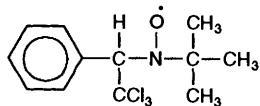


JOURNAL OF THE CHEMICAL SOCIETY
Perkin Transactions 2
Physical Organic Chemistry

CONTENTS**Papers Presented at the 26th International ESR Conference**

1983 Study of the isolation and stability of α -trichloromethylbenzyl(*tert*-butyl)aminoxyl, the trichloromethyl radical adduct of α -phenyl-*tert*-butylnitron (PBN)

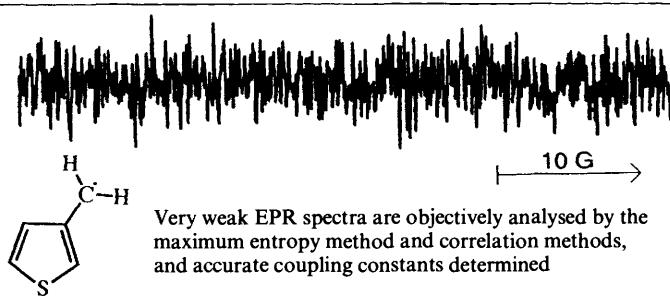
Edward G. Janzen, Guoman Chen, Tammy M. Bray, Lester A. Reinke, J. Lee Poyer and Paul B. McCay



The stability of the trichloromethyl radical adduct of PBN is explored in a variety of solvents

1991 Objective analysis of EPR spectra by computer methods

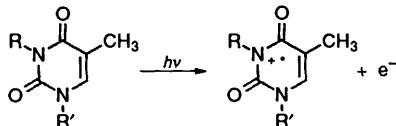
Richard A. Jackson



Very weak EPR spectra are objectively analysed by the maximum entropy method and correlation methods, and accurate coupling constants determined

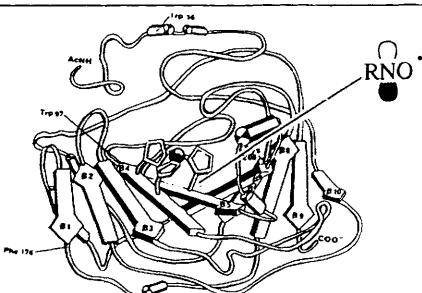
1995 Electronic structure, methyl group reorientation and reactions of radical cations of 1,2,4-trimethylcyclohexanes: An EPR study

Masaru Shiotani, Michinobu Matsumoto and Mikael Lindgren



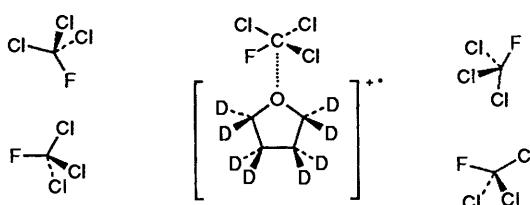
2003 Probing local mobility in carbonic anhydrase: EPR of spin-labelled SH groups introduced by site-directed mutagenesis

Mikael Lindgren, Magdalena Svensson, Per-Ola Freskgård, Uno Carlsson, Bengt-Harald Jonsson, Lars-Göran Mårtensson and Per Jonasson



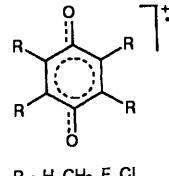
2009 The [$^2\text{H}_8$]THF radical cation in CF_3CCl_3 and CFCI_3 . An EPR and ENDOR study

Mikael Lindgren, Roland Erickson, Nikolas P. Benetis and Oleg N. Antzutkin



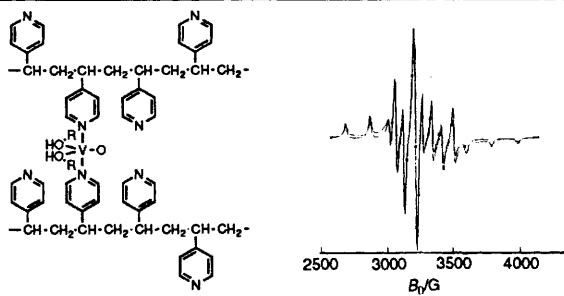
2015 EPR and flash photolysis investigations of some *p*-quinone radical cations

