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ChemInform

Number 35/2013 August

Inorganic Chemistry

Physical Properties of Solids and Liquids

Structure
D 2000

DOI: 10.1002/chin.201335001

35- 001

The New Hg-Rich Barium Indium Mercurides BaIn$_x$Hg$_{7-x}$ (x = 3.1) and BaIn$_x$Hg$_{11-x}$ (x = 0—2.8) Synthesis, Crystal and Electronic Structure. — The title compounds BaIn$_{3.1}$Hg$_{3.9}$ (x = 3.1) (I) and BaIn$_x$Hg$_{11-x}$ (x = 0—2.8) (II) are prepared from stoichiometric mixtures of the elements (Ta crucible, 825 K, cooling rate of 5 K/h). (I) crystallizes with a new structure type in the orthorhombic space group Cmmm (Z = 2). The In and Hg atoms form planar nets of four-, six-, and eight-membered rings. BaIn$_{2.8}$Hg$_{8.2}$ (cubic, space group Pm$\bar{3}$m, Z = 3) is the border compound of the phase width of (II) and shows a rare BaHg$_{11}$ type structure. For both structure types, the bonding situation and the In/Hg distribution of the polyanionic network are discussed considering the different sizes of the atoms and the charge distribution (Bader AIM charges) which are calculated within the framework of FP-LAPW density functional theory. — (WENDORFF, M.; SCHWARZ, M.; ROEHR*, C.; J. Solid State Chem. 203 (2013) 297-303, http://dx.doi.org/10.1016/j.jssc.2013.04.042 ; Inst. Anorg. Anal. Chem., Albert-Ludwigs-Univ., D-79104 Freiburg/Br., Germany; Eng.) — J. Schramke

Structure
D 2000

DOI: 10.1002/chin.201335002

35- 002

Synthesis and Crystal Structures of the Alkali Aluminum Thiohypodiphosphates M^{I}AlP$_2$S$_6$ (M: Li, Na). — LiAlP$_2$S$_6$ (I) and NaAlP$_2$S$_6$ (II) are prepared by solid state reaction of stoichiometric amounts of Na or Li$_2$S, Al, P, and S (evacuated quartz ampules, 10023 K, 1 d). (II) crystallizes in the orthorhombic space group Fdd2 (Z = 8, single crystal XRD) and is isostructural with AgAlP$_2$S$_6$ due to the similar ionic radii of Na and Ag. In contrast, (I) (monoclinic space group C2/c, Z = 4) crystallizes with a different layered structure type which has not been observed in the large number of thiohypodiphosphates reported so far. — (KUHN, A.; EGER, R.; NUSS, J.; LOTSCH*, B. V.; Z. Anorg. Allg. Chem. 639 (2013) 7, 1087-1089, http://dx.doi.org/10.1002/zaac.201300214 ; MPI Festkoerperforsch., D-70569 Stuttgart, Germany; Eng.) — J. Schramke

Structure
D 2000

DOI: 10.1002/chin.201335003

35- 003

From One to Three Dimensions: Corrugated $_\infty^1$[NiGe] Ribbons as a Building Block in Alkaline Earth Metal Ae/Ni/Ge Phases with Crystal Structure and Chemical Bonding in AeNiGe (Ae: Mg, Sr, Ba). — MgNiGe (I), SrNiGe (II), and BaNiGe (III) are synthesized from equimolar ratios of the elements (sealed Ta tubes, 1. 950 °C, 0.5 h, 2. 600 °C, 1 h, quenching). Powder and single crystal XRD show that (I) crystallizes in the TiNiSi-type structure (space group Pnma, Z = 4) and (II) and (III) are isotypic and crystallize in the anti-SnFCl type structure (space group Pnma, Z = 4). The increase of the cation size leads to a reduction of the dimensionality of the [NiGe] polyanions. In the structure of (I), Ni and Ge atoms build a $_\infty^3$[NiGe] network with Mg in the channels. In (II) and (III) the $_\infty^1$[NiGe] ribbons are separated by Sr/Ba atoms. The crystal chemistry and chemical bonding in the series MNiGe (M: Mg, Ca, Sr, Ba) are discussed. — (HLUKHYY, V.; SIGGELKOW, L.; FAESSLER*, T. F.; Inorg. Chem. 52 (2013) 12, 6905-6915, http://dx.doi.org/10.1021/ic302681t ; Dep. Chem., TU Muenchen, D-85747 Garching, Germany; Eng.) — J. Schramke

Structure
D 2000

DOI: 10.1002/chin.201335004

35- 004

Crystal Growth and Real Structure Effects of the First Weak 3D Stacked Topological Insulator $Bi_{14}Rh_3I_9$. — Microcrystalline $Bi_{14}Rh_3I_9$ is obtained by annealing a mixture of Bi, Rh, and BiI_3 in the molar ratio of 11:3:3 (evacuated silica ampule, 365 °C, 3 d; 97% yield). Larger crystals are obtained by rapidly heating the mixture to 700 °C (cooling to 420 °C with 4 K/min, slow cooling to 365 °C with 1 K/h, quenching). The compound features decorated-honeycomb $[(Bi_4Rh)_3I^{2+}]$ sheets with topologically protected electronic edge-states. XRD and HRTEM studies of the crystal structure, its pseudosymmetry, and the stacking disorder and twinning phenomena shows that $Bi_{14}Rh_3I_9$ is a stable, structurally well-defined bulk material which can be used for gaining experimental knowledge about the yet poorly investigated class of weak three-dimensional topological insulators. — (RASCHE, B.; ISAEVA, A.; GERISCH, A.; KAISER, M.; VAN DEN BROEK, W.; KOCH, C. T.; KAISER, U.; RUCK*, M.; Chem. Mater. 25 (2013) 11, 2359-2364, http://dx.doi.org/10.1021/cm4010823 ; TU Dresden, D-01069 Dresden, Germany; Eng.) — J. Schramke

Structure
D 2000

DOI: 10.1002/chin.201335005

35- 005

Penikisite, $BaMg_2Al_2(PO_4)_3(OH)_3$, Isostructural with Bjarebyite. — Single crystal XRD of naturally occurring single crystals of the title compound (Mayo Mining District, Yukon Territory, Canada) show penikisite to be monoclinic and isotypic with other members of the bjarebyite group with space group $P2_1/m$ (Z = 2). Its structure contains dimers of edge-shared AlO_6 octahedra interconnected via corners to form chains along [010]. These chains are decorated with PO_4 tetrahedra and connected along [100] via dimers of edge-shared MgO_6 octahedra and 11-coordinated Ba^{2+} ions, resulting in a complex three-dimensional network. — (BOWMAN*, M. G.; DOWNS, R. T.; YANG, H.; Acta Crystallogr., Sect. E: Struct. Rep. Online 69 (2013) 2, i4, http://dx.doi.org/10.1107/S1600536812051793 ; Dep. Geosci., Univ. Ariz., Tucson, AZ 85721, USA; Eng.) — J. Schramke

Structure
D 2000

DOI: 10.1002/chin.201335006

35- 006

Schaurteite, $Ca_3Ge(SO_4)_2(OH)_6{\cdot}3H_2O$. — Single crystal XRD results reveal that the naturally occurring title mineral (Tsumeb, Otavi Mountains, Namibia) crystallizes in the hexagonal space group $P6_3/mmc$ with Z = 2. The structure exhibits slabs of $Ca(O,OH,H_2O)_8$ polyhedra (site symmetry mm2) interleaved with a mixed layer of $Ge(OH)_6$ octahedra and SO_4 tetrahedra. Two H atoms in the asymmetric unit, both located by full-matrix refinement, form O-H···O hydrogen bonds. — (ORIGLIERI*, M. J.; DOWNS, R. T.; Acta Crystallogr., Sect. E: Struct. Rep. Online 69 (2013) 2, i6, http://dx.doi.org/10.1107/S1600536812050945 ; Dep. Geosci., Univ. Ariz., Tucson, AZ 85721, USA; Eng.) — J. Schramke

Structure
D 2000

DOI: 10.1002/chin.201335007

35- 007

Pirquitasite, Ag_2ZnSnS_4. — Single crystal XRD of a twinned crystal of the title mineral (specimens from Pirquitas deposit, Jujuy Province, Argentina) shows anisotropic displacement parameters for all atoms and a measured composition of $(Ag_{1.87}Cu_{0.13})(Zn_{0.61}Fe_{0.36}Cd_{0.03})SnS_4$. The compound crystallizes in the tetragonal space group $I\bar{4}$ with Z = 2. — (SCHUMER*, B. N.; DOWNS, R. T.; DOMANIK, K. J.; ANDRADE, M. B.; ORIGLIERI, M. J.; Acta Crystallogr., Sect. E: Struct. Rep. Online 69 (2013) 2, i8-i9, http://dx.doi.org/10.1107/S1600536813001013 ; Dep. Geosci., Univ. Ariz., Tucson, AZ 85721, USA; Eng.) — J. Schramke

Structure
D 2000

DOI: 10.1002/chin.201335008

35- 008

Dihydronium Tetrachromate (VI), $(H_3O)_2Cr_4O_{13}$. — Single crystals of $(H_3O)_2Cr_4O_{13}$ are obtained from an aqueous mother liquor containing $Na_2Cr_2O_7$, CrO_3, $AgClO_4$, and theobromine in HNO_3 after 6 months. Single crystal XRD of racemically twinned crystals (monoclinic, space group Pc, Z = 2) show that the finite tetrachromate anion consists of four vertex-sharing CrO_4 tetrahedra and exhibits a typical zigzag arrangement. The crystal packing is stabilized by hydrogen bonds between these anions and hydronium cations. The two different hydronium cations are surrounded by nine O atoms of tetrachromate anions with O—O distances in the range 2.866—3.282 Å. — (KULIKOV, V.; MEYER*, G.; Acta Crystallogr., Sect. E: Struct. Rep. Online 69 (2013) 2, i13, http://dx.doi.org/10.1107/S1600536813001608 ; Inst. Anorg. Chem., Univ. Koeln, D-50939 Koeln, Germany; Eng.) — J. Schramke

Optical properties
D 6000

DOI: 10.1002/chin.201335009

35- 009

New Metal Chalcogenides $Ba_4CuGa_5Q_{12}$ (Q: S, Se) Displaying Strong Infrared Nonlinear Optical Response. — $Ba_4CuGa_5S_{12}$ (I), $Ba_4CuGa_5(S_{0.75}Se_{0.25})_{12}$ (II), and $Ba_4CuGa_5Se_{12}$ (III) are prepared by melting of the elements in a KBr flux (1. 750 °C, 1 d, 2. 600 °C, 2 d). The compounds are isostructural and crystallize in the noncentrosymmetric space group $P\bar{4}2_1c$ with Z = 2 (single crystal XRD). The three-dimensional framework of (I) consists of infinite ${}_{\infty}^{1}[CuGa_4S_{10}^{7-}]$ columns that surround the discrete GaS_4 tetrahedra. Compounds (I)—(III) are transparent in the mid-IR range and have absorption edges at 2.82, 2.05, and 1.45 eV, respectively. The new nonlinear optical materials are type-I non-phasematchable at 693 nm and display strong second harmonic generation intensities that are ≈2.7, ≈2.6, and ≈1.1 times that of $AgGaSe_2$ at 808 nm. Raman spectroscopic characterizations are given. — (KUO, S.-M.; CHANG, Y.-M.; CHUNG, I.; JANG, J.-I.; HER, B.-H.; YANG, S.-H.; KETTERSON, J. B.; KANATZIDIS, M. G.; HSU*, K.-F.; Chem. Mater. 25 (2013) 12, 2427-2433, http://dx.doi.org/10.1021/cm400311v ; Dep. Chem., Natl. Cheng Kung Univ., Tainan 70101, Taiwan; Eng.) — J. Schramke

Electric properties
D 8000
DOI: 10.1002/chin.201335010

35- 010

Solution-Phase Synthesis of Highly Conductive Tungsten Diselenide Nanosheets. — WSe_2 nanosheets are prepared by injecting tBu_2Se_2 into a solution of WCl_4 in dodecylamine at 150 °C (N_2 atmosphere, heating to 225 °C, 6 h, quenching). Tetra-n-octylammonium bromide is added to prevent agglomeration and the final product is dispersed in tetramethylurea and 1,2-dichlorobenzene forming a stable colloidal suspension (90% yield). Preferential sheet alignment along [001] is shown in XRD data of as-prepared and annealed (475 °C) thin WSe_2 films prepared by drop casting. Two-point conductivity measurements for unannealed and annealed samples yield 0.6 and 92 S/cm, respectively. — (ANTUNEZ, P. D.; WEBBER, D. H.; BRUTCHEY*, R. L.; Chem. Mater. 25 (2013) 12, 2385-2387, http://dx.doi.org/10.1021/cm400790z ; Dep. Chem., Univ. South. Calif., Los Angeles, CA 90089, USA; Eng.) — J. Schramke

Electric properties
D 8000
DOI: 10.1002/chin.201335011

35- 011

Synthesis, Structure, and Properties of Turbostratically Disordered $(PbSe)_{1.18}(TiSe_2)_2$. — The title compound is prepared by annealing (350 °C, N_2) a system of 28 repetitions of sputtered layer sequences of Ti-Se-Ti-Se-Pb-Se. The structure of $(PbSe)_{1.18}(TiSe_2)_2$ consists of an intergrowth between one distorted rock salt structured PbSe bilayer and two transition metal dichalcogenide structured Se-Ti-Se trilayers. In addition to the lattice mismatch, extensive rotational disorder between these constituents is observed. The electrical resistivity of $(PbSe)_{1.18}(TiSe_2)_2$ is a factor of 9 lower at room temperature, and the Seebeck coefficient is almost twice of that reported for the crystalline misfit layered compound analogue. — (MOORE, D. B.; BEEKMAN, M.; DISCH, S.; ZSCHACK, P.; HAEUSLER, I.; NEUMANN, W.; JOHNSON*, D. C.; Chem. Mater. 25 (2013) 12, 2404-2409, http://dx.doi.org/10.1021/cm400090f ; Dep. Chem., Univ. Oreg., Eugene, OR 97403, USA; Eng.) — J. Schramke

Magnetic properties
D 9000
DOI: 10.1002/chin.201335012

35- 012

Cation, Vacancy, and Spin Ordered 15R-Superstructures in $Sr(Cr_{1-x}Fe_x)O_{3-y}$ ($0.4 \le x \le 0.6$) Perovskites. — $Sr(Cr_{1-x}Fe_x)O_{3-y}$ perovskites ($0.2 \le x \le 0.8$) are prepared by solid state reaction of stoichiometric mixtures of $SrCO_3$, Fe_2O_3, and Cr_2O_3 (argon atmosphere, 1200 °C, 24 h, quenching in liquid N_2). 15-Layer rhombohedral (15R) $SrCrO_{2.8}$-type superstructures are discovered in $Sr(Cr_{1-x}Fe_x)O_{3-y}$ perovskites between $0.4 \le x \le 0.6$ (space group $R\bar{3}m$, powder XRD). Cr/Fe cations are segregated between layers of tetrahedrally and octahedrally coordinated sites. The 15R-$Sr(Cr_{1-x}Fe_x)O_{3-y}$ materials are semiconducting and order ferrimagnetically below 225—342 K. The magnetic structure of an $x = 0.5$ sample shows spin canting consistent with a simple spin disorder model. Samples with $x \geq 0.7$ have a disordered cubic perovskite structure. — (AREVALO-LOPEZ, A. M.; SHER, F.; FARNHAM, J.; WATSON, A. J.; ATTFIELD*, J. P.; Chem. Mater. 25 (2013) 11, 2346-2351, http://dx.doi.org/10.1021/cm401062u ; Cent. Sci. Extreme Cond., Sch. Chem., Univ. Edinburgh, Edinburgh EH9 3JZ, UK; Eng.) — J. Schramke

Magnetic properties
D 9000

DOI: 10.1002/chin.201335013

35- 013

Room Temperature Magnetic Rare-Earth Iron Garnet Thin Films with Ordered Mesoporous Structure. — Highly crystalline thin films of lanthanoid Fe garnet ($Ln_3Fe_5O_{12}$, Ln: Y, Gd, Tb, Dy) with cubic networks of interconnected pores (average 17 nm in diameter) are prepared through facile polymer (poly-ω-hydroxypoly(ethylene-co-butylene)-co-poly(ethylene oxide)) templating of hydrated nitrate salts in methoxyethanol and EtOH. Dip-coating of a polar substrate is followed by drying and heating (1. 300 °C 6 h, 2. 830—900 °C for polymer removal). Characterization of the morphology, microstructure, and magnetic properties of polymer-templated $Y_3Fe_5O_{12}$ is given. This novel mesoporous material is of single phase after heating to 900 °C, free of major structural defects, and also well-defined on the atomic level. The high quality of the nanocrystalline $Y_3Fe_5O_{12}$ thin films with overall soft magnetic properties and moderate anisotropy is further confirmed by SQUID measurements. The magnetization behavior in the temperature range 5—380 K is well described by Bloch's $T^{3/2}$ law for a 3D Heisenberg-type ferromagnet. — (SUCHOMSKI*, C.; REITZ, C.; SOUSA, C. T.; ARAUJO, J. P.; BREZESINSKI, T.; Chem. Mater. 25 (2013) 12, 2527-2537, http://dx.doi.org/10.1021/cm400999b ; Inst. Nanotech., Forschungszent. Karlsruhe, D-76344 Eggenstein, Germany; Eng.) — J. Schramke

Chemical Thermodynamics, Equilibria

Equilibria
E 4000

DOI: 10.1002/chin.201335014

35- 014

Observation of the Sixth Polymorph of BiB_3O_6: In situ High-Pressure Raman Spectroscopy and Synchrotron X-Ray Diffraction Studies on the β-Polymorph. — A pressure-induced phase transition from β-BiB_3O_6 to a new polymorph, ζ-BiB_3O_6 between 11.5 and 18.5 GPa is identified by the combination of in situ Raman spectroscopy and synchrotron XRD. Above 20.2 GPa, β-BiB_3O_6 completely transforms irreversibly to ζ-BiB_3O_6. It is speculated that the new polymorph possesses a layered structure with an orthorhombic unit cell. — (CONG, R.; YANG*, T.; SUN, J.; WANG, Y.; LIN, J.; Inorg. Chem. 52 (2013) 13, 7460-7466, http://dx.doi.org/10.1021/ic400268p ; Coll. Chem. Chem. Eng., Chongqing Univ., Chongqing, Sichuan 400044, Peop. Rep. China; Eng.) — W. Pewestorf

Equilibria
E 4000

DOI: 10.1002/chin.201335015

35- 015

Effect of Defects in the Formation of AlB_2-Type WB_2 and MoB_2. — First-principles DFT calculations indicate that boron defects are responsible for the difference in synthesizability of the title compounds. AlB_2-type MoB_2 is stabilized with some boron defects added, while AlB_2-type WB_2 is only minimally stabilized, suggesting it may actually not exist. Attempts to synthesize AlB_2-type WB_2 with the optimum quantity of boron defects are unsuccessful. It is concluded that AlB_2-type WB_2 does not exist as stable phase in the W—B phase diagram. The compound produced in a previous report might have contained some impurities. — (HAYAMI*, W.; MOMOZAWA, A.; OTANI, S.; Inorg. Chem. 52 (2013) 13, 7573-7577, http://dx.doi.org/10.1021/ic400587j ; Natl. Inst. Mater. Sci., Nanoscale Mater. Cent., Ibaraki, Tsukuba 305, Japan; Eng.) — W. Pewestorf

Electrochemistry

Electrodes
F 3000

DOI: 10.1002/chin.201335016

35- 016

Titanium(III) Sulfate as New Negative Electrode for Sodium-Ion Batteries. — $Ti_2(SO_4)_3$ is prepared by treatment of Ti metal powder with conc. H_2SO_4 at 170 °C (2 d). Powder XRD data are indexed according to the orthorhombic $Fe_2(SO_4)_3$ system (space group $R\overline{3}$, Z = 6). Na electrochemical intercalation is performed in a Swagelok cell using Na as the counter electrode, borosilicate fabrics soaked in $NaClO_4$ as separators and the title compound milled with 30% of graphite as working electrode. Electrons exchanged per mol of $Ti_2(SO_4)_3$ reach a maximum of 3.7 with increasing milling time, but only values of ≤ 1.7 show reversible behavior making the material a promising candidate for negative electrodes in Na ion cells. — (SENGUTTUVAN, P.; ROUSSE, G.; VEZIN, H.; TARASCON, J.-M.; PALACIN*, M. R.; Chem. Mater. 25 (2013) 12, 2391-2393, http://dx.doi.org/10.1021/cm401181b ; Inst. Cienc. Mater., CSIC, Univ. Auton. Barcelona, Bellaterra, E-08193 Barcelona, Spain; Eng.) — J. Schramke

Preparative Inorganic Chemistry

Strontium
I 1400

DOI: 10.1002/chin.201335017

35- 017

Synthesis and Characterization of Strontium Chloroborate Whiskers. — Single crystalline $Sr_2B_5O_9Cl$ whiskers with uniform diameter are precipitated with $SrCl_2$ from aqueous $Na_2B_4O_7$ solutions followed by evaporation at 150 °C. A mixture of the obtained precursor and KCl is sintered at 700 °C for 8 h. The samples are characterized by powder XRD, SEM, TEM, and IR spectroscopy. The whiskers crystallize in the orthorhombic space group Pnn2 and the structure contains Sr^{2+} cations, Cl^{-}, and $B_5O_9^{3-}$ anions. The orthorhombic whiskers exhibit diameters in the range of 200—500 nm and lengths of 5—20 μm. — (ZHU, D.; YUN, S.; NAI, X.; ZHAO, D.; LIU, X.; LI*, W.; Cryst. Res. Technol. 48 (2013) 1, 6-10, http://dx.doi.org/10.1002/crat.201200332 ; Qinghai Inst. Salt Lakes, Chin. Acad. Sci., Xining 810008, Peop. Rep. China; Eng.) — W. Pewestorf

Aluminum
I 2100

DOI: 10.1002/chin.201335018

35- 018

Ammonothermal Synthesis and Crystal Structure of $BaAl_2(NH_2)_8{\cdot}2NH_3$. — $BaAl_2(NH_2)_8{\cdot}2NH_3$ is synthesized from Al_2Ba intermetallic phase, NH_3, and Al foil as substrate under ammonothermal conditions (autoclave, 823 K, 245 MPa; 700 h). Single crystals of the title compound grown on the substrate show a structure containing isolated $Al(NH_2)_4$-tetrahedra forming two different types of channels along [001] (space group $R\bar{3}c$, Z = 1). — (PUST, P.; SCHMIECHEN, S.; HINTZE, F.; SCHNICK*, W.; Z. Anorg. Allg. Chem. 639 (2013) 7, 1185-1187, http://dx.doi.org/10.1002/zaac.201300088 ; Lehrstuhl Anorg. Festkoerperchem., Ludwig-Maximilians-Univ., D-81377 Muenchen, Germany; Eng.) — J. Schramke

Germanium
I 4700

DOI: 10.1002/chin.201335019

35- 019

A Template-Free Solution Route for the Synthesis of Well-Formed One--Dimensional Zn_2GeO_4 Nanocrystals and Its Photocatalytic Behavior. — Zn_2GeO_4 hexagonal nanorods are obtained via a surfactant and template-free hydrothermal reaction of a 2:1 mixture of $Zn(OAc)_2$ and GeO_2 in aq. NaOH solution (autoclave, 473 K, 12 h). Hexagonal nanofibers are prepared under the same conditions with 4-fold excess of NaOH. Polycrystalline samples are prepared by solid state reaction of a stoichiometric mixture of GeO_2 and ZnO (1473 K, 15 h). Prismatic Zn_2GeO_4 nanocrystals are both uniform single crystals with the longitudinal direction along [001] and dominated by (110) and $(\bar{1}\bar{1}0)$ surfaces. With increasing amounts of NaOH, the morphology transition from hexagonal nanorods to nanofibers is observed. Both Zn_2GeO_4 nanorods and nanofibers exhibit superior photocatalytic activities for the decomposition of a H_2O/MeOH solution to H_2 under UV irradiation with a maximum obtained with the nanofibers. — (LIANG, J.; CAO, Y.; LIN, H.; ZHANG, Z.; HUANG, C.; WANG*, X.; Inorg. Chem. 52 (2013) 12, 6916-6922, http://dx.doi.org/10.1021/ic302698z ; Res. Inst. Photocatal., Fuzhou Univ., Fuzhou 350002, Fujian, Peop. Rep. China; Eng.) — J. Schramke

Uranium
I 5900

DOI: 10.1002/chin.201335020

35- 020

Synthesis, Structure, and Spectroscopy of Two Ternary Uranium(IV) Thiophosphates: UP_2S_9 and UP_2S_7 Containing $P_2S_9^{2-}$ and $P_2S_7^{2-}$ Ligands. — UP_2S_9 (I) and UP_2S_7 (II) are prepared by solid state reaction of 1:1:2:1 mixtures of BaS, U, P_2S_5, and S or Li_2S, U, P_2S_5, and S, resp. (presence of Si for (II); evacuated silica tube, 500 °C, 5 d). The compounds are characterized by single crystal XRD, UV/VIS/NIR, and Raman spectroscopy. (I) crystallizes in the tetragonal space group $P4_2/mcm$ with Z = 2 and (II) in the orthorhombic space group Fddd with Z = 16.

The structures of both compounds contain $[US_6]^{8-}$ chains connected to each other by either $P_2S_9^{4-}$ or $P_2S_7^{4-}$ ions resulting in three-dimensional frameworks. The two compounds are semiconductors with nearly identical band gaps of 1.41 eV. — (BABO, J.-M.; JOUFFRET, L.; LIN, J.; VILLA, E. M.; ALBRECHT-SCHMITT*, T. E.; Inorg. Chem. 52 (2013) 13, 7747-7751, http://dx.doi.org/10.1021/ic400942r ; Dep. Chem. Biochem., Fla. State Univ., Tallahassee, FL 32306, USA; Eng.) — W. Pewestorf

Manganese
I 6800

DOI: 10.1002/chin.201335021

35- 021

A Ferrimagnetic Zintl Phase Pr_4MnSb_9: Synthesis, Structure, and Physical Properties. — The title compound is synthesized by solid state reaction of stoichiometric mixtures of the elements (sealed carbon-coated silica tube; 1373 K, 20 h). The compound is characterized by powder and single crystal XRD, magnetic measurements, electrical conductivity and Seebeck coefficient measurements, and TB-LMTO-ASA electronic structure calculations. Pr_4MnSb_9 crystallizes in the monoclinic space group C2/m with Z = 4. The polyanionic three-dimensional network contains Sb_5^{7-} ribbons that are joined by 6-fold coordinated Mn^{3+} cations, which also link Sb_3^{5-} ribbons. Pr^{3+} cations and single Sb^{3-} anions are located within the tunnels of the anionic framework. The compound shows ferrimagnetic and semimetallic behavior. — (CHEN, X.; SHEN, J.-N.; WU, L.-M.; CHEN*, L.; Inorg. Chem. 52 (2013) 13, 7441-7447, http://dx.doi.org/10.1021/ic400209x ; Key Lab. Optoelectron. Mater. Chem. Phys., Fujian Inst. Res. Struct. Matter, Chin. Acad. Sci., Fuzhou 350002, Fujian, Peop. Rep. China; Eng.) — W. Pewestorf

Rhenium
I 7000

DOI: 10.1002/chin.201335022

35- 022

Synthesis and Lewis Acid Properties of $(ReO_3F)_\infty$ and the X-Ray Crystal Structures of $(HF)_2ReO_3F\cdot HF$ and $[N(CH_3)_4]_2[\{ReO_3(\mu\text{-}F)\}_3(\mu_3\text{-}O)]\cdot CH_3CN$. — $(ReO_3F)_\infty$ (I) is prepared as a precursor by solvolysis of Re_2O_7 in anhydrous HF (aHF) followed by room temperature fluorination of the formed H_2O. The complex $(HF)_2ReO_3F\cdot HF$ is then obtained by dissolution of (I) in aHF at room temperature and is characterized by vibrational spectroscopy and single-crystal XRD at -173 °C (space group $P2_1/c$, Z = 4). The HF molecules are F-coordinated to Re representing the only known example of a HF complex with Re. $[\{ReO_3(\mu\text{-}F)\}_3(\mu_3\text{-}O)]^{2-}$ is obtained as its $[NMe_4]^+$ salt by the reaction of stoichiometric amounts of (I) and $[NMe_4]F$ in MeCN at -40 to -20 °C. The anion is structurally characterized in MeCN solution by ^{19}F NMR and the $[NMe_4]_2[\{ReO_3(\mu\text{-}F)\}_3(\mu_3\text{-}O)]\cdot MeCN$ crystals by Raman spectroscopy and single crystal XRD at -173 °C (space group $P2_1/c$, Z = 4). Structural parameters and vibrational frequencies of the $[\{MO_3(\mu\text{-}F)\}_3(\mu_3\text{-}O)]^{2-}$ and $[\{MO_3(\mu\text{-}F)\}_3(\mu_3\text{-}F)]^-$ anions (M: Re,Tc) are calculated using DFT and used to assign the Raman spectra. The crystal structures of the by-products $[NMe_4][ReO_4]$ and $KF\cdot 4HF$ (space groups Pbcm and $I4_1/a$, resp., both Z = 4) are also determined. — (IVANOVA, M. V.; KOECHNER, T.; MERCIER, H. P. A.; SCHROBILGEN*, G. J.; Inorg. Chem. 52 (2013) 12, 6806-6819, http://dx.doi.org/10.1021/ic302221y ; Dep. Chem., McMaster Univ., Hamilton, Ont. L8S 4M1, Can.; Eng.) — J. Schramke

