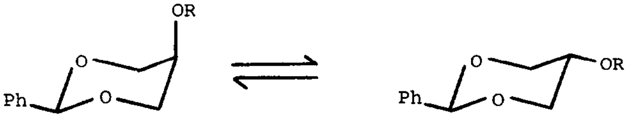
GRAPHICAL ABSTRACTS

Tetrahedron, **1992**, *48*, 5941

Conformational Analysis of 5-Substituted 1,3-Dioxanes. 6. Study of the Attractive Gauche Effect in O-C-C-O Segments

Eusebio Juaristi* and Sandra Antúnez, Depto. Química, CINVESTAV-IPN, Apdo. Postal 14-740, 07000 México, D.F., México.

NMR and quantum mechanical studies of several 5-O-substituted-1,3-dioxanes appear to support a stereoelectronic $\sigma_{C-H} \rightarrow \sigma^*_{C-OR}$ interpretation of the attractive *gauche* effect.

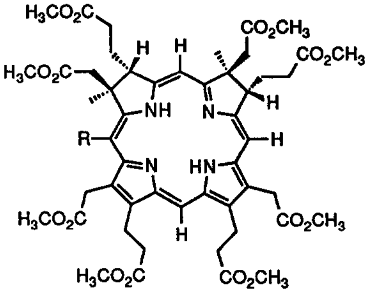


Tetrahedron, **1992**, *48*, 5951

^{1}H AND ^{13}C NMR STUDIES OF SIROHYDROCHLORIN (FACTOR II) AND ITS 20-METHYL DERIVATIVE (FACTOR III).

Mario D. Gonzalez, Howard J. Williams, Patricio J. Santander, Shin-ichi Ozaki, Neal J. Stolowich, and A. Ian Scott*.
Center for Biological NMR, Texas A & M University,
College Station, Texas, 77843, USA.

^{1}H and ^{13}C NMR spectra of Sirohydrochlorin octamethylester (R = H) and its 20-methyl derivative (R = CH_3) have been assigned. Evidence for the presence of tautomeric forms of differing stabilities is presented.

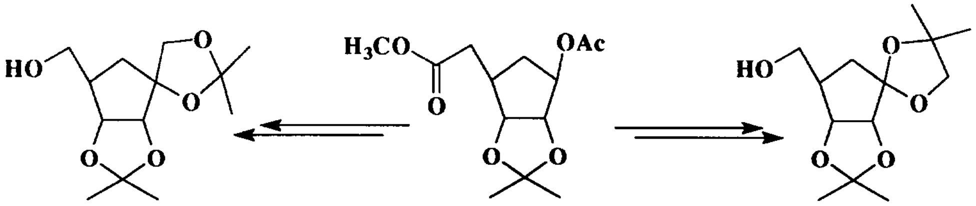


Tetrahedron, **1992**, *48*, 5961

SYNTHESIS OF PROTECTED (±)-α- AND ß-CARBA-PSICOFURANOSE

Michael Bodenteich and Victor E. Marquez*
Laboratory of Medicinal Chemistry, DTP, DCT, NCI, NIH, Bethesda, MD 20892.

Protected racemic α- and ß-psicofuranose were synthesized form a non-carbohydrate precursor which is available in both enantiomeric forms.

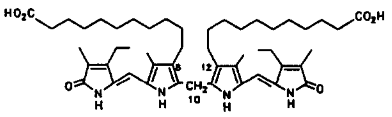


Tetrahedron, **1992**, *48*, 5969

SYNTHESIS AND CONFORMATION OF A BILIRUBIN ANALOG WITH PROPIONIC ACID SIDE CHAINS EXTENDED TO UNDECANOIC ACID

John Chiefari, Richard V. Person and David A. Lightner*
Department of Chemistry, University of Nevada, Reno

A lipophilic analog of bilirubin (1) with C-8 and C-12 propionic acid groups replaced by undecanoic acids was synthesized and found to participate in conformation-determining intramolecular hydrogen bonding by ^{1}H-NMR analyses and molecular dynamics calculations.



