Esterification of carboxylic acids with boron trichloride

Tetrahedron Letters 42 (2001) 3959

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OR
1
 $\xrightarrow{1) BCl_{3}, -78^{\circ}->0^{\circ}}$ OR 1 $\xrightarrow{R = \text{variable}}$ R $^{1} = H, Bn$ R $^{1} = H, Bn$ R $^{1} = H, Bn$ $^{1} = H, Bn$

Convenient preparation of naphthyridines from halopyridines: sequential Heck coupling and cyclization

Tetrahedron Letters 42 (2001) 3963

Puay-Wah Phuan and Marisa C. Kozlowski*

Department of Chemistry, Roy and Diana Vagelos Laboratories, University of Pennsylvania, Philadelphia, PA 19104, USA

$$\begin{array}{c|c}
 & MeO \\
\hline
 & MeO \\
\hline
 & Pd cat.
\end{array}$$

Stereopure 1,3-butadiene-2-carboxylates and their conversion into non-racemic α-alkylidenebutyrolactone natural products by asymmetric dihydroxylation

Tetrahedron Letters 42 (2001) 3967

Christian Harcken and Reinhard Brückner*

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Synthesis of carba-sugars from (-)-quinic acid

Tetrahedron Letters 42 (2001) 3973

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Syntheses of (1S,2R,3R,4S,5R)- (3a), (1S,2S,3S,4S,5R)-1,2,3,4,5-pentahydroxy-1-hydroxymethylcyclohexane (4a), (1R,2R,3R,4S,5R)(3b) and (1R,2S,3S,4S,5R)-1,2,3,4,5-pentahydroxycyclohexan-1-carboxylic acid (4b) are described.

The first direct formation of an organolithium reagent on a soluble polymer by chlorine-lithium exchange: functionalised linear polystyrene

Tetrahedron Letters 42 (2001) 3977

Miguel Yus,* Cecilia Gómez and Pablo Candela

Departamento de Química Orgánica, Facultad de Ciencias, Universidad de Alicante, Apdo 99, 03080 Alicante, Spain

 $\begin{bmatrix} E = H_2O, D_2O, Me_3SiCl, Bu^tCHO, \\ PhCHO, Et_2CO, (CH_2)_5CO \end{bmatrix}$

(Yield: 48- ≈100%)

Triphenylphosphonium salts bearing an L-alanyl substituent: short synthesis and enantiomeric analysis by NMR

Tetrahedron Letters 42 (2001) 3981

Franck Meyer,^a Jacques Uziel,^a Anne Marie Papini^b and Sylvain Jugé^{a,*}

^aUniversité Cergy Pontoise, 5 mail Gay Lussac, 95031 Cergy Pontoise, France

^bLab. Ch. Peptidi, Università degli Studi di Firenze, via Gino Capponi, 9, Florence, Italy

The synthesis of triphenylphosphonium salts bearing an L-alanyl substituent is described in 80% overall yield from serine. Their enantiomeric purity was easily determined by ³¹P NMR in the presence of a cinchona alcaloid.

L-serine
$$2 \text{ steps}$$
 Ph_3P Ph_3P $X = CI, Br$ $R = 80\%$ overall yield

The 'non-oxidative' chloro-Pummerer reaction: a highly stereoselective entry to β -chloro amines and aziridines

Tetrahedron Letters 42 (2001) 3985

Alessandro Volonterio, a.* Pierfrancesco Bravo, a.b Cristina Pesentib and Matteo Zandab.*

^aC.N.R.-Centro di Studio sulle Sostanze Organiche Naturali, via Mancinelli 7, I-20131 Milan, Italy ^bDipartimento di Chimica del Politecnico di Milano, via Mancinelli 7, I-20131 Milan, Italy

Tris-bipyridine ruthenium complex-based glyco-clusters: amplified luminescence and enhanced lectin affinities

Tetrahedron Letters 42 (2001) 3989

Teruaki Hasegawa, Takahiro Yonemura, Kazunori Matsuura and Kazukiyo Kobayashi*

Department of Molecular Design and Department of Biotechnology, Graduate School of Engineering, Nagoya University,