Günter Grampp and Kurt Neubauer



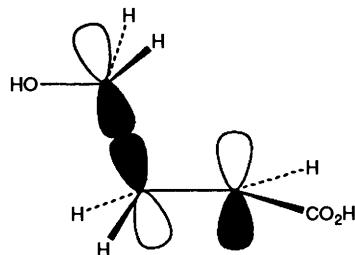
2021 Simulation of EPR spectra with automatic fitting of the spectroscopic parameters and of the reorientational correlation time

Edgar J. Soulié and Claude Chachaty



2025 Kinetic-EPR studies of the addition of aliphatic radicals to acrylic acid and related alkenes: the interplay of steric and electronic factors

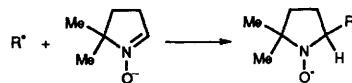
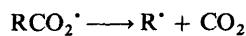
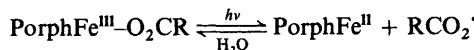
Bruce C. Gilbert, John R. Lindsay Smith, Elizabeth C. Milne, Adrian C. Whitwood and Philip Taylor



Typical transition-state for the addition of pyramidal oxygen-conjugated radicals to acrylic acid

2033 Photolytic cleavage of the iron-carboxyalkyl ligand bond in some iron(III) tetra(*N*-methylpyridyl)porphyrins: Evidence for reversible photodecomposition and fragmentation from EPR and UV spectroscopy

Bruce C. Gilbert, John R. Lindsay Smith, Philip MacFaul and Philip Taylor



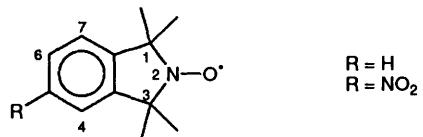
2039 EPR spin-trapping studies of the reaction of the hydroxyl radical with pyrimidine nucleobases, nucleosides and nucleotides, polynucleotides and RNA. Direct evidence for sites of initial attack and for strand breakage

Helen Catterall, Michael J. Davies, Bruce C. Gilbert and Natalie P. Polack



EPR spectrum of uridine-OH spin-adducts generated by HO[·] attack and subsequent enzymatic cleavage of RNA

2049 An EPR and NMR study of some tetramethylisoindolin-2-yloxy free radicals



Roger Bolton, Duncan G. Gillies, Leslie H. Sutcliffe and Xiaoping Wu

¹H and ¹³C hyperfine coupling constants have been derived from EPR and NMR spectra

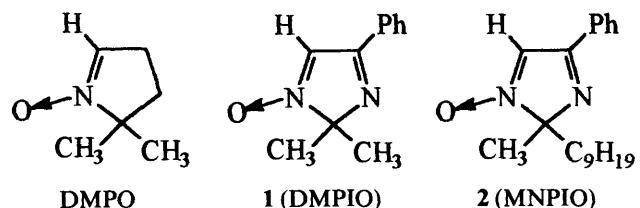
2053 Comparative study of the reduction rates of various types of imidazoline radicals in tissues

V. Yelinova, A. Krainev, A. Savelov and I. Grigor'ev

Various types of imidazoline radical have been studied for potential utility as contrast-enhancing agents in nuclear magnetic resonance (NMR) imaging

2057 Spin-trapping study of free radical penetration into liposomal membranes

Gila Strul, Aryeh A. Frimer and Lev Weiner



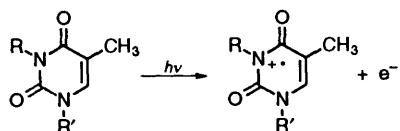
2061 The effects of ionizing radiation on frozen aqueous RNA: an electron paramagnetic resonance study

Philip J. Boon, Aidan O'Connell, Ian D. Podmore and Martyn C. R. Symons

DNA + Y → No sugar radicals
RNA + Y → RO[·] radicals

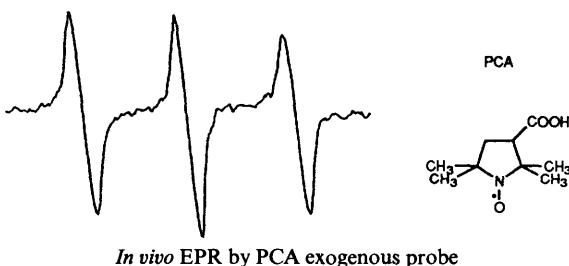
2067 An EPR study of photoionised thymine and its derivatives at 77 K

