Synthesis

Reviews and Full Papers in Chemical Synthesis

2022
Vol. 54, No. 2
January II

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Cover Image: B. Wei, P. Knochel

Synthesis **2022**, *54*, 217–245
DOI: 10.1055/a-1526-8160

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N.D. Zelinsky Institute of Organic Chemistry, Russian Federation
University of Greenwich, UK
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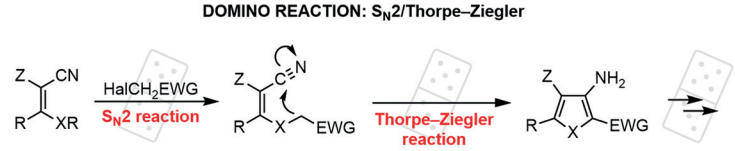

Synthesis **2022**, *54*, 246–254
DOI: 10.1055/a-1589-0150

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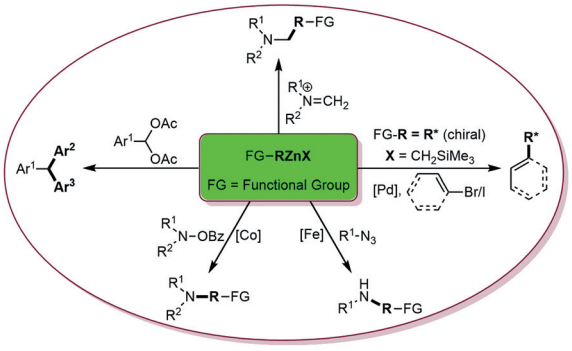

Synthesis

Strategies for the Synthesis of Selenocysteine Derivatives

Short Review

255

Synthesis **2022**, *54*, 255–270
DOI: 10.1055/a-1588-9763

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A. Avenoza
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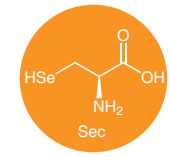
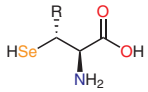
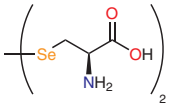


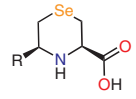


R = Me: SeThr
R = ^{i}Pr: (β-Se)Leu
R = Ph: (β-Se)Phe
R = CO_2H: (β-Se)Asp

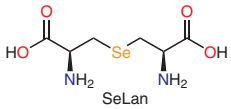
R = All: ASec
R = Me: SeMeSec
R = Ph: SePhSec
R = $CH_2CH_2NH_2$: SeLys
R = α-GalNAc: *Se*Tn antigen



selenocystine



selenomorpholines



SeLan

Synthesis

Asymmetric Synthesis of P-Stereogenic Secondary Phosphine Oxides (SPOs)

Short Review

271

Synthesis **2022**, *54*, 271–280
DOI: 10.1055/a-1582-0169

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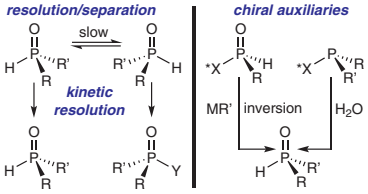
Dartmouth College, USA



Synthesis

Nickel-Catalyzed Paired Electrochemical Cross-Coupling of Aryl Halides with Nucleophiles

Short Review

281

Synthesis **2022**, *54*, 281–294
DOI: 10.1055/a-1581-0934

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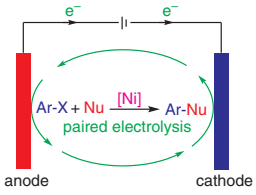
National Institute of Biological
Sciences, Beijing, P. R. of China



Synthesis

Transition Metal Complex Catalyzed Photo- and Electrochemical (De)hydrogenations Involving C=O and C=N Bonds

Short Review

295

Synthesis **2022**, *54*, 295–314
DOI: 10.1055/a-1645-3254

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K.-T. Kuessner
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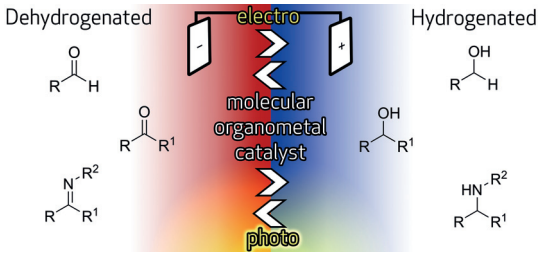

