GRAPHICAL ABSTRACTS
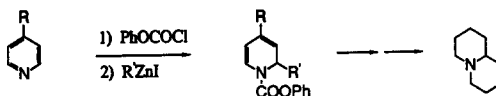
THE ADDITION OF ALKYLZINC IODIDES TO 1-(PHENOXYCARBONYL)-
PYRIDINIUM SALTS

Daniel L. Comins* and Sean O'Connor
Department of Chemistry and Biochemistry, Utah State University, Logan, Utah 84322-0300

Alkylzinc iodides add to 1-(phenoxycarbonyl)pyridinium salts to give 1-acyldihydropyridines.

α-LITHIO TRIMETHYLSILYLMETHYL LITHIUM CARBONATE

AS METHANOL DIANION SYNTHON. A ONE-POT SYNTHESIS OF α-HYDROXY KETONES.

Alan R. Katritzky and Saumitra Sengupta, Department of Chemistry, University
of Florida, Gainesville, FL 32611. USA

$$Me_3SiCH_2OH \longrightarrow Me_3SiCH_2\text{-}OCO_2Li \ (1) \xrightarrow{\text{i) s-BuLi, ii) RCOX}} RCO\text{-}CH_2\text{-}OH$$
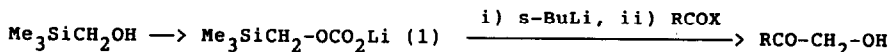
α-Lithiation (with s-BuLi) of trimethylsilylmethyl lithium carbonate (1)
provides a novel methanol dianion synthon which upon reaction with carbonyl
electrophiles gives α-hydroxy ketones in a one-pot sequence.

AN ANOMALOUS METALATION OF A TRIMETHYLSILYL GROUP

J. E. Macdonald* and G. S. Poindexter
Department of Cardiovascular Chemistry, Bristol-Myers Pharmaceutical R & D Division
2404 Pennsylvania Avenue, Evansville, IN 47721

Metalation of 4 followed by traping with electrophiles unexpectedly provided products
from metalation on the trimethylsilyl group.
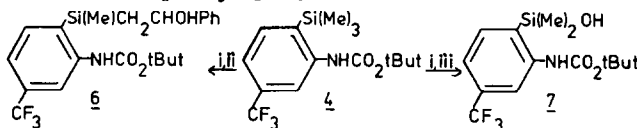
TANDEM CYCLOPROPANATION/COPE REARRANGEMENT SEQUENCE.
STEREOSPECIFIC [3 + 4] CYCLOADDITION REACTION OF VINYL
CARBENOIDS WITH CYCLOPENTADIENE

Huw M.L. Davies, H. David Smith and Osei Korkor
Department of Chemistry, Wake Forest University, Winston-Salem, NC 27109

Divinyl cyclopropane intermediates can be isolated from the [3 + 4] cycloaddition reaction
between rhodium(II) acetate-stabilized vinyl carbenoids and cyclopentadiene
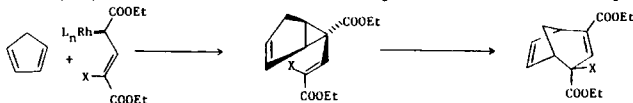
ACYCLIC STEREOCHEMICAL CONTROL USING HEXACARBONYL-
DICOBALT STABILIZED PROPARGYL CATIONS. A HIGHLY STEREO-
SELECTIVE ROUTE TO 1β-METHYLCARBAPENEM PRECURSORS.

J. Siva Prasad and Lanny S. Liebeskind*
Department of Chemistry, Emory University, Atlanta, GA 30322

Alkyne functionality on a β-lactam was used to generate a dicobalthexacarbonyl
stabilized propargyl cation for use in the synthesis of 1β-methylcarbapenem precursors.
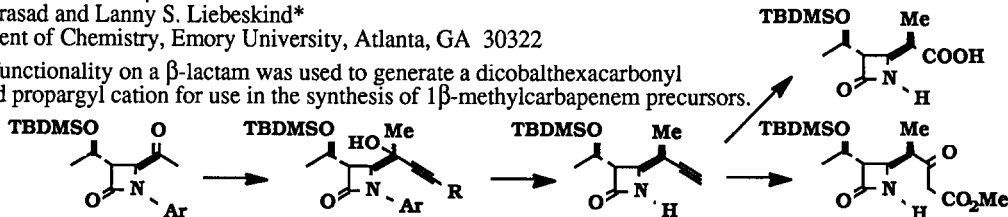
SYNTHESIS OF SUBSTITUTED 3-HYDROXY-4-ALKOXYCARBONYL-2-
AZETIDINONES