Mark E. Malone, Martyn C. R. Symons* and Anthony W. Parker



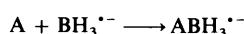
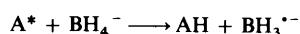
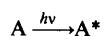
2077 New experimental procedures for *in vivo* L-band and radio frequency EPR spectroscopy/imaging

Silvia Colacicchi, Marcello Alecci, Giancaterino Gualtieri, Valentina Quaresima, Cinzia Lucia Ursini, Marco Ferrari and Antonello Sotgiu



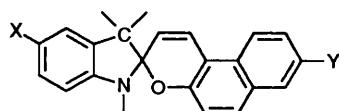
2083 Spontaneous and photoinduced formation of radical anions in the reaction of borohydrides with unsaturated compounds

Marco Lucarini, Gian Franco Pedulli, Angelo Alberti, Carmen Paradisi and Sergio Roffia



2089 Radical ions and germyloxyaminoxyls from nitrospiro[indoline-naphthopyrans]. A combined electrochemical and EPR study

Mylène Campredon, Gérard Giusti, Robert Guglielmetti, André Samat, Gérard Gronchi, Angelo Alberti and Massimo Benaglia

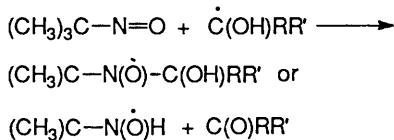


X, Y = H, NO₂

EPR spectroscopy reveals unexpected behaviour in the dinitro spiro compound towards chemical reduction

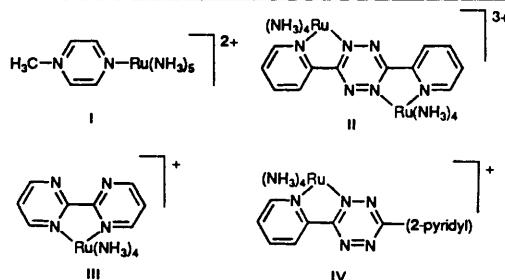
2095 An *in-situ* radiolysis EPR study of spin trapping by 2-methyl-2-nitrosopropane: steric and electronic effects influencing the trapping of hydroxyalkyl radicals derived from pentanols and substituted pentanols

Keith P. Madden and Hitoshi Taniguchi



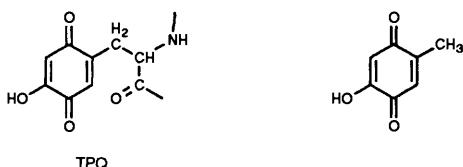
2105 EPR characteristics of radical complexes with coordinated ammineruthenium(II) fragments. Evidence for the metal-to-ligand charge transfer (MLCT) nature of the low-lying excited states in precursor complexes

Jürgen Poppe, Wolfgang Kaim, Aída Ben Altabef and Néstor E. Katz



2109 Ruthenium(II) coordination to a model for the topasemiquinone cofactor of amine oxidases. Resolution of ¹H and ^{99,101}Ru EPR hyperfine structure

Eberhard Waldhör, Brigitte Schwederski and Wolfgang Kaim



The effect of metal chelate coordination on the electronic structure of *o,p*-(semi)quinonoid systems has been studied

2113 Spin-lattice relaxation times of phospholipid aminoxy spin labels in cardiolipin-cytochrome c bilayers: a pulse saturation-recovery EPR study

Teresa J. T. Pinheiro, Peter J. Bratt, Ian H. Davis, David C. Doetschman and Anthony Watts

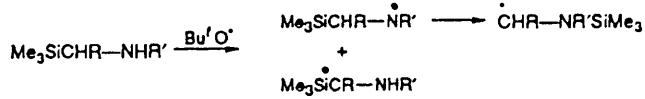
Spin-lattice (T_1) relaxation times of aminoxy spin-labels have been measured in lipid bilayers by pulse saturation methods to monitor the perturbation of the dynamics of the bilayer lipid chains by the peripheral protein, cytochrome c

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2119 Hydrogen abstraction from silylamines; an investigation of the 1,2-migration of the trimethylsilyl group in aminyl radicals

Joanna M. Harris, John C. Walton, Bernard Maillard, Stéphane Grelier and Jean-Paul Picard

Hydrogen abstraction from silylamines gave mixtures of aminyl and aminoalkyl radicals; rearrangement of the former was monitored by EPR spectroscopy



