enzyme stability

Enzymatic ester synthesis in ionic liquids 9

Improved functional properties of trypsin modified by monosubstituted amino- β -cyclodextrins 133

Enzyme stabilization

Effect of increasing co-solvent concentration on the stability of soluble and immobilized β -galactosidase 25

Influence of different silica derivatives in the immobilization and stabilization of a *Bacillus licheniformis* protease (Subtilisin Carlsberg) 189

Equilibrium constant

Thermodynamics of the lipase-catalyzed transesterification of 1-phenyl-1-alkanols and butyl acetate in organic solvents 123

Esterase

Ferulic acid esterase from *Humicola Insolens* catalyzes enantioselective transesterification of secondary alcohols 309

Ethyl 3-oxobutanoates

The enantioselectivity of reduction of ethyl 4-halo-3-oxobutanoate catalyzed by *Geotrichum candidum* depends on the cofactor 63

Eupergit C

Immobilization on Eupergit C of cyclodextrin glucosyltransferase (CGTase) and properties of the immobilized biocatalyst 299

Ferulic acid

Ferulic acid esterase from *Humicola Insolens* catalyzes enantioselective transesterification of secondary alcohols 309

Flavanone

Biotransformation of flavone and flavanone by *Streptomyces lividans* cells carrying shuffled biphenyl dioxygenase genes 113

Flavone

Biotransformation of flavone and flavanone by *Streptomyces lividans* cells carrying shuffled biphenyl dioxygenase genes 113

Fungistatic

Biotransformation of the fungistatic compound (*R*)-(+)-1-(4'-chlorophenyl)propan-1-ol by *Botrytis cinerea* 267

β-Galactosidase

Effect of increasing co-solvent concentration on the stability of soluble and immobilized β -galactosidase 25

Influence of the spacer length on the activity of enzymes immobilised on nylon/polyGMA membranes. Part 1. Isothermal conditions 239

Influence of the spacer length on the activity of enzymes immobilised on nylon/polyGMA membranes. Part 2: Non-isothermal conditions 253

Geotrichum candidum

The enantioselectivity of reduction of ethyl 4-halo-3-oxobutanoate catalyzed by *Geotrichum candidum* depends on the cofactor 63

Glucose oxidase activity

Activity studies of glucose oxidase immobilized onto poly(*N*-vinylimidazole) and metal ion-chelated poly(*N*-vinylimidazole) hydrogels 273

Glucose oxidase adsorption

Activity studies of glucose oxidase immobilized onto poly(*N*-vinylimidazole) and metal ion-chelated poly(*N*-vinylimidazole) hydrogels 273

Glycerides

Response surface modeling of glycerolysis catalyzed by *Candida rugosa* lipase immobilized in different polyurethane foams for the production of partial glycerides 71

Glycerolysis

Response surface modeling of glycerolysis catalyzed by *Candida rugosa* lipase immobilized in different polyurethane foams for the production of partial glycerides 71

Glycosidas

Enzyme inactivation due to Maillard reactions during oligosaccharide synthesis by a hyperthermophilic glycosidase: influence of enzyme immobilisation 31

Synthesis of nucleotide-activated disaccharides with β-galactosidase from *Bacillus circulans* and α-galactosidase from *Bifi*dobacterium adolescentis 157

Hydrolysis

Hydrolysis of native proteins by keratinolytic protease of *Doratomyces microsporus* 35

C-Hydroxylation

Microbial C-hydroxylation and β -4-O-methylglucosidation of methyl-benzamide 7-azanorbornane ethers with Beauveria bassiana 97

Hydroxymethylbenzaldehyde

Oxidation of both termini of *p*- and *m*-xylene by *Escherichia coli* transformed with xylene monooxygenase gene 211

Immobilisation

Enzyme inactivation due to Maillard reactions during oligosaccharide synthesis by a hyperthermophilic glycosidase: influence of enzyme immobilisation 31 VIII Subject Index

Effect of increasing co-solvent concentration on the stability of soluble and immobilized β -galactosidase 25

Alcohol oxidase from the yeast *Pichia pastoris*—a potential catalyst for organic synthesis 47

Immobilized enzyme

Influence of different silica derivatives in the immobilization and stabilization of a *Bacillus licheniformis* protease (Subtilisin Carlsberg) 189

Inactivation

Enzyme inactivation due to Maillard reactions during oligosaccharide synthesis by a hyperthermophilic glycosidase: influence of enzyme immobilisation 31