Silver
I 7500

DOI: 10.1002/chin.201335023

35- 023

Synthesis and Crystal Structure Determination of $Ag_9FeS_{4.1}Te_{1.9}$, the First Example of an Iron Containing Argyrodite. — $Ag_9FeS_{4.1}Te_{1.9}$ is prepared by solid state reaction of stoichiometric amounts of the elements (evacuated quartz ampoule, 873 K, 2 weeks). The compound crystallizes in the space group $F\bar{4}3m$ (Z = 4, powder XRD at 293 K) and shows a reversible phase transition to space group $P2_13$ upon cooling (Z = 4, single crystal XRD at 200 K). A phase transition temperature of 232 K with an enthalpy of 7.9 kJ/mol is determined by DSC measurements. The title compound is the first example of an Fe containing argyrodite-type material with Fe^{3+} located in tetrahedral sites. Silver atoms are disordered at room temperature which is taken into account by nonharmonic refinement of the silver positions. $Ag_9FeS_{4.1}Te_{1.9}$ exhibits remarkable silver ion conductivity. Magnetic susceptibility measurements reveal that the compound is paramagnetic down to the Neel temperature of 22.1 K. Antiferromagnetic ordering is observed at lower temperatures. — (FRANK, D.; GERKE, B.; EUL, M.; POETTGEN, R.; PFITZNER*, A.; Chem. Mater. 25 (2013) 11, 2339-2345, http://dx.doi.org/10.1021/cm401057u ; Inst. Anorg. Chem., Univ. Regensburg, D-93053 Regensburg, Germany; Eng.) — J. Schramke

Osmium
I 8100

DOI: 10.1002/chin.201335024

35- 024

Nb_2OsB_2, with a New Twofold Superstructure of the U_3Si_2 Type: Synthesis, Crystal Chemistry and Chemical Bonding. — The new title compound is synthesized by arc melting of the elements in a water-cooled Cu crucible under argon (ratio 7:6:8 for Nb:Os:B, 80% yield). Nb_2OsB_2 crystallizes as a new superstructure (space group P4/mnc, single crystal XRD) of the tetragonal U_3Si_2 structure type. All of the B atoms are involved in B_2 dumbbells with a B—B distance of 1.89 Å. Structure relaxation using VASP (Vienna ab initio Simulation Package) confirms the space group and the lattice parameters. According to electronic structure calculations (TB-LMTO-ASA), the homoatomic B—B interactions are very strong, but relatively strong heteroatomic Os—B, Nb—B, and Nb—Os bonds are also found and discussed as being responsible for the structural stability of this new phase. — (MBARKI, M.; TOUZANI, R. S.; FOKWA*, B. P. T.; J. Solid State Chem. 203 (2013) 304-309, http://dx.doi.org/10.1016/j.jssc.2013.04.018 ; Inst. Anorg. Chem., RWTH Aachen, D-52056 Aachen, Germany; Eng.) — J. Schramke

Preparative Organic Chemistry

Reactions and Processes

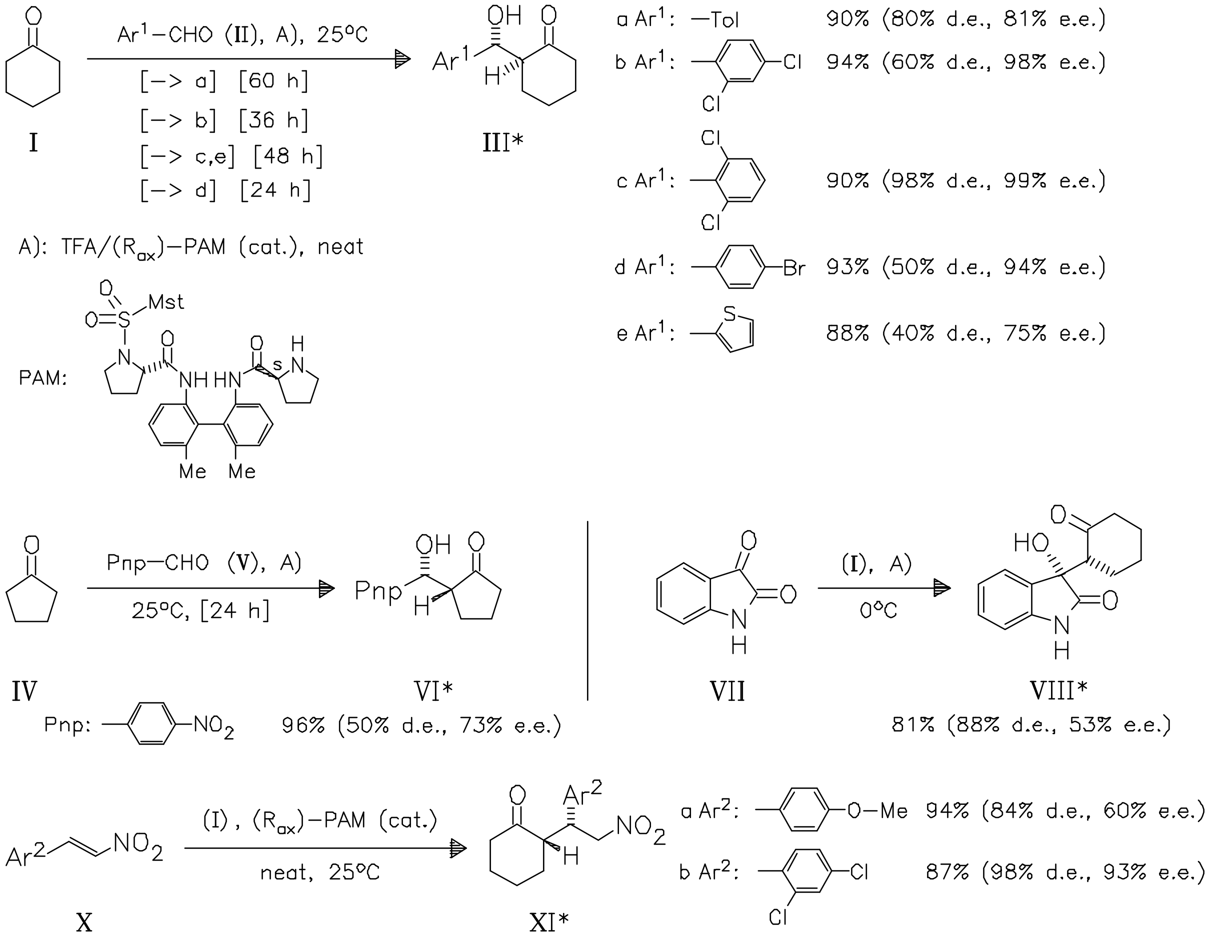
Enantioselective syntheses

O 0031

DOI: 10.1002/chin.201335025

35- 025

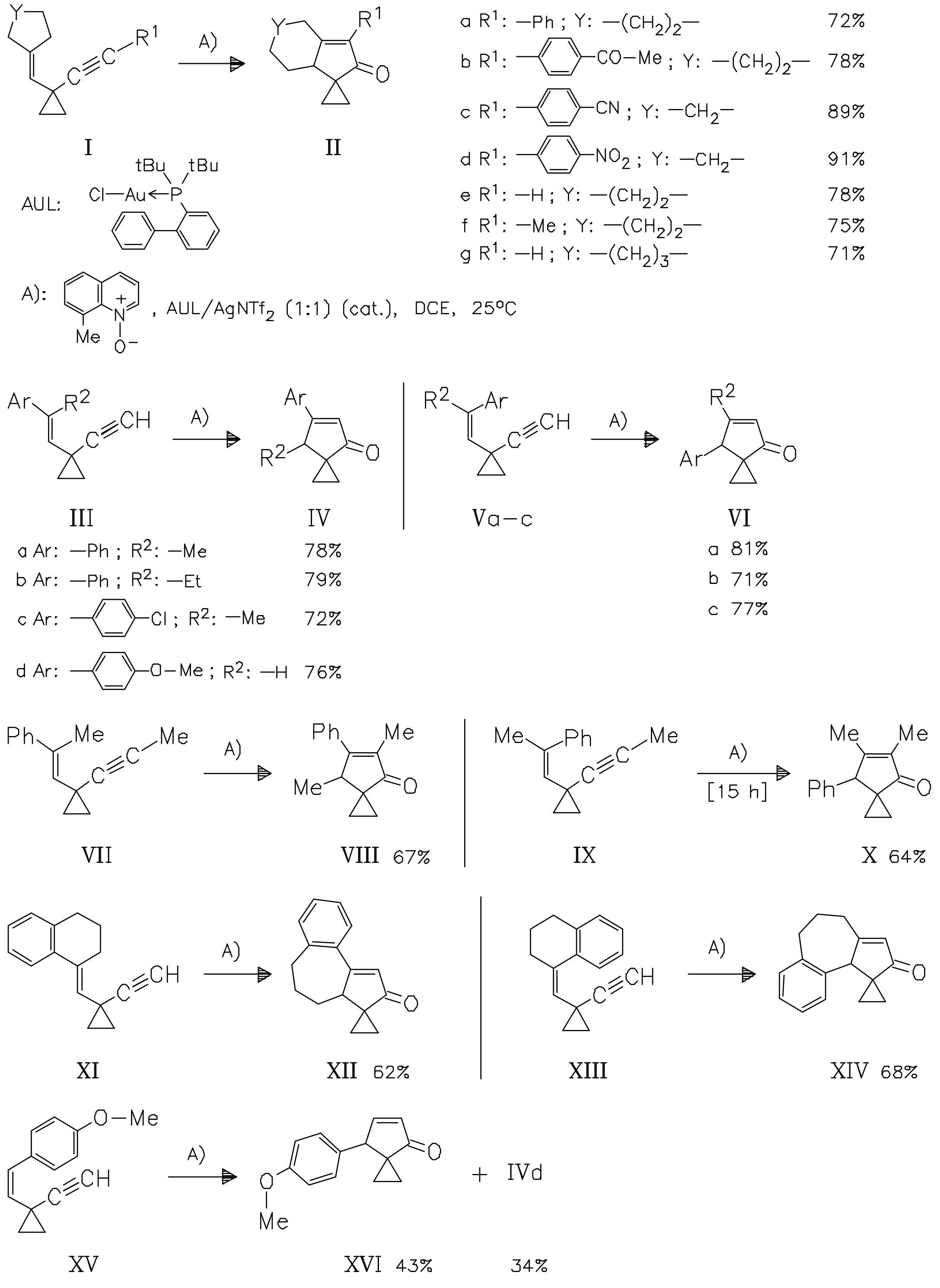
Highly Diastereo- and Enantioselective Direct Aldol Reaction under Solvent--Free Conditions. — The catalyst is also applied to nitro Michael reactions. — (ZHANG, F.; LI, C.; QI*, C.; Tetrahedron: Asymmetry 24 (2013) 7, 380-388, http://dx.doi.org/10.1016/j.tetasy.2013.02.013 ; Zhejiang Key Lab. Alternative Technol. Fine Chem. Process, Shaoxing Univ., Shaoxing 312000, Zhejiang, Peop. Rep. China; Eng.) — U. Scheffler



Ring closure reactions
O 0130

DOI: 10.1002/chin.201335026

35- 026 **Gold-Catalyzed Oxidative Cyclizations on 1,4-Enynes: Evidence for a γ-Substituent Effect on Wagner—Meerwein Rearrangements.** — (GHORPADE, S.; SU, M.-D.; LIU*, R.-S.; Angew. Chem., Int. Ed. 52 (2013) 15, 4229-4234, http://dx.doi.org/10.1002/anie.201210313 ; Dep. Chem., Natl. Tsing Hua Univ., Hsinchu 30043, Taiwan; Eng.) — M. Zastrow

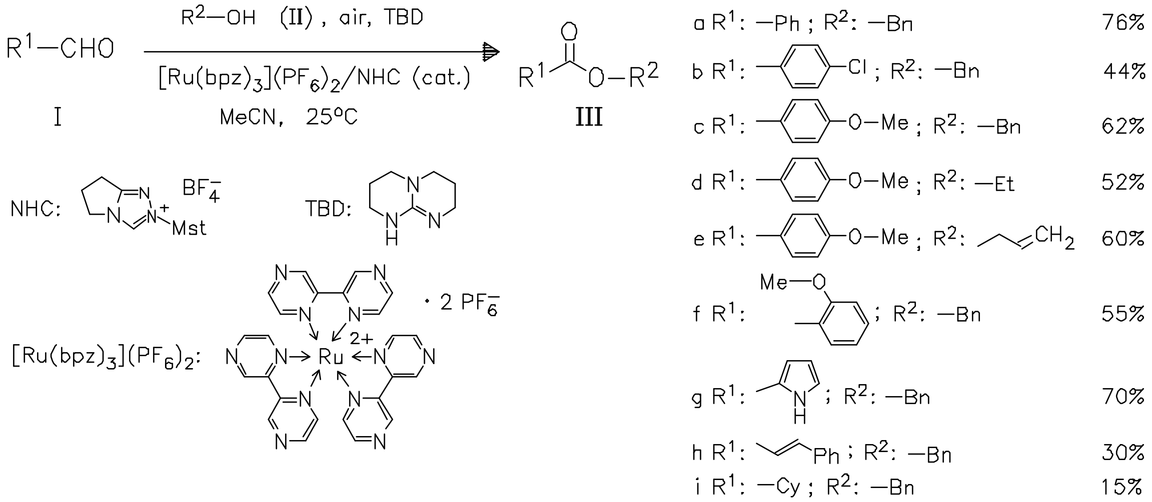


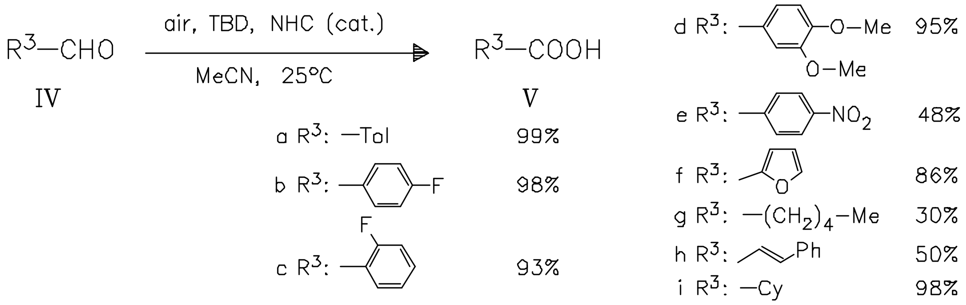
Oxidation
O 0212

DOI: 10.1002/chin.201335027

35- 027

Cooperative N-Heterocyclic Carbene (NHC) and Ruthenium Redox Catalysis: Oxidative Esterification of Aldehydes with Air as the Terminal Oxidant. — The cooperative NHC and Ru-based redox catalysis for the aerobic oxidative esterification of aldehydes (I) is described. The Ru(II)-complex is shown to be compatible with free NHCs. The NHC is used in these cascade reactions for the umpolung of the aldehyde to form the corresponding Breslow intermediate which in turn gets oxidized to an acylazolium ion by the Ru-redox catalyst. Air is used as the terminal oxidant for the regeneration of the Ru catalyst. In addition, in the absence of Ru-catalyst and alcohol, NHC-aerobic oxidation of aldehydes (IV) delivers the corresponding acids (V) in high yields, in general. — (ZHAO, J.; MUECK-LICHTENFELD, C.; STUDER*, A.; Adv. Synth. Catal. 355 (2013) 6, 1098-1106, http://dx.doi.org/10.1002/adsc.201300034 ; Org.-Chem. Inst., Westfael. Wilhelms Univ., D-48149 Muenster, Germany; Eng.) — S. Karsten



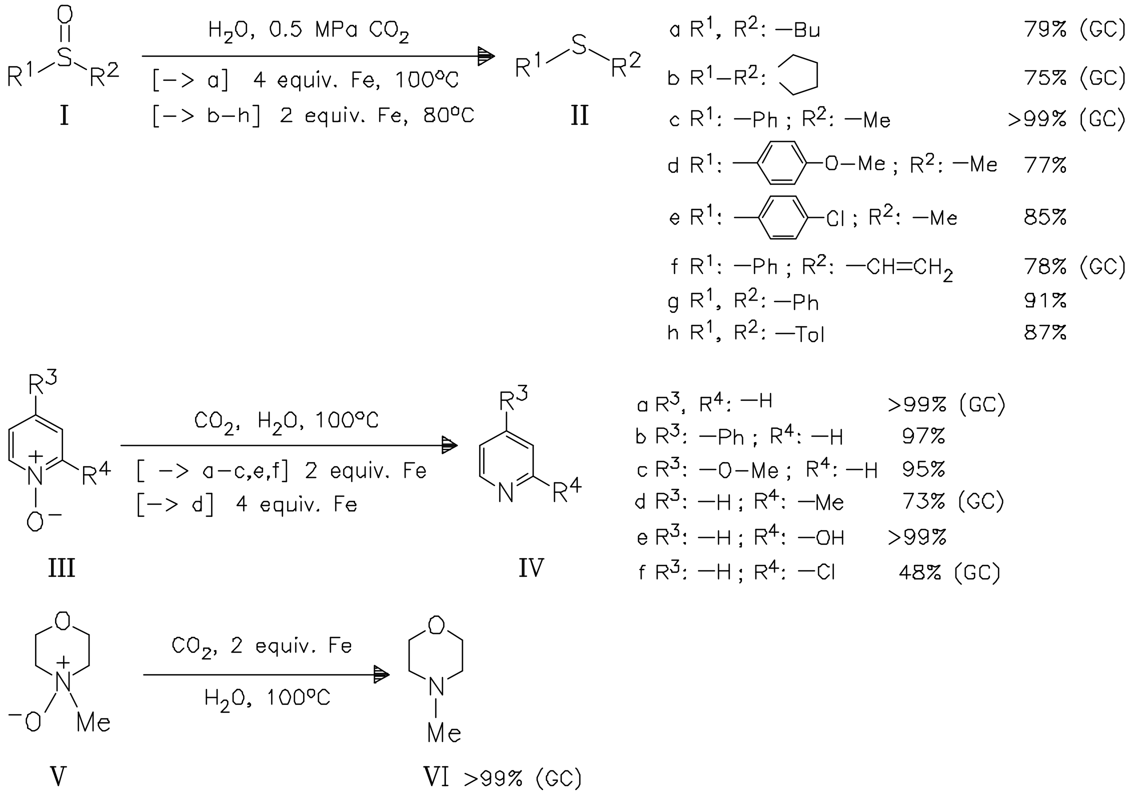


Reduction
O 0220

DOI: 10.1002/chin.201335028

35- 028

Reduction of Sulfoxides and Pyridine-N-Oxides over Iron Powder with Water as Hydrogen Source Promoted by Carbon Dioxide. — (MA, R.; LIU, A.-H.; HUANG, C.-B.; LI, X.-D.; HE*, L.-N.; Green Chem. 15 (2013) 5, 1274-1279, http://dx.doi.org/10.1039/c3gc40243f ; State Key Lab. Elem.-Org. Chem., Nankai Univ., Tianjin 300071, Peop. Rep. China; Eng.) — B. Voigt

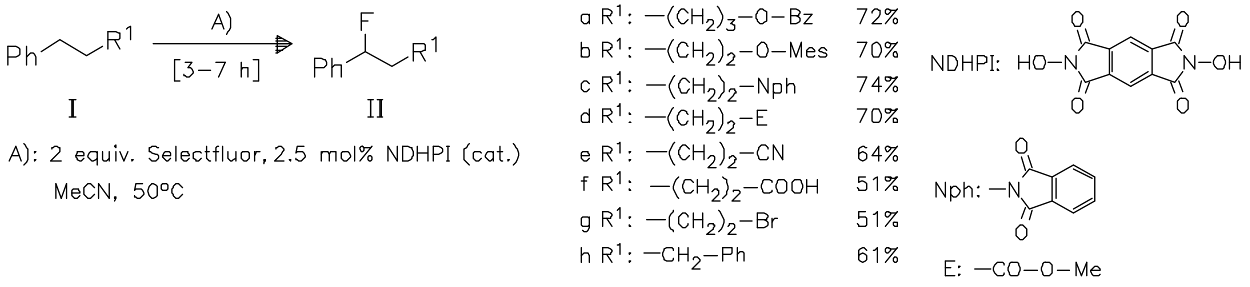


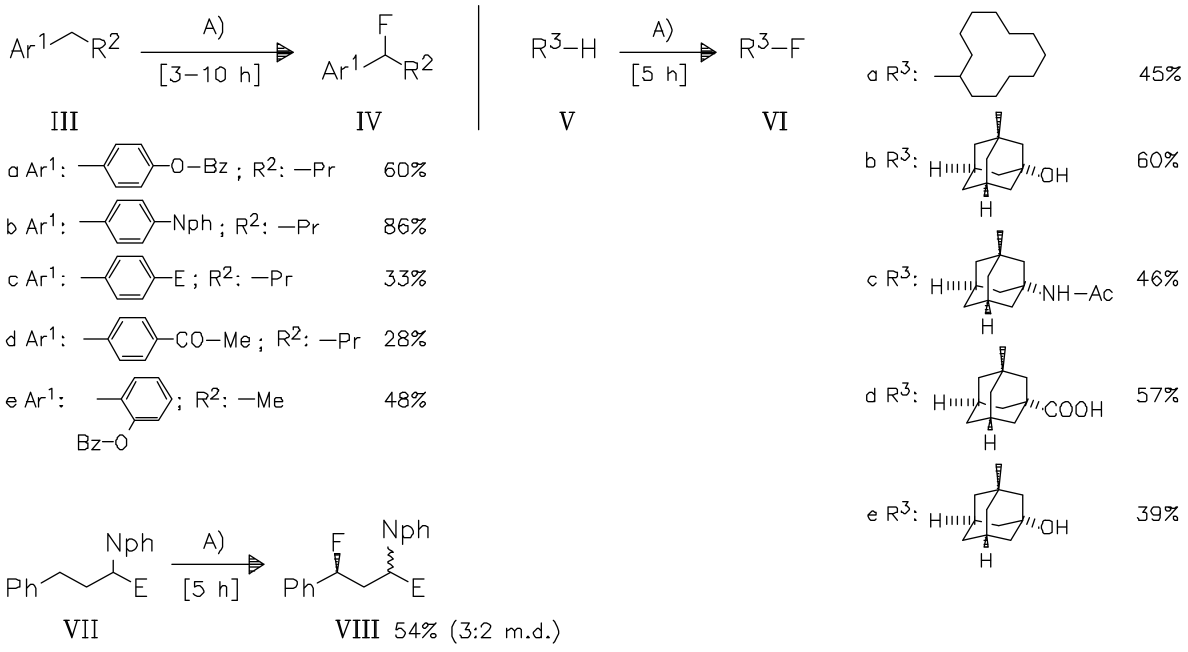
Halogenation
O 0235

DOI: 10.1002/chin.201335029

35- 029

Metal-Free Fluorination of C(sp^3)—H Bonds Using a Catalytic N-Oxyl Radical. — The simple reagent system composed of NDHPI (cat.) and Selectfluor enables a metal-free fluorination under mild conditions. The reaction features predictable chemoselectivity towards the benzylic or the tertiary position of the aromatic or aliphatic substrates respectively, along with high tolerance to various functionalities. — (AMAOKA, Y.; NAGATOMO, M.; INOUE*, M.; Org. Lett. 15 (2013) 9, 2160-2163, http://dx.doi.org/10.1021/ol4006757 ; Grad. Sch. Pharm. Sci., Univ. Tokyo, Bunkyo, Tokyo 113, Japan; Eng.) — M. Duhs



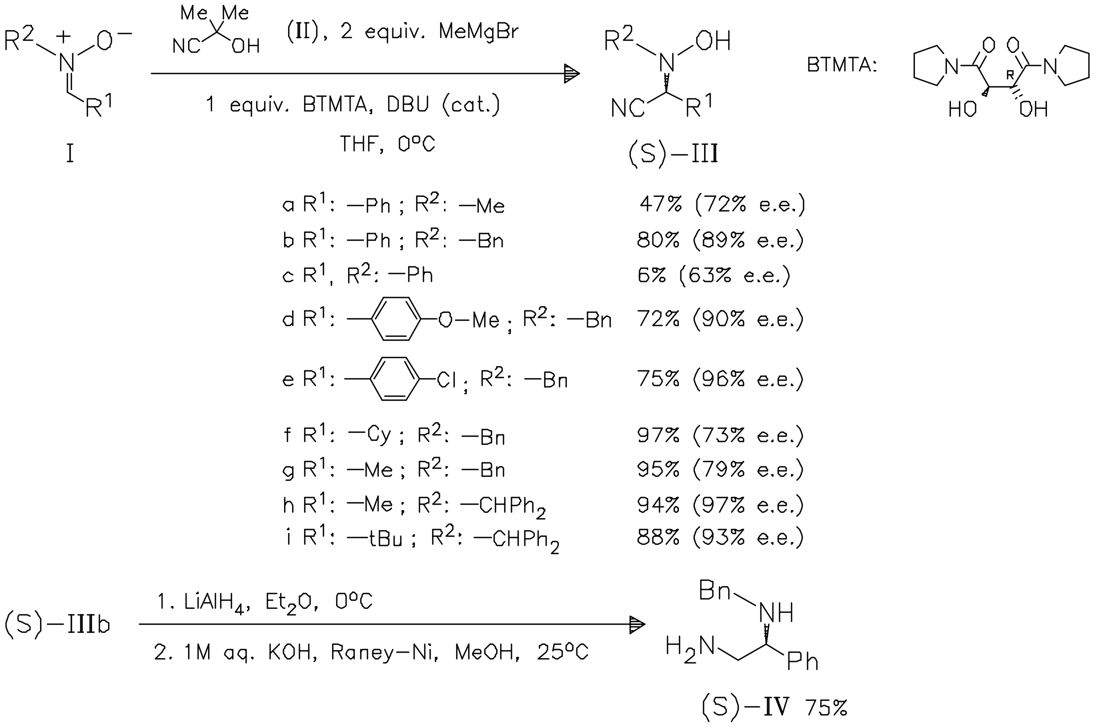


Cyanation
O 0273

DOI: 10.1002/chin.201335030

35- 030

Magnesium—Tartramide Complex Mediated Asymmetric Strecker-Type Reaction of Nitrones Using Cyanohydrin — [as a source of HCN]. — (SAKAI, T.; SOETA, T.; ENDO, K.; FUJINAMI, S.; UKAJI*, Y.; Org. Lett. 15 (2013) 10, 2422-2425, http://dx.doi.org/10.1021/ol400898p ; Div. Mater. Sci., Grad. Sch. Nat. Sci. Technol., Kanazawa Univ., Kanazawa 920, Japan; Eng.) — Koehler

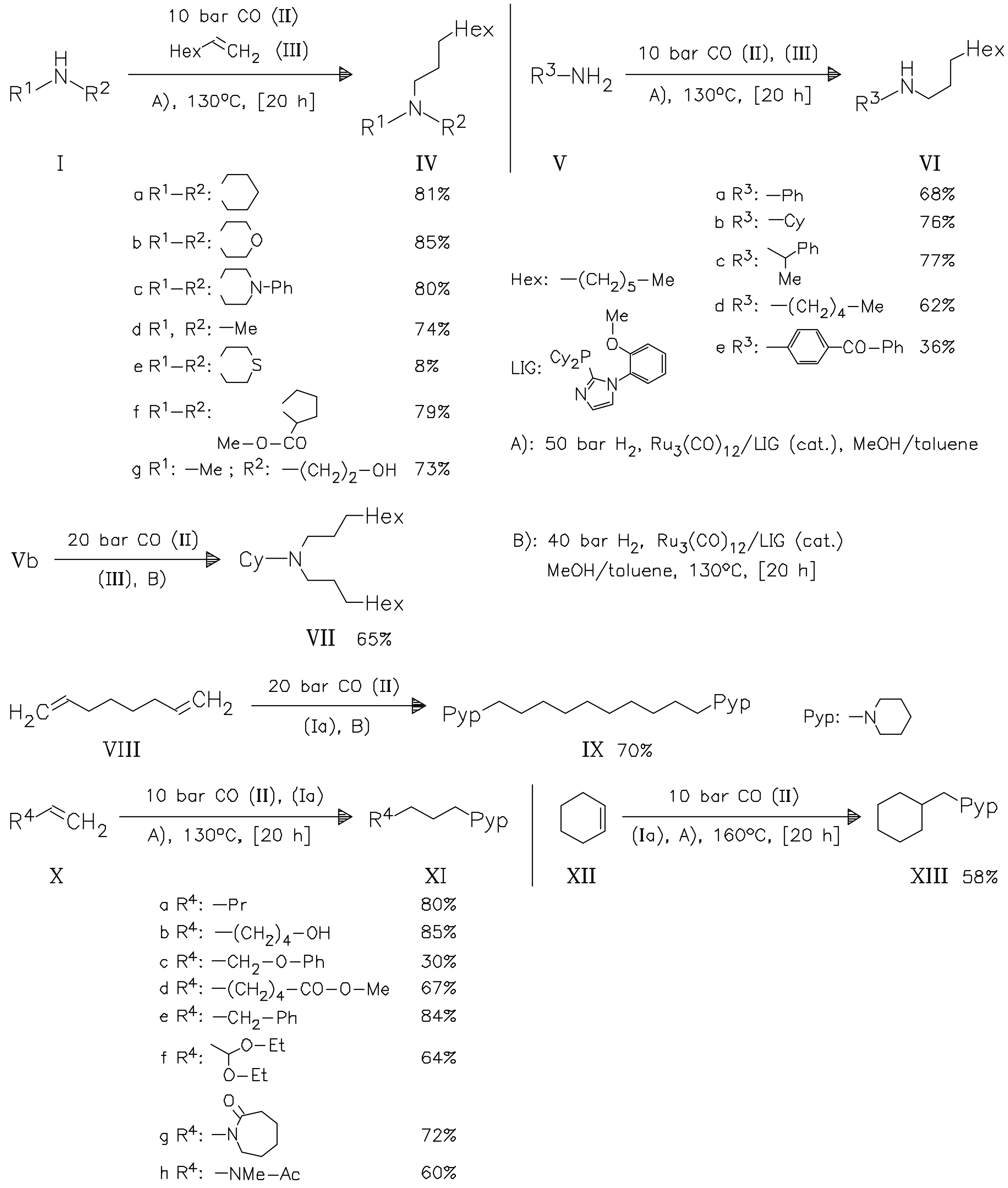


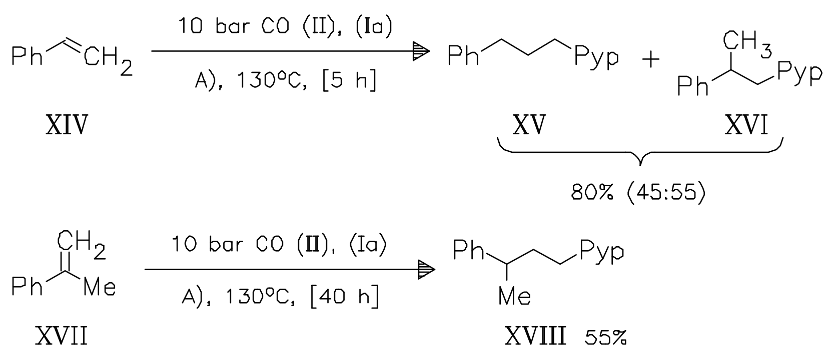
Carbonylation
O 0305

DOI: 10.1002/chin.201335031

35- 031

Efficient and Regioselective Ruthenium-Catalyzed Hydroaminomethylation of Olefins. — Synthetically valuable linear amines are prepared with high yields and regioselectivities. The method has advantage over the existing Rh-catalyzed ones due to the lower price of ruthenium and lower amount of ligand. — (WU, L.; FLEISCHER, I.; JACKSTELL, R.; BELLER*, M.; J. Am. Chem. Soc. 135 (2013) 10, 3989-3996, http://dx.doi.org/10.1021/ja312271c ; Leibniz-Inst. Katal., Univ. Rostock, D-18059 Rostock, Germany; Eng.) — Y. Steudel