Chikusa, Nagoya 464-8603, Japan

Synthesis and characterization of a new class of liquid-crystalline, highly luminescent molecules containing a 2,4,6-triphenyl-

1,3,5-triazine unitChi-Han Lee* and Takakazu Yamamoto*

Chemical Resources Laboratory, Tokyo Institute of Technology, 4259 Nagatsuta, Midori-ku, Yokohama 226-8503, Japan

2,4,6-Triphenyl-1,3,5-triazine derivatives having long alkoxyl side chains have been synthesized by a Pd(0)/Cu(I)-catalyzed coupling reaction; some of the derivatives behave as liquid crystals.

Tetrahedron Letters 42 (2001) 3993

Br terminal acetylene, Pd(PPh₃)₄/Cul NEt₉/toluene

$$R = -C \equiv C \longrightarrow OC_nH_{2n+1}-n$$
 $R = 9, 10, 11, 12, 13, and 14$

First synthesis of (+)-deoxoartemisitene and its novel C-11 derivatives

Tetrahedron Letters 42 (2001) 3997

Mankil Jung,* Kyunghoon Lee and Hochul Jung

Department of Chemistry, Yonsei University, Seoul 120-749, South Korea

A short and first synthesis of (+)-deoxoartemisitene and its novel C-11 derivatives with non-acetal at C-12 was achieved from artemisinic acid.

Enantioselective syntheses of decursinol angelate and decursin

Tetrahedron Letters 42 (2001) 4001

Jongdoo Lim,^a Ik-Hwan Kim,^b Hyeon Ho Kim,^b Kyung-Seop Ahn^c and Hogyu Han^{a,*}

^aDepartment of Chemistry, Korea University, Seoul 136-701, South Korea

^bGraduate School of Biotechnology, Korea University, Seoul 136-701, South Korea

^cKorea Research Institute of Bioscience and Biotechnology, PO Box 115, Yusong, Taejon 305-333, South Korea

A novel approach to the stereoselective synthesis of $\beta\text{-}D\text{-}mannopyranosides}$

Tetrahedron Letters 42 (2001) 4005

Sung-Kee Chung* and Kyu-Hwan Park

Department of Chemistry, Division of Molecular & Life Sciences, Pohang University of Science & Technology, Pohang 790-784, South Korea

A non-covalent version of the intramolecular aglycon delivery methodology has been demonstrated for the stereoselective formation of β -D-mannopyranoside in the presence of lanthanide(III) triflate.

BnO
$$O - - L n^{3+}$$
BnO $O - - L n^{3+}$
Sor $O -$

The catalytic synthesis of aryl O-glycosides using triaryloxyboranes

Tetrahedron Letters 42 (2001) 4009

Takashi Yamanoi* and Ippo Yamazaki

The Noguchi Institute, 1-8-1, Kaga, Itabashi-ku, Tokyo 173-0003, Japan

A catalytic amount of ytterbium(III) trifluoromethanesulfonate activated the formation reaction of aryl O-glycosidic linkages between glycosyl acetates and triaryloxyboranes.

A new pathway to chiral tetracyclic indolidines via Pauson-Khand reaction

Tetrahedron Letters 42 (2001) 4013

Shinji Tanimori,* Kouji Fukubayashi and Mitsunori Kirihata

Department of Applied Biological Chemistry, Graduate School of Agriculture and Life Sciences, Osaka Prefecture University, 1-1 Gakuen-cho, Sakai, Osaka 599-8531, Japan

A model study for the synthesis of asperparaline.