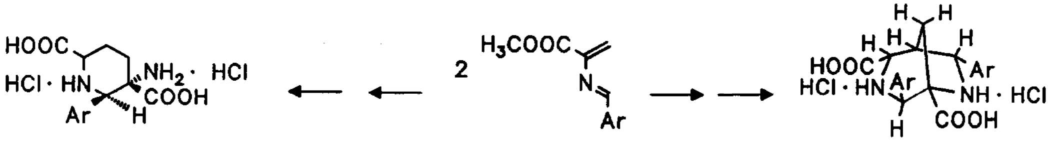
(n=10) MESOBILIRUBIN-XIIIα (1)

Tetrahedron, **1992**, *48*, 5985

Preparation of Novel Heterocyclic Amino Acids from N-(Arylmethylene)dehydroalanine Methyl Esters

Günter Wulff*, Heinz Theo Klinken
Institute of Organic Chemistry and Macromolecular Chemistry, Heinrich-Heine University Düsseldorf, Universitätsstr. 1, 4000 Düsseldorf 1 F.R.G.

From N-(arylmethylene)dehydroalanine methyl esters by dimerization and further transformations the non-proteinogenic amino acids derived from 3-amino-piperidine-3,6-dicarboxylic acids or 2,6-diazabicyclo[3.2.1]octane-1,5-dicarboxylic acids are formed.



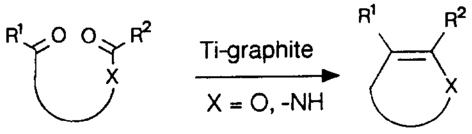
7b 1a,b 9b

Tetrahedron, **1992**, *48*, 5991

Titanium-Induced Syntheses of Furans, Benzofurans and Indoles

A. Fürstner,* D.N. Jumbam
Institute of Organic Chemistry, Technical University A-8010 Graz, Austria

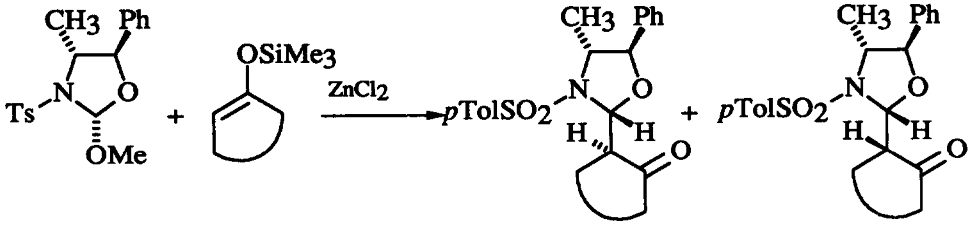
Intramolecular McMurry-type reactions of acyloxy- and acylamido carbonyl compounds



Tetrahedron, **1992**, *48*, 6011

Norpseudoephedrine Derived 2-Methoxy-3-sulfonyl-1,3-oxazolidines: Chiral, Highly Diastereoselective Formyl Cation Equivalents

Kilian Conde-Frieboes, Dieter Hoppe*
Institut für organische Chemie der Universität Kiel, Olshausenstr. 40, D-2300 Kiel, Germany

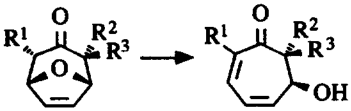


Tetrahedron, **1992**, *48*, 6021

SYNTHESIS OF NONENOLIZABLE 6-HYDROXY-2,4-CYCLOHEPTADIEN-1-ONES

I. Stohrer, H.M.R. Hoffmann
Department of Organic Chemistry, University of Hannover, Schneiderberg 1 B, 3000 Hannover, Germany

8-Oxabicyclo[3.2.1]oct-6-en-3-ones with a quaternary centre adjacent to the carbonyl group have been converted into 6-hydroxy-2,4-cycloheptadien-1-ones with zirconium tetrachloride/piperidine (1:1).



R^1, R^2, R^3 = H, CH_3
$R^1 \frown R^2 = -(CH_2)_9-$, $R^3 = CH_3$
$R^2 \frown R^3 = -(CH_2)_n-$, R^1 = H
n = 4,5

Tetrahedron, **1992**, *48*, 6033

FORMATION COMPETITIVE D'IONS AZETIDINIUM, PYRROLIDINIUM ET AZIRIDINIUM LORS DE LA FLUORATION DE QUELQUES DIMETHYLAMINOPENTOFURANOSIDES DI-O-MESYLES

M.B. Giudicelli, D. Picq et D. Anker, UCB-Lyon I, Lab. de Chimie Organique 3, associé au CNRS, 43 Boulevard du 11 Novembre 1918, 69622 VILLEURBANNE Cedex (France)*

Furanosidic dimethylaminomesylates easily give stable corresponding pyrrolidinium or azetidinium ions even if R is a O-mesyl group ; opening of these ions with fluorinating agents seems to be impossible or very difficult.

