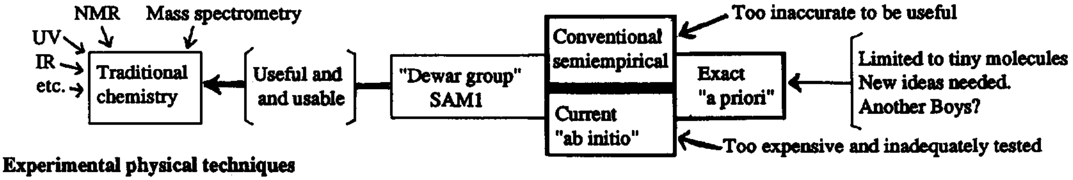
GRAPHICAL ABSTRACTS

Tetrahedron, **1993**, *49*, 5003

SAM1; THE FIRST OF A NEW SERIES OF GENERAL PURPOSE QUANTUM MECHANICAL MOLECULAR MODELS

Michael J. S. Dewar*, Caoxian Jie, and Jianguo Yu
Department of Chemistry, The University of Florida, Gainesville, Florida 32611, USA

SAM1 is the latest "Dewar group" procedure. Calculations for 512 molecules, ions, and radicals, and for 11 chemical reactions, show its superiority to AM1. Its development also opens the way to a new generation of progresssively better"semi-ab-initio" treatments.



Experimental physical techniques are now used routinely by chemists

Quantitative quantum mechanical procedures that might be used by chemists

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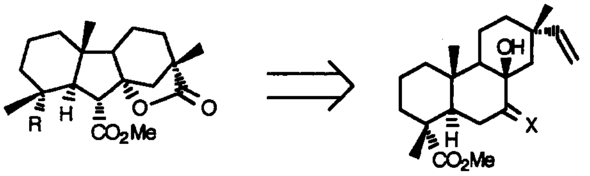
Tetrahedron, **1993**, *49*, 5039

SYNTHESIS OF ENANTIOMERIC GIBBERELLIN ANALOGS FROM NATURAL ISOPIMARENES

Angelo C. Pinto*, Rosângela de A. Epifanio[1] and Wilson Camargo
Instituto de Química, Universidade Federal do Rio de Janeiro, Cidade Universitária, Ilha do Fundão, 21910, Rio de Janeiro, RJ, Brasil.

We report the synthesis of 15-oxa-giberellanes, enantiomeric analogs of gibberellins, from natural isopimarenes.



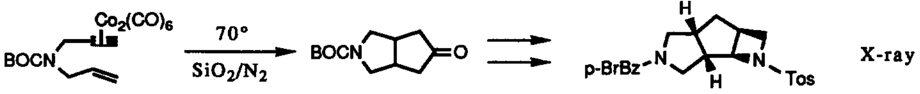
R = Me, CO_2Me; X = O; OH, H

Tetrahedron, **1993**, *49*, 5047

Synthesis of N-BOC-3-Azabicyclo[3.3.0]octan-7-one via Reductive Pauson-Khand Cyclization and Subsequent Conversion to a Novel Diazatricyclic Ring System

Daniel P. Becker* and Daniel L. Flynn, Searle Research & Development, 4901 Searle Parkway, Skokie, IL 60077

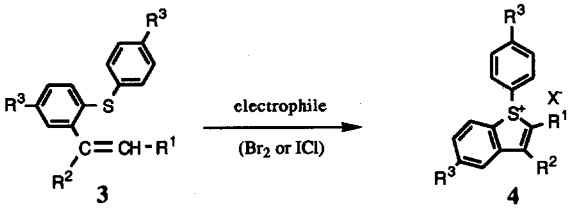
A *reductive* intramolecular Pauson-Khand cyclization under dry-state adsorption conditions and inert atmosphere directly afforded the saturated N-BOC-3-azabicyclo[3.3.0]octan-7-one which was converted to the novel octahydro-1-azeto[2',3':3,4]cyclopenta[1,2-C]pyrrole ring system.