2125 Measurement of the ^{13}C hyperfine tensors for cubyl and related bridgehead radicals

Christopher J. Rhodes, John C. Walton and Ernest W. Della

Solid-state features from carbon-13 nuclei have been observed by EPR spectroscopy in a series of bridgehead radicals, leading to a determination of the geometries of their radical centres

2129 Substituent effects in diphenylmercury radical cations: a very clear distinction between σ - and π -states

Christopher J. Rhodes, Hikmet Agirbas, Henry J. Shine, A. K. M. Mansural Hoque and T. Krishnan Venkatachalam

Diphenylmercury radical cations are formed in the σ -state in a solid freon matrix at 77 K, and show a pronounced interaction with a single chlorine atom from the matrix; allyloxy derivatives, in contrast, are formed in their π -states

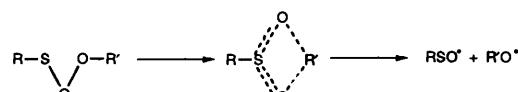
2135 An EPR and theoretical investigation of azoalkane and azobenzene radical cations

Christopher J. Rhodes, Hikmet Agirbas, Mikael Lindgren and Oleg N. Antzutkin

g - and A -tensors have been evaluated for a range of azoalkane and azobenzene radical cations by simulation of their EPR spectra as observed in solid freon matrices; the results are compared with those predicted from semiempirical calculations

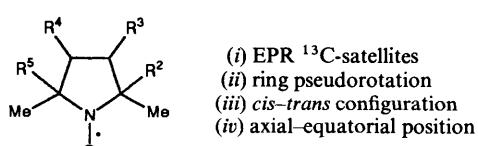
2141 Post-irradiation decomposition of sulfanylperoxides and peroxycyclohexadienethiones formed from thiyl and peroxy radicals

Brynmor Mile, Christopher C. Rowlands, Philip D. Sillman and Andrew J. Holmes



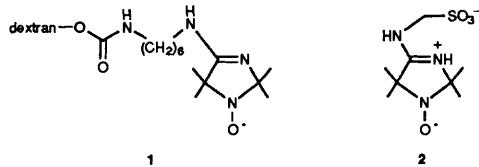
2149 Ring pseudorotation in pyrrolidine N -oxyl radicals: an analysis of ^{13}C -hyperfine structure of EPR spectra

Antal Rockenbauer, László Korecz and Kálmán Hideg



2157 New pH-sensitive aminoxyls: application to the study of biomembrane transport processes

Maxim Balakirev and Valery Khramtsov

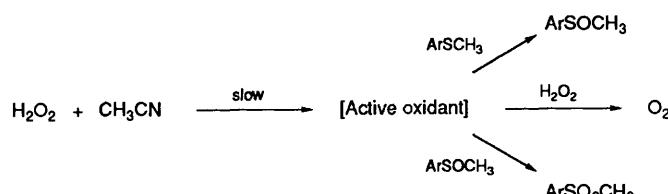


New pH-sensitive hydrophilic spin probes, **1** and **2**, have been used to determine the kinetics of pH variations inside large unilamellar phospholipid vesicles, and the membrane permeability coefficients for H⁺ (5×10^{-4} cm s⁻¹), Cl⁻ (10^{-10} cm s⁻¹) and Tl⁺ (10^{-8} cm s⁻¹)

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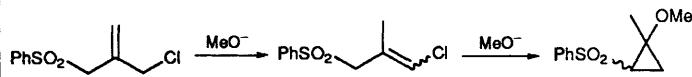
2161 Reactivity and selectivity in the oxidation of aryl methyl sulfides and sulfoxides by hydrogen peroxide mediated by acetonitrile

Donald Bethell, Andrew E. Graham, Jag P. Heer, Olga Markopoulou, Philip C. Bulman Page and B. Kevin Park



2163 Formation of cyclopropylsulfones from 1-arylsulfonyl-2-chloromethylprop-2-enes

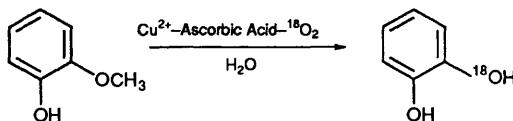
Stephen M. Jeffery and Charles J. M. Stirling



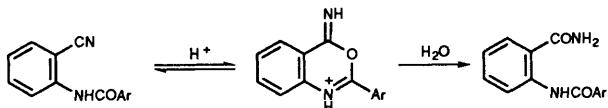
Regular Articles

2165 Mechanistic studies of selective catechol formation from *o*-methoxyphenols using a copper(II)-ascorbic acid-dioxygen system