1-Indanones

Microbiological transformations 52. Biocatalysed Baeyer-Villiger oxidation of 1-indanone derivatives 231

Interfacial activation

Modulation of *Mucor miehei* lipase properties via directed immobilization on different hetero-functional epoxy resins. Hydrolytic resolution of (*R*,*S*)-2-butyroyl-2-phenylacetic acid 201

Ionic liquids

Enzymatic ester synthesis in ionic liquids 9

Isothermal bioreactors

Influence of the spacer length on the activity of enzymes immobilised on nylon/polyGMA membranes. Part 1. Isothermal conditions 239

Keratinolytic protease

Hydrolysis of native proteins by keratinolytic protease of *Doratomyces microsporus* 35

Kinetic resolution

Enantioselectivity of *Candida rugosa* lipase in the hydrolysis of 2-chloropropionic acid methyl ester 89

Kinetics

Effect of cationic and non-ionic surfactants on the hydrolysis of *N*-glutaryl-L-phenylalanine catalysed by chymotrypsin isoenzymes 175

Leucosporidium antarcticum

The unique cold-adapted extracellular subtilase from psychrophilic yeast *Leucosporidium antarcticum* 39

Leukotoxin

Epoxidation of fatty acids, fatty methyl esters, and alkenes by immobilized oat seed peroxygenase 143

Lignin peroxidase

Electrochemical characterization of lignin peroxidase from the white-rot basidiomycete *Phanerochaete chrysosporium* 291

Limonin

Response surface modelling of the consumption of bitter compounds from orange juice by *Acinetobacter calcoaceticus* 81

Lipase

Response surface modeling of glycerolysis catalyzed by *Candida rugosa* lipase immobilized in different polyurethane foams for the production of partial glycerides 71

Thermodynamics of the lipase-catalyzed transesterification of 1-phenyl-1-alkanols and butyl acetate in organic solvents 123 Wax esters synthesis from heavy fraction of sheep milk fat and

cetyl alcohol by immobilised lipases 167

Lipase enantioselectivity

Modulation of *Mucor miehei* lipase properties via directed immobilization on different hetero-functional epoxy resins. Hydrolytic resolution of (*R*,*S*)-2-butyroyl-2-phenylacetic acid 201

Lipid epoxides

Epoxidation of fatty acids, fatty methyl esters, and alkenes by immobilized oat seed peroxygenase 143

Maillard

Enzyme inactivation due to Maillard reactions during oligosaccharide synthesis by a hyperthermophilic glycosidase: influence of enzyme immobilisation 31

Metal chelate adsorption

Activity studies of glucose oxidase immobilized onto poly(*N*-vinylimidazole) and metal ion-chelated poly(*N*-vinylimidazole) hydrogels 273

β-4-*O*-Methylglucosidation

Microbial *C*-hydroxylation and β-4-*O*-methylglucosidation of methyl-benzamide 7-azanorbornane ethers with *Beauveria bassiana* 97

Methylotropic yeast

Alcohol oxidase from the yeast *Pichia pastoris*—a potential catalyst for organic synthesis 47

Micellar capillary electrophoresis

High-yield enzymatic synthesis of O-allyl β -D-galactopyranoside 153

Micelles

Effect of cationic and non-ionic surfactants on the hydrolysis of N-glutaryl-L-phenylalanine catalysed by chymotrypsin isoenzymes 175

Microbial Baeyer-Villiger oxidation

Biocatalytic synthesis of cyclopropanol from cyclopropyl methyl ketone using whole cells of *Rhodococcus erythropolis* 51

Models

Effect of cationic and non-ionic surfactants on the hydrolysis of N-glutaryl-L-phenylalanine catalysed by chymotrypsin isoenzymes 175

Modified enzyme

Improved functional properties of trypsin modified by monosubstituted amino- β -cyclodextrins 133

Monoamides

Enantioselective enzymatic preparation of chiral glutaric monocarboxylic acids and amides 55

Monocarboxylic acids

Enantioselective enzymatic preparation of chiral glutaric monocarboxylic acids and amides 55

Monoester

Lipase-catalyzed esterification of rutin and naringin with fatty acids of medium carbon chain 59

NADPH

The enantioselectivity of reduction of ethyl 4-halo-3-oxobutanoate catalyzed by *Geotrichum candidum* depends on the cofactor 63

