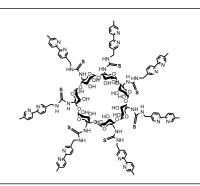
Heptakis-6-(5-methylene-thioureido-5'-methyl-2,2'-bipyridyl)-β-cyclodextrin: synthesis and metal complexation study

Romain Heck and Alain Marsura*

UMR CNRS 7565-UHP, GEVSM, Faculté de Pharmacie, 5 rue A. Lebrun, F-54001 Nancy Cedex, France

A new β -CD heptapode and its complexation selectivity towards Au^I , Ag^I , Hg^{II} , Zn^{II} and Fe^{II} cations is described.

Tetrahedron Letters 44 (2003) 1533



Synthesis and antitumor activity of DNA binding cationic porphyrin-platinum(II) complexes

Rita Song,^a Yeong-Sang Kim,^{b,c} Chong Ock Lee^d and Youn Soo Sohn^{b,*}

^aDivision of Life Sciences, Korea Institute of Science and Technology, Seoul 136-791, South Korea

^bDepartment of Chemistry, Ewha Womans University,

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^dPharmaceutical Screening Laboratory, Korea Research

Institute of Chemical Technology, Taejon 305-343, South Korea

Tetrahedron Letters 44 (2003) 1537

Tetrahedron Letters 44 (2003) 1541

Base-free oxidative homocoupling of arylboronic esters

Hiroto Yoshida,* Yasuhito Yamaryo, Joji Ohshita and Atsutaka Kunai

Department of Applied Chemistry, Graduate School of Engineering, Hiroshima University, Higashi-Hiroshima 739-8527, Japan

Preparation and properties of chiral 4-pyrrolidinopyridine (PPY) analogues with dual functional side chains

Tetrahedron Letters 44 (2003) 1545

Takeo Kawabata,* Roland Stragies, Takayuki Fukaya, Yoshie Nagaoka, Hartmut Schedel and Kaoru Fuji Institute for Chemical Research, Kyoto University, Uji, Kyoto 611-0011, Japan

Tetrahedron Letters 44 (2003) 1553

Preparation and evaluation of novel chiral stationary phases covalently bound with chiral pseudo-18-crown-6 ethers

Keiji Hirose, a,* Takashi Nakamura, Ryota Nishioka, Tetsuro Ueshigeb and Yoshito Tobea

^aDepartment of Chemistry, Faculty of Engineering Science, Osaka University, Machikaneyama, Toyonaka, Osaka 560-8531, Japan

^bSumika Chemical Analysis Service, 3-1-135 Kasugadenaka, Konohana, Osaka 554-0022, Japan

Synthesis of dihydroxylated prolines and iminocyclitols from five-membered endocyclic enecarbamates. Total synthesis of the potent glycosidase inhibitor (2*R*,3*R*,4*R*,5*R*)-2,5-dihydroxymethyl-3,4-dihydroxypyrrolidine (DMDP)

Ariel Lázaro L. Garcia and Carlos Roque D. Correia*

Instituto de Química, Universidade Estadual de Campinas,
CP 6154, 13083-970, Campinas, SP, Brazil

 R^1 = H or CH_2OTr N OH HO H

On the photoisomerization of the benzisothiazole portion of ziprasidone

Tetrahedron Letters 44 (2003) 1559

Thomas R. Sharp,^{a,*} Kyle R. Leeman,^b D. Eugene Bryant^b and George J. Horan^a Analytical R&D Department, Pfizer Global Research & Development, Groton, CT 06340, USA

^bChemical R&D Department, Pfizer Global Research & Development, Groton, CT 06340, USA

Photostability challenge of ziprasidone in solution shows that the benzisothiazole moiety undergoes isomerization to the corresponding benzthiazole.

$$\begin{array}{c|c}
 & hv \\
\hline
 & hv
\end{array}$$

Planar 2,2'-bithiophenes with 3,3'- and 3,3',4,4'-substituents. A computational study

Martin Pomerantz*

Department of Chemistry and Biochemistry, Box 19065, The University of Texas at Arlington, Arlington, TX 76019-0065, USA

Ab initio calculations show planar and twisted bithiophenes. The planar molecules have carbonyl groups in the 3- and 3'-positions in five-membered rings.