Teodozyj Kolasa and Marvin J. Miller
Department of Chemistry, University of Notre Dame, Notre Dame, IN 46556 USA

A short, efficient synthesis of optically active 3-hydroxy-4-alkoxycarbonyl-2-azetidinones (β-lactams) from tartaric acid is
described. No enzymatically mediated steps were required.
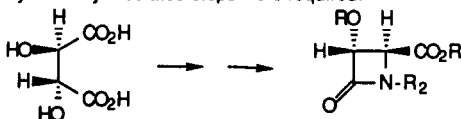
DIASTEREOSELECTIVE CYCLOPROPANATION VIA HOMOCHIRAL KETALS.
DIOXOLANE STRUCTURAL EFFECTS

Eugene A. Mash*, Keith A. Nelson, and Philip C. Heidt
Department of Chemistry, University of Arizona, Tucson, Arizona 85721

A series of 2-cyclohexen-1-one ethylene ketals was
subjected to Simmons–Smith cyclopropanation in an
effort to determine the dioxolane structural features
necessary for diastereoselection.
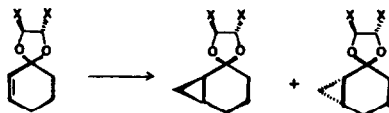
PHOTOINDUCED PARA-CYCLOADDITION OF PHTHALIMIDES

W.Schwack, Institute of Pharmacy and Food Chemistry, University of D-8700 Würzburg, FRG

N-Substituted phthalimides reacted with
cyclohexene. on irradiation at λ > 280 nm
by way of para-cycloaddition, yielding N-
substituted tricyclo(4.2.2.0)dodeca-8,11-
diene-9,10-dicarboximides. The N-(tri-
chloromethylthio)phthalimide gave the cyclo-
adduct as by-product, while for N-methyl-
and N-phenylphthalimide the para-cycload-
dition predominated.
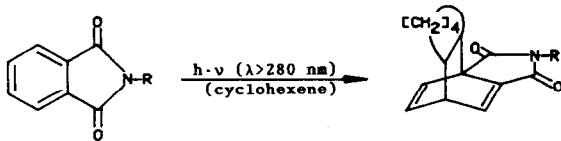
a: R= -SCCl$_3$; b: R= -CH$_3$; c: R= -C$_6$H$_5$

STEREOCONTROLLED SYNTHESIS OF D-α-HYDROXY CARBOXYLIC ACIDS FROM L-α-AMINO ACIDS

Horst Kunz and Hans-Georg Lerchen
Institut fuer Organische Chemie der Universitaet Mainz, F.R. Germany

The stereocontrolled transformation of L-amino acids into D-α-hydroxy carboxylic acids via L-α-halocarboxylic acid tert-butyl esters and their reactions with cesium p-nitrobenzoate is described.
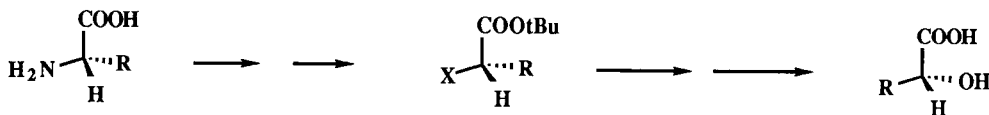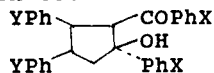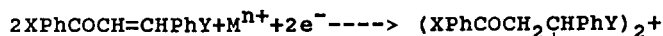
ELECTRO-HYDRODIMERISATION D'ENONES EN PRESENCE DE SELS METALLIQUES

J.Berthelot[*],C.Guette,F.Fournier et D.Davoust
Laboratoire de Chimie Organique Structurale,UA455,Université
P.et M.Curie,4 place Jussieu, 75230 Paris Cedex 05.

$$2XPhCOCH{=}CHPhY + M^{n+} + 2e^- ---> (XPhCOCH_2CHPhY)_2 +$$

Ia,b,c,d,e,f   IIa,b,c,d,e,f   IIIa,b,c,d,e,f

a)X=OMe,Y=H b)X=H,Y=OMe c)X=Me,Y=H, d)X=H,Y=Me e)X=Br,Y=H
f)X=H,Y=Cl. (X et Y toujours en para).