Tetrahedron, **1993**, *49*, 5055

Intramolecular Cyclization of [*o*-(Arylthio)phenyl]ethenes. Synthesis and Crystal Structure of 1-Arylbenzo[b]thiophenium Salts

Tsugio Kitamura,* Shin-ichi Soda, Hironobu Kawasato, and Hiroshi Taniguchi*,
Department of Chemical Science and Technology, Faculty of Engineering, Kyushu University 36, Hakozaki, Fukuoka 812, Japan; Motoo Shiro, Rigaku Corporation, Matsubara-cho 3-9-12, Akishima, Tokyo 196, Japan

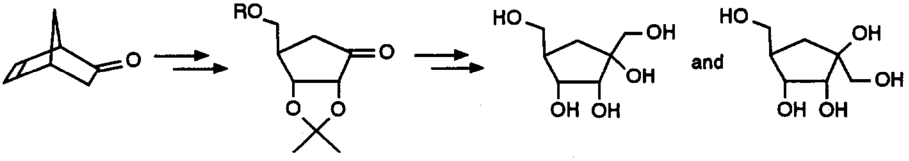


Tetrahedron, **1993**, *49*, 5067

SYNTHESIS OF α- AND β-D,L-*ribo*-CARBAHEX-2-ULOFURANOSE

Ch. Marschner, G. Penn and H. Griengl*
Institute of Organic Chemistry, Graz University of Technology, Stremayrgasse 16, A-8010 Graz

Racemic α- and β-isomers of D,L-*ribo*-carbahex-2-ulofuranose have been synthesized. An unexpected stereochemical course in the reaction of sulfur ylides with α-alkoxy ketones has been observed.

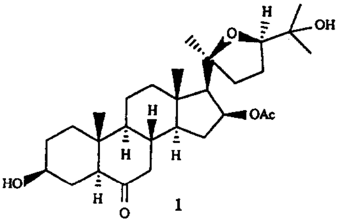


Tetrahedron, **1993**, *49*, 5079

Hemisynthesis of (20S,24R)-20,24-Epoxy-3β,16β,25-Trihydroxy-6-Oxo-5α-Cholestane 16-Acetate from Diosgenin.

Regina Tavares, Thierry Randoux, Jean-Claude Braekman, and Désiré Daloze.
Laboratory of Bio-organic Chemistry, Faculty of Sciences, University of Brussels, Av. F.D. Roosevelt, 50, B-1050 Brussels - Belgium.

The title compound 1 which was isolated as its 3β-sophoroside from the defensive secretion of *Chrysolina varians* (Coleoptera: Chrysomelidae) has been synthesized from diosgenin in 8 steps.

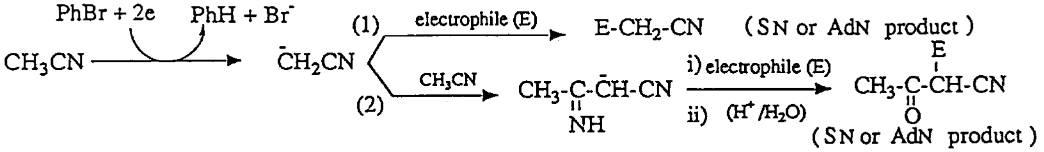


Tetrahedron, **1993**, *49*, 5091

Aryl Halides as Precursors of Electrogenerated Bases. Utilization in Coupling Reactions of Acetonitrile with various Electrophilic Compounds.

Rachid Barhdadi, Jacques Gal, Monique Heintz, Michel Troupel* and Jacques Périchon.
Laboratoire d'Electrochimie, Catalyse et Synthèse Organique (UMR 28), C.N.R.S.,2,rue Henri Dunant, 94320 Thiais, France.

Cyanomethylation reactions are performed using bases electrogenerated from aryl halides. Different products are obtained depending on the procedure utilized.



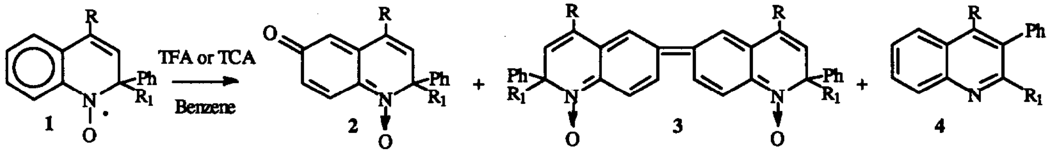
(1): one-pot procedure (2): two steps-procedure E = ester, carbonyl- , alkylchloride, acylchloride.

Tetrahedron, **1993**, *49*, 5099

OXIDATIVE DIMERIZATION OF QUINOLINIC NITROXIDE WITH TRIFLUORO- AND TRICHLORO- ACETIC ACID. CRYSTAL STRUCTURES OF 6,6'-BIS-(1-OXIDE-1,2,6,8A-TETRAHYDROQUINOLINE)YLIDENE AND OF 2,3-DIPHENYLQUINOLINE.