Tetrahedron Letters 44 (2003) 1563

Calculated planar Calculated twisted

A complete asymmetric synthesis of polyhydroxypiperidines

Hyunsoo Han*

Department of Chemistry, The University of Texas at San Antonio, 6900 N. Loop 1604 West, San Antonio, TX 78249, USA

A new general methodology for the asymmetric synthesis of polyhydroxypiperidines was developed, which utilized a highly regioselective aminohydroxylation reaction, a ring-closing metathesis reaction, and a dihydroxylation reaction.

Design and synthesis of conformationally constrained, extended and reverse turn pseudopeptides as Grb2-SH2 domain antagonists

Tetrahedron Letters 44 (2003) 1571

Hilary R. Plake, Thomas B. Sundberg, Angela R. Woodward and Stephen F. Martin*

Department of Chemistry and Biochemistry and Institute of Cellular and Molecular Biology, The University of Texas, Austin, TX 78712, USA

Selective electrochemical deprotection of cinnamyl ethers, esters, and carbamates

Tetrahedron Letters 44 (2003) 1575

Jeff Hansen,^a Stanley Freeman^{b,*} and Tomas Hudlicky^b

^aDepartment of Chemistry, DePauw University, Greencastle, IN 46135, USA

^bDepartment of Chemistry, University of Florida, Gainesville, FL 32611, USA

Halogenation effects on the conformational properties of alkanes

Tetrahedron Letters 44 (2003) 1579

David Wiedenfeld, a,* Wenjian Xub and Sandip Niyogib

^aDepartment of Natural Sciences, New Mexico Highlands University, Las Vegas, NM 87701, USA

^bDepartment of Chemistry, University of North Texas, Denton, TX 76205, USA

The concentration and temperature dependence of the emissive behavior of the shown materials is described.

R

 $P y r - (C F_2)_n - P y r$ n = 3, 4 a n d 6

 $P y r - (C F_2)_n - F$ n = 4 a n d 6

A new entry to carbocycles: synthesis of cyclopentene and cyclohexene derivatives through *endo*-mode ring closure of allenyl sulfones

Chisato Mukai,* Rie Ukon and Norikazu Kuroda

Faculty of Pharmaceutical Sciences, Kanazawa University, Takara-machi, Kanazawa 920-0934, Japan

EWG'
$$SO_2Ph$$
 base $n = 1,2$ SO_2Ph EWG

Palladium-catalyzed cross-coupling reaction of aryldioxaborolane with 2-bromo-N,N-dimethylacetamide

Tetrahedron Letters 44 (2003) 1587

Ting-Yi Lu,^a Cuihua Xue^b and Fen-Tair Luo^{b,*}

^aDepartment of Chemistry and Biochemistry, National Chung Cheng University, Chia-Yi, Taiwan 621

^bInstitute of Chemistry, Academia Sinica, Nankang, Taipei, Taiwan 115

Ar
$$\rightarrow$$
 BrCH₂CONMe₂ $\xrightarrow{3 \% \text{Pd}(\text{dba})_2} \xrightarrow{6 \% \text{PCy}_3} \text{ArCH}_2\text{CONMe}_2$

$$10\% \text{ hydroquinone}$$
THF, 70° C

Enantioselective total synthesis of (-)-pseudophrynaminol through tandem olefination, isomerization and asymmetric Claisen rearrangement

Tetrahedron Letters 44 (2003) 1591

Tomomi Kawasaki,* Atsuyo Ogawa, Yasuyuki Takashima and Masanori Sakamoto

Meiji Pharmaceutical University, 2-522-1 Noshio, Kiyose, Tokyo 204-8588, Japan

First total synthesis of valeriananoid A

Tetrahedron Letters 44 (2003) 1595

Hisahiro Hagiwara, a.* Akihiro Morii, Yu Yamada, Takashi Hoshi and Toshio Suzuki

^aGraduate School of Science and Technology, Niigata University, 8050, 2-nocho, Ikarashi, Niigata 950-2181, Japan ^bDepartment of Chemistry and Chemical Engineering, Faculty of Engineering, Niigata University, 8050, 2-nocho, Ikarashi, Niigata 950-2181, Japan

Valeriananoid A

Efficient synthesis of trisubstituted [1]benzopyrano[4,3-b]pyrrol-4(1H)-one derivatives from 4-hydroxycoumarin

Yuan-Xiu Liao, Pei-Yu Kuo and Ding-Yah Yang*

Department of Chemistry, Tunghai University, 181, Taichung-Kang Rd. Sec.3, Taichung, Taiwan 407

Various trisubstituted [1]benzopyrano[4,3-b]pyrrol-4(1H)-one derivatives have been synthesized from 4-hydroxycoumarin with a 23–54% yield over six steps. The key step of the synthesis is an intramolecular cyclization reaction that forms the fused pyrrole ring of the target compound.