Electrochemical synthesis of tertiary phosphines from organic halides and chlorophosphines.

J.C. FOLEST, J.Y. NEDELEC and J. PERICHON.

Laboratoire d'Electrochimie, Catalyse et Synthèse Organique (U.M. 28), 2, rue Henri-Dunant, 94320 THIAIS (France).

The electroreduction of Ph_2PCl or $PhPCl_2$ in presence of alkyl halides in a one-compartment cell with a sacrificial Mg anode affords the corresponding mono- or dialkylated tertiary phosphines in good yields.
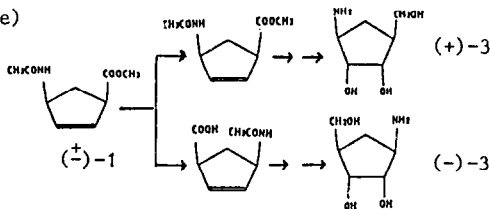
CHEMOENZYMATIC APPROACH TO CARBOCYCLIC ANALOGUES OF RIBONUCLEOSIDES AND NICOTINAMIDE RIBOSE.

Sames Sicsic, Mohamed Ikbal and François Le Goffic
CERCOA-CNRS 2, rue Henri Dunant 94320 Thiais (France)

A synthesis of (−)$\underline{3}$, an intermediate of carbocyclic analogue of ribonucleoside, after enzyme mediated resolution ($\overset{+}{-}$)-1.

STEREO- AND REGIOCONTROLLED CONSTRUCTION OF 3-ALKYL-*CIS*-BICYCLO[4.3.0]NON-3-ENE DERIVATIVES. AN EFFICIENT SYNTHESIS OF THE POTENT HOMOISOCARBACYCLIN ANALOG *

Atsuo Takahashi and Masakatsu Shibasaki
Sagami Chemical Research Center, Nishi-Ohnuma,
Sagamihara, Kanagawa 229, Japan

The efficient synthesis of the potent homoisocarbacyclin analogs 3 has been achieved by a general strategy (1 ⇒ 2 ⇒ 3).
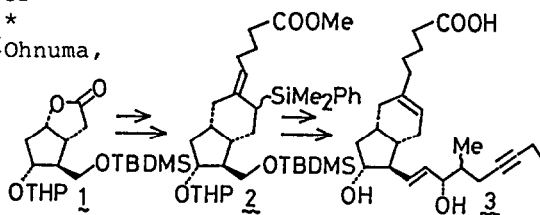

UMPOLUNG IN ALLYLIC PHOSPHONATES. REGIOSELECTIVE REACTION OF ACETOXY ALLYLIC PHOSPHOANTES WITH NUCLEOPHILES CATALYZED BY PALLADIUM(0) COMPLEX

Jingyang Zhu and Xiyan Lu*
Shanghai Institute of Organic Chemistry, Academia Sinica, Shanghai 200032, China

Vinylic phosphonates with functional groups can be synthesized regioselectively by the reaction of acetoxy allylic phosphonates with soft carbon nucleophiles in the presence of BSA under Pd(0) catalysis with moderate to good yields.
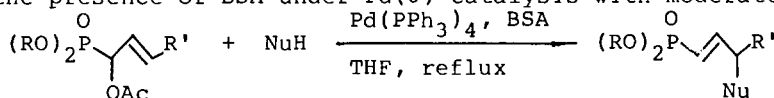
STRUCTURE OF ZEBRININ, A NOVEL ACYLATED ANTHOCYANIN ISOLATED FROM ZEBRINA PENDULA

Eiichi Idaka, Yoshiharu Ohashi, Toshihiko Ogawa,
Tadao Kondo*+ and Toshio Goto*++
Department of Chemistry, Faculty of Engineering, Gifu University,
Yanagido, Gifu 501-11, and +Chemical Instrument Center,
and ++Laboratory of Organic Chemistry, Faculty of
Agriculture; Nagoya University, Chikusa, Nagoya 464, Japan