A convenient synthesis of thiirene 1-oxides

Tetrahedron Letters 42 (2001) 4017

Juzo Nakayama,* Kenta Takahashi, Yoshiaki Sugihara and Akihiko Ishii

Department of Chemistry, Faculty of Science, Saitama University, Urawa, Saitama 338-8570, Japan

$$R^{1} = R^{2} + CISCI \xrightarrow{CH_{2}CI_{2}, RT} \xrightarrow{R^{1}} \xrightarrow{S} CI \xrightarrow{NaOH} \xrightarrow{S} R^{2}$$

$$1 \xrightarrow{CI} R^{2} \xrightarrow{R^{2}} \xrightarrow{ROH/H_{2}O \text{ or THF/H}_{2}O} \xrightarrow{R^{1}} \xrightarrow{S} R^{2}$$

a: R^1 , $R^2 = t$ -butyl, 68%; b: $R^1 = R^2 = 1$ -adamantyl, 81%; c: $R^1 = 1$ -adamanty, $R^2 = t$ -butyl, 90% (overall yields)

Absolute configuration of a novel glutamate receptor antagonist kaitocephalin

Tetrahedron Letters 42 (2001) 4021

Hiroyuki Kobayashi, a, Kazuo Shin-ya, a,* Kazuo Furihata, Yoichi Hayakawa and Haruo Seto (

^aInstitute of Molecular and Cellular Biosciences, The University of Tokyo, Bunkyo-ku, Tokyo 113-0032, Japan ^bDivision of Agriculture and Agricultural Life Sciences, The University of Tokyo, Bunkyo-ku, Tokyo 113-8657, Japan

A highly stereo-divergent Mannich-type reaction catalyzed by Brønsted acid in aqueous media

Tetrahedron Letters 42 (2001) 4025

Takahiko Akiyama,* Jun Takaya and Hirotaka Kagoshima

Department of Chemistry, Faculty of Science, Gakushuin University, 1-5-1, Mejiro, Toshima-ku, Tokyo 171-8588, Japan

Both syn and anti isomers were obtained highly stereoselectively using the HBF₄-catalyzed Mannich-type reaction of ketene silyl acetal and aldimine by the proper choice of the ketene silyl acetal and solvent system.

Chemoenzymatic total synthesis of (+)-conagenin, a low-molecular-weight immunomodulator

Tetrahedron Letters 42 (2001) 4029

Shigeki Sano, Toshio Miwa, Kazuhiko Hayashi, Kazuo Nozaki, Yohei Ozaki and Yoshimitsu Nagao* Faculty of Pharmaceutical Sciences, The University of Tokushima, Sho-machi, Tokushima 770-8505, Japan

Sequential removal of the benzyl-type protecting groups PMB and NAP by oxidative cleavage using CAN and DDQ

Tetrahedron Letters 42 (2001) 4033

Joseph A. Wright, Jinquan Yu and Jonathan B. Spencer*

Department of Chemistry, University of Cambridge, Lensfield Road, Cambridge CB2 1EW, UK

Synthesis of water-soluble aminosulfonamide ligands and their application in enantioselective transfer hydrogenation

Tetrahedron Letters 42 (2001) 4037

Christian Bubert,^a John Blacker,^b Stephen M. Brown,^b John Crosby,^c Steven Fitzjohn,^d James P. Muxworthy,^b Tim Thorpe^a and Jonathan M. J. Williams^{a,*}

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^dZeneca Agrochemicals, Jealott's Hill International Research Station, Bracknell, Berkshire RG42 6ET, UK

$$H_2N$$
 \longrightarrow SO_3H $\xrightarrow{4 \text{ steps}}$ $\xrightarrow{H_2N}$ $\xrightarrow{H_2N}$

хi

Efficient rhodium and iridium-catalysed asymmetric transfer hydrogenation using water-soluble aminosulfonamide ligands

Tetrahedron Letters 42 (2001) 4041

Tim Thorpe,^a John Blacker,^b Stephen M. Brown,^b Christian Bubert,^a John Crosby,^c Steven Fitzjohn,^d James P. Muxworthy^b and Jonathan M. J. Williams^{a,*}

^aDepartment of Chemistry, University of Bath, Claverton Down, Bath BA2 7AY, UK

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^dZeneca Agrochemicals, Jealott's Hill International Research Station, Bracknell, Berkshire RG42 6ET, UK