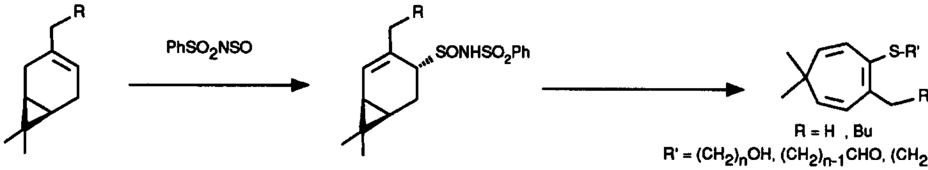
R= F or OMs

Tetrahedron, **1992**, *48*, 6043

A NEW ENE REACTION MEDIATED ACCESS TO CYCLOHEPTATRIENE ENOL-THIOETHERS

Sylvie GEHANNE, Françoise RAYNAUD, Alain GADRAS and Gérard DELERIS
Laboratoire de Chimie BioOrganique INSERM U8, Université de Bordeaux II, 33076 Bordeaux, France.

A synthesis of cycloheptatriene enol-thioethers via an ene reaction with sulfinyl sulfonamides and subsequent Grignard alkylation and ring enlargement.



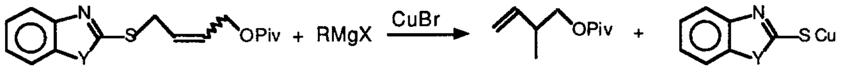
R = H , Bu
R' = $(CH_2)_nOH$, $(CH_2)_{n-1}CHO$, $(CH_2)_{n-1}CO_2H$

Tetrahedron, **1992**, *48*, 6051

REGIOCONTROL BY ANCHIMERIC CO-ORDINATION IN THE REACTIONS OF ORGANOCOPPER REAGENTS WITH ALLYLIC SUBSTRATES BEARING TWO LEAVING GROUPS. SYNTHESIS OF OPTICALLY ACTIVE HOMOALLYLIC ALCOHOLS

Vincenzo Calò*[a], Concetta De Nitti[a], Luigi Lopez[a] and Antonio Scilimati[b]

[a]Centro CNR di Studio sulle Metodologie Innovative di Sintesi Organiche, Dipartimento di Chimica, Università di Bari, via Amendola n.173-70126 Bari-Italy. [b]Dipartimento Farmacochimico, Università di Bari, Trav.200 Re David n.4-70126 Bari-Italy.



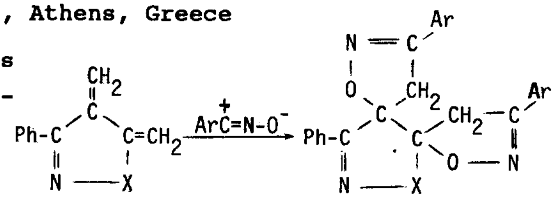
1, Y=S; 2, Y=NSO_2camphor

Tetrahedron, **1992**, *48*, 6059

SPIROHETEROCYCLES FROM REACTION OF NITRILE OXIDES WITH HETEROCYCLIC *o*-QUINODIMETHANES

Sophia Mitkidou and Julia Stephanidou-Stephanatou*
Laboratory of Organic Chemistry, University of Thessaloniki, Greece
Aristides Terzis and Demetrios Mentzafos
X-Ray Laboratory, NCR "Democritos", Athens, Greece

1,3-Dipolar cycloaddition reactions of stable nitrile oxides to heterocyclic *o*-quinodimethanes leading to the formation of dispiroisoxazolines are described.