Structure of zebrinin, a red-purple pigment, isolated from Zebrina pendula was determined as described.
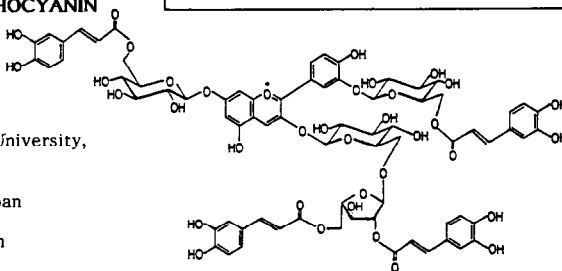
RUTHENIUM(II)-BINAP COMPLEX CATALYZED ASYMMETRIC HYDROGENATION OF UNSATURATED DICARBOXYLIC ACIDS

Hiroyuki Kawano, Youichi Ishii, Takao Ikariya, Masahiko Saburi,* Sadao Yoshikawa,
Yasuzo Uchida, and Hidenori Kumobayashi
Department of Industrial Chemistry, Faculty of Engineering, The University of Tokyo, Hongo,
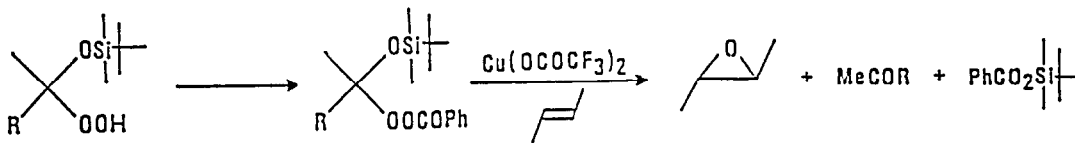Bunkyo-ku, Tokyo 113, Japan
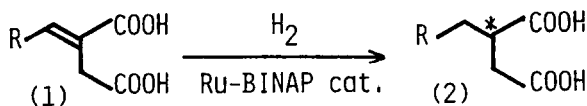
R = H, Ph, etc.   84-90% O.P.

INTER- AND INTRAMOLECULAR EPOXIDATION UTILIZING SILYL-
PROTECTED PEROXY ESTERS AND COPPER SALT

Isao Saito*, Takashi Mano, Ryu Nagata and Teruo Matsuura
Department of Synthetic Chemistry, Faculty of Engineering, Kyoto University, Kyoto 606, Japan
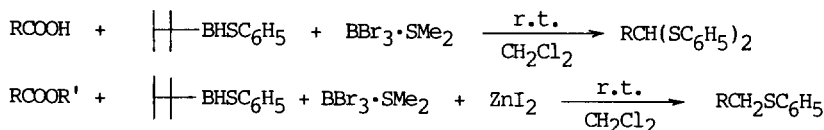

DIRECT CONVERSION OF CARBOXYLIC ACIDS AND CARBOXYLIC
ESTERS INTO S,S'-DIPHENYL ACETALS AND PHENYL SULFIDES
WITH THEXYLPHENYLTHIOBORANE

Sunggak Kim* and Sung Soo Kim
Department of CHemistry, Korea Advanced Institute of Science & Technology, Seoul 131, Korea

$$RCOOH + \left.\right|\left.\right|-BHSC_6H_5 + BBr_3 \cdot SMe_2 \xrightarrow[CH_2Cl_2]{r.t.} RCH(SC_6H_5)_2$$

$$RCOOR' + \left.\right|\left.\right|-BHSC_6H_5 + BBr_3 \cdot SMe_2 + ZnI_2 \xrightarrow[CH_2Cl_2]{r.t.} RCH_2SC_6H_5$$
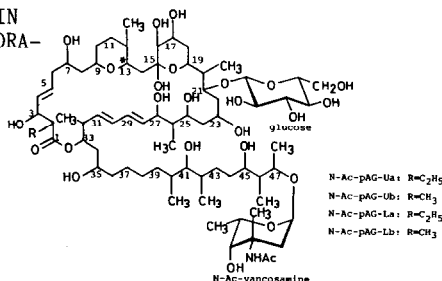

STRUCTURAL INVESTIGATION OF THE ANTIBIOTIC SPORAVIRIDIN
XII ISOLATION OF THE PSEUDOAGLYCONES FROM N-ACETYLSPORA-
VIRIDINS UNDER BASIC CONDITIONS

Ikumi Kimura, Kinjiro Yamamoto, Ken-ichi Harada and
Makoto Suzuki
Faculty of Pharmacy, Meijo University, Tempaku,
Nagoya 468, Japan