An original approach to 5,6-dihydroindolizines from 1-allylpyrroles by a tandem hydroformylation/cyclization/dehydration sequence

Tetrahedron Letters 42 (2001) 4045

Roberta Settambolo,^a Aldo Caiazzo^b and Raffaello Lazzaroni^{b,*}

^aIstituto di Chimica Quantistica ed Energetica Molecolare del CNR, Via Alfieri 1, 56010 Ghezzano (PI), Italy

^bDipartimento di Chimica e Chimica Industriale, Via Risorgimento 35, 56126 Pisa, Italy

$$\begin{array}{c|c} R & & \\ \hline N & Rh_4(CO)_{12} \\ \hline R' & & \\ \end{array} \begin{array}{c} R & \\ \hline N & \\ R' & & \\ \end{array} \begin{array}{c} O \\ \hline R' & & \\ \hline \end{array} \begin{array}{c} R & \\ \hline N & \\ \hline N & \\ \hline \end{array} \begin{array}{c} R & \\ \hline N & \\ \hline \end{array}$$

New ligands for manganese catalysed selective oxidation of sulfides to sulfoxides with hydrogen peroxide

Tetrahedron Letters 42 (2001) 4049

Jelle Brinksma, a René La Crois, Ben L. Feringa, Maria Irene Donnoli and Carlo Rosini , Rosin

^aLaboratory of Organic Chemistry, Stratingh Institute, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands

^bDipartimento di Chimica, Università della Basilicata, via N. Sauro 85, 85100 Potenza, Italy

In situ prepared manganese complexes with ligands 1–5 have been used in catalytic oxidation of sulfides to sulfoxides using hydrogen peroxide at 0°C in acetone. Using ligand 4 methyl phenyl sulfoxide is obtained in 55% yield and turnover numbers up to 250, while the formation of sulfone is almost suppressed.

Yb(OTf)₃-catalyzed *C*-glycosylation: highly stereoselective synthesis of *C*-pseudoglycals

Tetrahedron Letters 42 (2001) 4053

Mohamed Takhi, Adel A.-H. Abdel Rahman and Richard R. Schmidt*

Department of Chemistry, University of Konstanz, D-78457 Konstanz, Germany

Nu= allyl or propargylsilane or silyl enol ether

$Sc(OTf)_3$ -catalyzed C-glycosidation of glycals: a facile synthesis of allyl glycosides, glycosyl cyanides and glycosyl azides

Tetrahedron Letters 42 (2001) 4057

J. S. Yadav,* B. V. Subba Reddy and Pratap K. Chand

Organic Chemistry Division I, Indian Institute of Chemical Technology, Hyderabad 500 007, India

$$+ \geqslant_{Si} - R' \xrightarrow{Sc(OTf)_3} RO \xrightarrow{RO} RO$$

R = Ac , Bz , Piv R' = Allyl , Cyanide , Azide

Radical-chain isomerisation of allyl silyl ethers to silyl enol ethers in the presence of thiols as polarity reversal catalysts

Tetrahedron Letters 42 (2001) 4061

Alistair J. Fielding and Brian P. Roberts*

Department of Chemistry, University College London, 20 Gordon Street, London WC1H 0AJ, UK

OSiPh₂Bu^t Bu^tPh₂SiO

$$C_6F_5SH \text{ catalyst,}$$
AIBN initiator, benzene reflux, 2.5 h

OSiPh₂Bu^t Bu^tPh₂SiO

Isolated yield 81%;
 $E:Z=4.6:1$

Generation and cycloaddition reactions of pyranose-1-carbonitrile oxides

Tetrahedron Letters 42 (2001) 4065

Kenneth W. J. Baker, Andrew Gibb, Andrew R. March and R. Michael Paton*

Department of Chemistry, The University of Edinburgh, West Mains Road, Edinburgh EH9 3JJ, UK

Regio- and stereoselective alternating copolymerization of α -olefins with carbon monoxide using a cationic palladium-chiral diphosphine catalyst