Kazuhiro Aihara, Yasuteru Urano, Tsunehiko Higuchi and Masaaki Hirobe



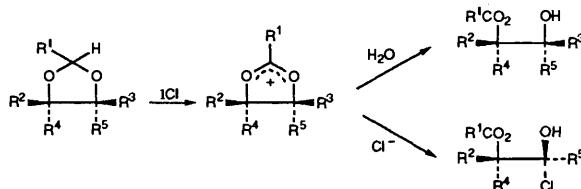
2171 Anchimeric assistance in the specific acid-catalysed hydration of benzonitriles



Richard M. Smyth and Andrew Williams

Anchimeric assistance by a neighbouring amido carbonyl increases the acid-catalysed hydration rate of a nitrile by a factor of 25 000

2175 Reactions of 1,3-dioxolanes with iodine monochloride: formation of chlorohydrin esters and diol monoesters

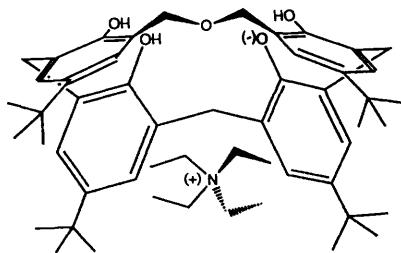


Beverley D. Glass, André Goosen and Cedric W. McCleland

Dioxolanes react with ICl to form either diol monoesters (stereoselectively) or chlorohydrin esters (stereo- and regioselectively), depending on the reaction conditions

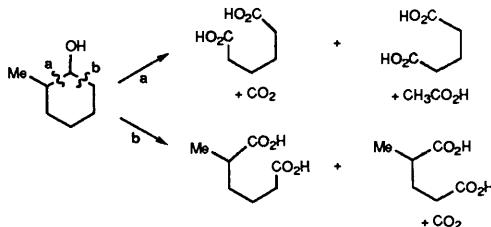
2183 Cation-calixarene interactions: tetraalkylammonium cation binding by calixarene anions

Jack M. Harrowfield, Mark I. Ogden, William R. Richmond, Brian W. Skelton and Allan H. White



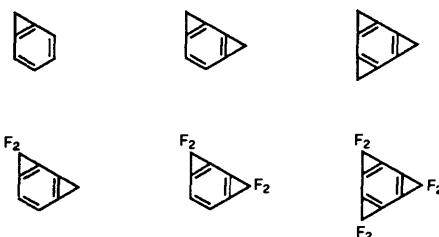
2191 Oxidation of α -substituted cyclohexanols by nitric acid

John R. Lindsay Smith, C. Barry Thomas and Mark Whittaker



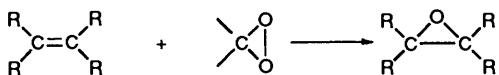
2195 Fluorination effect on the structural properties of selected benzocyclopropenes

Wolfram Koch, Mirjana Eckert-Maksić and Zvonimir B. Maksić



2203 Dioxirane chemistry. Part 23. The effect of solvent on the dimethyldioxirane epoxidation reaction

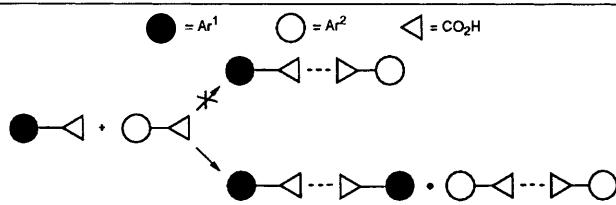
Robert W. Murray and Daquan Gu



The rate of epoxidation of alkenes by dimethyldioxirane is increased by hydrogen bond donor solvents

2209 Molecular recognition involving an interplay of O-H . . . O, C-H . . . O and π . . . π interactions. The anomalous crystal structure of the 1:1 complex 3,5-dinitrobenzoic acid -4-(*N,N*-dimethylamino)benzoic acid

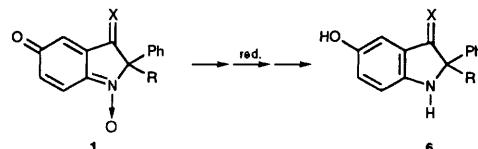
C. V. Krishnamohan Sharma, Kaliyamoorthy Panneerselvam, Tullio Pilati and Gautam R. Desiraju