Synthesis

α-Csp^3–H Bond Functionalization of Simple Ethers in Radical Reactions

Short Review

315

Synthesis **2022**, *54*, 315–333
DOI: 10.1055/a-1631-1606

Y. Feng
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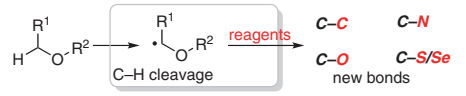

reagents = alkenes, alkynes, isocyanides, isocyanates, 5-nitrosoisoxazoles, arenes, aldehydes, ketones, imines, isoquinolines, enols, azides, NH, OH, SH, etc.

Synthesis

Late-Stage C–H Arylation of Azepinoindole via Pd/Cu Catalysis: A Step Efficient and Convergent Synthesis of Rucaparib

Feature

334

Synthesis **2022**, *54*, 334–340
DOI: 10.1055/s-0037-1610784

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G. O'Rourke
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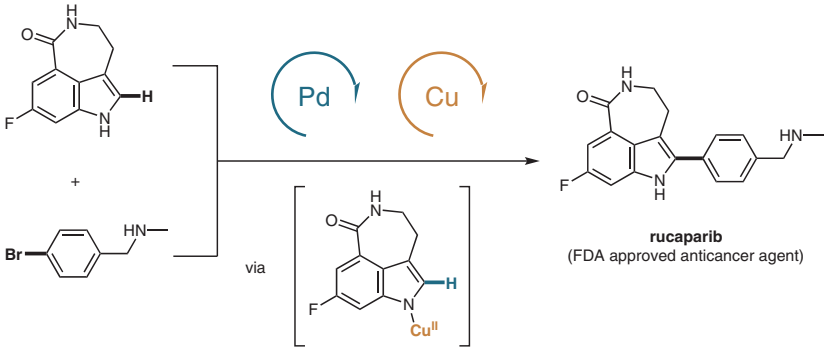
KU Leuven, Belgium



rucaparib
(FDA approved anticancer agent)

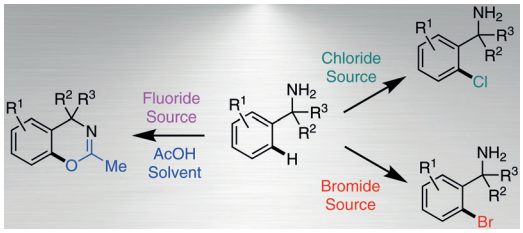
Synthesis

Synthesis **2022**, *54*, 341–354
DOI: 10.1055/a-1625-9095

P. Chand-Thakuri
I. Alahakoon
D. Liu
M. Kapoor
J. F. Kennedy
K. W. Jenkins, III
A. M. Rabon
M. C. Young*
The University of Toledo, USA

Native Amine-Directed *ortho*-C–H Halogenation and Acetoxylation /Condensation of Benzylamines

Feature



Synthesis

Synthesis **2022**, *54*, 355–368
DOI: 10.1055/a-1638-2478

A. El-Tunsi
N. Carter
S.-H. Yeo
J. D. Priest
A. Choi
C. M. Kobras
S. Ndlovu
I. Proietti Silvestri
A. K. Fenton
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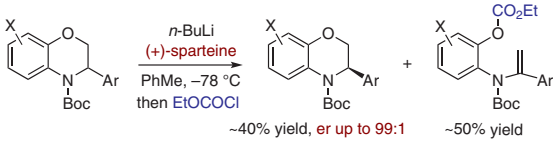
Kinetic Resolution by Lithiation: Highly Enantioselective Synthesis of Substituted Dihydrobenzoxazines and Tetrahydroquinoxalines