Tetrahedron Letters 42 (2001) 4069

Jian-Chao Yuan and Shi-Jie Lu*

State Key Laboratory for Oxo Synthesis and Selective Oxidation, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou 730000, PR China

Highly optically active and isotactic alternating copolymers of propylene, 1-heptene, 1-octene and styrene with CO have been prepared using [(DDPPI)Pd(CH₃CN)₂](BF₄)₂ as the catalyst.

$$= \overset{R}{\overset{}{\stackrel{}{\stackrel{}}{=}}} + CO \overset{Pd(II)\text{-}Cat}{\overset{}{\stackrel{}{\stackrel{}{\stackrel{}}{=}}}} \overset{R}{\overset{}{\stackrel{}{\stackrel{}{=}}}} \overset{1: R=CH_3}{\overset{}{\stackrel{}{=}}} 2: R=(CH_2)_4CH_3}{\overset{}{\stackrel{}{\stackrel{}{=}}} 3: R=(CH_2)_5CH_3} \overset{1: R=CH_3}{\overset{}{\stackrel{}{=}}} \overset{1: R=CH_3}{\overset{}{=}} \overset{1: R=CH_3}{\overset{}{\stackrel{}{=}}} \overset{1$$

CuBr₂-mediated direct aqueous bromolactonization of 2,3-allenoates. An efficient access to β-bromobutenolides

Tetrahedron Letters 42 (2001) 4075

Shengming Ma* and Shulin Wu

State Key Laboratory of Organometallic Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, 354 Fenglin Lu, Shanghai 200032, PR China

$$R^{2} \xrightarrow{R^{3}} COOR + CuBr_{2} \xrightarrow{\text{ethanol- H}_{2}O} R^{2} \xrightarrow{R^{2}} O$$

$$R = Et, Bn \qquad up to 97\%$$

Synthesis of oxazolidinyl azacycles via ring-closing olefin metathesis: a practical entry to the synthesis of deoxy-azasugars and hydroxy-pyrrolizidines

Tetrahedron Letters 42 (2001) 4079

Thangaiah Subramanian, Chang-Ching Lin and Chun-Cheng Lin*

Institute of Chemistry, Academia Sinica, Nankang, Taipei, Taiwan 11529, ROC

α -(Trifluoromethyl)ethenyl boronic acid as a useful trifluoromethyl containing building block. Preparation and palladium-catalysed coupling with aryl halides

Tetrahedron Letters 42 (2001) 4083

Biao Jiang, a,b,* Quan-Fu Wang, a Cai-Guang Yang b and Min Xub

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$$F_{3}C \qquad + ArX \qquad \xrightarrow{2\% \ Pd(Ph_{3}P)_{4}/\ Na_{2}CO_{3}(aq.)} F_{3}C \qquad + ArX \qquad \xrightarrow{Toluene/MeOH, \ 70\ ^{\circ}C} F_{3}C \qquad Ar$$

Ligand promoted palladium-catalyzed homo-coupling of arylboronic acids

Tetrahedron Letters 42 (2001) 4087

Man Shing Wong* and Xiao Ling Zhang

Department of Chemistry, Hong Kong Baptist University, Kowloon Tong, Hong Kong, China

xiv

Application of the tandem Stryker reduction—aldol cyclization strategy to the asymmetric synthesis of lucinone

Tetrahedron Letters 42 (2001) 4091

Pauline Chiu,* Chun Pong Szeto, Zhe Geng and Kin Fai Cheng

Department of Chemistry, The University of Hong Kong, Pokfulam Road, Hong Kong, SAR PR China

$$\begin{array}{c} \text{Steps} \\ \text{O} \end{array} \begin{array}{c} \text{[Ph}_3\text{PCuH]}_6 \\ \text{99\%} \end{array} \begin{array}{c} \text{OH} \\ \text{OH} \end{array} \begin{array}{c} \text{OH} \\ \text{OH} \\ \text{OH} \end{array}$$