P.Carloni,[a] E.Damiani,[a] L.Greci,[*,a] P.Stipa,[a] C.Rizzoli,[b] P.Sgarabotto,[*,b] F.Ugozzoli.[b] a: Dip. Scienze Materiali e Terra, Università, Via Brecce Bianche, I-60131 Ancona, Italy; b: Istit. Strutt. Chimica, Università, Viale delle Scienze, I-43100 Parma, Italy.

Quinolinic nitroxides **1a-c** react with trichloro- and trifluoro-acetic acid to give dimers **3a-c** and quinolines **4a-c** as the main products.

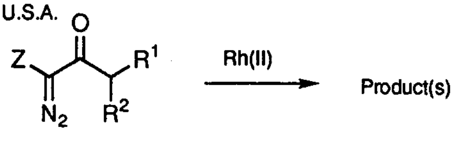


Tetrahedron, **1993**, *49*, 5109

CHEMOSELECTIVITY OF RHODIUM CARBENOIDS. A COMPARISON OF THE SELECTIVITY FOR O–H INSERTION REACTIONS OR CARBONYL YLIDE FORMATION VERSUS ALIPHATIC AND AROMATIC C–H INSERTION AND CYCLOPROPANATION

Geoffrey G. Cox and Christopher J. Moody*
Department of Chemistry, Loughborough University of Technology, Loughborough, Leicestershire, LE11 3TU, U.K.
David J. Austin and Albert Padwa*
Department of Chemistry, Emory University, Atlanta, Georgia 30522, U.S.A.

A range of diazocarbonyl compounds containing two different functional groups (within R^1 and R^2) has been prepared, and their rhodium(II) catalysed decomposition studied as a means of probing the chemoselectivity of carbenoid intermediates.

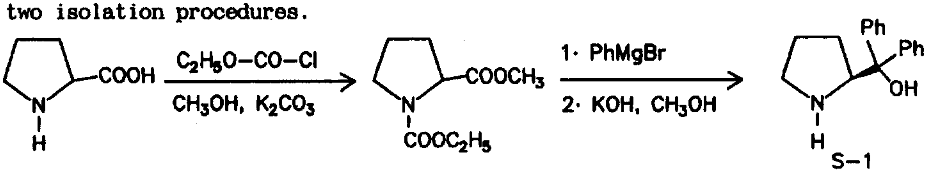


Tetrahedron, **1993**, *49*, 5127

CONVENIENT METHOD FOR THE SYNTHESIS OF CHIRAL α, α-DIPHENYL-2-PYRROLIDINEMETHANOL

J.V.Bhaskar Kanth and Mariappan Periasamy*
School of Chemistry, University of Hyderabad, Hyderabad 500 134, India

Chiral α, α-diphenyl-2-pyrrolidinemethanol S-1, is synthesised from S-proline utilizing inexpensive reagents, following a method involving only two isolation procedures.

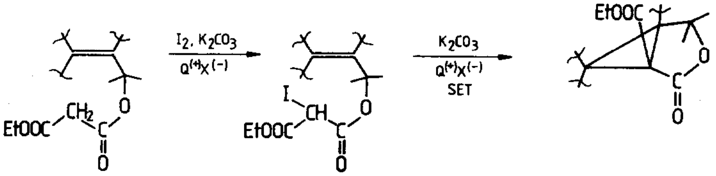


Tetrahedron, **1993**, *49*, 5133

SINGLE ELECTRON TRANSFER INDUCED ELEMENTAL STEPS IN THE TRANSFORMATION OF IODOMALONIC ESTERS AND RELATED CH-ACIDS UNDER SOLID-LIQUID PTC CONDITIONS. PREPARATION OF ELECTROPHILIC CYCLOPROPANES

L. Tõke, Z. Hell, G.T. Szabó, M. Bihari, A. Rockenbauer
Dept. of Org. Chem. Techn. Technical University, Budapest, Hungary

Malonic esters react with olefins under PTC-conditions in the presence of iodine to give cyclopropane derivatives. The mechanism of the reaction is also discussed.

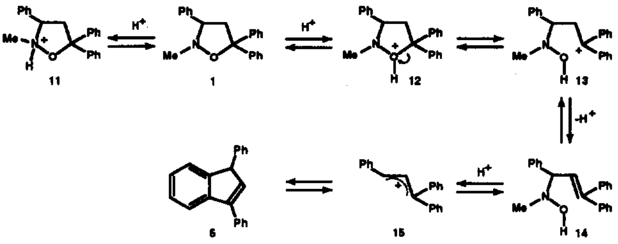


Tetrahedron **1993**, *49*, 5147

RING-OPENING OF SUBSTITUTED ISOXAZOLIDINES: ONE-POT SYNTHESIS OF INDENES

F. Casuscelli,[a] U. Chiacchio,[b] A. Liguori,[c] G. Romeo,[a] G. Sindona[c] and N. Uccella;[c]
[a]Università di Messina, Italy; [b]Università di Catania, Italy; [c]Università della Calabria, Italy.