Non-conventional media

Enzymatic ester synthesis in ionic liquids 9

Subject Index IX

Non-isothermal bioreactors

Influence of the spacer length on the activity of enzymes immobilised on nylon/polyGMA membranes. Part 2: Non-isothermal conditions 253

Nucleotide sugars

Synthesis of nucleotide-activated disaccharides with β -galactosidase from *Bacillus circulans* and α -galactosidase from *Bifidobacterium adolescentis* 157

Nucleotide-activated disaccharides

Synthesis of nucleotide-activated disaccharides with β-galactosidase from *Bacillus circulans* and α-galactosidase from *Bifi*dobacterium adolescentis 157

Nylon membranes

Influence of the spacer length on the activity of enzymes immobilised on nylon/polyGMA membranes. Part 1. Isothermal conditions 239

Influence of the spacer length on the activity of enzymes immobilised on nylon/polyGMA membranes. Part 2: Non-isothermal conditions 253

Oat seeds

Epoxidation of fatty acids, fatty methyl esters, and alkenes by immobilized oat seed peroxygenase 143

Ochrobactrum anthropi

Enhancement of the thermostability and catalytic activity of D-stereospecific amino-acid amidase from *Ochrobactrum anthropi* SV3 by directed evolution 283

Octanoic acid

Lipase-mediated epoxidation of α-pinene 67

Oligosaccharides

Enzyme inactivation due to Maillard reactions during oligosaccharide synthesis by a hyperthermophilic glycosidase: influence of enzyme immobilisation 31

Orange juice

Response surface modelling of the consumption of bitter compounds from orange juice by Acinetobacter calcoaceticus 81

Organic solvent

Effect of increasing co-solvent concentration on the stability of soluble and immobilized β -galactosidase 25

Overexpressed Baeyer-Villigerase

Microbiological transformations 52. Biocatalysed Baeyer-Villiger oxidation of 1-indanone derivatives 231

Peroxygenase

Epoxidation of fatty acids, fatty methyl esters, and alkenes by immobilized oat seed peroxygenase 143

Phenolic compounds

Covalent flavinylation enhances the oxidative power of vanillylalcohol oxidase 43

(R)-(+)-1-Phenyl ethanol

Thermodynamics of the lipase-catalyzed transesterification of 1-phenyl-1-alkanols and butyl acetate in organic solvents 123

(R)-(+)-1-Phenyl-1-butanol

Thermodynamics of the lipase-catalyzed transesterification of 1-phenyl-1-alkanols and butyl acetate in organic solvents 123

(R)-(+)-1-Phenyl-1-propanol

Thermodynamics of the lipase-catalyzed transesterification of 1phenyl-1-alkanols and butyl acetate in organic solvents 123

Pichia pastoris

Alcohol oxidase from the yeast *Pichia pastoris*—a potential catalyst for organic synthesis 47

α-Pinene

Lipase-mediated epoxidation of α-pinene 67

Poly(*N*-vinylimidazole)

Activity studies of glucose oxidase immobilized onto poly(*N*-vinylimidazole) and metal ion-chelated poly(*N*-vinylimidazole) hydrogels 273

Polyurethane foam

Response surface modeling of glycerolysis catalyzed by *Candida rugosa* lipase immobilized in different polyurethane foams for the production of partial glycerides 71

Powder characterization

Influence of different silica derivatives in the immobilization and stabilization of a *Bacillus licheniformis* protease (Subtilisin Carlsberg) 189

Protease

Rational engineering of the stability and the catalytic performance of enzymes 3

Influence of different silica derivatives in the immobilization and stabilization of a *Bacillus licheniformis* protease (Subtilisin Carlsberg) 189

Protein stability

Covalent flavinylation enhances the oxidative power of vanillylalcohol oxidase 43

Pseudomonas putida

Oxidation of both termini of *p*- and *m*-xylene by *Escherichia coli* transformed with xylene monooxygenase gene 211

Pyrococcus furiosus

Enzyme inactivation due to Maillard reactions during oligosaccharide synthesis by a hyperthermophilic glycosidase: influence of enzyme immobilisation 31

Random mutation

Enhancement of the thermostability and catalytic activity of pstereospecific amino-acid amidase from *Ochrobactrum anthropi* SV3 by directed evolution 283

Recombinant microorganisms

Microbiological transformations 52. Biocatalysed Baeyer–Villiger oxidation of 1-indanone derivatives 231