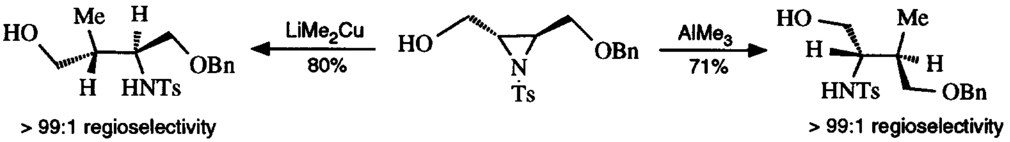


Tetrahedron, **1992**, *48*, 6069

REGIOSELECTIVE NUCLEOPHILIC RING OPENING OF 2,3-AZIRIDINO ALCOHOLS

David Tanner* and Hua Ming He, Dept. of Organic Chemistry, University of Uppsala,
Box 531, S-751 21 Uppsala, Sweden
Peter Somfai, Organic Chemistry 2, Lund Institute of Technology, Box 124, S-221 00 Lund, Sweden

Excellent regioselectivity can be attained in the ring-opening of the title compounds, *e.g.*:

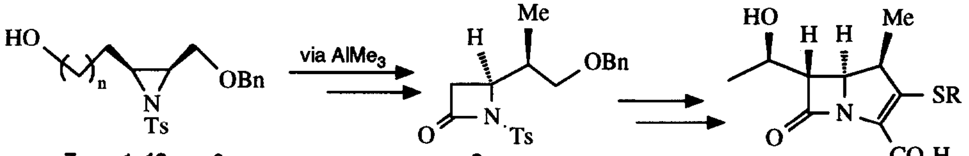


Tetrahedron, **1992**, *48*, 6079

ENANTIOSELECTIVE ROUTES TOWARD 1β-METHYLCARBAPENEMS FROM CHIRAL AZIRIDINES

David Tanner* and Hua Ming He, Dept. of Organic Chemistry, University of Uppsala, Box 531, S-751 21 Uppsala, Sweden

Enantioselective routes toward 1β-methylcarbapenems, *e.g.* **2**, from the chiral aziridines **7** or **10** are described.
A key step is the completely regioselective ring-opening of the aziridines by AlMe$_3$.



7, n = 1; **10**, n = 0

9

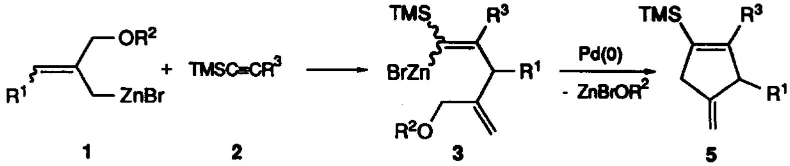
2 R =$CH_2CH_2NH_2$

Tetrahedron, **1992**, *48*, 6087

ALLYLMETALLATION OF 1-SILYLALKYNES BY 2-(BROMOZINCMETHYL)-2-ALKENYL ETHERS FOLLOWED BY Pd(0)-CATALYZED CYCLIZATION: A ONE-POT SYNTHESIS OF 4-METHYLENECYCLOPENTENES

J. van der Louw, J.L. van der Baan, F.J.J. de Kanter, F. Bickelhaupt, G.W. Klumpp
Scheikundig Laboratorium, Vrije Universiteit, De Boelelaan 1083, 1081 HV Amsterdam, The Netherlands

4-Methylenecyclopentenes **5** were prepared by carbozincation of **2** by **1** followed by Pd(0)-catalyzed cyclization of **3**.



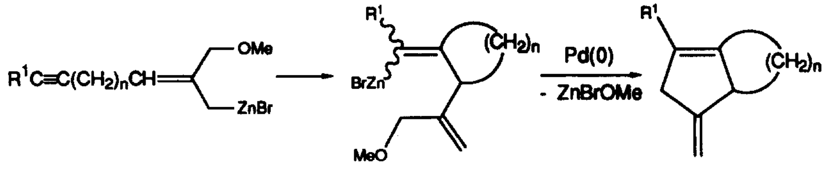
1 **2** **3** **5**

Tetrahedron, **1992**, *48*, 6105

INTRAMOLECULAR ZINC-ENE REACTIONS OF ALKYNES; PREPARATION OF 1,5-ANNULATED 4-METHYLENECYCLOPENTENES

J. van der Louw, J.L. van der Baan, C.M.D. Komen, A. Knol, F.J.J. de Kanter, F. Bickelhaupt, G.W. Klumpp
Scheikundig Laboratorium, Vrije Universiteit, De Boelelaan 1083, 1081 HV Amsterdam, The Netherlands

Zinc-ene reaction of **2** gave **3**, which on Pd(0)-catalyzed cyclization was converted to **4**.