High yield conversion of 3,5,5,-triaryl-isoxazolidines into indene derivatives has been achieved by 4 h refluxing in aq. H_2SO_4. The rearrangement pathway is interpretable on the basis of a ring-opening process where the crucial step is the protonation of the oxygen atom of the isoxazolidine nucleus.

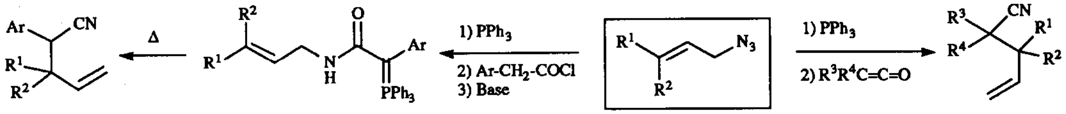


Tetrahedron, **1993**, *49*, 5153

REACTION OF ALLYL IMINOPHOSPHORANES WITH KETENES AND ACYL CHLORIDES: ONE-POT PREPARATION OF 4-PENTENENITRILES

Pedro Molina, Mateo Alajarín, Carmen López-Leonardo, and Julian Alcántara
Departamento de Química Orgánica, Universidad de Murcia, Campus de Espinardo, E-30071, Murcia, Spain.

The titled iminophosphoranes react either with ketenes at r.t. or acyl chlorides and further thermal treatment of the resulting phosphoranes to give 4-pentenenitriles.

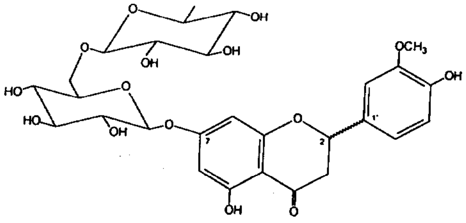


Tetrahedron, **1993**, *49*, 5169

Isolation and Structure of Clematine, A New Flavanone Glycoside from *Clematis armandii* Franch

Yingfong Chen[a], Jian Liu[b*], R. Stephen Davidson[b], Oliver W. Howarth[c]; [a]Hunan College of Traditional Chinese Medicine, (China), [b]University of Kent, (UK), and [c]University of Warwick, (UK)

A new flavanone glycoside was isolated from Chinese crude drug "*mu tong*" (*Clematis armandii*). The structure was established mainly by 2D NMR methods, FAB and HREI-MS.



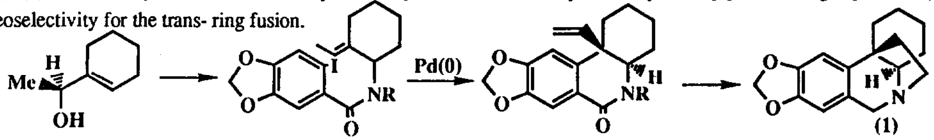
Clematine

Tetrahedron, **1993**, *49*, 5177

TOTAL SYNTHESIS OF (R,R)-CRINAN VIA REGIOSPECIFIC AND STEREOSELECTIVE PALLADIUM CATALYSED CYCLISATION

R. Grigg,[*a] V. Santhakumar,[a] V. Sridharan,[a] M. Thornton - Pett[a], and A.W. Bridge[b]
a. School of Chemistry, Leeds University, Leeds LS2 9JT, b. Rhone - Poulenc Rorer, Rainham Road South, Daganham RM10 7XS.

(R,R)-(–)-Crinan is synthesised from S-1-cyclohexenylethan-1-ol. The key Pd catalysed step proceeds regiospecifically and with a 20:1 stereoselectivity for the trans- ring fusion.



(1)

Tetrahedron, **1993**, *49*, 5189

NEW SYNTHESIS OF 3'-C-SUBSTITUTED NUCLEOSIDES

N. Garg, J. Plavec and J. Chattopadhyaya*
Department of Bioorganic Chemistry, Box 581, Biomedical Center,
University of Uppsala, S-751 23 Uppsala, Sweden

Synthesis of 3'-C-branched thymidine **3** is described starting from 2',3'-dideoxy-3'-nitro-thymidine **1**.