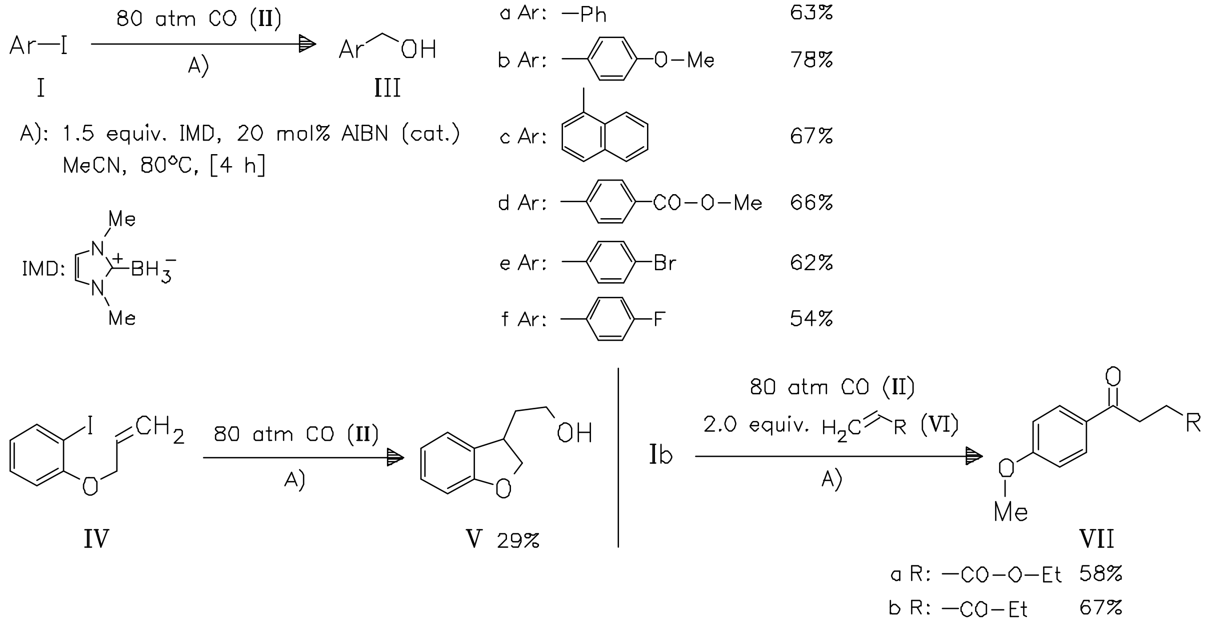


Carbonylation
O 0305

DOI: 10.1002/chin.201335032

35- 032

Efficient Hydroxymethylation Reactions of Iodoarenes Using CO and 1,3-Dimethylimidazol-2-ylidene Borane. — While iodoarenes react smoothly, bromoarenes and chloroarenes do not couple under conditions used. — (KAWAMOTO, T.; OKADA, T.; CURRAN, D. P.; RYU*, I.; Org. Lett. 15 (2013) 9, 2144-2147, http://dx.doi.org/10.1021/ol4006294 ; Dep. Chem., Grad. Sch. Sci., Osaka Prefect. Univ., Osaka 599, Japan; Eng.) — M. Duhs

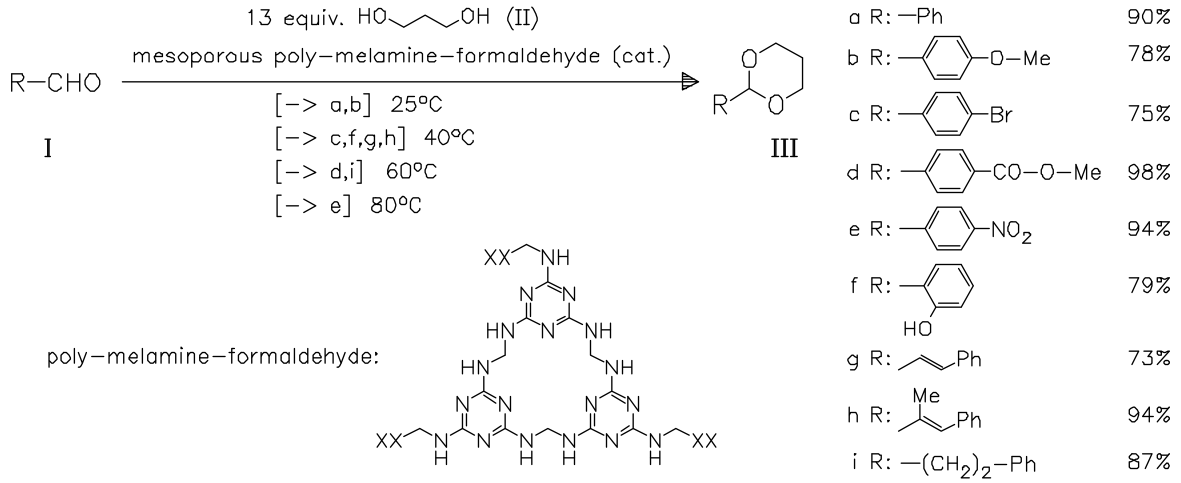


Protection
O 0345

DOI: 10.1002/chin.201335033

35- 033

Mesoporous Poly-melamine-formaldehyde (mPMF) — A Highly Efficient Catalyst for Chemoselective Acetalization of Aldehydes. — (TAN, M. X.; GU, L.; LI, N.; YING*, J. Y.; ZHANG, Y.; Green Chem. 15 (2013) 5, 1127-1132, http://dx.doi.org/10.1039/c3gc40297e ; Inst. Bioeng. Nanotechnol., Singapore 138669, Singapore; Eng.) — B. Voigt



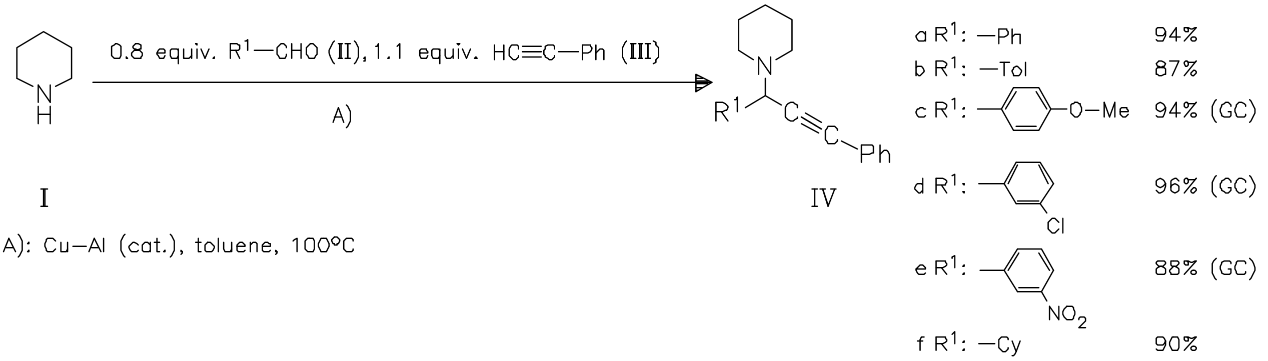
Multicomponent reactions

O 0359

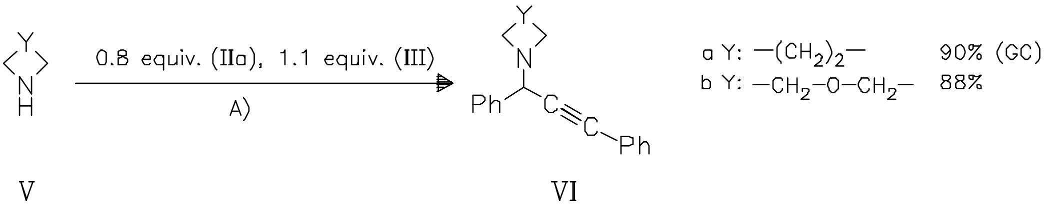
DOI: 10.1002/chin.201335034

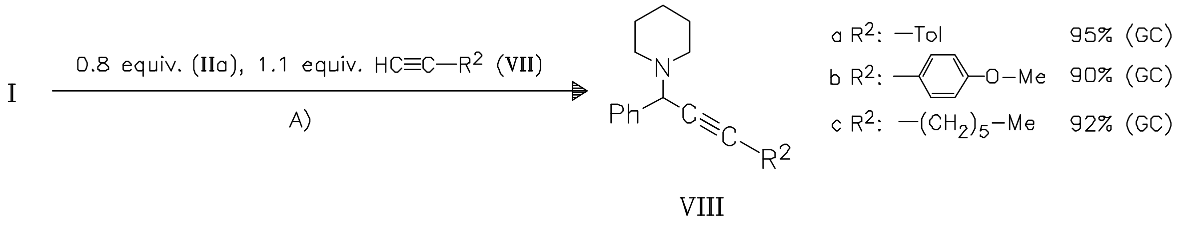
35- 034

Efficient Three-Component Coupling Catalyzed by Mesoporous Copper——Aluminum Based Nanocomposites. — Solid Cu—Al mesoporous sponges are found to be robust, inexpensive and excellent catalysts for the synthesis of propargylamines from aldehydes, cyclic secondary amines and acetylenes. — (DULLE, J.; THIRUNAVUKKARASU, K.; MITTELMEIJER-HAZELEGER, M. C.; ANDREEVA, D. V.; SHIJU, N. R.; ROTHENBERG*, G.; Green Chem. 15 (2013) 5, 1238-1243, http://dx.doi.org/10.1039/c3gc36607c ; Van't Hoff Inst. Mol. Sci., Univ. Amsterdam, NL-1098 XH Amsterdam, Neth.; Eng.) — B. Voigt



A): Cu−Al (cat.), toluene, 100°C





Acyclic Compounds

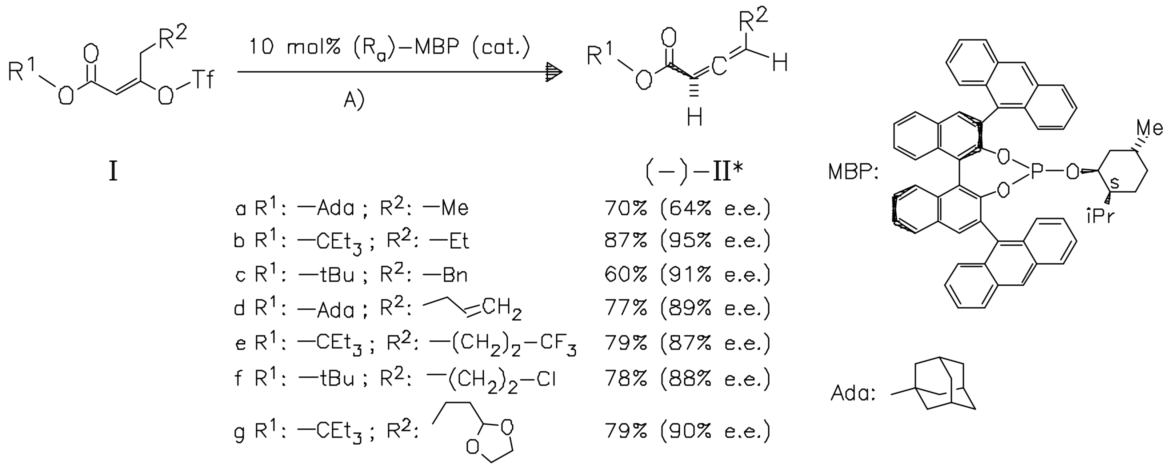
Allenes

P 0025

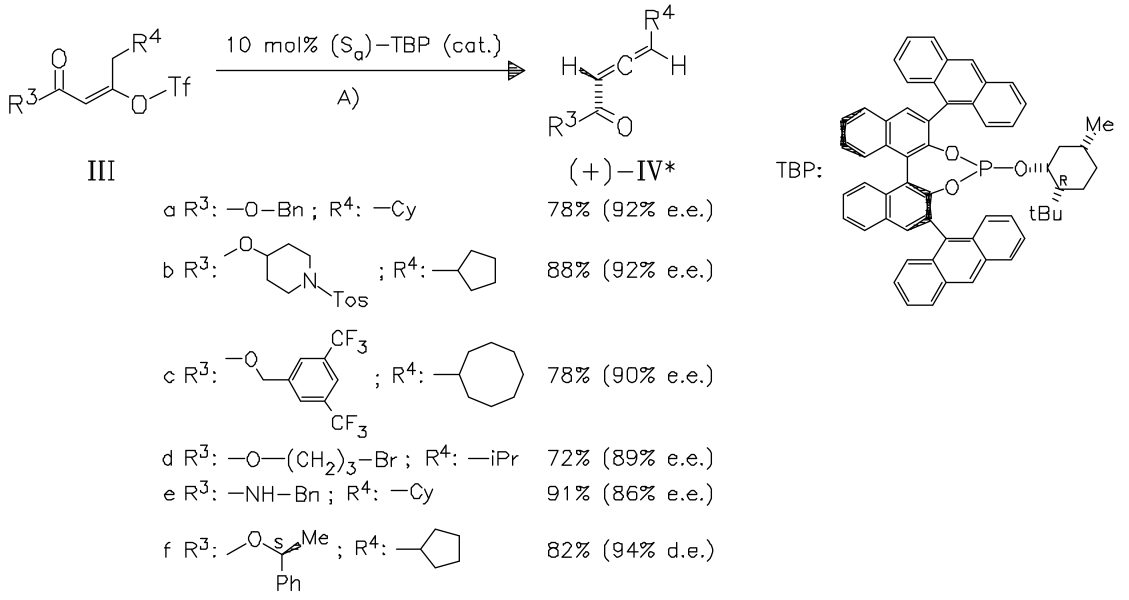
DOI: 10.1002/chin.201335035

35- 035

Pd-Catalyzed Asymmetric β-Hydride Elimination en Route to Chiral Allenes. — (CROUCH, I. T.; NEFF, R. K.; FRANTZ*, D. E.; J. Am. Chem. Soc. 135 (2013) 13, 4970-4973, http://dx.doi.org/10.1021/ja401606e ; Dep. Chem., Univ. Tex., San Antonio, TX 78249, USA; Eng.) — U. Scheffler



A): 4 equiv. iPr_2NEt, iPrOAc, 5 mol% $Pd_2(dba)_3$ (cat.), neat, 25°C

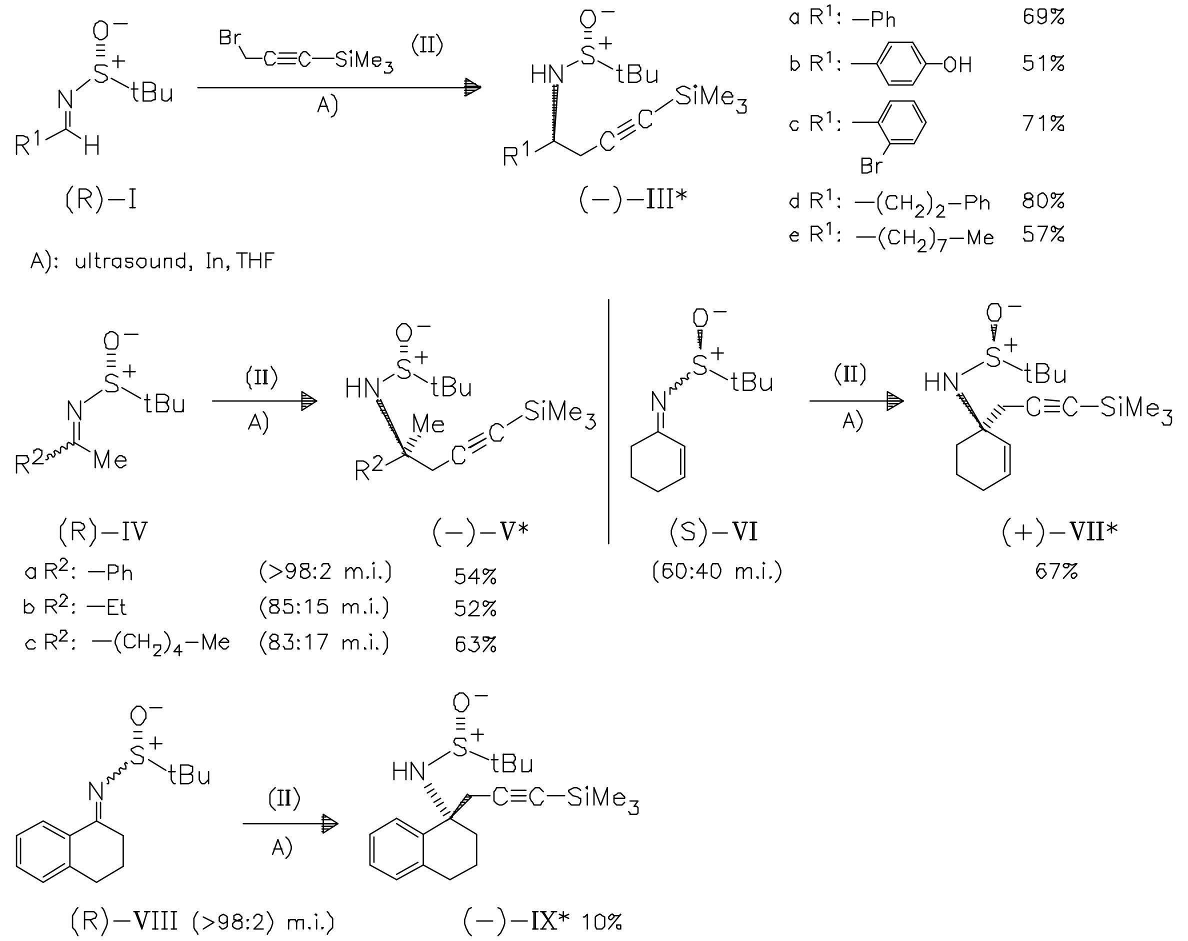


Amines
P 0060

DOI: 10.1002/chin.201335036

35- 036

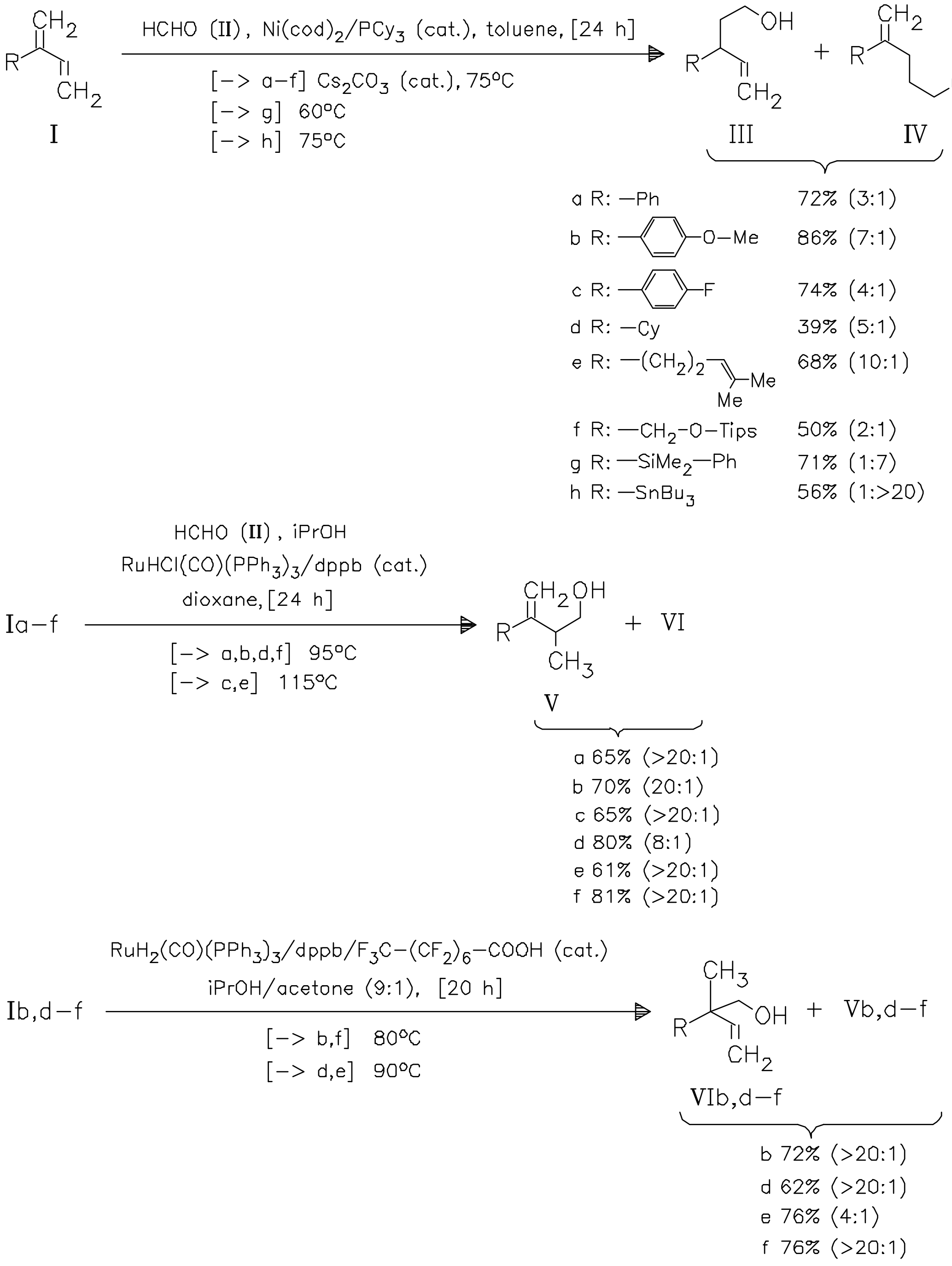
Indium-Promoted Diastereo- and Regioselective Propargylation of Chiral Sulfinylimines. — (GARCIA-MUNOZ, M. J.; ZACCONI, F.; FOUBELO*, F.; YUS, M.; Eur. J. Org. Chem. 2013, 7, 1287-1295, http://dx.doi.org/10.1002/ejoc.201201410 ; Dep. Quim. Org., Fac. Cienc., Univ. Alicante, E-03080 Alicante, Spain; Eng.) — M. Zastrow



DOI: 10.1002/chin.201335037

35- 037

Regiodivergent Reductive Coupling of 2-Substituted Dienes to Formaldehyde Employing Ruthenium or Nickel Catalyst: Hydrohydroxymethylation via Transfer Hydrogenation. — The title reaction provides an alternative to diene hydroformylation due to its regioselectivity. — (KOEPFER, A.; SAM, B.; BREIT*, B.; KRISCHE, M. J.; Chem. Sci. 4 (2013) 4, 1876-1880, http://dx.doi.org/10.1039/c3sc22051f ; Inst. Org. Chem. Biochem., Albert-Ludwigs-Univ., D-79104 Freiburg/Br., Germany; Eng.) — M. Zastrow

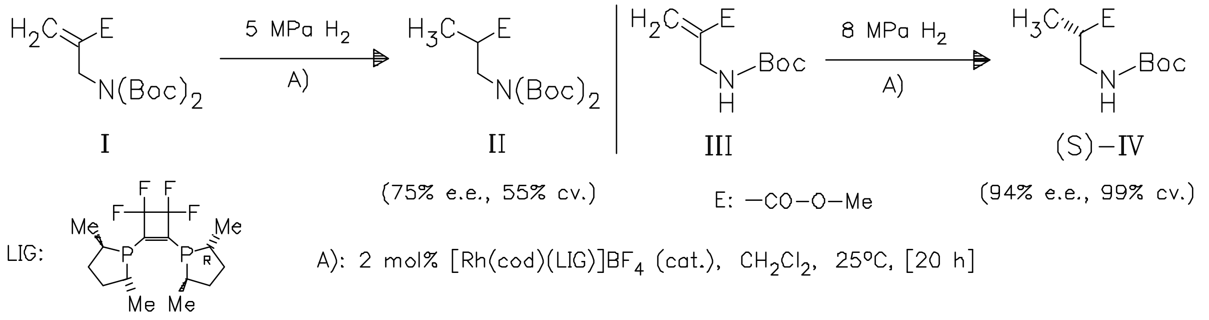


Aminocarboxylic acids (hydrazinocarboxylic acids) and esters

P 0270 DOI: 10.1002/chin.201335038

35- 038

Synthesis of Enantiopure β^2-Homoalanine Derivatives via Rhodium Catalyzed Asymmetric Hydrogenation. — (LUEHR*, S.; HOLZ, J.; ZAYAS, O.; SEIDELMANN, O.; DOMKE, L.; BOERNER, A.; Tetrahedron: Asymmetry 24 (2013) 7, 395-401, http://dx.doi.org/10.1016/j.tetasy.2013.02.011 ; Leibniz-Inst. Katal., Univ. Rostock, D-18059 Rostock, Germany; Eng.) — U. Scheffler



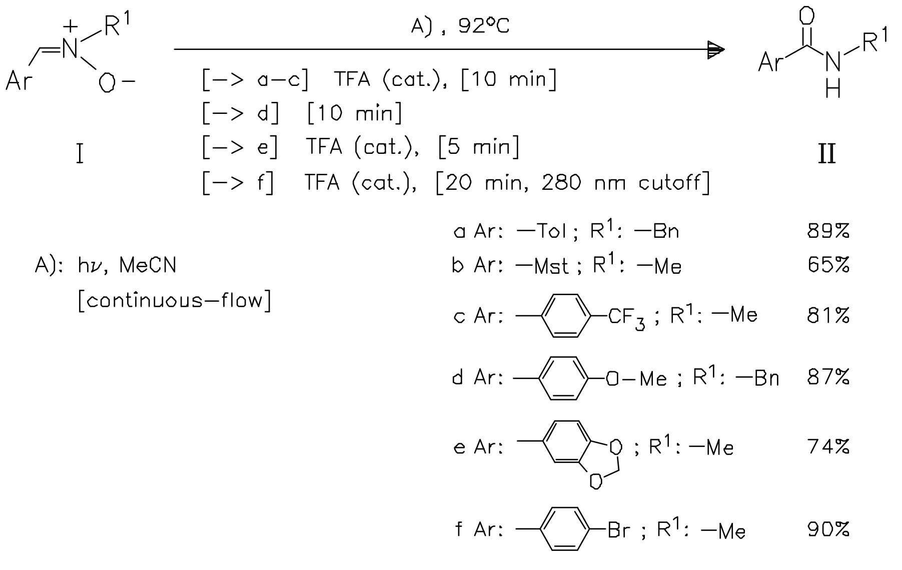
A): 2 mol% [Rh(cod)(LIG)]BF_4 (cat.), CH_2Cl_2, 25°C, [20 h]

Carboxylic amides

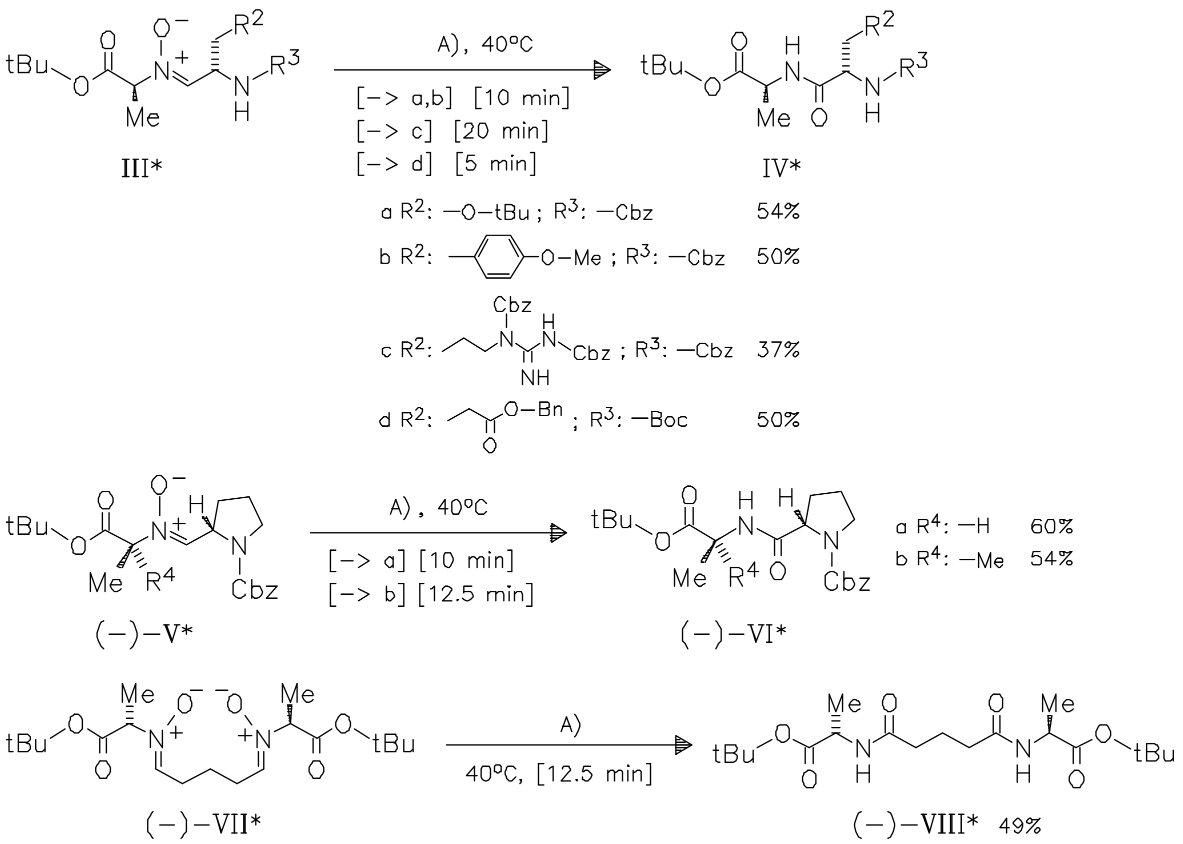
P 0320 DOI: 10.1002/chin.201335039

35- 039

Peptide Fragment Coupling Using a Continuous-Flow Photochemical Rearrangement of Nitrones. — A general, versatile, efficient and novel approach for the synthesis of simple and complex peptide bonds via the title rearrangement is developed. — (ZHANG, Y.; BLACKMAN, M. L.; LEDUC, A. B.; JAMISON*, T. F.; Angew. Chem., Int. Ed. 52 (2013) 15, 4251-4255, http://dx.doi.org/10.1002/anie.201300504 ; Dep. Chem., MIT, Cambridge, MA 02139, USA; Eng.) — M. Zastrow