The interplay of O-H . . . O, C-H . . . O and π - π interactions causes the formation of the unusual homodimer structure for the pair of title benzoic acids instead of the expected heterodimer

2217 Chemical and electrochemical reduction of 2*H*-indole-3,5-dione and -dione 3-imine *N*-oxides

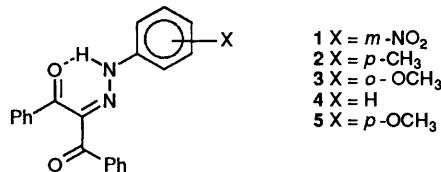
Patricia Carloni, Elisabetta Damiani, Lucedio Greci, Pierluigi Stipa, Angelo Alberti, Massimo Benaglia, Giancarlo Marrosu, Rita Petrucci and Antonio Trazza



A series of *N*-oxides (1) was reduced either chemically or electrochemically affording the corresponding 5-hydroxyindoles (6)

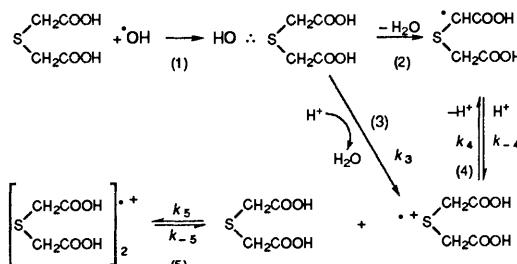
2223 Intramolecular N-H . . . O hydrogen bonding assisted by resonance. Part 2. Intercorrelation between structural and spectroscopic parameters for five 1,3-diketone arylhydrazones derived from dibenzoylmethane

Valerio Bertolasi, Valeria Ferretti, Paola Gilli, Gastone Gilli, Y. M. Issa and O. E. Sherif



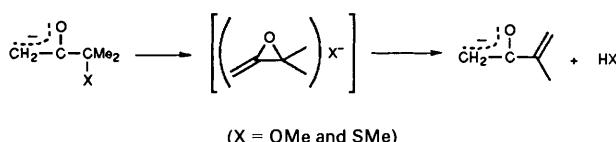
2229 Electron transfer reactions of 2,2'-thiodiethanoic acid in aqueous solutions: a pulse radiolysis study

Dilip K. Maity and Hari Mohan



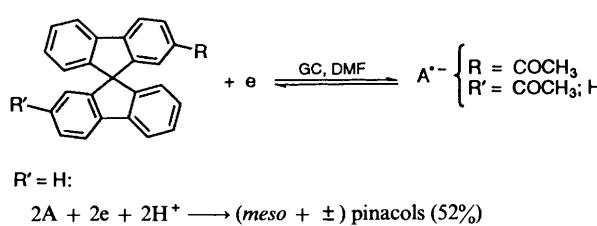
2235 Rearrangement reactions of deprotonated α -substituted ketones in the gas phase

Suresh Dua, Alan P. Pollnitz and John H. Bowie



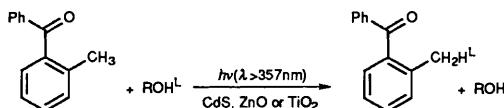
2243 Electrochemistry of 9,9'-spirobifluorene derivatives: 2-acetyl- and 2,2'-diacetyl-9,9'-spirobifluorene. Preparation of stereoisomeric 2,3-bis(9,9'-spirobifluoren-2-yl)butane-2,3-diols

Leonardo Mattiello and Liliana Rampazzo



2249 Hydrogen isotope exchange in *ortho*-alkyl phenyl ketones mediated by illuminated semiconductor powders

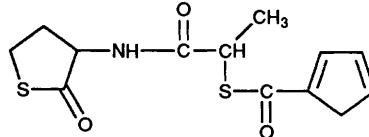
Jacek Michalak and Jerzy Gębicki



R = Me, Prⁱ
H^L = deuterium or tritium

2253 Crystal structure and NMR investigation of the serine proteinase inhibitor MR889, a cyclic thiolic compound

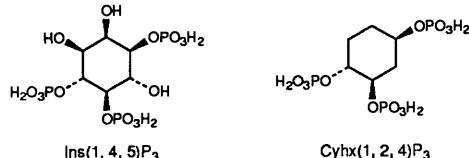
Menico Rizzi, Elena Casale, Paolo Ascenzi, Mauro Fasano, Silvio Aime, Concetta La Rosa, Maurizio Luisetti and Martino Bolognesi