Redox potential

Electrochemical characterization of lignin peroxidase from the white-rot basidiomycete *Phanerochaete chrysosporium* 291

Response surface design

Response surface modeling of glycerolysis catalyzed by *Candida rugosa* lipase immobilized in different polyurethane foams for the production of partial glycerides 71

Response Surface Methodology

Response surface modelling of the consumption of bitter compounds from orange juice by *Acinetobacter calcoaceticus* 81

Rhodococcus erythropolis

Biocatalytic synthesis of cyclopropanol from cyclopropyl methyl ketone using whole cells of *Rhodococcus erythropolis* 51

X Subject Index

Secondary alcohols

Ferulic acid esterase from *Humicola Insolens* catalyzes enantioselective transesterification of secondary alcohols 309

Sheep milk fat

Wax esters synthesis from heavy fraction of sheep milk fat and cetyl alcohol by immobilised lipases 167

Silica derivatization

Influence of different silica derivatives in the immobilization and stabilization of a *Bacillus licheniformis* protease (Subtilisin Carlsberg) 189

Site-directed mutagenesis

Covalent flavinylation enhances the oxidative power of vanillylalcohol oxidase 43

Solvent stability

Effect of increasing co-solvent concentration on the stability of soluble and immobilized β -galactosidase 25

Streptomyces lividans

Biotransformation of flavone and flavanone by *Streptomyces lividans* cells carrying shuffled biphenyl dioxygenase genes 113

Subtilase

The unique cold-adapted extracellular subtilase from psychrophilic yeast *Leucosporidium antarcticum* 39

Thermoanaerobacter sp

Immobilization on Eupergit C of cyclodextrin glucosyltransferase (CGTase) and properties of the immobilized biocatalyst 299

Thermodialysis

Influence of the spacer length on the activity of enzymes immobilised on nylon/polyGMA membranes. Part 2: Non-isothermal conditions 253

Thermodynamics

Thermodynamics of the lipase-catalyzed transesterification of 1-phenyl-1-alkanols and butyl acetate in organic solvents 123

Thermophilic

Enzyme inactivation due to Maillard reactions during oligosaccharide synthesis by a hyperthermophilic glycosidase: influence of enzyme immobilisation 31

Thermostability

Enhancement of the thermostability and catalytic activity of pstereospecific amino-acid amidase from *Ochrobactrum anthropi* SV3 by directed evolution 283

Transesterification

Ferulic acid esterase from *Humicola Insolens* catalyzes enantioselective transesterification of secondary alcohols 309

Transglycosylation

Synthesis of nucleotide-activated disaccharides with β -galactosidase from *Bacillus circulans* and α -galactosidase from *Bifidobacterium adolescentis* 157

Trypsii

Improved functional properties of trypsin modified by monosubstituted amino- β -cyclodextrins 133

Unfolding

Rational engineering of the stability and the catalytic performance of enzymes $\,3\,$

Vanillyl-alcohol oxidase

Covalent flavinylation enhances the oxidative power of vanillylalcohol oxidase 43

Vernolic acid

Epoxidation of fatty acids, fatty methyl esters, and alkenes by immobilized oat seed peroxygenase 143

Vigna angularis

On the mechanism of hydrolysis of hydantoins by D-hydantoinase from *Vigna angularis*: inhibition studies 107

Water activity

Lipase-catalyzed esterification of rutin and naringin with fatty acids of medium carbon chain 59

Wax ester

Wax esters synthesis from heavy fraction of sheep milk fat and cetyl alcohol by immobilised lipases 167

Whole cell biotransformation

Microbiological transformations 52. Biocatalysed Baeyer-Villiger oxidation of 1-indanone derivatives 231

Xylanase

Fusion of family VI cellulose binding domains to *Bacillus halodurans* xylanase increases its catalytic activity and substrate-binding capacity to insoluble xylan 221

Xylene

Oxidation of both termini of *p*- and *m*-xylene by *Escherichia coli* transformed with xylene monooxygenase gene 211

Xylene monooxygenase

Oxidation of both termini of *p*- and *m*-xylene by *Escherichia coli* transformed with xylene monooxygenase gene 211

Xylyleneglycol

Oxidation of both termini of *p*- and *m*-xylene by *Escherichia coli* transformed with xylene monooxygenase gene 211

Yeast

The unique cold-adapted extracellular subtilase from psychrophilic yeast *Leucosporidium antarcticum* 39