A): hν, MeCN
[continuous−flow]



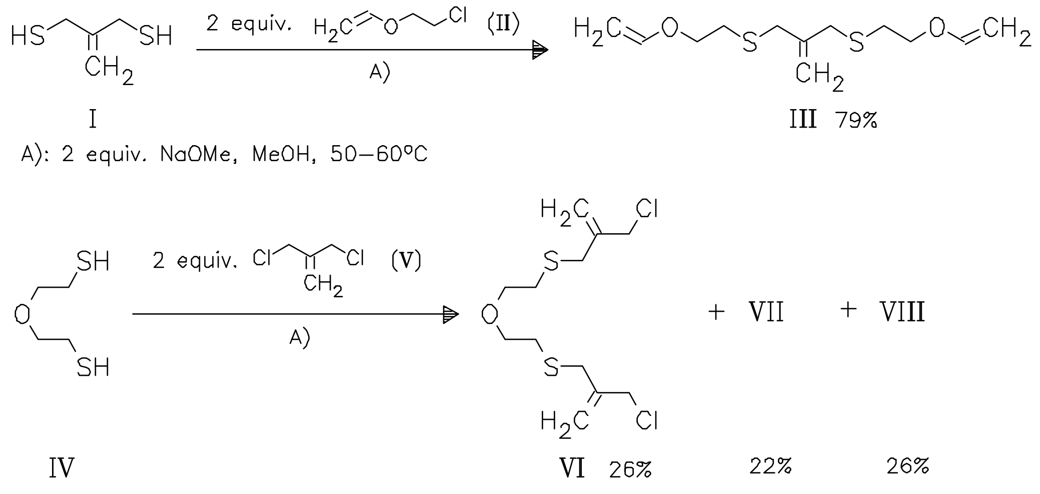
Thioethers

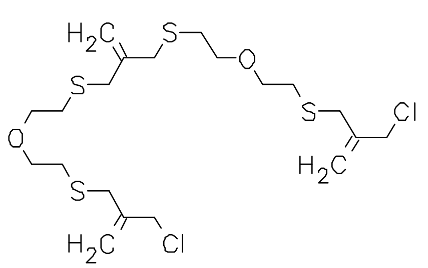
P 0430

DOI: 10.1002/chin.201335040

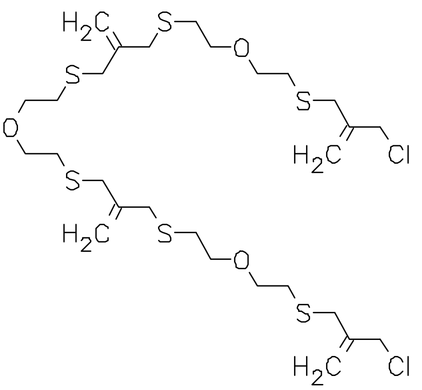
35- 040

Novel Synthesis of Symmetrical 3,3'-Allyl Dithioethers as Photoplastic Monomer Precursors by Equal Molar Rate Addition of Reactants and Solvent Controlled Oligomerization. — An alternative method is described for the synthesis of title compounds which can be used as monomers in photoplastic polymers. The method comprises the rapid addition of a concentrated mixture of the alkyl halide and bis--mercapto compound in methanol in one syringe and sodium methoxide in another syringe. — (MOORHOFF*, C. M.; COOK, W. D.; BRAYBROOK, C.; Monatsh. Chem. 144 (2013) 6, 891-902, http://dx.doi.org/10.1007/s00706-013-0942-6 ; Dep. Mater. Eng., Monash Univ., Clayton, Victoria 3168, Australia; Eng.) — M. Bohle





VII



VIII

Isocyclic Compounds

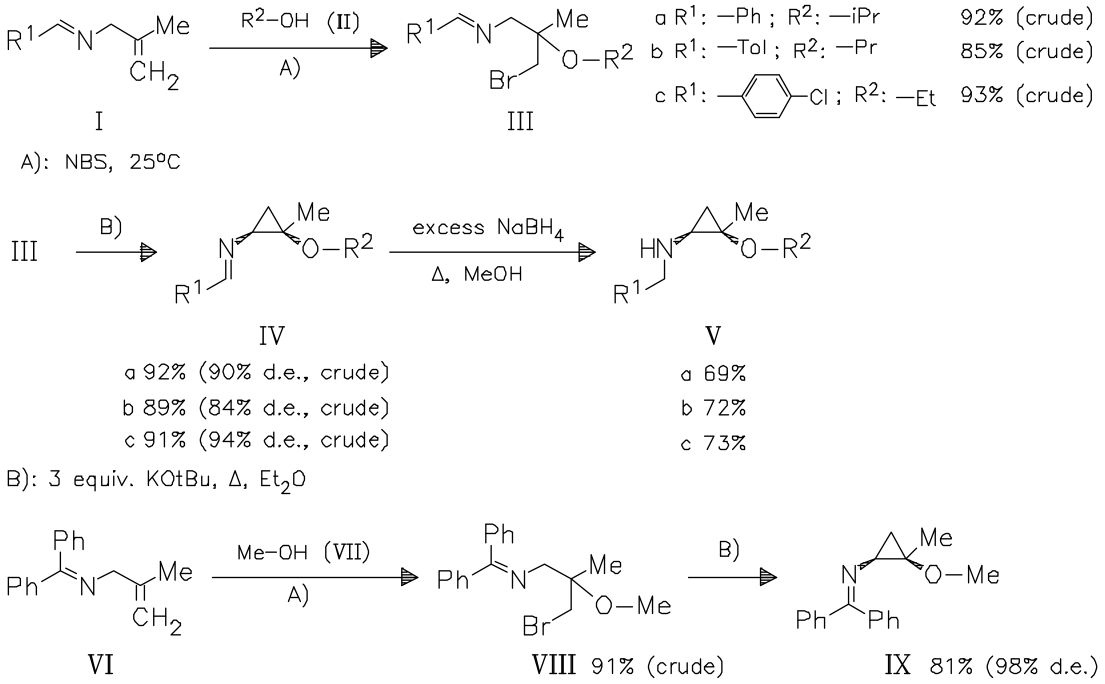
Cyclopropane derivatives

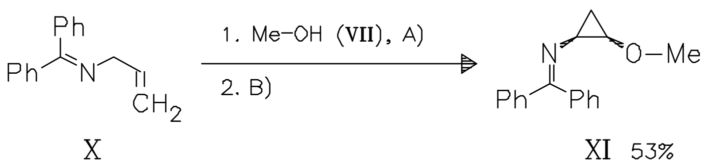
Q 0021

DOI: 10.1002/chin.201335041

35- 041

Synthesis of cis-2-Alkoxycyclopropylamines via Intramolecular Cyclization of 2-Azaallylic Anions Derived from Alkoxybrominated N-(Arylidene)-2-methyl--2-propenylamines. — (MANGELINCKX, S.; KADAM, S. T.; SEMINA, E.; CALLEBAUT, G.; COLPAERT, F.; DE SMAELEM, D.; DE KIMPE*, N.; Tetrahedron 69 (2013) 18, 3728-3735, http://dx.doi.org/10.1016/j.tet.2013.02.094 ; Dep. Sustainable Org. Chem. Technol., Fac. Biosci. Eng., Univ. Gent, B-9000 Gent, Belg.; Eng.) — U. Scheffler



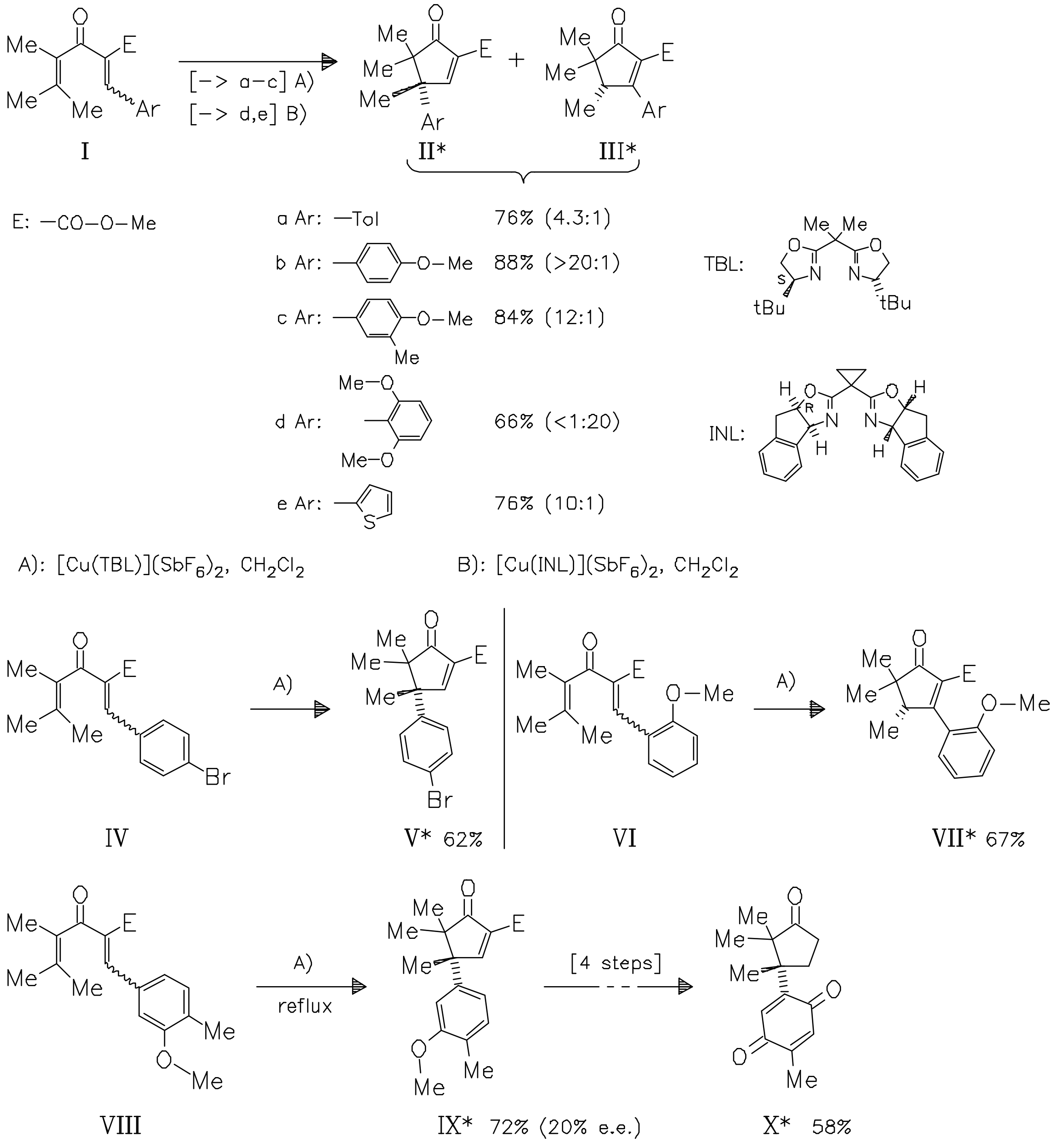


Cyclopentane derivatives

Q 0030 DOI: 10.1002/chin.201335042

35- 042

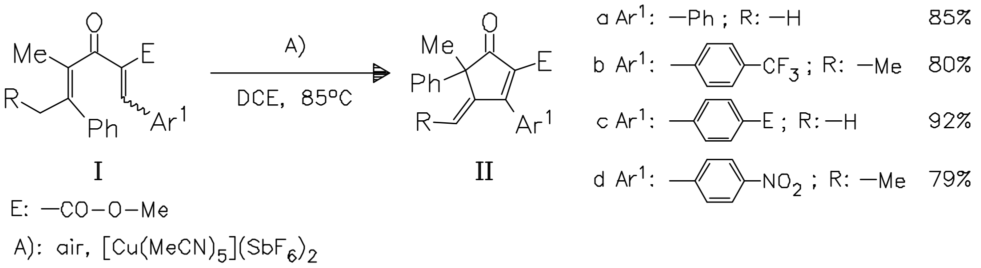
Reagent Control of [1,2]-Wagner—Meerwein Shift Chemoselectivity Following the Nazarov Cyclization: Application to the Total Synthesis of Enokipodin B (X).
— (LEBOEUF, D.; WRIGHT, C. M.; FRONTIER*, A. J.; Chem. - Eur. J. 19 (2013) 15, 4835-4841, http://dx.doi.org/10.1002/chem.201203395 ; Dep. Chem., Univ. Rochester, Rochester, NY 14627, USA; Eng.) — M. Zastrow

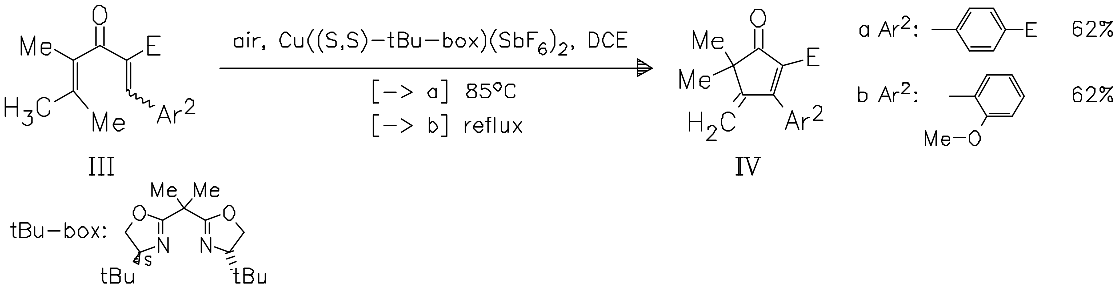


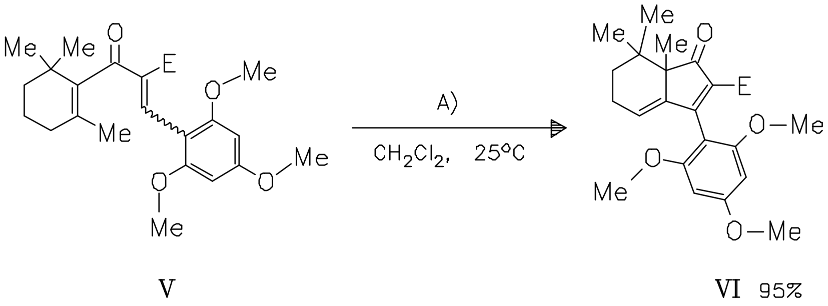
Cyclopentane derivatives
Q 0030 DOI: 10.1002/chin.201335043

35- 043

Efficient Nazarov Cyclization/Wagner—Meerwein Rearrangement Terminated by a Cu^{II}-Promoted Oxidation: Synthesis of 4-Alkylidene Cyclopentenones. — (LEBOEUF, D.; THEISTE, E.; GANDON, V.; DAIFUKU, S. L.; NEIDIG, M. L.; FRONTIER*, A. J.; Chem. - Eur. J. 19 (2013) 15, 4842-4848, http://dx.doi.org/10.1002/chem.201203396 ; Dep. Chem., Univ. Rochester, Rochester, NY 14627, USA; Eng.) — M. Zastrow



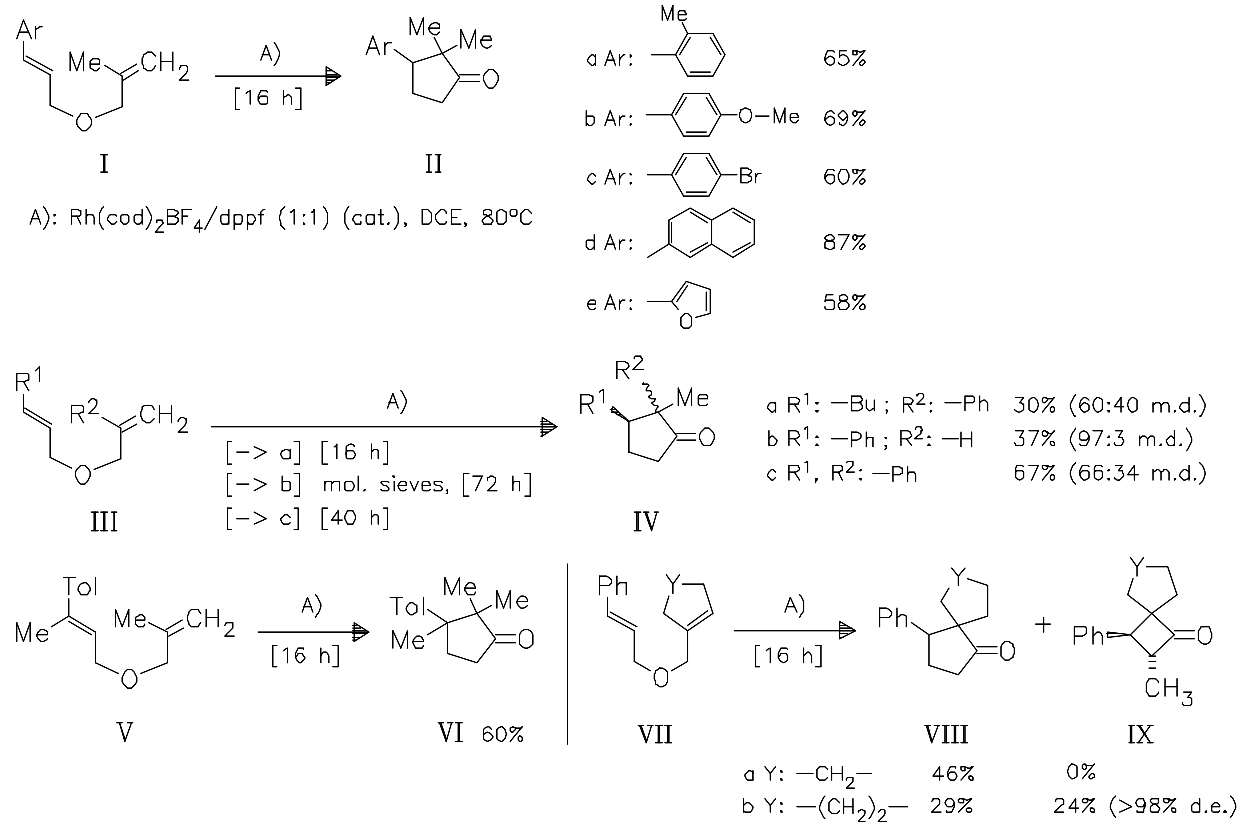




Cyclopentane derivatives
Q 0030 DOI: 10.1002/chin.201335044

35- 044

Rhodium-Catalyzed Olefin Isomerization/Allyl Claisen Rearrangement/Intramolecular Hydroacylation Cascade. — The cationic Rh(I)/dppf complex catalyzes the olefin isomerization/allyl Claisen rearrangement/intramolecular hydroacylation cascade of di(allyl) ethers to produce a variety of cyclopentanones. Experiments with a deuterium-labelled substrate prove an intramolecular process. — (OKAMOTO, R.; TANAKA*, K.; Org. Lett. 15 (2013) 9, 2112-2115, http://dx.doi.org/10.1021/ol400574s ; Japan Sci. Technol. Corp., Saitama 332, Japan; Eng.) — H. Haber

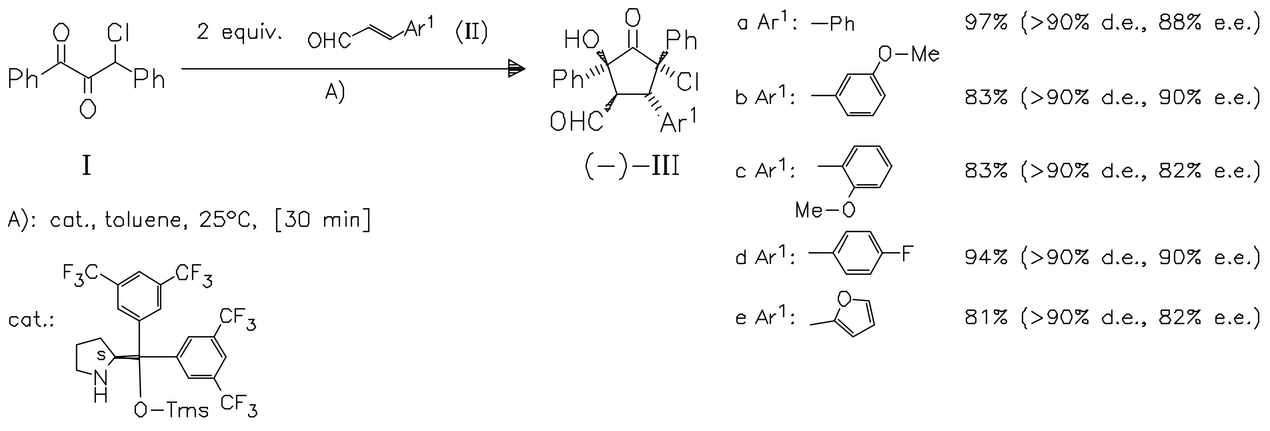


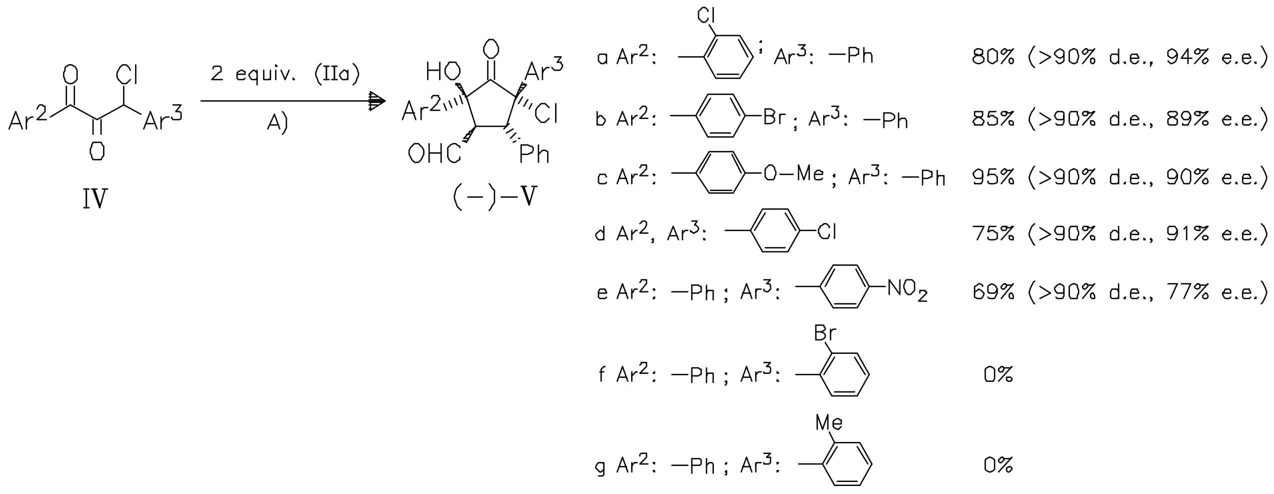
Cyclopentane derivatives
Q 0030

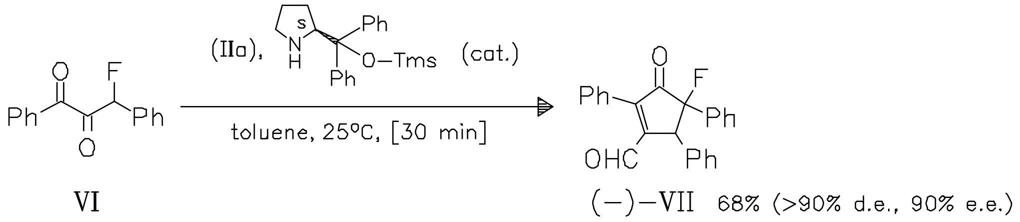
DOI: 10.1002/chin.201335045

35- 045

Highly Diastereo- and Enantioselective Organocatalytic Domino Michael/Aldol Reaction of Acyclic 3-Halogeno-1,2-diones to α,β-Unsaturated Aldehydes. — This transformation tolerates a large variety of electronically different substituents on both reactive partners. Cyclopentanone derivatives with four contiguous stereocenters are generated. New chiral cyclopentenone (VII) is obtained using another organocatalyst with excellent diastereoselectivity and high enantioselectivity. — (LEFRANC, A.; GUENEE, L.; ALEXAKIS*, A.; Org. Lett. 15 (2013) 9, 2172-2175, http://dx.doi.org/10.1021/ol400697n ; Dep. Org. Chem., Univ. Geneva, CH-1211 Geneva 4, Switz.; Eng.) — M. Duhs







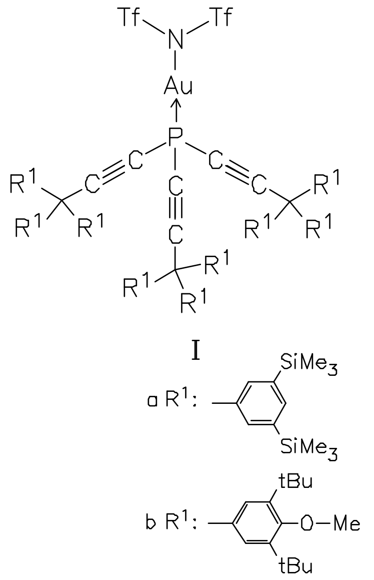
Rings with 7 or more members

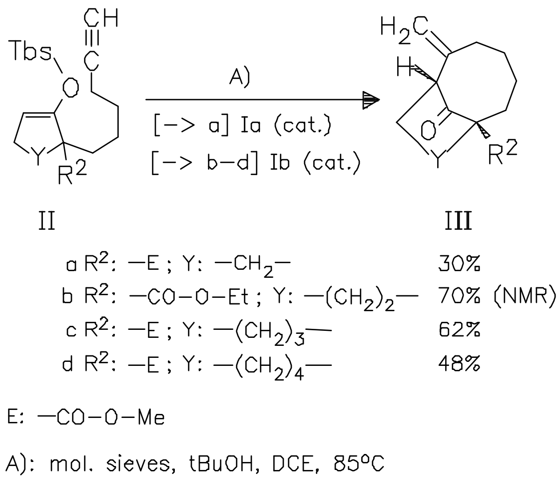
Q 0050

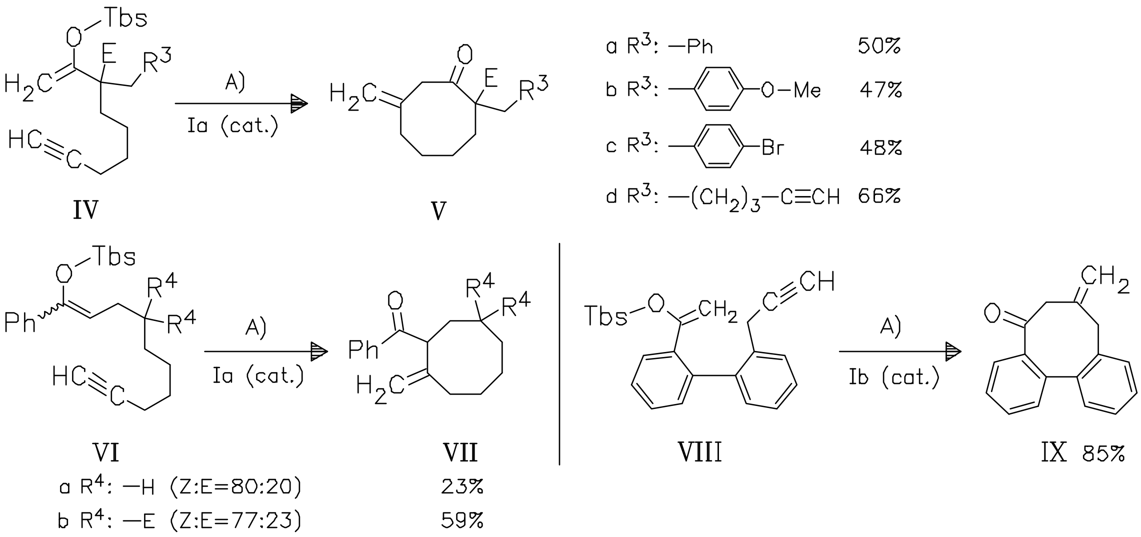
DOI: 10.1002/chin.201335046

35- 046

Construction of Eight-Membered Carbocycles Through Gold Catalysis with Acetylene-Tethered Silyl Enol Ethers. — (IWAI, T.; OKOCHI, H.; ITO, H.; SAWAMURA*, M.; Angew. Chem., Int. Ed. 52 (2013) 15, 4239-4242, http://dx.doi.org/10.1002/anie.201300265 ; Div. Chem., Grad. Sch. Sci., Hokkaido Univ., Sapporo 060, Japan; Eng.) — M. Zastrow