$$R_3$$
 R_1

Tetrahedron Letters 44 (2003) 1603

(Polyfluoro)silane-mediated generation of azomethine ylides from imines and their cycloaddition leading to N-heterocycles

Mitsuo Komatsu,* Hirofumi Okada, Seiji Yokoi and Satoshi Minakata

Department of Applied Chemistry, Graduate School of Engineering, Osaka University, Suita, Osaka 565-0871, Japan

1) LDA
$$F_n$$

$$R^1 \longrightarrow N \longrightarrow R^2 \xrightarrow{2) F_{1+n} SiR_{3-n}} R_{3-n} \xrightarrow{Si} \stackrel{N}{R^1} \longrightarrow R^2$$

$$R^1 \longrightarrow N \longrightarrow R^2 \xrightarrow{2) F_{1+n} SiR_{3-n}} R_{3-n} \xrightarrow{Si} \stackrel{N}{R^2} \longrightarrow R^2$$

$$R^1 \longrightarrow N \longrightarrow R^2 \xrightarrow{2) F_{1+n} SiR_{3-n}} R_{3-n} \xrightarrow{Si} \stackrel{N}{R^2} \longrightarrow R^2$$

$$R^1 \longrightarrow R^2 \xrightarrow{2) F_{1+n} SiR_{3-n}} R_{3-n} \xrightarrow{Si} \stackrel{N}{R^2} \longrightarrow R^2$$

$$R^1 \longrightarrow R^2 \xrightarrow{2) F_{1+n} SiR_{3-n}} R_{3-n} \xrightarrow{Si} \stackrel{N}{R^2} \longrightarrow R^2$$

$$R^1 \longrightarrow R^2 \xrightarrow{2) F_{1+n} SiR_{3-n}} R_{3-n} \xrightarrow{Si} \stackrel{N}{R^2} \longrightarrow R^2$$

$$R^1 \longrightarrow R^2 \xrightarrow{R^2} \longrightarrow R^2$$

$$R^1 \longrightarrow R^2 \longrightarrow R^2$$

$$R^2 \longrightarrow R^2 \longrightarrow R^2$$

$$R^3 \longrightarrow R^3$$

The 2-(4-trifluoromethylphenylsulfonyl)ethoxycarbonyl (Tsc) amino-protecting group: use in the solid-phase synthesis of pyrrole-imidazole polyamides

Tetrahedron Letters 44 (2003) 1607

Jin Seok Choi, ^a Younjoo Lee, ^a Eunmyoung Kim, ^a Nakcheol Jeong, ^a Hosung Yu^b and Hogyu Han^{a,*} ^aDepartment of Chemistry, Korea University, Seoul 136-701, South Korea ^bHanChem. Co., Ltd., 461-6, Jonmin-dong, Yuseong-gu, Daejeon 305-390, South Korea

An efficient synthesis of 3(S)-aminopiperidine-5(R)-carboxylic acid as a cyclic β, γ' -diamino acid

Tetrahedron Letters 44 (2003) 1611

Jin-Seong Park,^a Chang-Eun Yeom,^a Soo Hyuk Choi,^a Yong Shik Ahn,^a Sunggu Ro,^b Young Ho Jeon,^b Dong-Kyu Shin^b and B. Moon Kim^a,*

^aSchool of Chemistry & Molecular Engineering and Center for Molecular Catalysis, Seoul National University, Seoul 151-747, South Korea ^bLG Life Science, PO Box 51, Yuseong, Science Town, Daejon 305-380, South Korea

A conformationally constrained, optically active β, γ' -diamino acid derivative 6 was synthesized using chemoselective enzymatic hydrolysis of *cis-3* and resolution through diastereomeric salt formation as key steps.