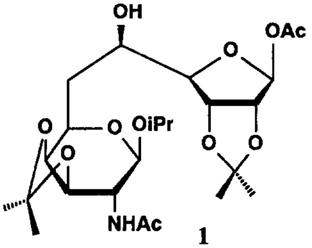
2 n=3,4,5 **3** **4**

Tetrahedron, **1992**, *48*, 6123

NEW CONVENIENT SYNTHESIS OF TUNICAMINE

J. Ramza and A. Zamojski
Institute of Organic Chemistry, Polish Academy of Sciences, 01-224 Warsaw

A ten-step synthesis of tunicamine derivative **1**, starting from isopropyl 2-azido-2-deoxy-3,4-*O*-isopropylidene-β-D-galactopyranoside, is described.



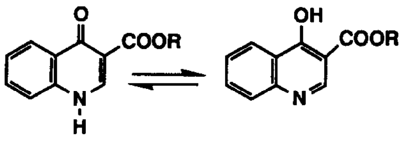
1

Tetrahedron, **1992**, *48*, 6135

TAUTOMERISM AND ACIDITY IN 4-QUINOLONE-3-CARBOXYLIC ACID DERIVATIVES

Angeles de la Cruz, José Elguero, Pilar Goya, Ana Martinez
Instituto de Química Médica (CSIC), Juan de la Cierva 3, 28006 Madrid (Spain)
Wolfgang Pfleiderer
Fakultat für Chemie, Universität Konstanz. D-7750 Konstanz (Germany)

Prototropic tautomerism in 4-quinolone-3-carboxylic acid derivatives has been studied. The techniques used include UV, ^{1}H-NMR, ^{13}C-NMR (solution and solid state) and semiempirical and *ab initio* calculations.

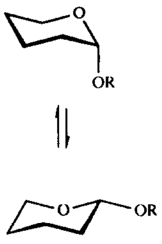


Tetrahedron, **1992**, *48*, 6151

EXPERIMENTAL STUDIES OF THE ANOMERIC EFFECT. PART V THE INFLUENCE OF SOME SOLVENTS ON THE CONFORMATIONAL EQUILIBRIA IN 2-METHOXY- AND 2-(2',2',2'-TRIFLUOROETHOXY)-TETRAHYDROPYRAN

Harold Booth,* J. Mark Dixon and Simon A. Readshaw
Department of Chemistry, The University, Nottingham, NG7 2RD

$\Delta H^\circ_{1\rightarrow 2}$ and $\Delta S^\circ_{1\rightarrow 2}$ values are measured for ($1 \rightleftharpoons 2$; R=Me, CH_2CF_3) in ether/toluene and ether/methanol, and for ($1 \rightleftharpoons 2$; R=Me) in CD_2Cl_2 and ether/CD_2Cl_2. Replacement of toluene by methanol causes increases in $\Delta H^\circ_{1\rightarrow 2}$ and $\Delta S^\circ_{1\rightarrow 2}$ values, consistent with a preferential H-bonding to the exo-cyclic O of axial conformations

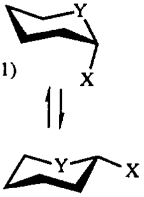

(1)
(2)

Tetrahedron, **1992**, *48*, 6165

EXPERIMENTAL STUDIES OF THE ANOMERIC EFFECT. PART VI RING INVERSION EQUILIBRIA IN CYCLOHEXANE, TETRAHYDROPYRAN AND PIPERIDINE RINGS SUBSTITUTED BY A CARBOMETHOXY OR A CYANO GROUP

Harold Booth,* J. Mark Dixon and Khedhair A. Khedhair
Department of Chemistry, The University, Nottingham, NG7 2RD

A variable temperature ^{13}C nmr study of ($1 \rightleftharpoons 2$; Y=CH_2, O, NH; X=CO_2Me, CN) gives values of $\Delta H^\circ_{1\rightarrow 2}$ which can be rationalised in terms of the steric effects of X and the endo-anomeric effects of Y.


(1)
(2)