Serine proteinase inhibitor MR889

2257 *myo*-Inositol 1,4,5-triphosphate and related compounds' protonation sequence: potentiometric and ³¹P NMR studies

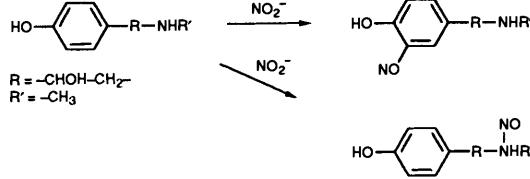
Laurent Schmitt, Patrick Bortmann, Gilbert Schlewer and B. Spiess



³¹P NMR shows the importance of phosphate interactions and the presence of the hydroxy groups on the ionization state of *myo*-inositol 1,4,5-triphosphate and analogues

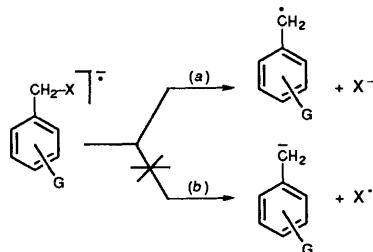
2265 Simultaneous C- and N-nitrosation of synephrine. A kinetic study

M. P. Fernández-Liencres, F. Carazo, M. C. Cabeza, B. Quintero, J. Thomas and J. M. Alvarez



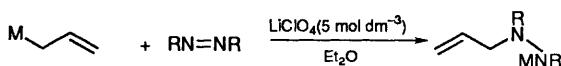
2275 Homolytic bond dissociation energies of the carbon–halogen bonds in the benzyl halide radical anion intermediates formed in radical nucleophilic substitution reactions

Xian-Man Zhang



2281 Catalysis of ene reactions by lithium perchlorate

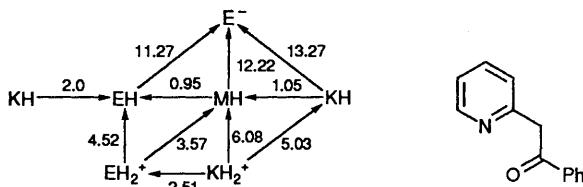
Alwyn G. Davies and Wojciech J. Kinart



Lithium perchlorate catalyses the hydrogen-ene reaction of allyl-hydrogen compounds (M = H), and the metallo-ene reaction of allyl-tin compounds (M = SnR₃) with azo-compounds

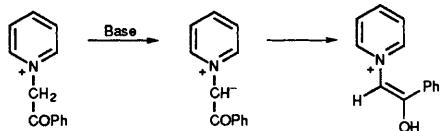
2285 Keto-enol and imine-enamine tautomerism of 2-, 3- and 4-phenacylpyridines

A. R. Edwin Carey, Stephen Eustace, Rory A. More O'Ferrall and Brian A. Murray



2297 Keto-enol tautomerism and ionisation of 1-phenacylpyridinium ions: a model for carbanion-stabilisation of azomethine ylides

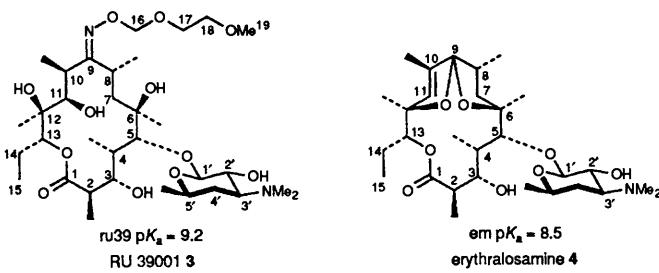
A. R. Edwin Carey, Rory A. More O'Ferrall and Brian A. Murray



An azomethine ylide intermediate relates keto-enol tautomerism of 1-phenacylpyridinium ion to catalysis by pyridoxal

2303 Conformational analysis of major metabolites of macrolide antibiotics roxithromycin and erythromycin A with different biological properties by NMR spectroscopy and molecular dynamics

Josyane Gharbi-Benarous, Patrick Ladam, Marcel Delaforge and Jean-Pierre Girault



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NOTE: An asterisk in the heading of each paper indicates the author who is to receive any correspondence.