Persistent carbocations from 4,4'-dimethylaminodiphenylethylenes within CaY zeolite: intrazeolite-water controls the structure of the carbocation

Smriti Koodanjeri and V. Ramamurthy*

Department of Chemistry, Tulane University, New Orleans, LA 70118, USA

$$(H_3C)_2N \longrightarrow CaY \longrightarrow CH_3 \\ H_3C-N \longrightarrow CH_3 \\ H_3C \longrightarrow N-CH_3 \\ \lambda_{max} : 620 \text{ nm}$$

Synthesis of 4-phosphono- β -lactams via phosphite addition to acyliminium salts

Tetrahedron Letters 44 (2003) 1619

Christian V. Stevens,* Wannes Vekemans, Kristof Moonen and Thomas Rammeloo

Department of Organic Chemistry, Faculty of Agricultural and Applied Biological Sciences, Ghent University, Coupure Links 653, B-9000 Gent, Belgium

New extended analogues of TTF via triethylphosphite-mediated reaction

Tetrahedron Letters 44 (2003) 1623

Philippe Leriche,* Sophie Roquet, Nicolas Pillerel, Gilles Mabon and Pierre Frère*

Groupe Systèmes Linéaires Conjugués, IMMO CNRS UMR 6501, 2 Boulevard Lavoisier, 49045 Angers, France

New extended TTFs bearing cyanoethylsulfanyl groups or furan rings on the dithiole cycles have been synthesized using a clean, cheap-step and rapid method.

The Bohlmann-Rahtz route to functionalised pyridine scaffolds and their use in library synthesis

Tetrahedron Letters 44 (2003) 1627

Katherine E. Bashford,^a Matthew B. Burton,^b Stuart Cameron,^b Anthony L. Cooper,^b Rebecca D. Hogg,^b Peter D. Kane,^b David A. MacManus,^b Christopher A. Matrunola,^b Christopher J. Moody,^{a,*} Avril A. B. Robertson^{b,*} and Mark R. Warne^b

^aSchool of Chemistry, University of Exeter, Stocker Road, Exeter EX4 4QD, UK

^bTripos Receptor Research Ltd., Bude-Stratton Business Park, Bude, Cornwall EX23 8LY, UK

$$R^{1}HN$$
 $R^{2}N$
 $R^{2}N$
 $R^{2}N$
 $R^{2}N$
 $R^{2}N$

Montmorillonite K10 as a suitable co-catalyst for atom economy in chelation-assisted intermolecular hydroacylation

Xiomara Yañez,^a Carmen Claver,^a Sergio Castillon^{b,*} and Elena Fernandez^{a,*}

^aDepartament de Química Física i Inorgànica, Universitat Rovira i Virgili, Pça. Imperial Tàrraco 1, 43005 Tarragona, Spain ^bDepartament de Química Analítica i Orgànica, Universitat Rovira i Virgili, Pça. Imperial Tàrraco 1, 43005 Tarragona, Spain

A facile route to a polymer-supported IBX reagent

Tetrahedron Letters 44 (2003) 1635

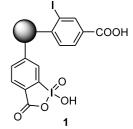
Z. Lei,^a C. Denecker,^b S. Jegasothy,^c D. C. Sherrington,^b

N. K. H. Slater^c and A. J. Sutherland^{a,*}

^aChemical Engineering & Applied Chemistry, Aston University, Aston Triangle, Birmingham B4 7ET, UK ^bDepartment of Pure & Applied Chemistry, University of Strathclyde, 295 Cathedral Street, Glasgow G1 1XL, UK

^cDepartment of Chemical Engineering, University of Cambridge, New Museums Site, Pembroke Street, Cambridge CB2 3RA, UK

Poly(p-methylstyrene) can be converted into polymer-supported oxidant 1 in three steps. Polymer-supported reagent 1 is a mild and efficient oxidant that can be used to oxidise primary and benzylic alcohols to the corresponding aldehydes.



Synthesis of polymer-supported TEMPO catalysts and their application in the oxidation of various alcohols

Tetrahedron Letters 44 (2003) 1639

Cihangir Tanyeli* and Ayşegül Gümüş

Department of Chemistry, Middle East Technical University, 06531 Ankara, Turkey

We describe the synthesis of a recyclable polymer-supported TEMPO as a catalyst in the Anelli oxidation of various primary alcohols to afford the corresponding aldehydes in good yields.

First total synthesis of a new pyrrolizidine alkaloid, amphorogynine A

Tetrahedron Letters 44 (2003) 1643

Hidemi Yoda,* Takahisa Egawa and Kunihiko Takabe

Department of Molecular Science, Faculty of Engineering, Shizuoka University, Johoku 3-5-1, Hamamatsu 432-8561, Japan

TBDPSO,
$$R_1 = H, R_2 = COOMe$$
: Amphorogynine A $R_1 = COOMe$, $R_2 = H$: 1-epi-amphorogynine A (6-epi-amphorogynine B)

Synthesis of *para*-substituted styrenes

Sandrine Langle, Franck David-Quillot, Mohamed Abarbri and Alain Duchêne*

Laboratoire de Physicochimie des Interfaces et des Milieux Réactionnels, Faculté des Sciences de Tours, Parc de Grandmont, F-37200 Tours, France