Feature



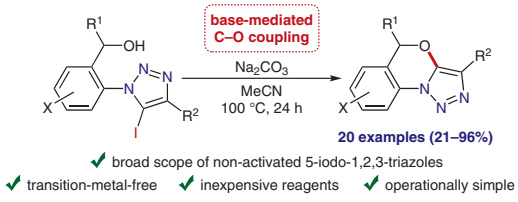
Synthesis

Synthesis **2022**, *54*, 369–377
DOI: 10.1055/a-1623-2333

S. S. Tatevosyan
Y. N. Kotovshchikov*
G. V. Latyshev
N. V. Lukashev
I. P. Beletskaya
M. V. Lomonosov Moscow State University, Russian Federation

Facile Access to Triazole-Fused 3,1-Benzoxazines Enabled by Metal-Free Base-Promoted Intramolecular C–O Coupling

Feature



Synthesis

A Straightforward, Purification-Free Procedure for the Synthesis of Ando and Still–Gennari Type Phosphonates

PSP

378

Synthesis **2022**, *54*, 378–382
DOI: 10.1055/a-1628-7586

I. Janicki*
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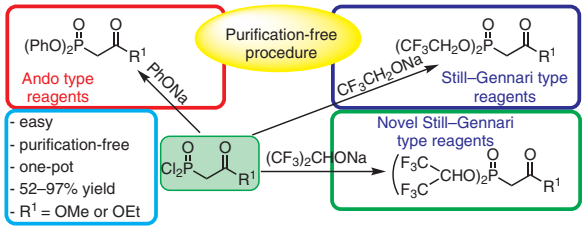

Synthesis

Oxidative Intramolecular C–C Bond Formation Reactions of 1,2-Diarylbenzenes: Syntheses of Highly Conjugated Double-Bridged Polycyclic Aromatic Hydrocarbons

Paper

383

Synthesis **2022**, *54*, 383–392
DOI: 10.1055/a-1560-4791

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T. Nishinaga
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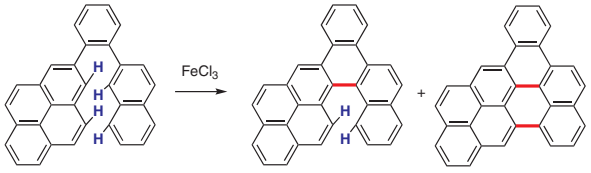

Synthesis

A Domino Heck Coupling–Cyclization–Dehydrogenative Strategy for the One-Pot Synthesis of Quinolines

Paper

393

Synthesis **2022**, *54*, 393–402
DOI: 10.1055/a-1589-7548

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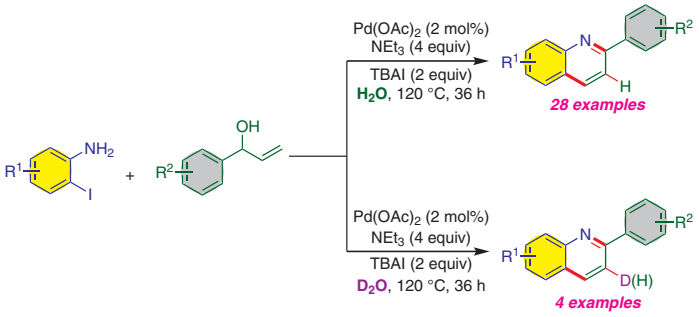


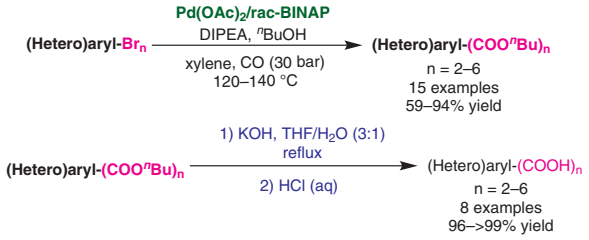
Synthesis

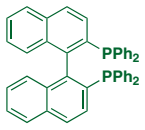
Synthesis **2022**, *54*, 403–410
DOI: 10.1055/a-1587-8859