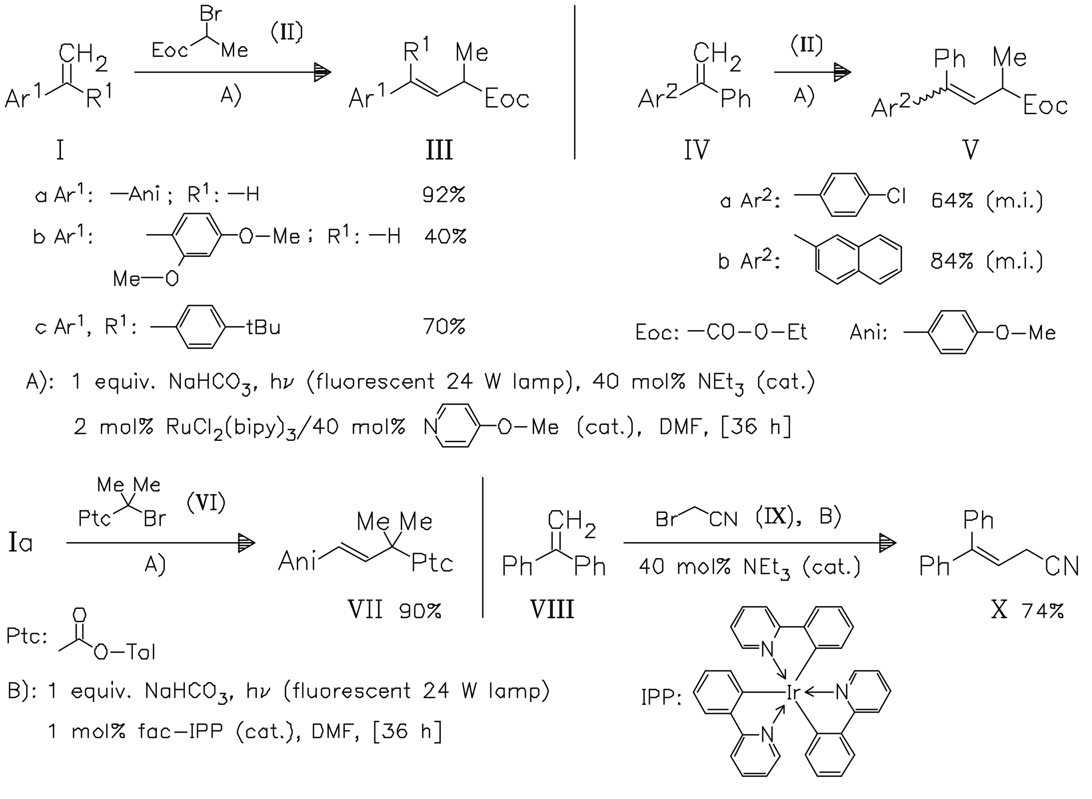
Alkenes

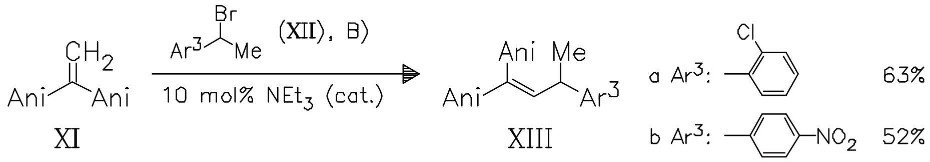
Q 0083

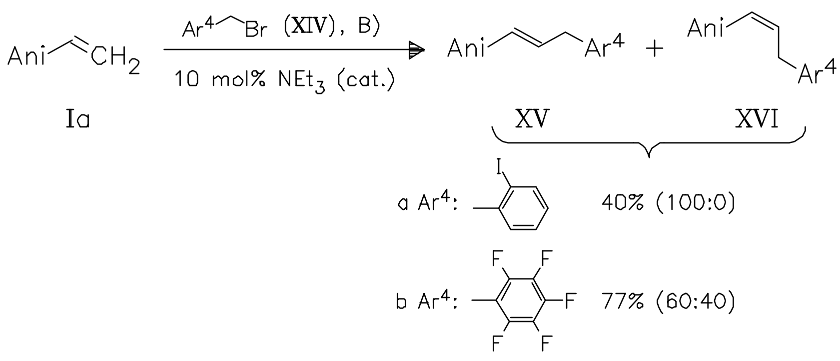
DOI: 10.1002/chin.201335047

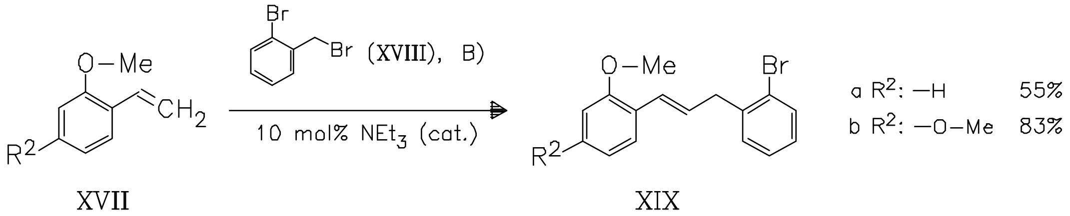
35- 047

Visible-Light Photocatalytic Radical Alkenylation of α-Carbonyl Alkyl Bromides and Benzyl Bromides. — The process is optimized with conditions A) or B) in the presence of either a Ru or an Ir polypyridyl complex. Various substrates are found to be suitable for the formation of α-vinyl carbonyls or allylbenzene derivatives as is demonstrated for selected examples. The products are of interest as prominent structural elements contained in bioactive molecules. — (LIU, Q.; YI, H.; LIU, J.; YANG, Y.; ZHANG, X.; ZENG, Z.; LEI*, A.; Chem. - Eur. J. 19 (2013) 16, 5120-5126, http://dx.doi.org/10.1002/chem.201203694 ; Coll. Chem. Mol. Sci., Wuhan Univ., Wuhan, Hubei 430072, Peop. Rep. China; Eng.) — Lindner









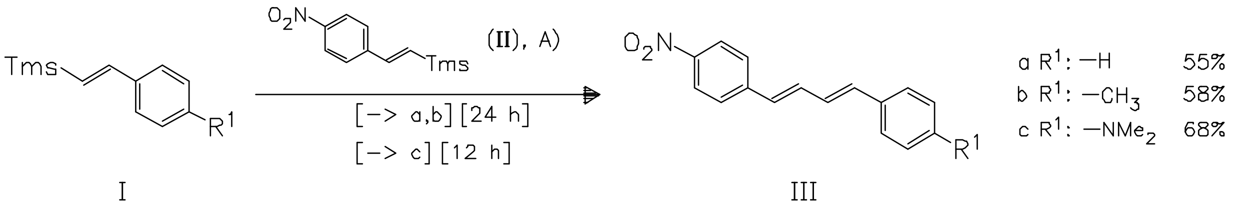
Alkenes

Q 0083

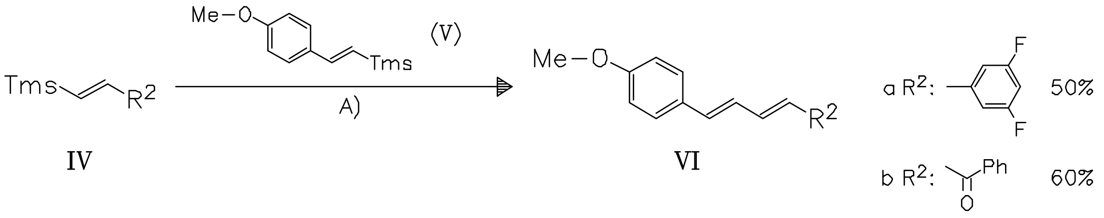
DOI: 10.1002/chin.201335048

35- 048

Oxidative Cross-Coupling of Vinylsilanes in Water. — The reactions proceed in micelles using water and a non ionic surfactant as medium. — (CICCO, S. R.; MARTINELLI, C.; PINTO, V.; NASO, F.; FARINOLA*, G. M.; J. Organomet. Chem. 732 (2013) 15-20, http://dx.doi.org/10.1016/j.jorganchem.2013.01.021 ; Dip. Chim., CNR, Univ. Bari, I-70126 Bari, Italy; Eng.) — U. Scheffler



A): $PdCl_2/CuCl_2/LiCl$ (cat.), H_2O/Triton X-100 (85:15), 25°C

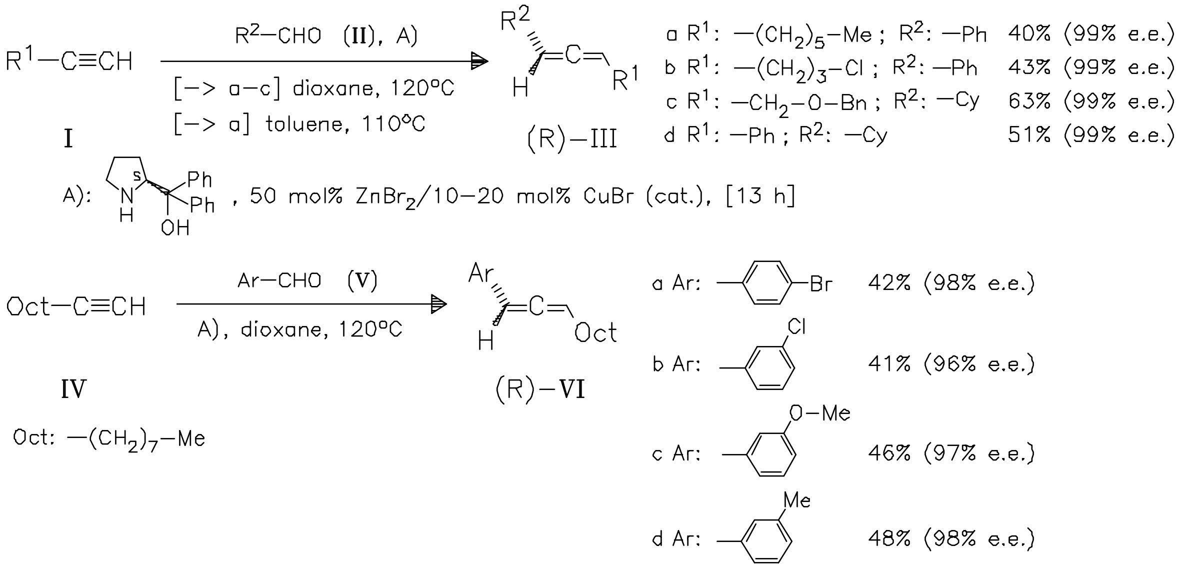


Allenes
Q 0085

DOI: 10.1002/chin.201335049

35- 049

Bimetallic Enantioselective Approach to Axially Chiral Allenes. — The reaction proceeds via an intermediate formation of the propargylic amines with CuBr catalyzing this step and combination of CuBr and $ZnBr_2$ being responsible for the transformation of the intermediate to allenes. Slightly lower yields but higher enantioselectivities are observed when the reaction is carried out in dioxane at 120°C compared with toluene at 110°C. — (MA*, S.; et al.; Org. Lett. 15 (2013) 9, 2254-2257, http://dx.doi.org/10.1021/ol400822m ; Dep. Chem., East China Norm. Univ., Shanghai 200062, Peop. Rep. China; Eng.) — Y. Steudel

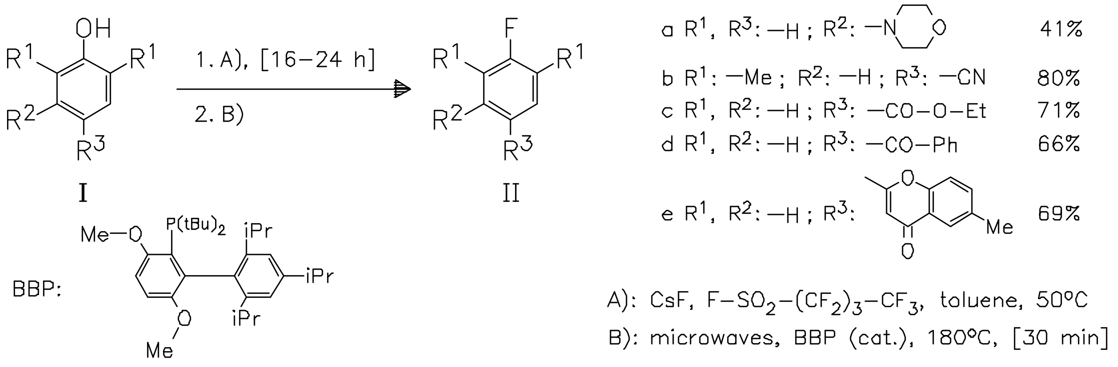


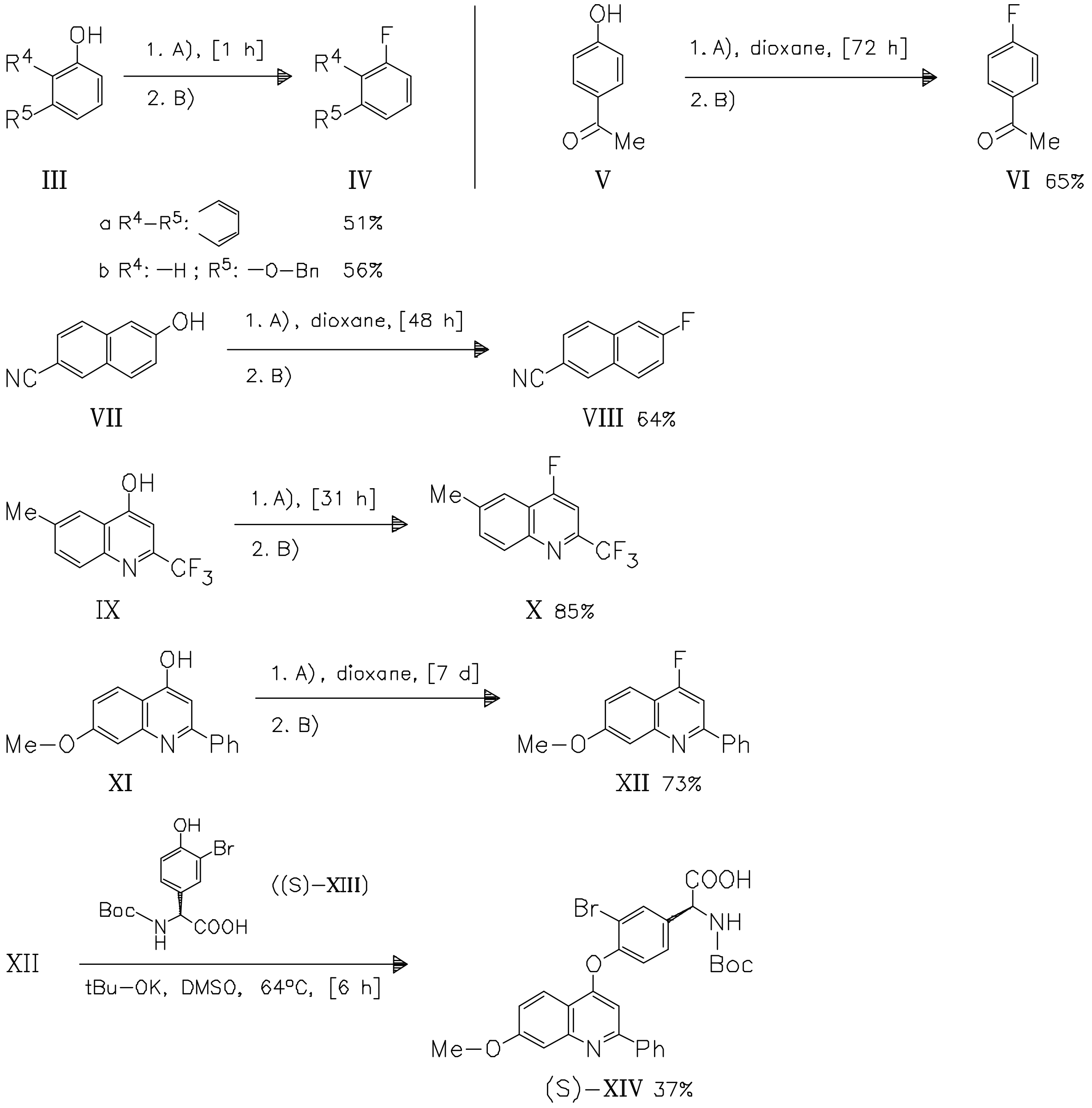
Halogen compounds
Q 0090

DOI: 10.1002/chin.201335050

35- 050

One-Pot, Two-Step, Microwave-Assisted Palladium-Catalyzed Conversion of Aryl Alcohols to Aryl Fluorides via Aryl Nonaflates. — The title convenient procedure improved the synthesis of a potent HCV NS3 protease inhibitor by preparing the key aryl fluoride intermediate (XII). The reductive elimination is investigated by DFT calculations. — (WANNBERG, J.; WALLINDER, C.; UENLUESOY, M.; SKOELD, C.; LARHED*, M.; J. Org. Chem. 78 (2013) 8, 4184-4189, http://dx.doi.org/10.1021/jo400255m ; Dep. Med. Chem., Uppsala Univ., S-751 23 Uppsala, Swed.; Eng.) — C. Gebhardt



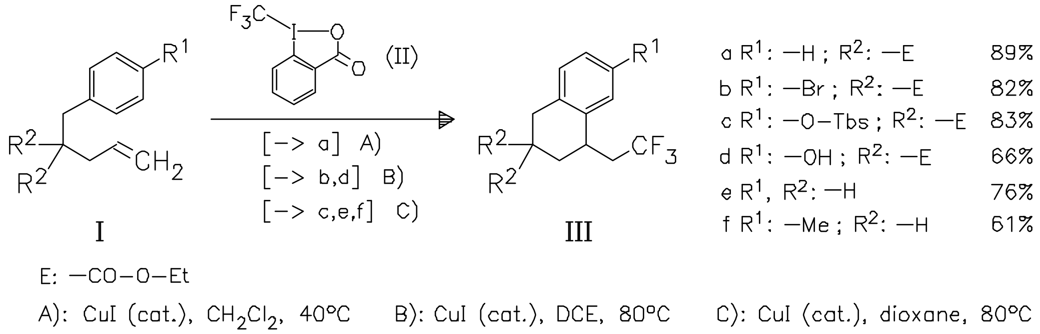


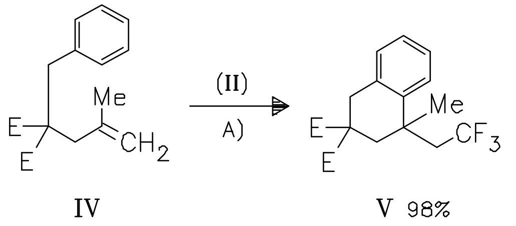
Halogen compounds
Q 0090 DOI: 10.1002/chin.201335051

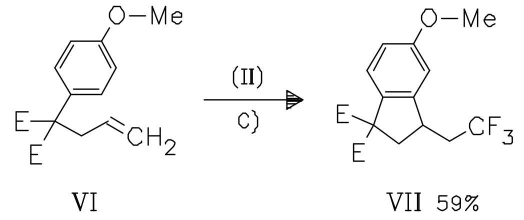
35- 051

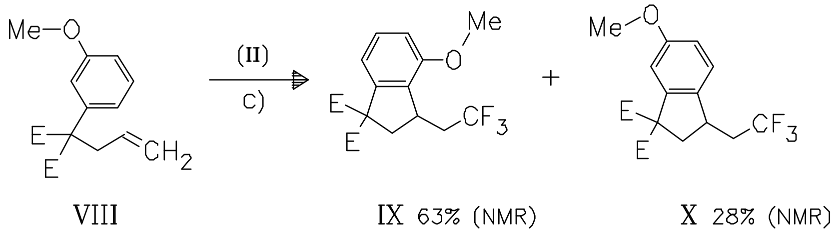
Alkene Trifluoromethylation Coupled with C—C Bond Formation: Construction of Trifluoromethylated Carbocycles and Heterocycles. —

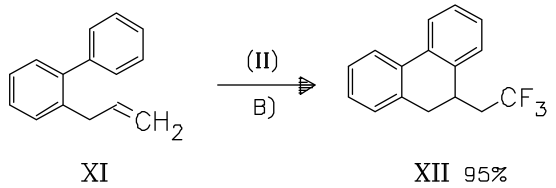
(EGAMI, H.; SHIMIZU, R.; KAWAMURA, S.; SODEOKA*, M.; Angew. Chem., Int. Ed. 52 (2013) 14, 4000-4003, http://dx.doi.org/10.1002/anie.201210250 ; Synth. Org. Chem. Lab., RIKEN, Wako, Saitama 351-01, Japan; Eng.) — Roessler

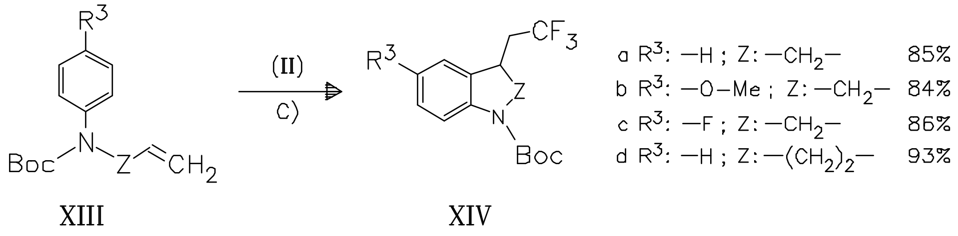

R1
R2
R2
CH2
I
F3C
I
O
O
(II)
[-> a] A)
[-> b,d] B)
[-> c,e,f] C)
R1
R2
R2
CF3
III
a R1: —H ; R2: —E 89%
b R1: —Br ; R2: —E 82%
c R1: —O—Tbs ; R2: —E 83%
d R1: —OH ; R2: —E 66%
e R1, R2: —H 76%
f R1: —Me ; R2: —H 61%
E: —CO—O—Et
A): CuI (cat.), CH2Cl2, 40°C
B): CuI (cat.), DCE, 80°C
C): CuI (cat.), dioxane, 80°C

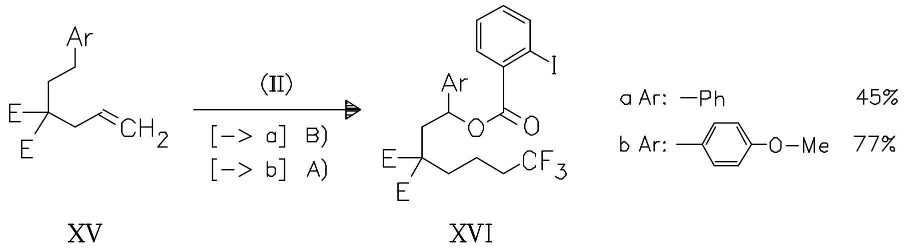

Me
E
E
CH2
IV
(II)
A)
E
E
Me
CF3
V 98%


O—Me
E
E
CH2
VI
(II)
C)
O—Me
E
E
CF3
VII 59%


Me—O
E
E
CH2
VIII
(II)
C)
Me
O
E
E
CF3
IX 63% (NMR)
+
Me
O
E
E
CF3
X 28% (NMR)


CH2
XI
(II)
B)
CF3
XII 95%


R3
Boc
N
Z
CH2
XIII
(II)
C)
R3
CF3
Z
N
Boc
XIV
a R3: —H ; Z: —CH2— 85%
b R3: —O—Me ; Z: —CH2— 84%
c R3: —F ; Z: —CH2— 86%
d R3: —H ; Z: —(CH2)2— 93%

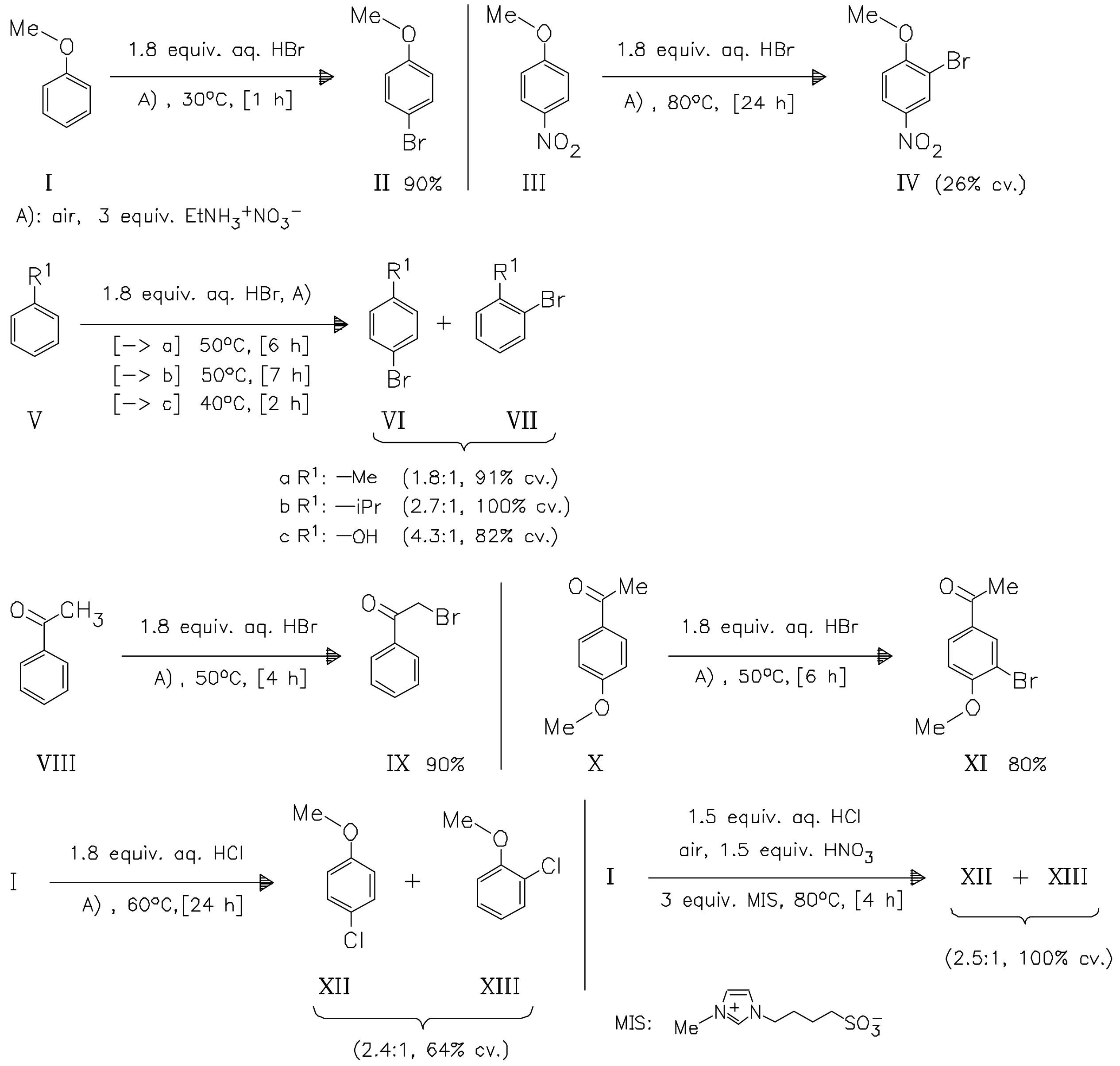

Ar
E
E
CH2
XV
(II)
[-> a] B)
[-> b] A)
I
Ar
O
O
E
E
CF3
XVI
a Ar: —Ph 45%
b Ar: —O—Me 77%

Halogen compounds
Q 0090

DOI: 10.1002/chin.201335052

35- 052

Metal and H_2O_2 Free Aerobic Oxidative Aromatic Halogenation with $[RNH_3^+]$ $[NO_3^-]$/HX and ($[BMIM(SO_3H)][NO_3]_x(X)_y]$ (X: Br, Cl) as Multifunctional Ionic Liquids. — Novel multifunctional ionic liquids are generated by addition of HBr or HCl to alkylammonium nitrates and to 3-methyl-1-(butyl-4-sulfonyl)imidazolium salts. The resulting systems act as both solvent and promoter for the aerobic oxidative halogenation of arenes under mild conditions and can be reused over several cycles. — (PREBIL, R.; LAALI*, K. K.; STAVBER, S.; Org. Lett. 15 (2013) 9, 2108-2111, http://dx.doi.org/10.1021/ol4001476 ; Dep. Chem., Univ. North Fla., Jacksonville, FL 32224, USA; Eng.) — H. Haber

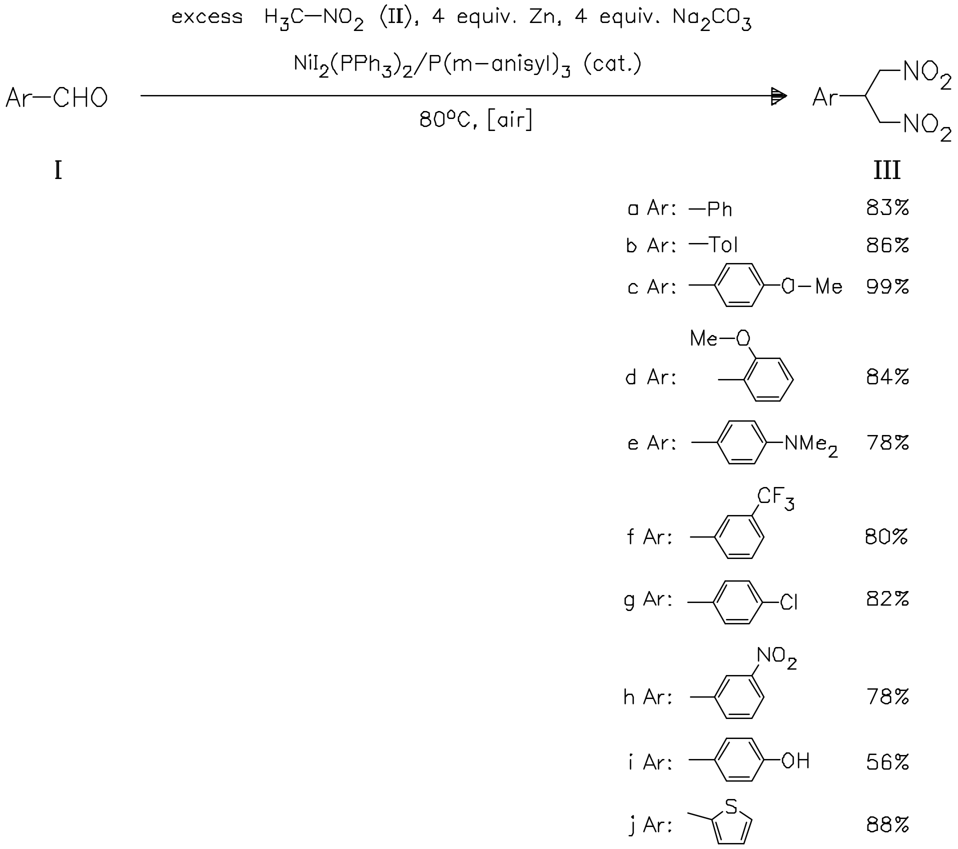


Nitro compounds
Q 0100

DOI: 10.1002/chin.201335053

35- 053

One-Pot Synthesis of 1,3-Dinitroalkanes Catalyzed by Nickel Species. — The title compounds are efficiently obtained by a simple one-pot reaction of various aromatic aldehydes with nitromethane under mild reaction conditions. — (GAO, M.; WEI*, Y.-P.; J. Chem. Res. 37 (2013) 3, 146-148, http://dx.doi.org/10.3184/174751913X13596259214753 ; Dep. Chem., Coll. Sci., Tianjin Univ., Tianjin 300072, Peop. Rep. China; Eng.) — H. Toeppel