MR₃= SiMe₃, GeEt₃, GePh₃, SnBu₃

Insect antifeedant sesquiterpene acetals from the liverwort Lepidolaena clavigera

Tetrahedron Letters 44 (2003) 1651

Nigel B. Perry, a,* Elaine J. Burgess, Lysa M. Foster and Philippa J. Gerard b

^aPlant Extracts Research Unit, New Zealand Institute for Crop & Food Research Ltd, Dept of Chemistry, University of Otago, PO Box 56, Dunedin, New Zealand ^bAgResearch, Ruakura Agricultural Research Centre, Private Bag 3123, Hamilton, New Zealand

Two new oxygenated bergamotane derivatives, clavigerins B and C, were responsible Clavigerin B for the insect antifeedant activity of an extract from the New Zealand liverwort *Lepidolaena clavigera*.

Direct formation of cyclic sulfates utilising hypervalent iodine species and sulfur trioxide adducts

Tetrahedron Letters 44 (2003) 1655

Richard I. Robinson and Simon Woodward*

School of Chemistry, The University of Nottingham, Nottingham NG7 2RD, UK

A technically very simple procedure for the preparation of cyclic sulfates is described.

Tetrapetalone A, a novel lipoxygenase inhibitor from *Streptomyces* sp.

Toshikazu Komoda,^a Yasumasa Sugiyama,^a Naoki Abe,^a Misako Imachi,^b Hiroshi Hirota^{c,d} and Akira Hirota^{a,*}

^aLaboratory of Applied Microbiology, School of Food and Nutritional Sciences, University of Shizuoka, Yada 52-1, Shizuoka 422-8526, Japan

^bBruker BioSpin K. K., 3-21-5 Ninomiya, Tsukuba 305-0051, Japan

^cProtein Research Group, RIKEN Genomic Sciences Center, 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama 230-0045, Japan

^dScience of Biological Supramolecular Systems, Yokohama City University, 1-7-29 Suehiro-cho, Tsurumi-ku, Yokohama 230-0045, Japan

Tetrapetalone A is a novel lipoxygenase inhibitor from *Streptomyces* sp. Its chemical structure was determined by spectroscopic evidence and methylation with diazomethane. It possessed a characteristic tetracyclic skeleton and a β -rhodinosyl moiety.

Tetrahedron Letters 44 (2003) 1659

Synthesis and nucleic acid binding studies of novel pyrrolidinyl PNA carrying an N-amino-N-methylglycine spacer

____a

Tetrahedron Letters 44 (2003) 1663

Tirayut Vilaivan,^{a,*} Chaturong Suparpprom,^a Preeyanut Duanglaor,^a Pongchai Harnyuttanakorn^b and Gordon Lowe^c

^aOrganic Synthesis Research Unit, Department of Chemistry, Faculty of Science, Chulalongkorn University, Phayathai Road, Patumwan, Bangkok 10330, Thailand ^bDepartment of Biology, Faculty of Science, Chulalongkorn University,

Phayathai Road, Patumwan, Bangkok 10330, Thailand

*Dyson Perrins Laboratory, Department of Chemistry, University of Oxford, South Parks Road, Oxford OX1 3QY, UK

Two novel PNA's (B = T, n = 10) were synthesized and their interaction with complementary DNA and RNA investigated.

A new strategy for the synthesis of α,β -diaroylpropionates promoted by samarium metal in DMF

Tetrahedron Letters 44 (2003) 1667

Tetrahedron Letters 44 (2003) 1671

Yongjun Liu, a Xi Liu and Yongmin Zhanga,b,*

^aDepartment of Chemistry, Zhejiang University (Campus Xixi), Hangzhou 310028, PR China ^bState Key Laboratory of Organometallic Chemistry,

Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai 200032, PR China

When promoted by samarium in DMF, aroyl chlorides react readily with acrylates to afford α,β -diaroylpropionates in good to excellent yields without pretreating or activating the metallic samarium.