STRUCTURAL INVESTIGATION OF THE ANTIBIOTIC SPORAVIRIDIN
XIII THE TOTAL STRUCTURES OF N-ACETYLSPORAVIRIDINS

Ikumi Kimura, Yasushi Ota, Reiko Kimura, Tetsuya Ito,
Yoko Yamada, Yukio Kimura, Yumiko Sato, Hideyuki Watanabe,
Yuji Mori, Ken-ichi Harada and makoto Suzuki
Faculty of Pharmacy, Meijo University, Tempaku, Nagoya
468, Japan
Takashi Iwashita
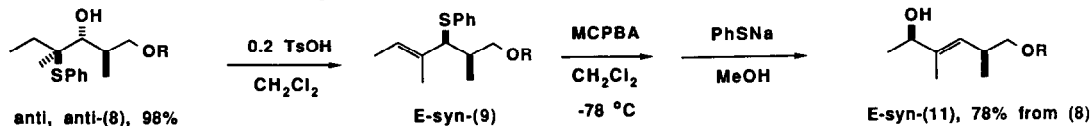Suntory Institute for Bioorganic research, Shimamoto-cho
Mishima-gun, Osaka 618, Japan
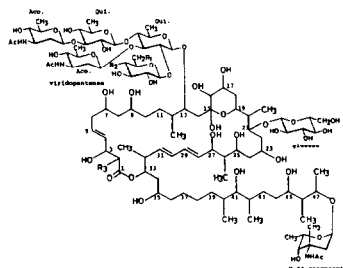
**SYNTHESIS OF COMPOUNDS WITH 1,4-RELATED CHIRAL CENTRES
BY PHENYLTHIO MIGRATION: SYN AND ANTI-E-2,4-DIMETHYL-
HEX-3-ENE-1,5-DIOL**, Varinder K. Aggarwal and Stuart Warren*
University Chemical Laboratory,Lensfield Road, Cambridge CB2 1EW.

Stereospecific PhS migration gave the syn title compound: the anti compound was made by
a Claisen-Ireland rearrangement.

anti, anti-(8), 98%   E-syn-(9)   -78 °C   E-syn-(11), 78% from (8)

0.2 TsOH / CH$_2$Cl$_2$

MCPBA / CH$_2$Cl$_2$ PhSNa / MeOH

PREPARATION OF ALKYL- AND PHENYL-SUBSTITUTED PYRIMIDINES
A.García Martínez,A.Herrera Fernández,R.Martínez Alvarez,E.Teso Vilar,A.García Fraile,J.Osío
Barcina,L.Pargada Iglesias.Depto.Química Orgánica,Fac.Ciencias Químicas,Universidad Complutense
Fac.Ciencias,UNED,Madrid,Spain.

2R^{3}CN   and/or
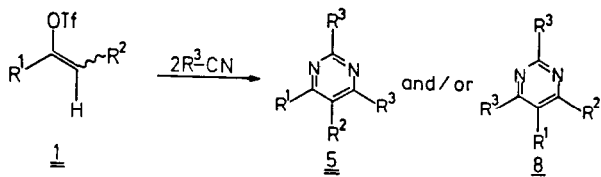
Vinyltriflates 1, which are obtained
easily from the corresponding ketones,
react in an excess of pure nitriles
(80°C/20h) to form substituted pyrimi-
dines 5-8 in good yields.

THE "OFF-TEMPLATE" PROBLEM: SYNTHESIS AND ALKYLATION OF A FUSED-BUTYROLACTONE FROM D-GLUCOSE

William W.Wood* and Abdul Rashid

Department of Chemistry, University of Sheffield, Sheffield S3 7HF. U.K.

The synthesis of a fused-butyrolactone from D-glucose and its stereospecific alkylation in an
off-template position is described, together with an unusual silyl protecting group
migration.