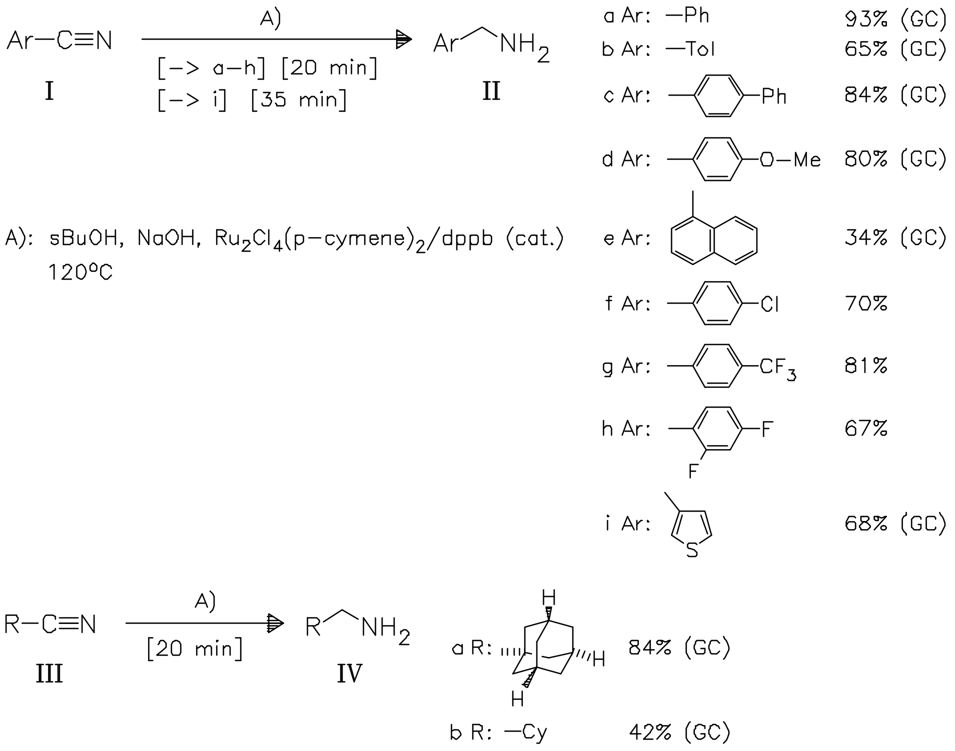


Amines
Q 0120

DOI: 10.1002/chin.201335054

35- 054

Selective Ruthenium-Catalyzed Transfer Hydrogenations of Nitriles to Amines with 2-Butanol. — The bulkiness of 2-butanol, which is used as hydrogen-transfer reagent, suppresses the unwanted subsequent reductive amination process. To date this is the most general hydrogenation methodology known. — (WERKMEISTER, S.; BORNSCHEIN, C.; JUNGE, K.; BELLER*, M.; Chem. - Eur. J. 19 (2013) 14, 4437-4440, http://dx.doi.org/10.1002/chem.201204633 ; Leibniz-Inst. Katal., Univ. Rostock, D-18059 Rostock, Germany; Eng.) — C. Gebhardt

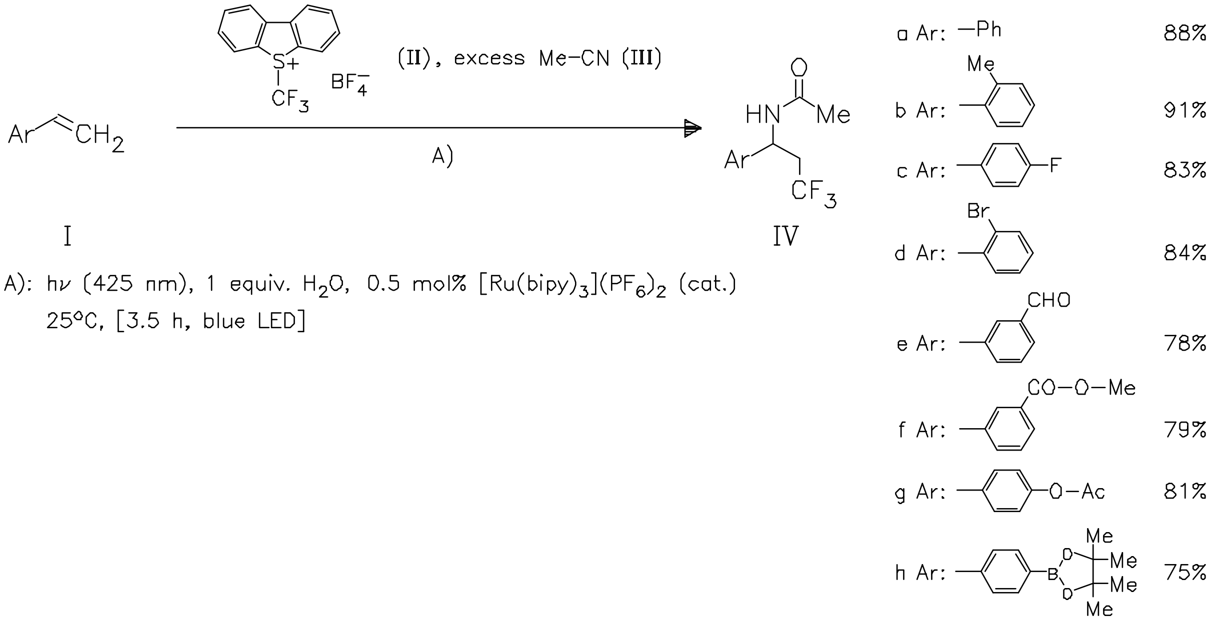


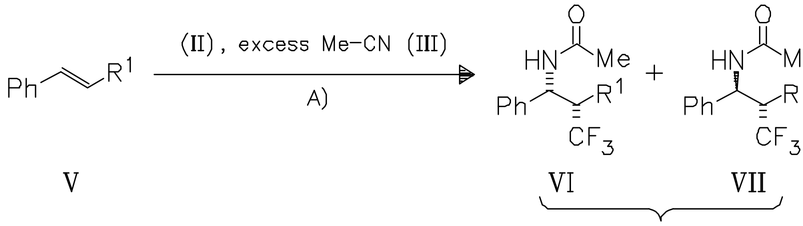
Amines
Q 0120

DOI: 10.1002/chin.201335055

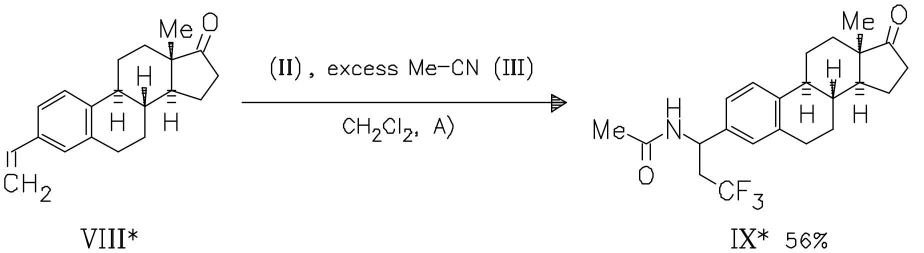
35- 055

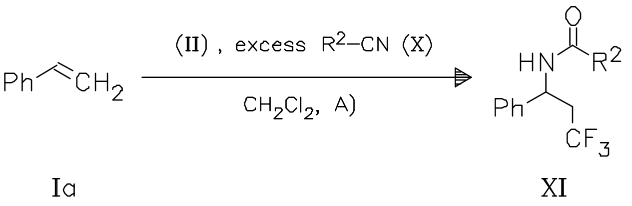
Intermolecular Aminotrifluoromethylation of Alkenes by Visible-Light-Driven Photoredox Catalysis. — The authors present a highly efficient and regioselective difunctionalization method of C=C double bonds, also applicable to steroid and amino acid scaffolds at "late stage". — (YASU, Y.; KOIKE*, T.; AKITA, M.; Org. Lett. 15 (2013) 9, 2136-2139, http://dx.doi.org/10.1021/ol4006272 ; Chem. Resour. Lab., Tokyo Inst. Technol., Yokohama 226, Japan; Eng.) — M. Duhs





a R^1: —Me 87% (65:35)
b R^1: —Ph 77% (89:11)
c R^1: —CO—O—Me 80% (21:79)
d R^1: —CO—O—Bn 77% (27:73)





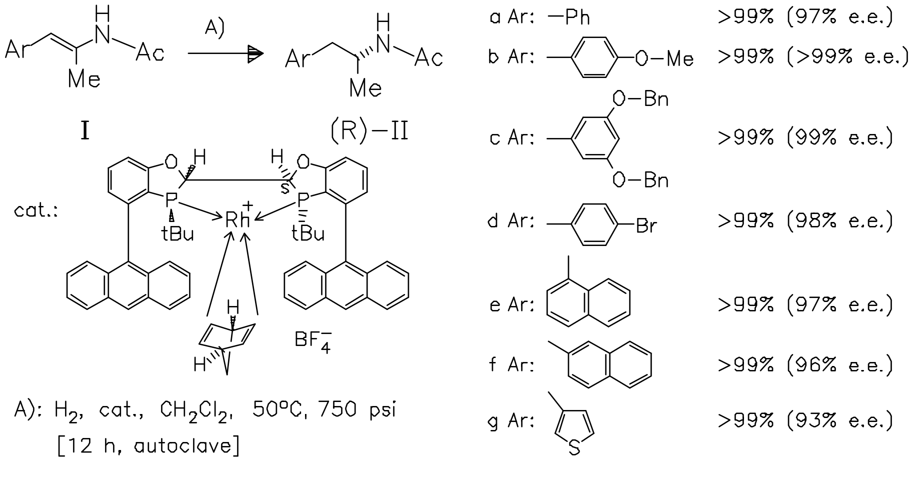
a R^2: $-CH_2-O-Me$ 53%
b R^2: —◁ 77%
c R^2: —Cy 67%

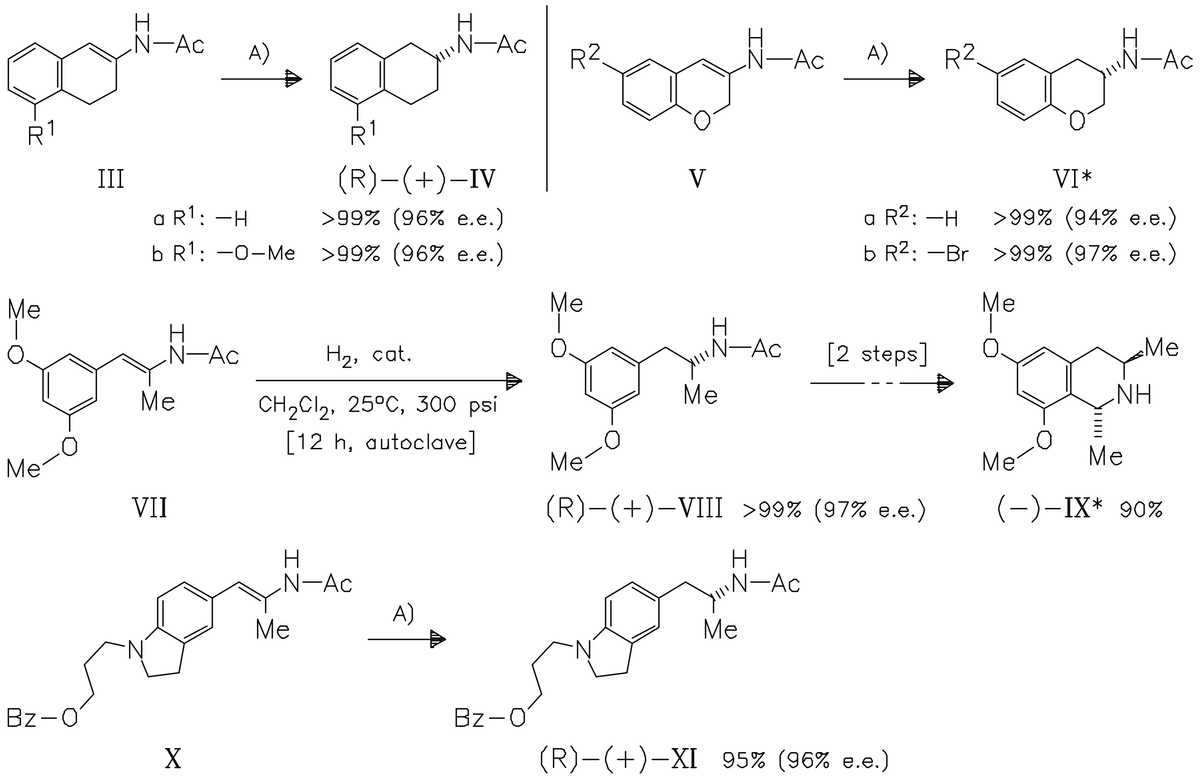
Amines
Q 0120

DOI: 10.1002/chin.201335056

35- 056

Design of Phosphorus Ligands with Deep Chiral Pockets: Practical Synthesis of Chiral β-Arylamines by Asymmetric Hydrogenation. — The newly developed bisphosphorus ligand shows high efficiency in the title reaction and several enamides are hydrogenated with excellent enantioselectivities. Furthermore, this method can be applied to the synthesis of important key intermediates for natural products and therapeutic agents, e.g. compounds (IX) and (XI). — (LIU, G.; LIU, X.; CAI, Z.; JIAO, G.; XU, G.; TANG*, W.; Angew. Chem., Int. Ed. 52 (2013) 15, 4235-4238, http://dx.doi.org/10.1002/anie.201300646 ; State Key Lab. Bioorg. Nat. Prod. Chem., Shanghai Inst. Org. Chem., Acad. Sin., Shanghai 200032, Peop. Rep. China; Eng.) — M. Zastrow



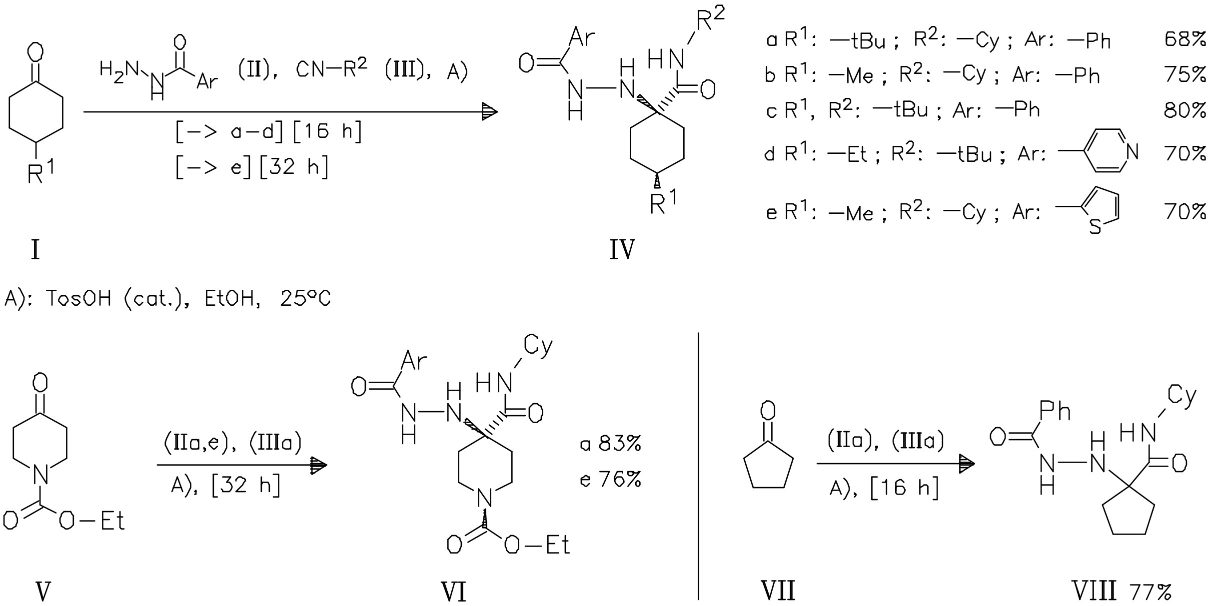


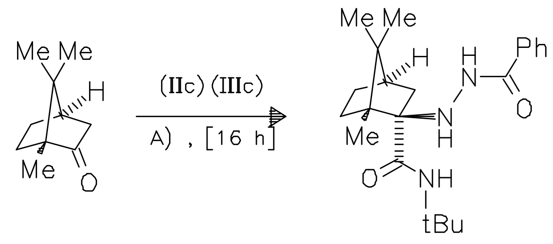
Hydrazines
Q 0150

DOI: 10.1002/chin.201335057

35- 057

An Efficient and Diastereoselective Synthesis of Hydrazino Amides via a Novel One-Pot Three-Component Reaction. — The simple and mild title reaction affords the corresponding hydrazine pseudopeptide derivatives, which are isolated as single diastereomer, in good yields. — (RAMEZANPOUR, S.; BALALAIE*, S.; ROMINGER, F.; BIJANZADEH, H. R.; Tetrahedron 69 (2013) 16, 3480-3485, http://dx.doi.org/10.1016/j.tet.2013.02.056 ; Peptide Chem. Res. Cent., K. N. Toosi Univ. Technol., Tehran, Iran; Eng.) — M. Zastrow





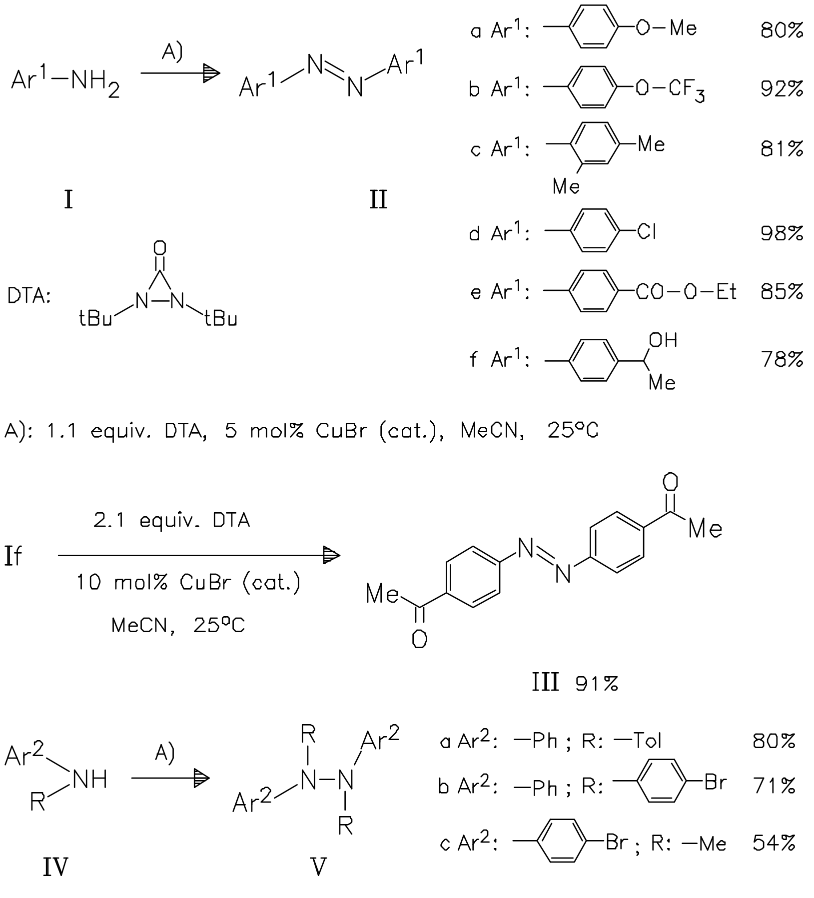
IX X 90%

Azo compounds
Q 0160

DOI: 10.1002/chin.201335058

35- 058

Facile Cu(I)-Catalyzed Oxidative Coupling of Anilines to Azo Compounds and Hydrazines with Diaziridinone under Mild Conditions. — Primary and secondary anilines can be efficiently oxidized to azo compounds and hydrazines using CuBr and diaziridinone, DTA. The reaction is operationally simple and is amenable to gram scale with no special precautions to exclude air or moisture. — (ZHU, Y.; SHI*, Y.; Org. Lett. 15 (2013) 8, 1942-1945, http://dx.doi.org/10.1021/ol4005917 ; Dep. Chem., Colo. State Univ., Fort Collins, CO 80523, USA; Eng.) — Bartels



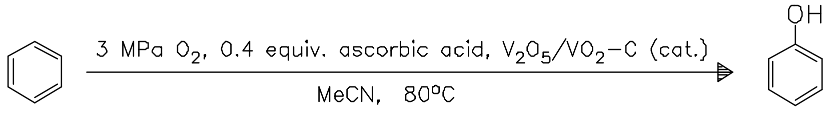
Monovalent phenols
Q 0180

DOI: 10.1002/chin.201335059

35- 059

Facile One-Pot Synthesis of V_xO_y@C Catalysts Using Sucrose for the Direct Hydroxylation of Benzene to Phenol.

— (WANG, W.; DING, G.; JIANG*, T.; ZHANG, P.; WU, T.; HAN, B.; Green Chem. 15 (2013) 5, 1150-1154, http://dx.doi.org/10.1039/c3gc00084b ; Beijing Natl. Lab. Mol. Sci., Inst. Chem., Chin. Acad. Sci., Beijing 100190, Peop. Rep. China; Eng.) — B. Voigt



I

II 9.5%

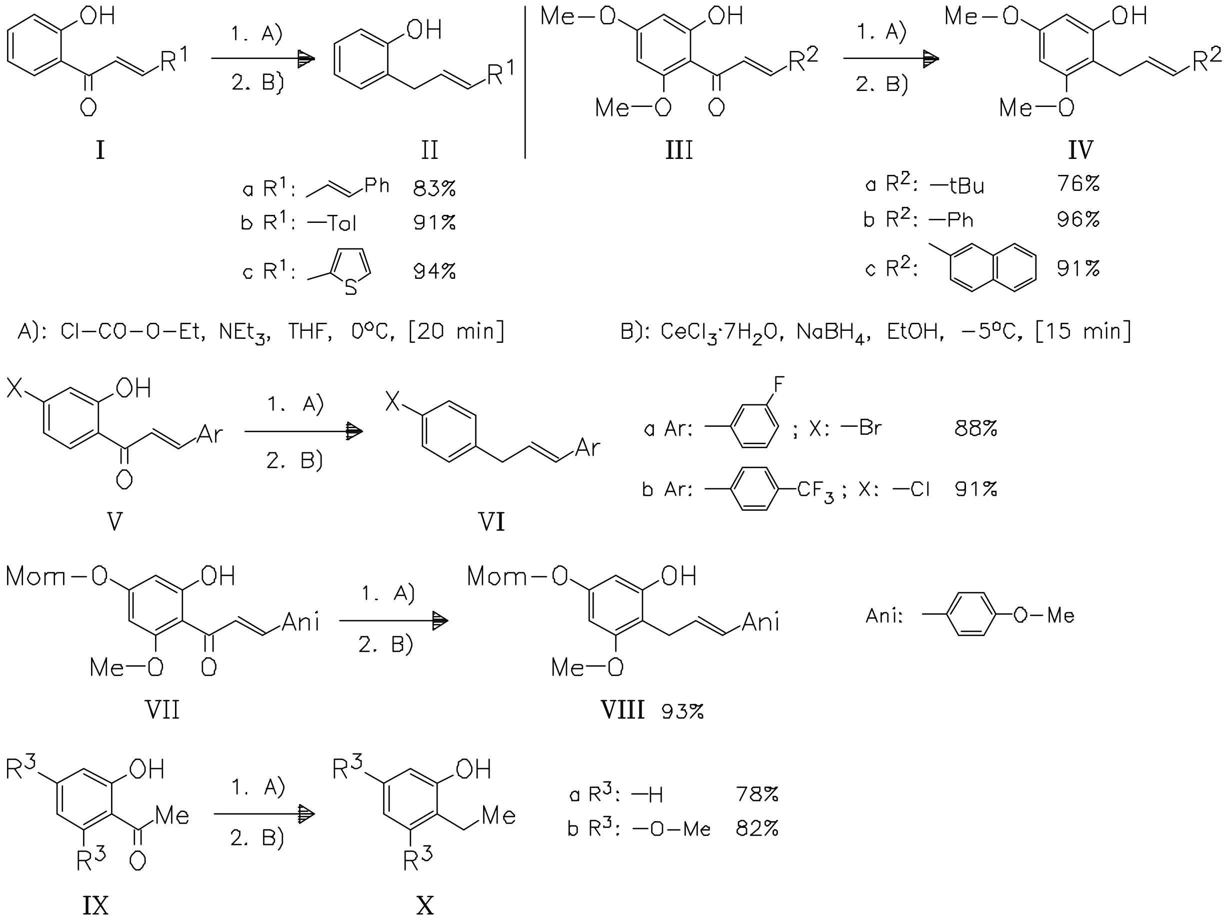
Monovalent phenols
Q 0180

DOI: 10.1002/chin.201335060

35- 060

Deoxygenation of α,β-Unsaturated Acylphenols Through Ethyl o-Acylphenylcarbonates with Luche Reduction.

— The reaction shows a very good selectivity as well as tolerance for a wide range of functional groups. Furthermore, the method is successfully applied to the deoxygenation of o-hydroxyacetophenones. — (ZHANG*, W.; et al.; Tetrahedron Lett. 54 (2013) 22, 2776-2780, http://dx.doi.org/10.1016/j.tetlet.2013.02.109 ; Sch. Pharm., Shanghai Jiaotong Univ., Shanghai 200240, Peop. Rep. China; Eng.) — Mais

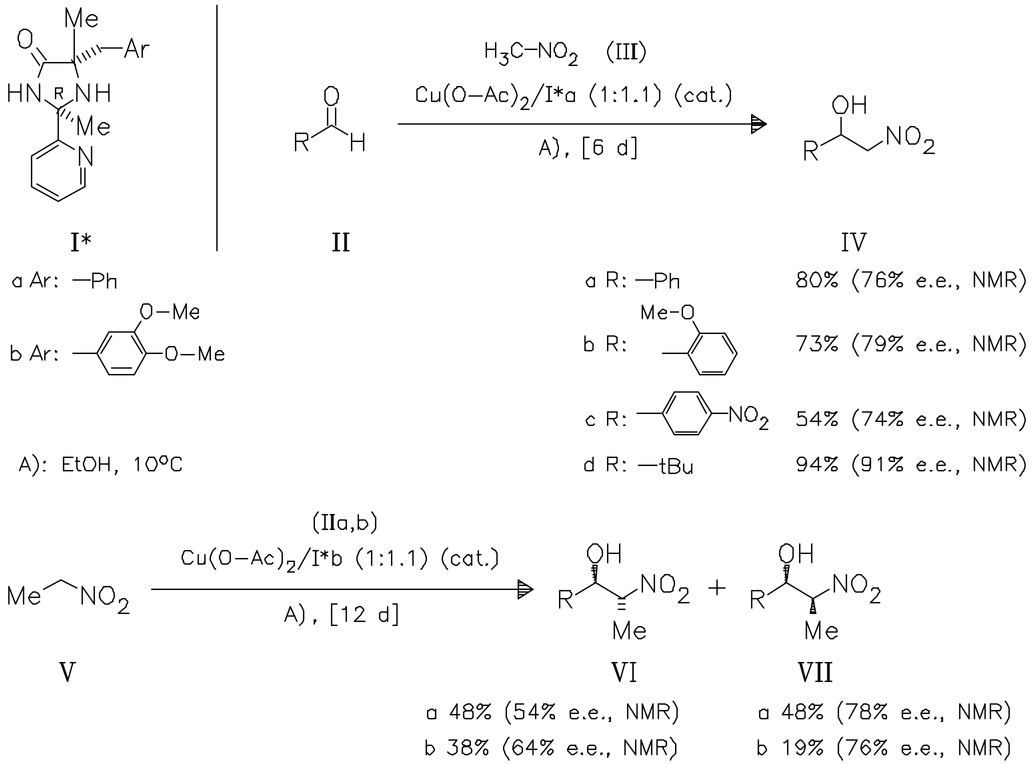


Alcohols
Q 0230

DOI: 10.1002/chin.201335061

35- 061

Enantiocatalytic Activity of Substituted 5-Benzyl-2-(pyridine-2-yl)imidazolidine--4-one Ligands. — The copper(II) complexes of newly synthesized chiral ligands (I) are studied as enantioselective catalysts for the Henry reaction. Chiral nitroaldols (IV) with the opposite configuration are obtained when the corresponding diastereoisomers of ligands (I) are used (not shown). None or only poor diastereoselectivity is observed for the enantioselective Henry reaction with nitroethane. — (DRABINA*, P.; KAREL, S.; PANOV, I.; SEDLAK, M.; Tetrahedron: Asymmetry 24 (2013) 5-6, 334-339, http://dx.doi.org/10.1016/j.tetasy.2013.02.007 ; Inst. Org. Chem. Technol., Univ. Pardubice, CZ-532 10 Pardubice, Czech Republic; Eng.) — H. Haber

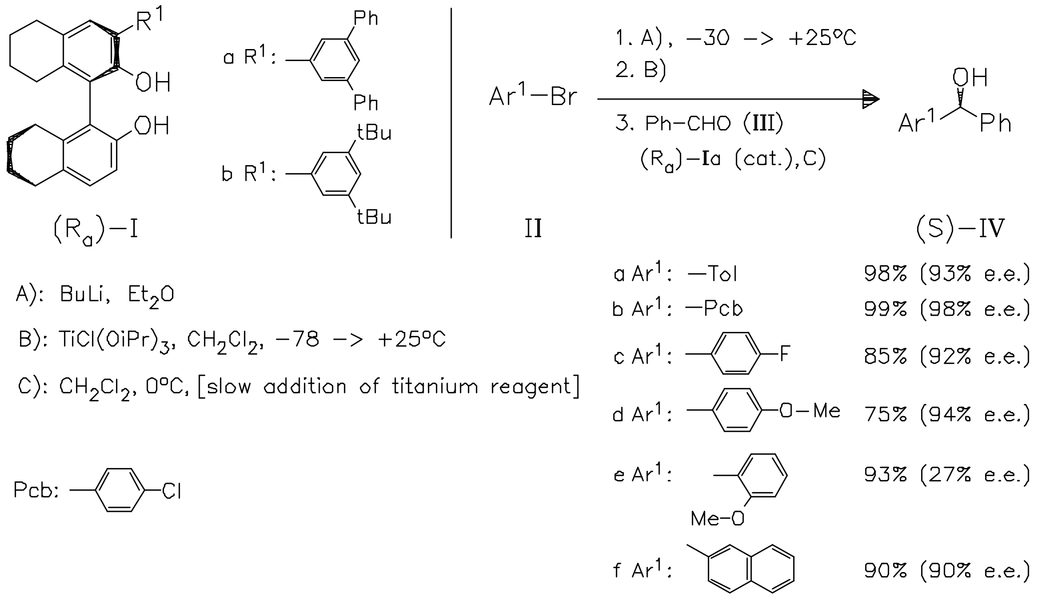


Alcohols
Q 0230

DOI: 10.1002/chin.201335062

35- 062

Practical Enantioselective Arylation and Heteroarylation of Aldehydes with in situ Prepared Organotitanium Reagents Catalyzed by 3-Aryl-H_8-BINOL-Derived Titanium Complexes. — The developed highly efficient title reaction affords a wide range of different substituted chiral alcohols. — (UENISHI, A.; NAKAGAWA, Y.; OSUMI, H.; HARADA*, T.; Chem. - Eur. J. 19 (2013) 15, 4896-4905, http://dx.doi.org/10.1002/chem.201203946 ; Dep. Chem. Mater. Technol., Kyoto Inst. Technol., Sakyo, Kyoto 606, Japan; Eng.) — M. Zastrow



(R_a)–I

II

(S)–IV

A): BuLi, Et_2O

B): $TiCl(OiPr)_3$, CH_2Cl_2, −78 -> +25°C

C): CH_2Cl_2, 0°C, [slow addition of titanium reagent]

a Ar^1: —Tol 98% (93% e.e.)