1 2

3

Two efficient ways to 2-O- and 5-O-feruloylated 4-nitrophenyl α -L-arabinofuranosides as substrates for differentiation of feruloyl esterases

Mária Mastihubová,* Jana Szemesová and Peter Biely Institute of Chemistry, Slovak Academy of Sciences, Dúbravská cesta 9, 842 38 Bratislava, Slovakia

New feruloyl esterase substrates have been synthesized as an alternative to naturally occurring feruloylated oligosaccharides. HOO ONPh HOO ONPh HOO ONPh

NPh = 4-nitrophenyl

Parallel iterative solution-phase synthesis of 5-amino-1-aryl-[1,2,4]triazolo[1,5-a]pyridine-7-carboxylic acid amide derivatives

Bernd Brodbeck, Bernd Püllmann, Sébastien Schmitt and Matthias Nettekoven*

F. Hoffmann-LaRoche Ltd, Pharmaceutical Research Basel, Discovery Chemistry, Lead Generation, CH-4070 Basel, Switzerland

A library of total 500 members of 1 was synthesised.

Tetrahedron Letters 44 (2003) 1675

HO O
$$\frac{4 \text{ steps}}{N}$$
 $\frac{R_1}{N}$ $\frac{R_2}{N}$ $\frac{R_2}{N}$ $\frac{R_1}{N}$ $\frac{R_2}{N}$ $\frac{R$

Hydroaminomethylation of olefins using a rhodium carbene catalyst

Abdul Majeed Seayad, Kumaravel Selvakumar, Moballigh Ahmed and Matthias Beller*

Leibniz Institut für Organische Katalyse an der Universität Rostock e.V. (IfOK), Buchbinderstraße 5-6, D-18055 Rostock, Germany

Hydroaminomethylation of various olefins with amines is described in the presence of [Rh(cod)(Imes)Cl] as a catalyst. In general good to excellent yields and high chemoselectivity were obtained.

$$R^{1}$$
 + $R^{3}R^{4}NH$ $\xrightarrow{\text{[Rh(Imes)(cod)CI]}}$ R^{1} $\xrightarrow{\text{CH}_{2}NR^{3}R^{4}}$ + R^{1} R^{2} R^{2} + R^{2} R^{2} R^{2} + R^{2} R^{2} R^{2} + R^{2} R^{2}

Synthesis of an ethidium nucleoside and its acyclic analog

Tetrahedron Letters 44 (2003) 1685

Nicole Amann and Hans-Achim Wagenknecht*

Institute for Organic Chemistry and Biochemistry, Technical University of Munich, Lichtenbergstr. 4, D-85747 Garching, Germany

N-Arylation of α -aminoesters with *p*-tolylboronic acid promoted by copper(II) acetate

Tetrahedron Letters 44 (2003) 1691

Patrick Y. S. Lam,* Damien Bonne, Guillaume Vincent, Charles G. Clark and Andrew P. Combs Bristol-Myers Squibb Company, Experimental Station, PO Box 80500, Wilmington, DE 19880-0500, USA

Primordial reductive amination revisited

Tetrahedron Letters 44 (2003) 1695

Claudia Huber^a and Günter Wächtershäuser^{b,*}

^aDepartment for Organic Chemistry and Biochemistry, Technische Universität München, Lichtenbergstraße 4, D-85747 Garching, Germany

^bTal 29, D-80331 München, Germany

FeS +
$$H_2$$
S FeS₂
 R_2 NH + R' -CO-COOH R_2 PreO(OH)

2Fe(OH)₂ 2FeO(OH)

A facile synthesis of oxazines by indium-induced reduction-rearrangement of the nitro β -lactams

Bimal K. Banik,* Susanta Samajdar and Indrani Banik

The University of Texas, M. D. Anderson Cancer Center, Department of Molecular Pathology, Box 89, 1515 Holcombe Boulevard, Houston, TX 77030, USA

Synthesis of TMG-capped RNA-DNA chimeric oligonucleotides

Tetrahedron Letters 44 (2003) 1703

Mitsuo Sekine,* Masatoshi Ushioda, Takeshi Wada and Kohji Seio

Department of Life Science, Tokyo Institute of Technology, Nagatsuta, Midoriku, Yokohama 226-8501, Japan

$$A^{5'}ppd(CpTpTpApCpCpT)_{OH}$$

$$m_{3}^{2,2,7}G^{5'}pppAmpUmpA$$

$$m_{3}^{2,2,7}G^{5'}pppAmpUmpAp(CpTpTpApCpCpT).$$

A novel one-pot synthesis of tetrasubstituted imidazoles under solvent-free conditions and microwave irradiation

Tetrahedron Letters 44 (2003) 1709

Saeed Balalaie, a,* Mohammed M. Hashemib and Maryam Akhbarib

^aChemistry Department, KN Toosi University of Technology, PO Box 15875-4416, Tehran, Iran