W. Wu
Y. Jing
D. Zhang
X. Yan
R. Liang
Z. Lu
B. Ji*

Luoyang Normal University, P. R. of China

Palladium-Catalyzed Butoxycarbonylation of Polybromo(hetero)arenes: A Practical Method for the Preparation of (Hetero)arenepolycarboxylates and -carboxylic Acids





rac-BINAP

Synthesis

Synthesis **2022**, *54*, 411–420
DOI: 10.1055/s-0040-1719833

D. Zhang
J. Zhang
X. Li
Z. Yu
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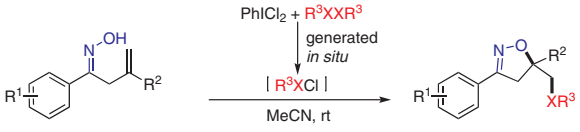
Hebei University of Science and Technology, P. R. of China

Intramolecular Chalcogenylation of Isooxazolines Mediated by $PhICl_2$ and Diorganyl Disulfides or Diselenides



R^1 = H, F, Br, Me, CF_3, ^{i}Pr
R^2 = aryl, alkyl, H
X = S, Se

32 examples
up to 94% yield

Synthesis

Synthesis **2022**, *54*, 421–428
DOI: 10.1055/a-1643-8526

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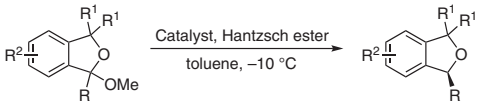
Enantioselective Transfer Hydrogenation of Oxocarbenium Ions Enables Asymmetric Access to α-Substituted 1,3-Dihydroisobenzofurans



R = aryl, alkynyl

20 examples
up to 96% yield
up to 98% ee

Synthesis

Synthesis **2022**, *54*, 429–438
DOI: 10.1055/a-1625-9538

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X. Tang*
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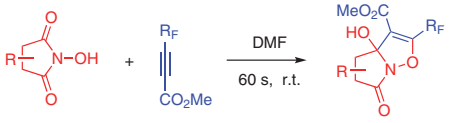
Shanghai Institute of Organic Chemistry, P. R. of China

A Catalyst-Free Synthesis of Fused Perfluoroalkylated 2,3-Dihydroisoxazoles via Oxa-Michael-Aldol Annulation



19 examples, up to 97% yield

Synthesis

Synthesis **2022**, *54*, 439–450
DOI: 10.1055/s-0040-1719837

M. Mittersteiner
E. C. Aquino
T. Budragchaa
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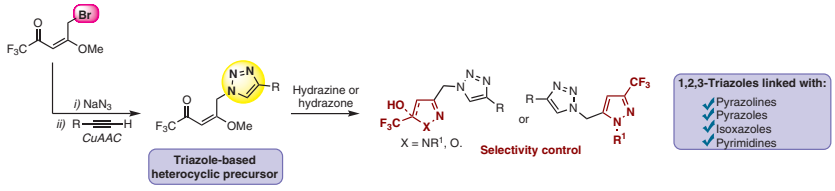
Universidade Federal de Santa Maria, Brazil

Synthesis of Methylene-Bridged Trifluoromethyl Azoles Using 5-(1,2,3-Triazol-1-yl)enones



Synthesis

Synthesis **2022**, *54*, 451–464
DOI: 10.1055/a-1624-2176

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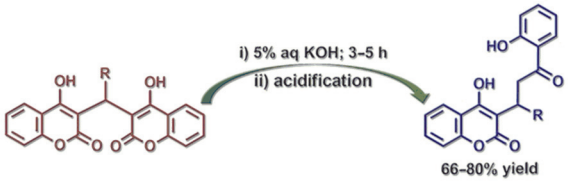
Facile and Straightforward Synthesis of Racemic Version of Substituted 3-[3-(2-Hydroxyphenyl)-3-oxo-1-arylpropyl]-4-hydroxycoumarins: Easy Access to a Series of Biorelevant Warfarin Analogues



- ✓ operationally simple
- ✓ water as solvent
- ✓ no column chromatography
- ✓ clean reaction profiles
- ✓ warfarin analogues
- ✓ good to excellent yields
- ✓ gram-scale applications
- ✓ green synthesis

Synthesis

Synthesis **2022**, *54*, 465–474
DOI: 10.1055/a-1628-7972

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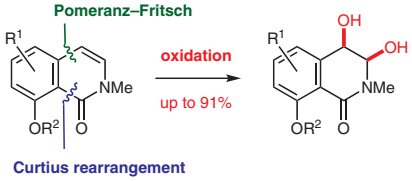
Dihydroxylation Studies of Isoquinolinones: Synthesis of the EF-Ring of Lysolipin I