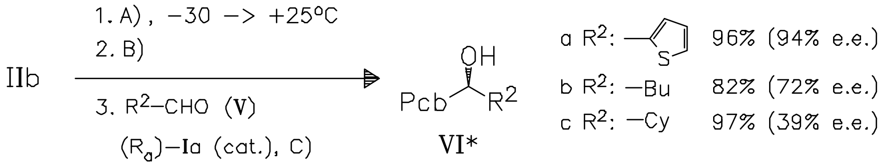
b Ar^1: —Pcb 99% (98% e.e.)

c 85% (92% e.e.)

d 75% (94% e.e.)

e 93% (27% e.e.)

f 90% (90% e.e.)

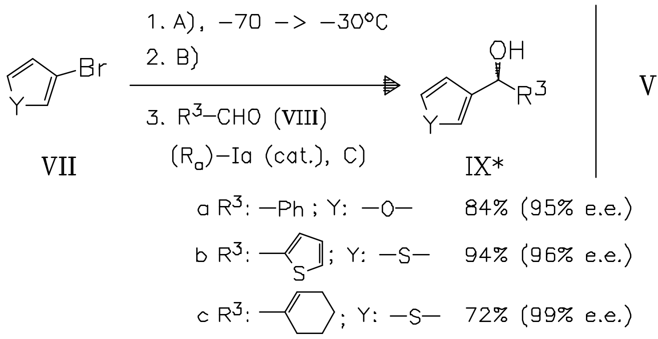


VI*

a 96% (94% e.e.)

b R^2: —Bu 82% (72% e.e.)

c R^2: —Cy 97% (39% e.e.)



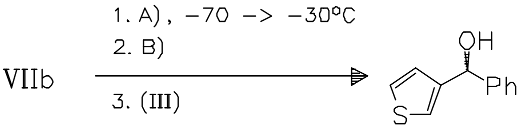
VII

IX*

a R^3: —Ph ; Y: —O— 84% (95% e.e.)

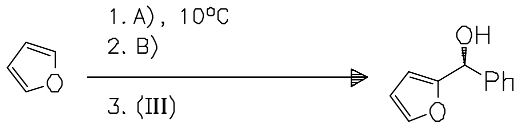
b 94% (96% e.e.)

c 72% (99% e.e.)



(S)–(+)–X

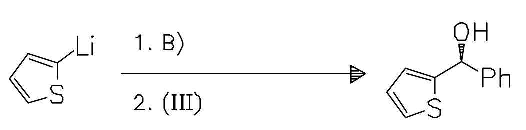
90% (95% e.e.)



XI

(S)–XII

68% (55% e.e.)



XIII

(S)–XIV

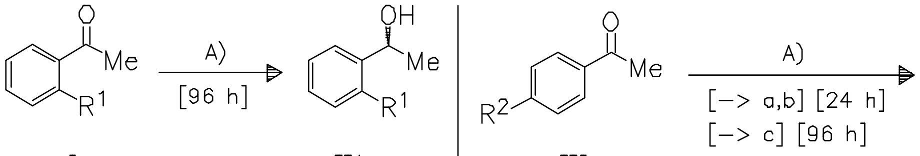
95% (95% e.e.)

Alcohols
Q 0230

DOI: 10.1002/chin.201335063

35- 063

Kluyveromyces marxianus CBS 6556 Growing Cells as a New Biocatalyst in the Asymmetric Reduction of Substituted Acetophenones. — (VITALE*, P.; D'INTRONO, C.; PERNA, F. M.; PERRONE, M. G.; SCILIMATI, A.; Tetrahedron: Asymmetry 24 (2013) 7, 389-394, http://dx.doi.org/10.1016/j.tetasy.2013.02.001 ; Dip. Farm.-Sci. Farm., Univ. Bari, I-70125 Bari, Italy; Eng.) — U. Scheffler

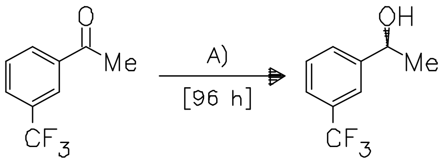


I → II*; III → IV*

a	R^1: —H	67% (48% e.e.)
b	R^1: —Me	8% (90% e.e.)
c	R^1: —Br	90% (94% e.e.)
d	R^1: —O—Me	50% (92% e.e.)

a	R^2: —Cl	95% (90% e.e.)
b	R^2: —NO_2	93% (96% e.e.)
c	R^2: —O—Me	25% (68% e.e.)

A): Kluyveromyces marxianus (CBS 6556), EtOH, 30°C



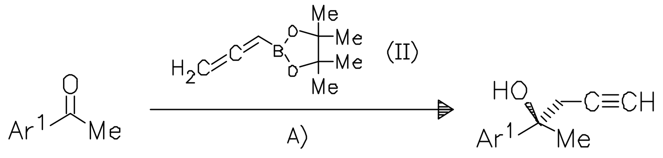
V → VI* 89% (66% e.e.)

Alcohols
Q 0230

DOI: 10.1002/chin.201335064

35- 064

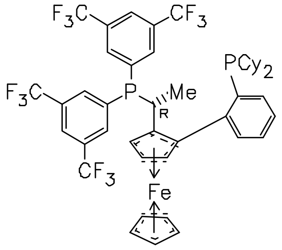
Silver-Catalyzed Allenylation and Enantioselective Propargylation Reactions of Ketones. — (KOHN, B. L.; ICHIISHI, N.; JARVO*, E. R.; Angew. Chem., Int. Ed. 52 (2013) 16, 4414-4417, http://dx.doi.org/10.1002/anie.201206971 ; Dep. Chem., Univ. Calif., Irvine, CA 92697, USA; Eng.) — C. Gebhardt

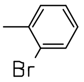
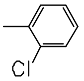
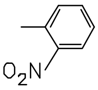
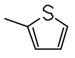


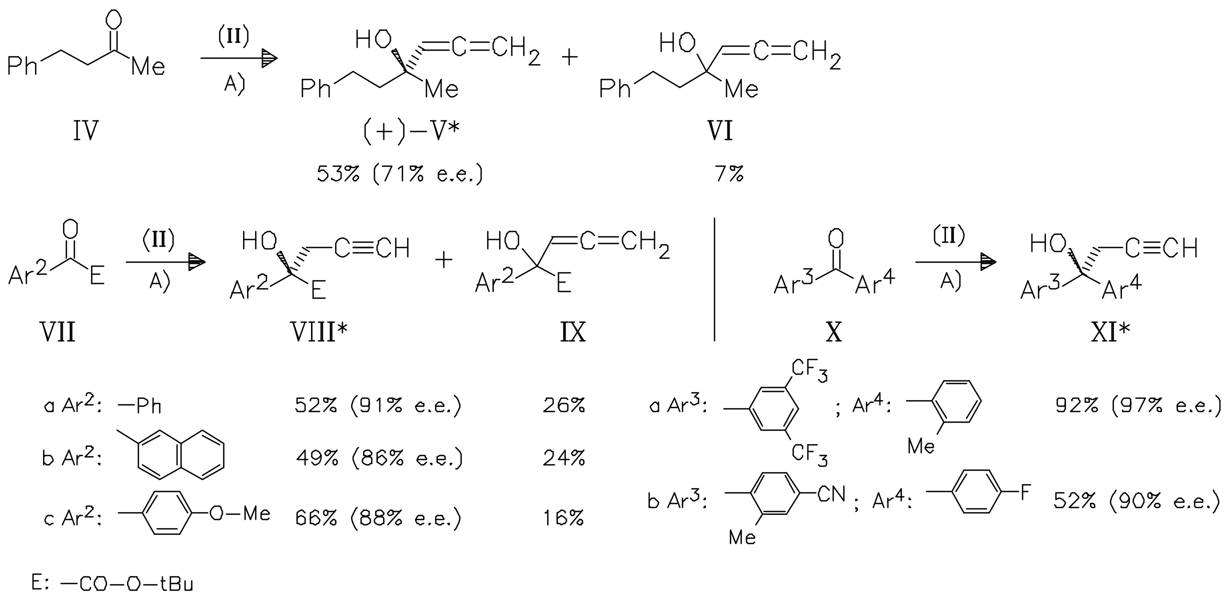
I → III*

A): tBuOH, AgF/WAL/tBu—ONa (cat.), Me—O—tBu
—20°C, [adddition of (II) over 3 h]

WAL:



a	Ar^1: —Ph	85% (81% e.e.)
b	Ar^1: 	70% (83% e.e.)
c	Ar^1: 	95% (83% e.e.)
d	Ar^1: 	48% (90% e.e.)
e	Ar^1: 	58% (87% e.e.)

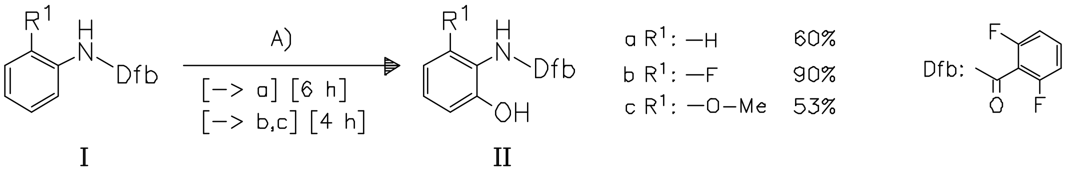


Phenol alcohols
Q 0250

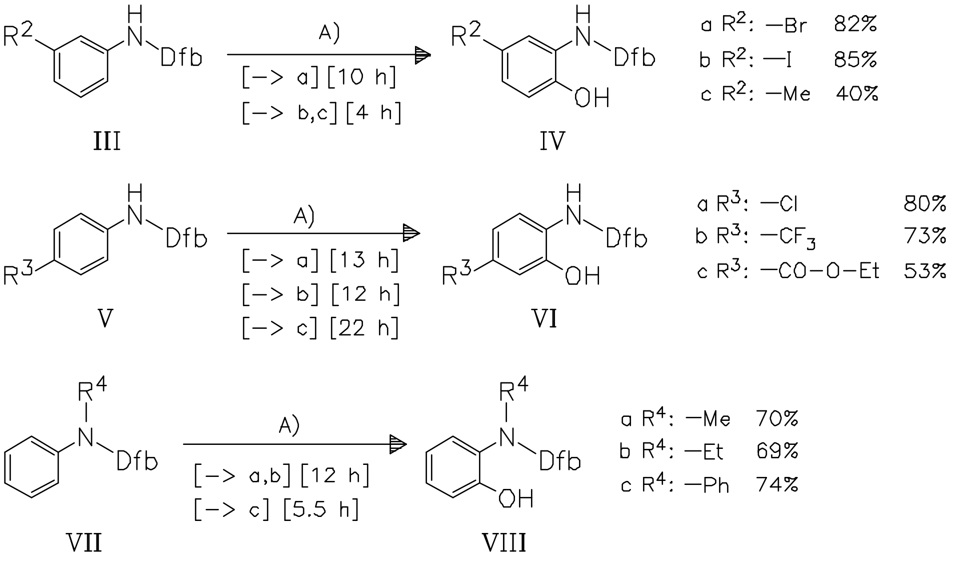
DOI: 10.1002/chin.201335065

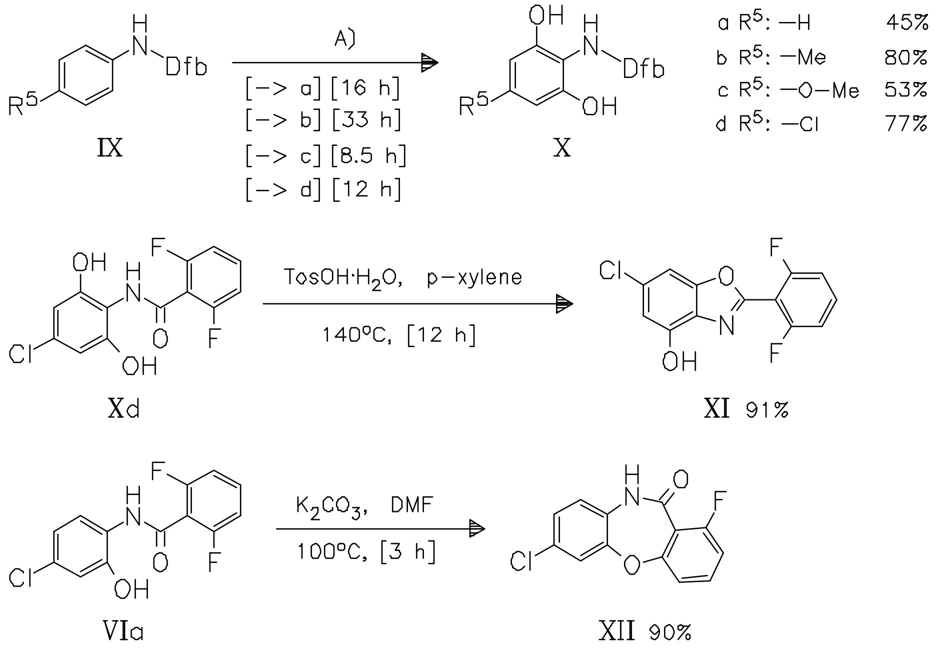
35- 065

Synthesis of 2-Aminophenols and Heterocycles by Ru-Catalyzed C—H Mono- and Dihydroxylation. — (YANG, X.; SHAN, G.; RAO*, Y.; Org. Lett. 15 (2013) 10, 2334-2337, http://dx.doi.org/10.1021/ol400437a ; Dep. Pharmacol. Pharm. Sci., Tsinghua Univ., Beijing 100084, Peop. Rep. China; Eng.) — U. Scheffler



A): $K_2S_2O_8$, 2.5 mol% $[RuCl_2(p\text{-}cymene)]_2$ (cat.), TFA/TFAA, 70—80°C



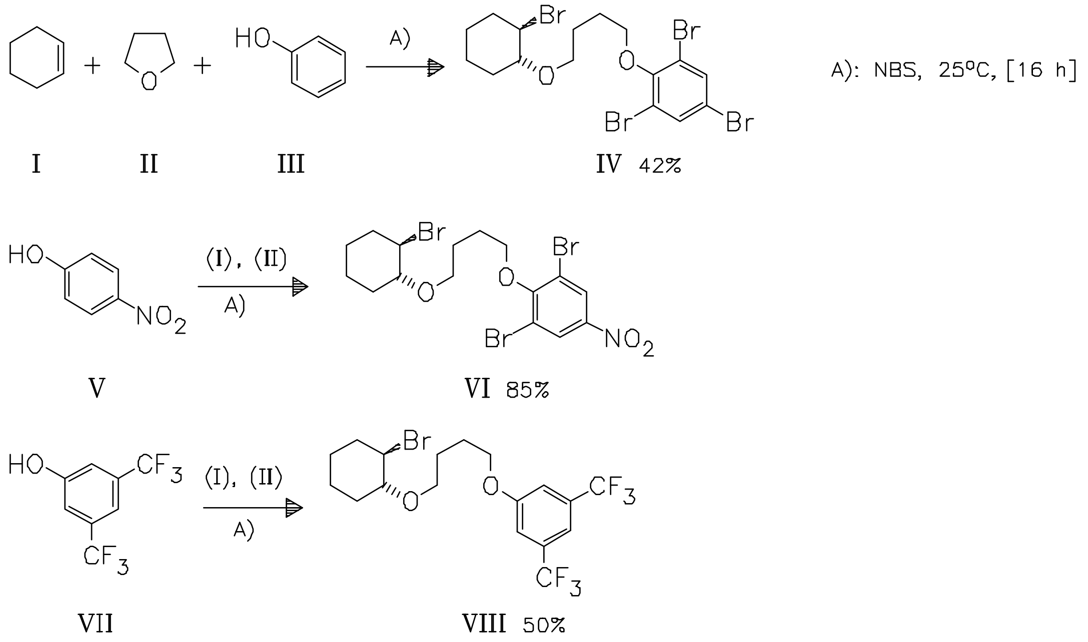


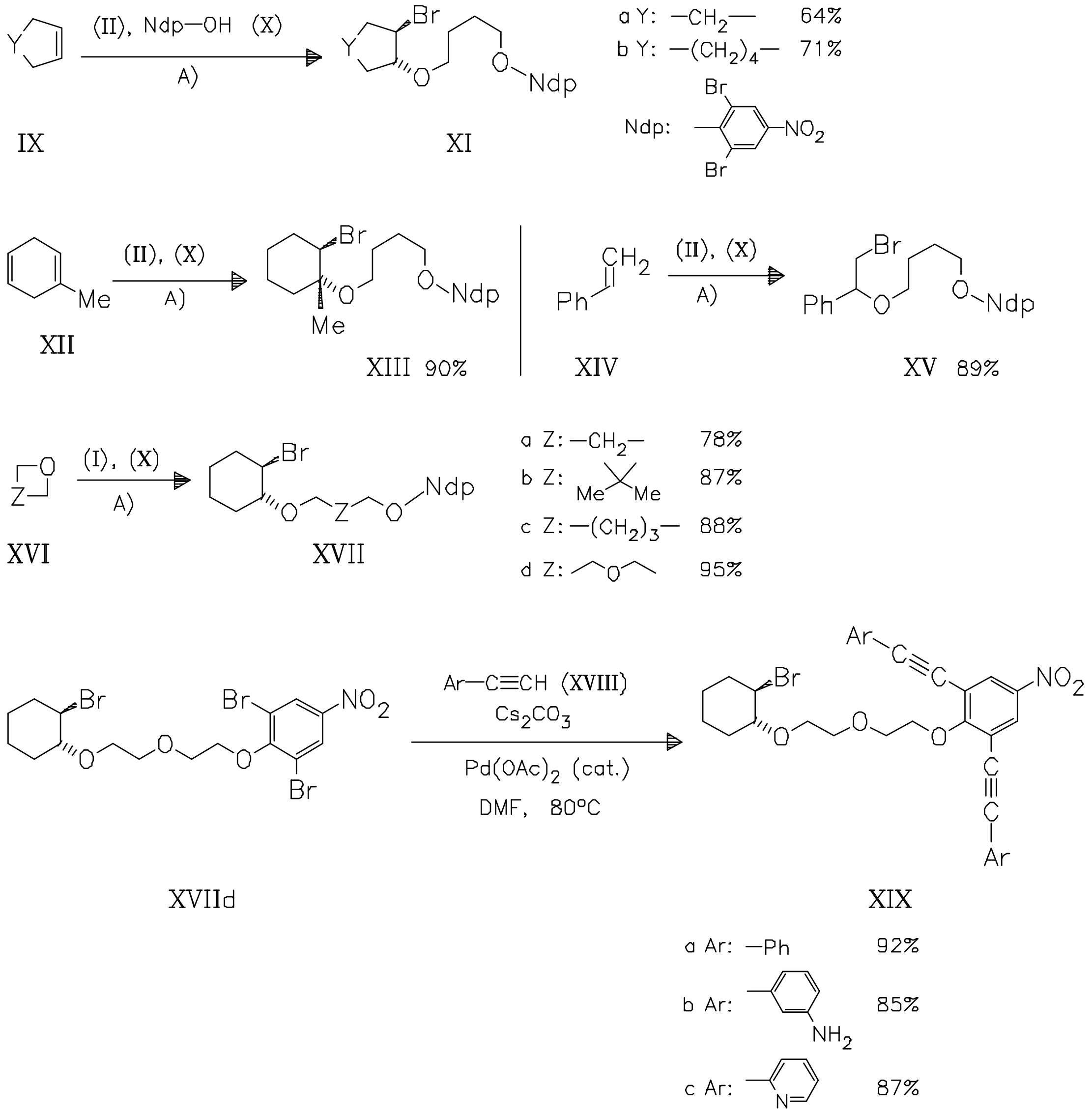
Phenol ethers
Q 0270

DOI: 10.1002/chin.201335066

35- 066

NBS-Initiated Electrophilic Phenoxyetherification of Olefins. — A one-pot electrophilic multicomponent phenoxyetherification using an olefin, a cyclic ether, a phenol, and NBS is developed. The resulting products, which contain an ether linkage and a functionalized phenoxy unit can be further manipulated to give building blocks that are potentially useful for self-assembly complex construction. — (KE, Z.; YEUNG*, Y.-Y.; Org. Lett. 15 (2013) 8, 1906-1909, http://dx.doi.org/10.1021/ol4005646 ; Dep. Chem., Natl. Univ. Singapore, Singapore 117543, Singapore; Eng.) — Bartels



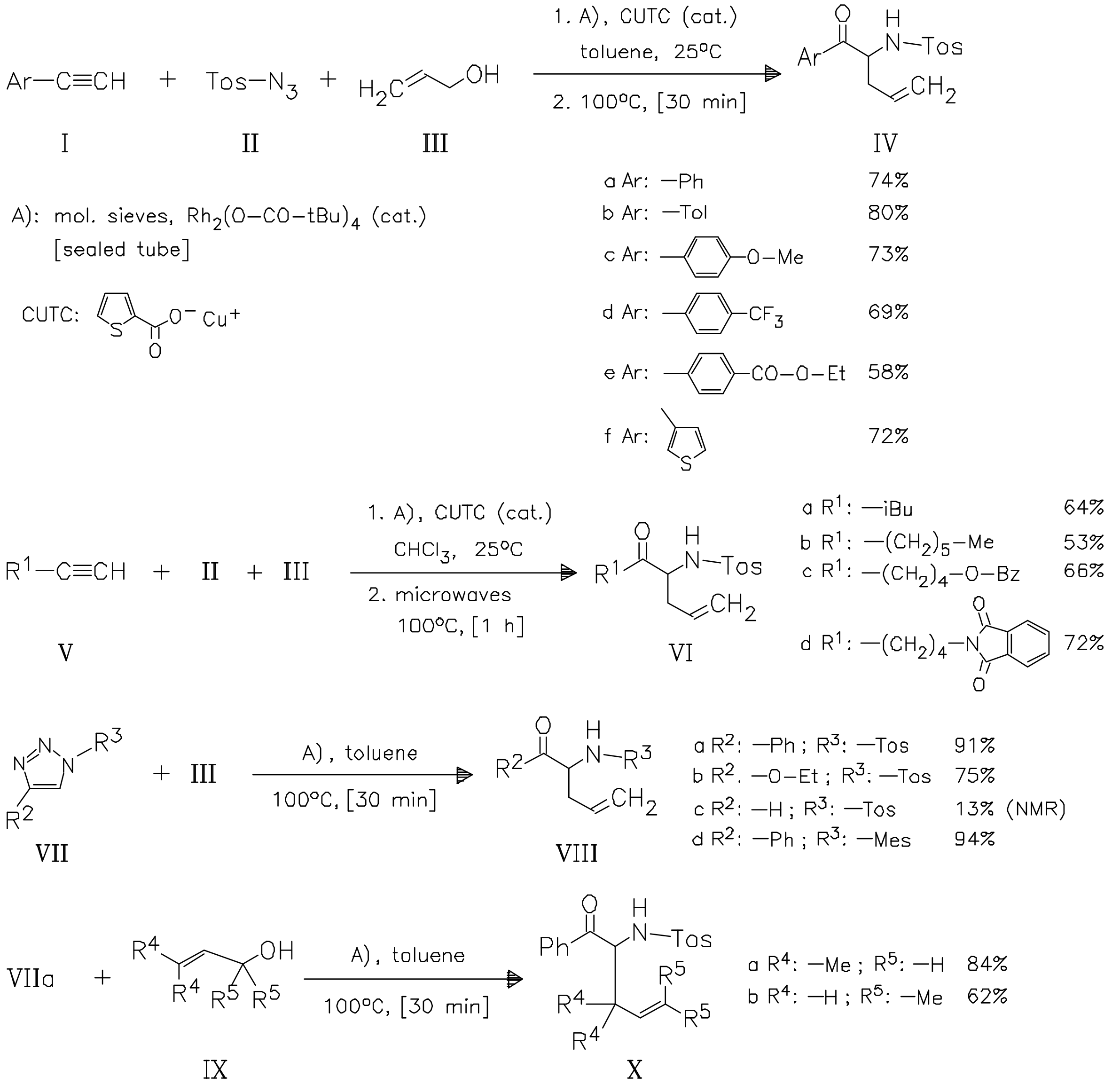

IX
(II), Ndp—OH (X)
A)
XI
Br
O
O
Ndp
a Y: —CH2— 64%
b Y: —(CH2)4— 71%
Ndp:
NO2
XII
Me
(II), (X)
A)
XIII 90%
XIV
Ph
CH2
XV 89%
XVI
(I), (X)
XVII
a Z: —CH2— 78%
b Z: Me Me 87%
c Z: —(CH2)3— 88%
d Z: 95%
XVIId
Ar—C≡CH (XVIII)
Cs2CO3
Pd(OAc)2 (cat.)
DMF, 80°C
XIX
Ar
C
a Ar: —Ph 92%
b Ar: NH2 85%
c Ar: N 87%

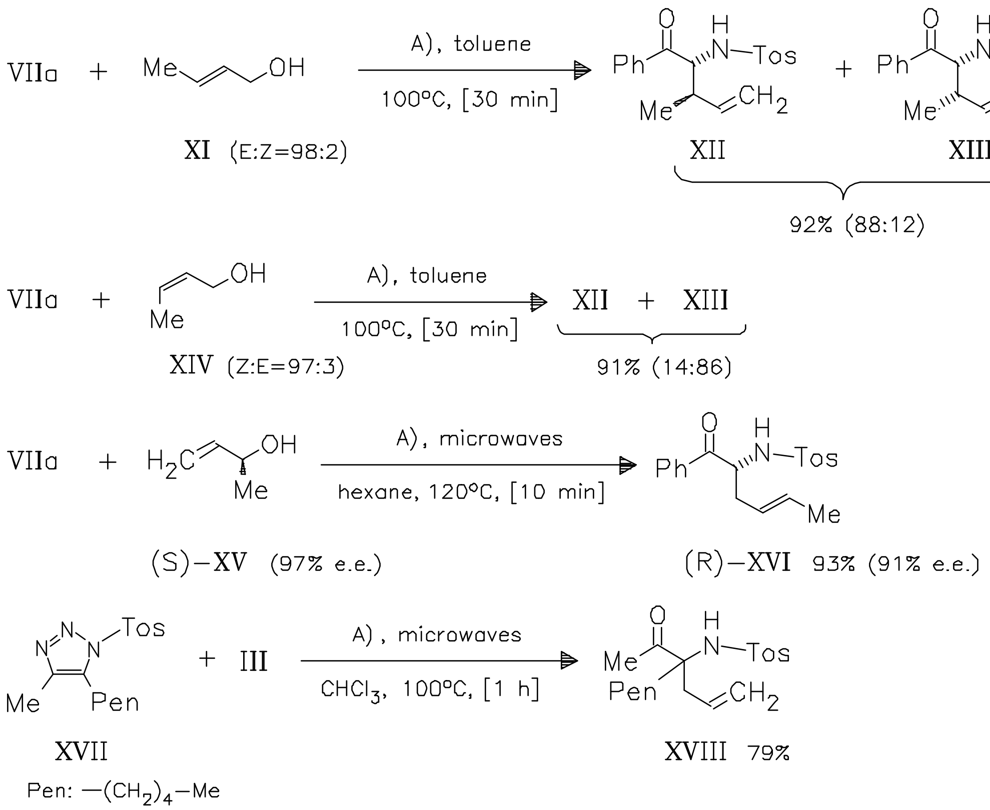
Ketones
Q 0350

DOI: 10.1002/chin.201335067

35- 067

One-Pot Procedure for the Introduction of Three Different Bonds onto Terminal Alkynes Through N-Sulfonyl-1,2,3-triazole Intermediates. — This method yields α-substituted α-amino ketone derivatives which are substructures of bioactive compounds and intermediates in the synthesis of α-amino alcohols. The reaction is suitable for a variety of different substituents on the terminal alkyne. The use of chiral substrate (XV) results in a good level of chirality transfer. — (MIURA*, T.; TANAKA, T.; BIYAJIMA, T.; YADA, A.; MURAKAMI, M.; Angew. Chem., Int. Ed. 52 (2013) 14, 3883-3886, http://dx.doi.org/10.1002/anie.201209603 ; Dep. Synth. Chem. Biol. Chem., Kyoto Univ., Katsura, Kyoto 615, Japan; Eng.) — Roessler