Wittig   +

ONLY, R = TBDMS   1:3, R = TBDPS
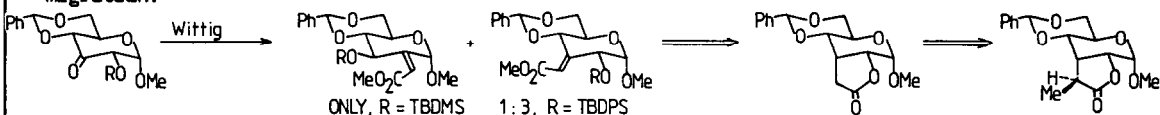
**INTRAANNULAR FUNCTIONALIZATION OF MACROCYCLIC POLYETHERS VIA ORGANOLITHIUM
CHEMISTRY; X-RAY STRUCTURE OF 2-SULFINYL-1,3-XYLYL-15-CROWN-4**

Maria Skowronska-Ptasinska,[a] Pieter Telleman,[a] Veronika M.L.J. Aarts,[a] Peter D.J. Grootenhuis,[a] Johan van Eerden,[b]
Sybolt Harkema,[b] and David N. Reinhoudt;[a,*] Laboratories of Organic Chemistry[a] and Chemical Physics,[b]
University of Twente, P.O. Box 217, 7500 AE Enschede, The Netherlands

n-BuLi / THF   1.E / 2 H$^+$,H$_2$O

n = 0-6   E = SO$_2$, CO$_2$
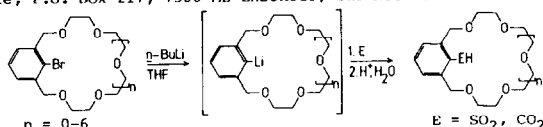
PHOTOCHEMICAL OXIDATION AND AUTOXIDATION OF SOME CYCLOALKANES PROMOTED BY CERIC AMMONIUM NITRATE IN ACETONITRILE
E. Baciocchi[a*], T. Del Giacco[b], and G.V. Sebastiani[b], Dip. di Chimica, Università di Roma[a] and Perugia[b], Italy.

The oxidation and autoxidation of some cycloalkanes in MeCN, at room temperature, are photochemically promoted by ceric ammonium nitrate (CAN), both processes being particularly efficient and selective with adamantane.

85%   5%   5%   1) CAN,O$_2$,hν CAN,hν 91%   9%
                                      2) KI

(X = ONO$_2$,NHCOCH$_3$)
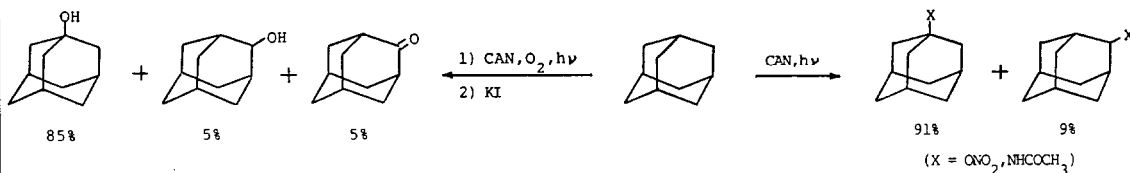
N,N-DIMETHYLPHOSPHORAMIDIC DICHLORIDE : A CONVENIENT REAGENT FOR THE PREPARATION OF β-LACTAMS FROM ACETIC ACIDS AND IMINES

Fernando P. Cossío, Iñaki Ganboa, Jesús M. García, Begoña Lecea and C. Palomo[*]
Departamento de Química Orgánica. Facultad de Ciencias Químicas. Universidad del Pais Vasco. Ap. 1072. 20080 San Sebastián. Spain.

Synthesis of functionalized β-lactams from acetic acids and imines is described. This approach was applied to the preparation of α-keto- β-lactams and 4-acetonyl- β -lactams

i: Me$_2$NPCl$_2$,NEt$_3$
CH$_2$Cl$_2$, r.t.,24 h
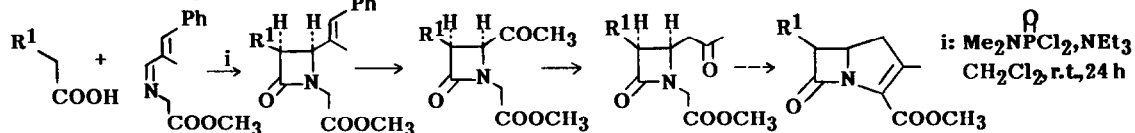
NEW ROUTES TO HETEROCYCLES VIA SULPHENYLATION OF UNSATURATED AMIDES

Zakaria K.M. Abd El Samii, Mohamed I. Al Ashmawy and
John M. Mellor*
Department of Chemistry, The University, Southampton, SO9 5NH.

Cyclosulphenylation of unsaturated amides is described.

RSSR / Mn^{3+} or   or