Paper
465



Synthesis

Synthesis **2022**, *54*, 475–482
DOI: 10.1055/a-1645-6040

X.-L. Xia
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J.-Q. Chen
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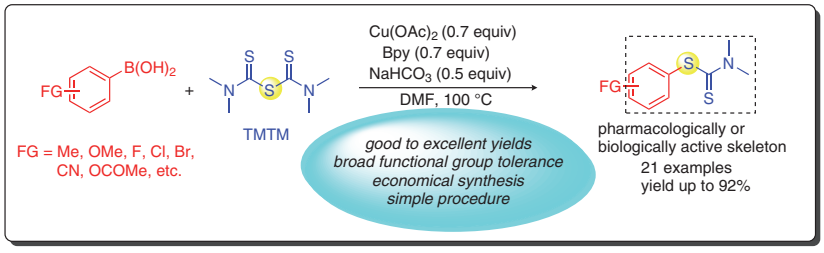
Synthesis of Aryl Dithiocarbamates from Tetramethylthiuram Monosulfide (TMTM) and Aryl Boronic Acids: Copper-Catalyzed Construction of C(sp²)–S Bonds

Paper
475



Synthesis

Synthesis **2022**, *54*, 483–489
DOI: 10.1055/s-0040-1719832

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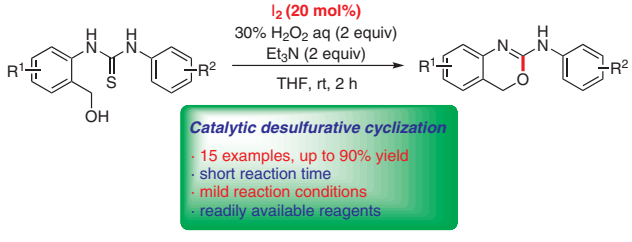
A Facile Synthesis of 2-Aminobenzoxazines Based on Iodine-Catalyzed Desulfurative Cyclization

Paper
483



Synthesis

Synthesis **2022**, *54*, 490–498
DOI: 10.1055/a-1592-6394

J. He
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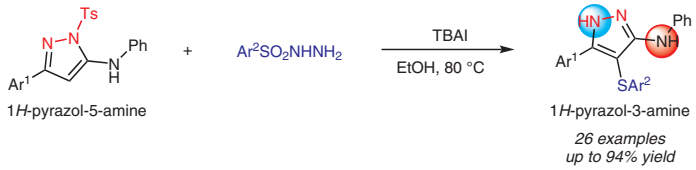
Tetrabutylammonium Iodide Mediated Sulfenylation of Polysubstituted 1*H*-Pyrazol-5-amines with Arylsulfonyl Hydrazides

Paper



Synthesis

Synthesis **2022**, *54*, 499–505
DOI: 10.1055/a-1561-5557

Y.-H. Ma*
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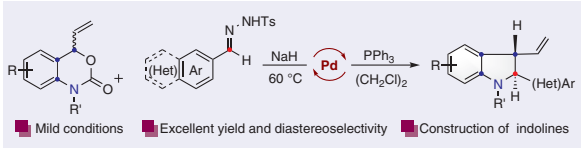
R.-N. Wang
Y.-X. Fan
Q.-Q. Su
J.-Y. Du*
Liaocheng University,
P. R. of China

Diastereoselective Palladium-Catalyzed [4+1] Cycloadditions of 4-Vinyl-1,4-dihydro-2*H*-3,1-benzoxazin-2-ones with In Situ Formed Carbenes

Paper



Synthesis

Synthesis **2022**, *54*, 506–516
DOI: 10.1055/a-1643-7642

I. B. Krylov
S. A. Paveliev
A. S. Budnikov
O. O. Segida
V. M. Merkulova
V. A. Vil'
G. I. Nikishin
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Hidden Reactivity of Barbituric and Meldrum's Acids: Atom-Efficient Free-Radical C–O Coupling with *N*-Hydroxy Compounds

Paper