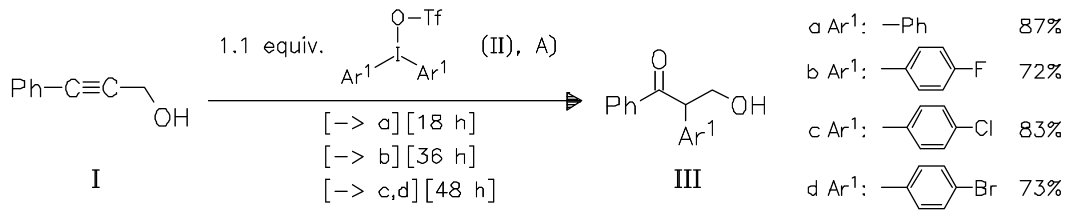


Ketones
Q 0350

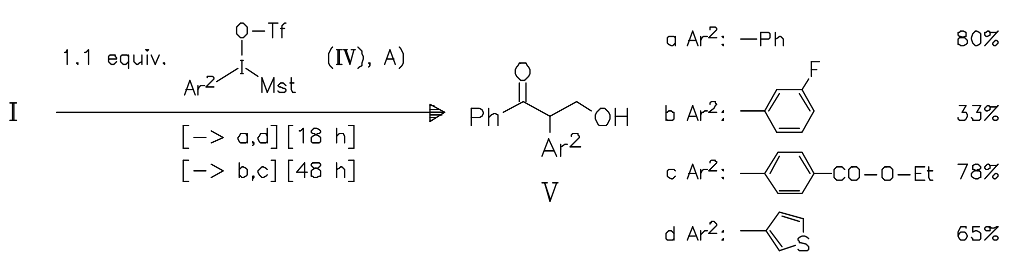
DOI: 10.1002/chin.201335068

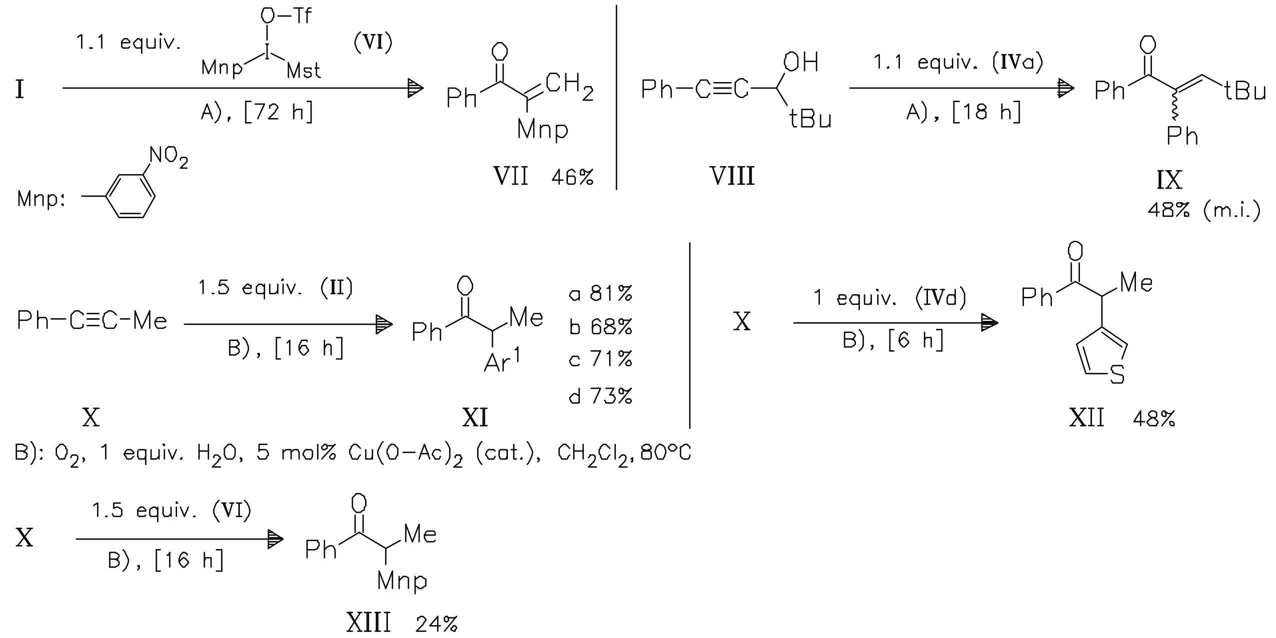
35- 068

Copper-Catalyzed Regioselective Reaction of Internal Alkynes and Diaryliodonium Salts. — A new approach to α-aryl ketones by the copper-catalyzed highly regioselective reaction of internal alkynes with diaryliodonium triflates is studied and mechanistic implications resulting from different substrate structures are discussed. — (XU, Z.-F.; CAI, C.-X.; LIU*, J.-T.; Org. Lett. 15 (2013) 9, 2096-2099, http://dx.doi.org/10.1021/ol4003543 ; State Key Lab. Organofluorine Chem., Shanghai Inst. Org. Chem., Chin. Acad. Sci., Shanghai 200032, Peop. Rep. China; Eng.) — H. Haber



A): 1.8 equiv. Li_2CO_3, 20 mol% CuI (cat.), CH_2Cl_2, 70°C

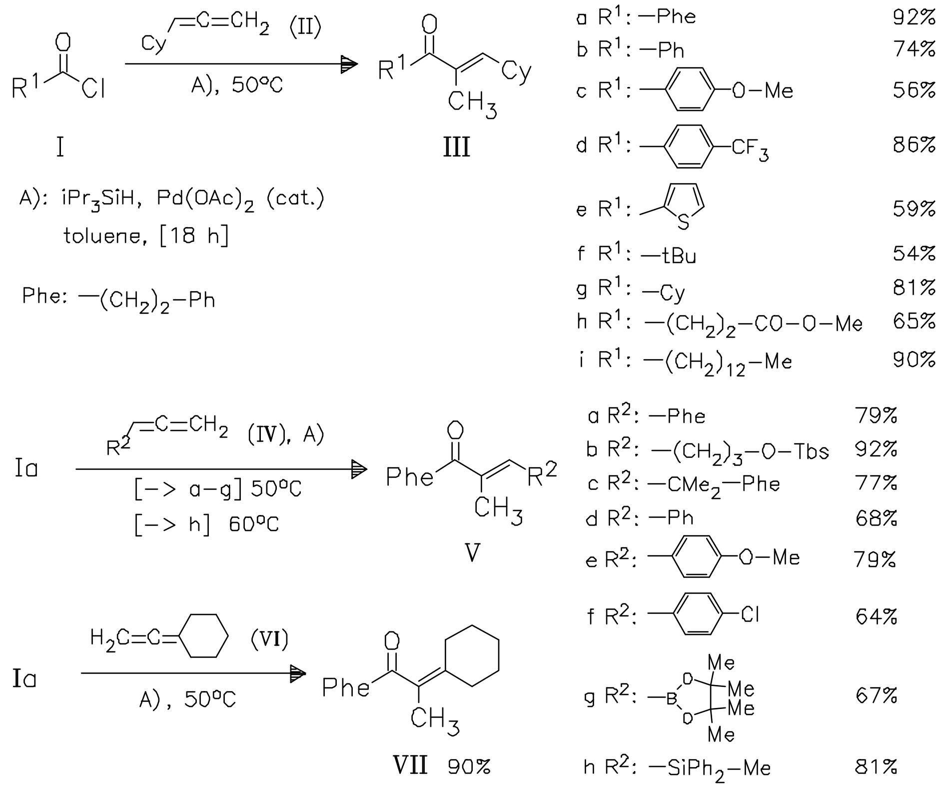


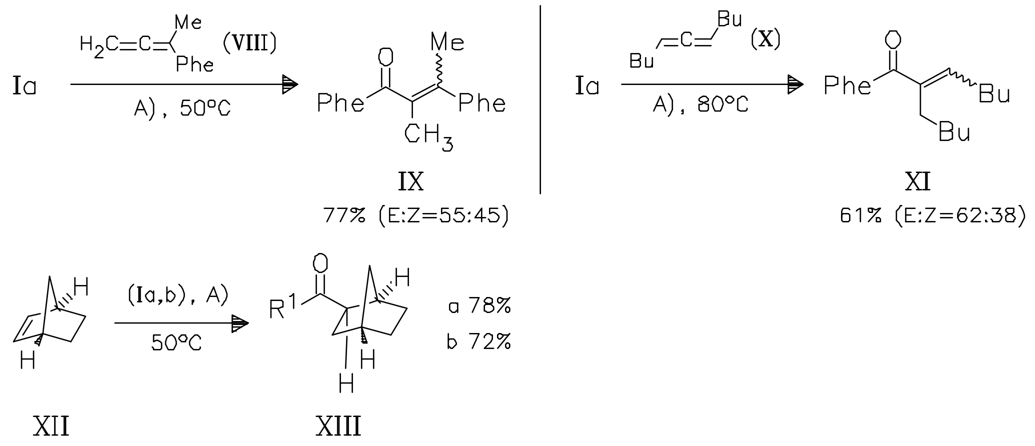


Ketones
Q 0350
DOI: 10.1002/chin.201335069

35- 069

Palladium-Catalyzed Formal Hydroacylation of Allenes Employing Acid Chlorides and Hydrosilanes. — The reaction proceeds with excellent regio- and stereoselectivities without any directing groups in the acyl chlorides. — (FUJIHARA, T.; TATSUMI, K.; TERAO, J.; TSUJI*, Y.; Org. Lett. 15 (2013) 9, 2286-2289, http://dx.doi.org/10.1021/ol400862k ; Dep. Energy Hydrocarbon Chem., Grad. Sch. Eng., Kyoto Univ., Nishikyo, Kyoto 615, Japan; Eng.) — Y. Steudel



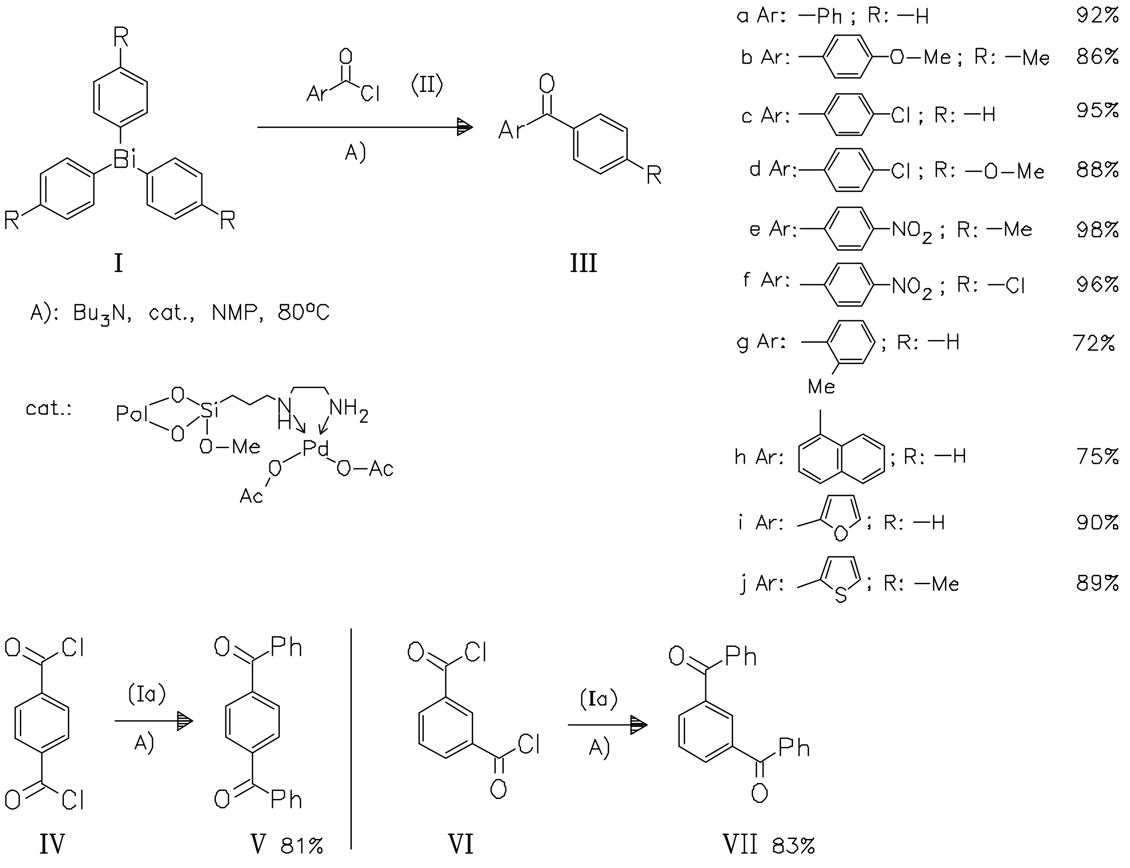


Ketone derivatives
Q 0370 DOI: 10.1002/chin.201335070

35- 070

A Phosphane-Free, Atom-Efficient Cross-Coupling Reaction of Triarylbismuths with Acyl Chlorides Catalyzed by MCM-41-Immobilized Palladium Complex.

— The catalyst can be reused at least 10 times without any significant decrease in activity. — (ZHAO, H.; YIN, L.; CAI*, M.; Eur. J. Org. Chem. 2013, 7, 1337-1345, http://dx.doi.org/10.1002/ejoc.201201432 ; Dep. Chem., Jiangxi Norm. Univ., Nanchang, Jiangxi 330022, Peop. Rep. China; Eng.) — Roessler



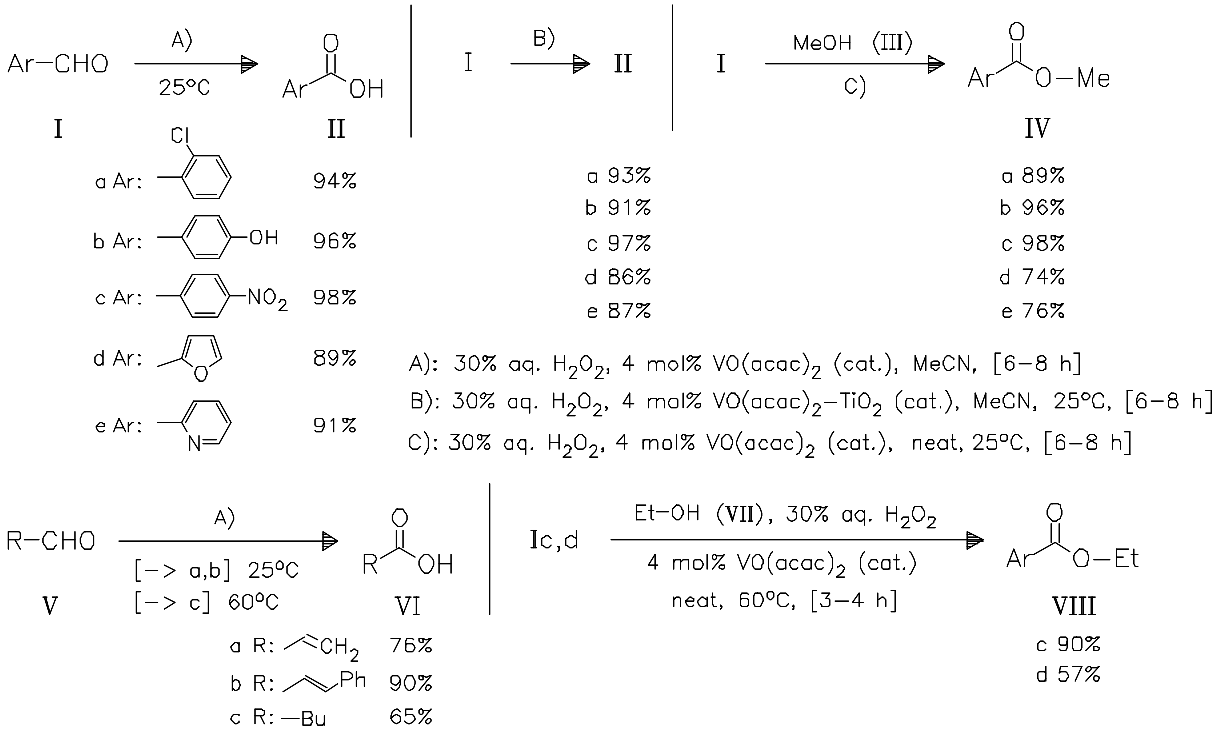
Carboxylic acids

Q 0420

DOI: 10.1002/chin.201335071

35- 071

VO(acac)$_2$: An Efficient Catalyst for the Oxidation of Aldehydes to the Corresponding Acids in the Presence of Aqueous H_2O_2. — The reaction provides a variety of carboxylic acids in an efficient manner in MeCN under either conditions A) or B), where similar yields are obtained. In methanol under conditions C), methyl esters are formed. Elevated temperatures render possible the preparation of ethyl esters. — (TALUKDAR, D.; SHARMA, K.; BHARADWAJ, S. K.; THAKUR*, A. J.; Synlett 24 (2013) 8, 963-966, http://dx.doi.org/10.1055/s-0032-1316914 ; Dep. Chem. Sci., Tezpur Univ., Tezpur 784 028, India; Eng.) — Mais



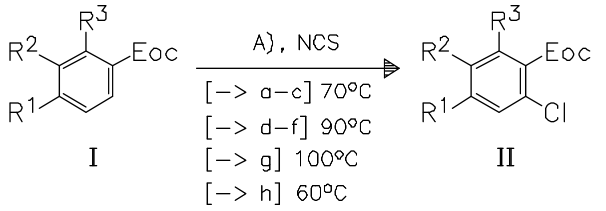
Halogenated carboxylic acids and esters

Q 0430

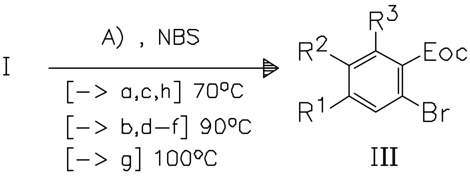
DOI: 10.1002/chin.201335072

35- 072

Regio- and Chemoselective C—H Chlorination/Bromination of Electron-Deficient Arenes by Weak Coordination and Study of Relative Directing-Group Abilities. — The novel and scalable ortho-chlorination/bromination reaction can be applied for the synthesis of a broad range of arene chlorides and bromides. A critical factor for the mono- and dihalogenation is the amount of TfOH [cf. synthesis of (IX) and (X)]. A feasible and selective double C—H halogenation with both chloride and bromide is also possible [viz. (XI)]. The use of other directing groups is evaluated and the order of priority is NHAc > CONHR > COR > SO_2NHR > CO_2Et, $CONR^1R^2$, $SO_2NR^1R^2$. The potential of this method is demonstrated by the synthesis of the intermediates (XIV) and (XIX) of plavix (XV) and N-methyl clopamide (XX), respectively. — (SUN, X.; SHAN, G.; SUN, Y.; RAO*, Y.; Angew. Chem., Int. Ed. 52 (2013) 16, 4440-4444, http://dx.doi.org/10.1002/anie.201300176 ; Dep. Pharmacol. Pharm. Sci., Tsinghua Univ., Beijing 100084, Peop. Rep. China; Eng.) — C. Gebhardt



I → II

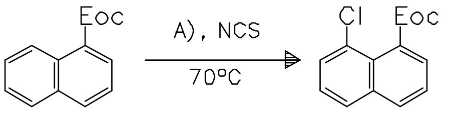


I → III

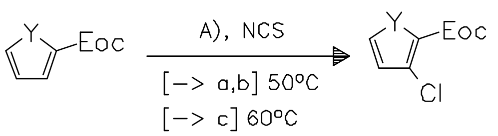
		II	III
a	R^1: —Me ; R^2, R^3: —H	67%	75%
b	R^1, R^3: —H ; R^2: —Me	80%	80%
c	R^1, R^2: —H ; R^3: —Me	78%	82%
d	R^1: —Cl ; R^2, R^3: —H	57%	64%
e	R^1: —Br ; R^2, R^3: —H	85%	77%
f	R^1: —CF_3 ; R^2, R^3: —H	43%	36%
g	R^1: —NO_2 ; R^2, R^3: —H	56%	46%
h	R^1, R^3: —H ; R^2: —O—Me	73%	71%

A): TfOH, $Na_2S_2O_8$, $Pd(OAc)_2$ (cat.), DCE

Eoc: —CO—O—Et

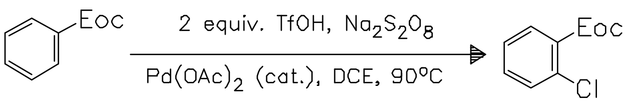


IV → V 78%

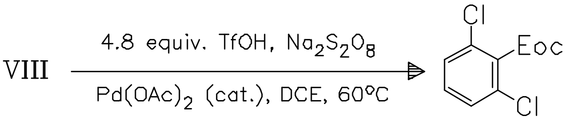


VI → VII

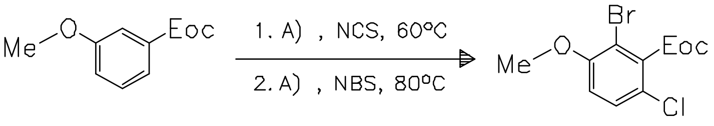
a Y: $-\overset{\text{Me}}{\text{N}}-$ 46%
b Y: —S— 53%
c Y: —O— 75%



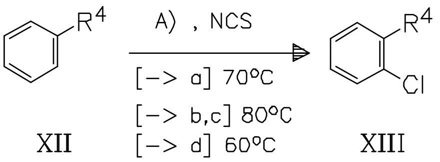
VIII → IX 85%



X 55%



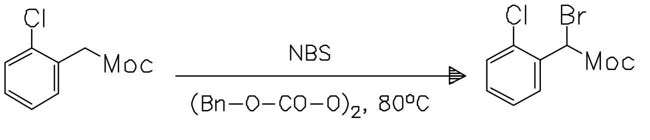
Ih → XI 77%



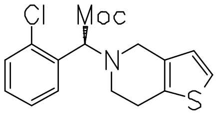
XII → XIII

a	R^4: —CH_2—Moc	66%
b	R^4: —CO—NH_2	61%
c	R^4: —CO—tBu	75%
d	R^4: —SO_2—NH—Bu	49%

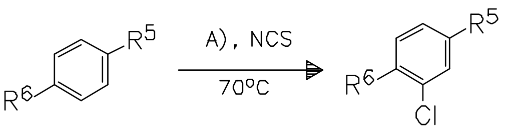
Moc: —CO—O—Me



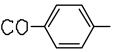
XIIIa → XIV 76%

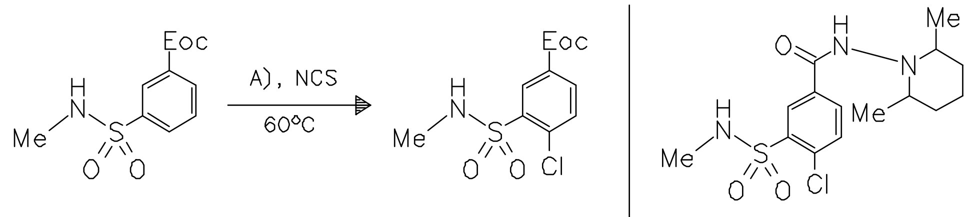


XV*



XVI → XVII

a	R^5: —CO—NH—Pr ; R^6: —NH—Ac	40%
b	R^5: —H ; R^6: —NH—Tos	36%
c	R^5: —CO—Ph ; R^6: —NH—Bz	68%
d	R^5: —H ; R^6: —CO—  —SO_2—NH—Et	75%
e	R^5: —Eoc ; R^6: —SO_2—NH—Et	49%



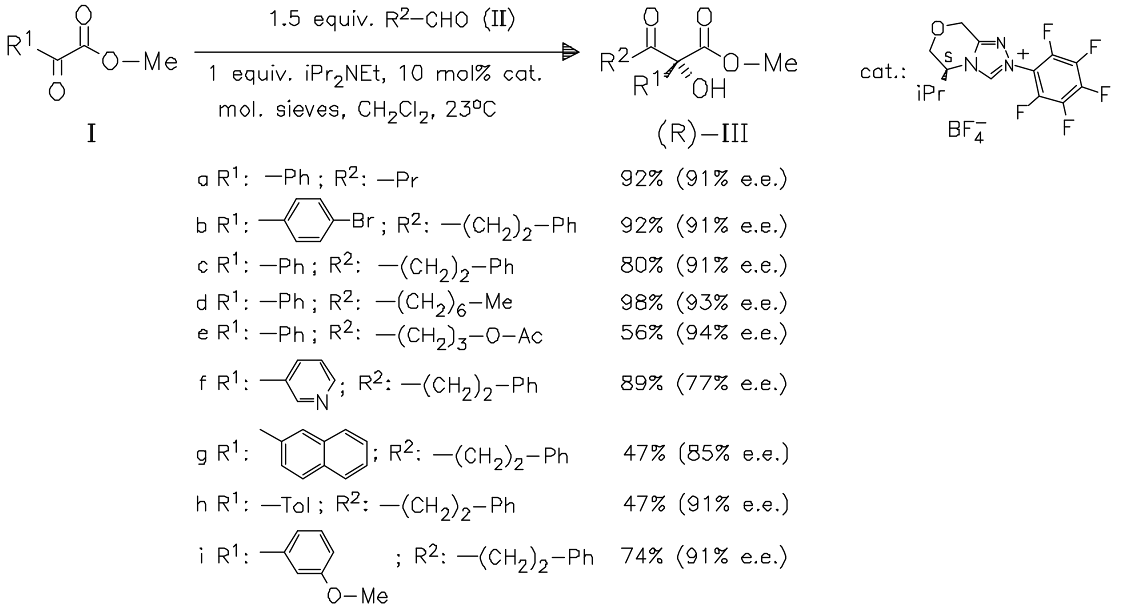
XVIII XIX 54% XX

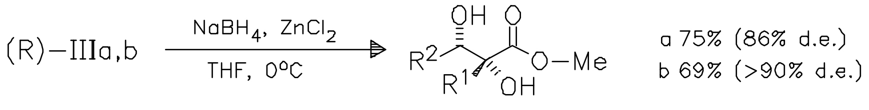
Hydroxycarboxylic acids (ether carboxylic acids) and esters

Q 0450 DOI: 10.1002/chin.201335073

35- 073

Highly Chemo- and Enantioselective Cross-Benzoin Reaction of Aliphatic Aldehydes and α-Ketoesters. — Densely oxygenated syn-diols are available by diastereoselective reduction of the primary products. — (THAI, K.; LANGDON, S. M.; BILODEAU, F.; GRAVEL*, M.; Org. Lett. 15 (2013) 9, 2214-2217, http://dx.doi.org/10.1021/ol400769t ; Dep. Chem., Univ. Saskatchewan, Saskatoon, Sask. S7N 5C9, Can.; Eng.) — M. Duhs





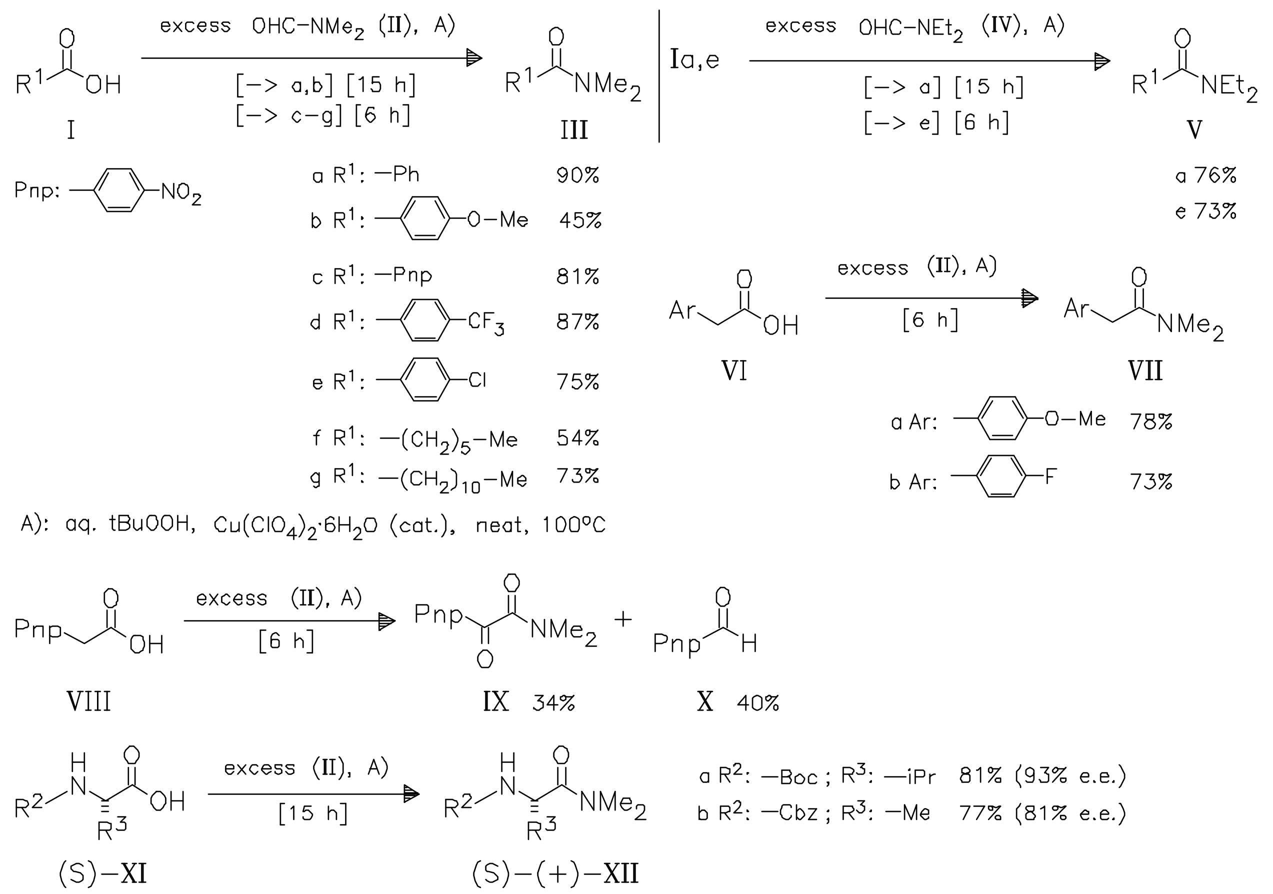
(+)–IV*

Carboxylic amides

Q 0490 DOI: 10.1002/chin.201335074

35- 074

Copper-Catalyzed Oxidative Coupling of Carboxylic Acids with N,N-Dialkylformamides: An Approach to the Synthesis of Amides. — (KUMAR, P. S.; KUMAR, G. S.; KUMAR, R. A.; REDDY, N. V.; REDDY*, K. R.; Eur. J. Org. Chem. 2013, 7, 1218-1222, http://dx.doi.org/10.1002/ejoc.201201544 ; Inorg. Phys. Chem. Div., Indian Inst. Chem. Technol., Hyderabad 500 607, India; Eng.) — M. Zastrow



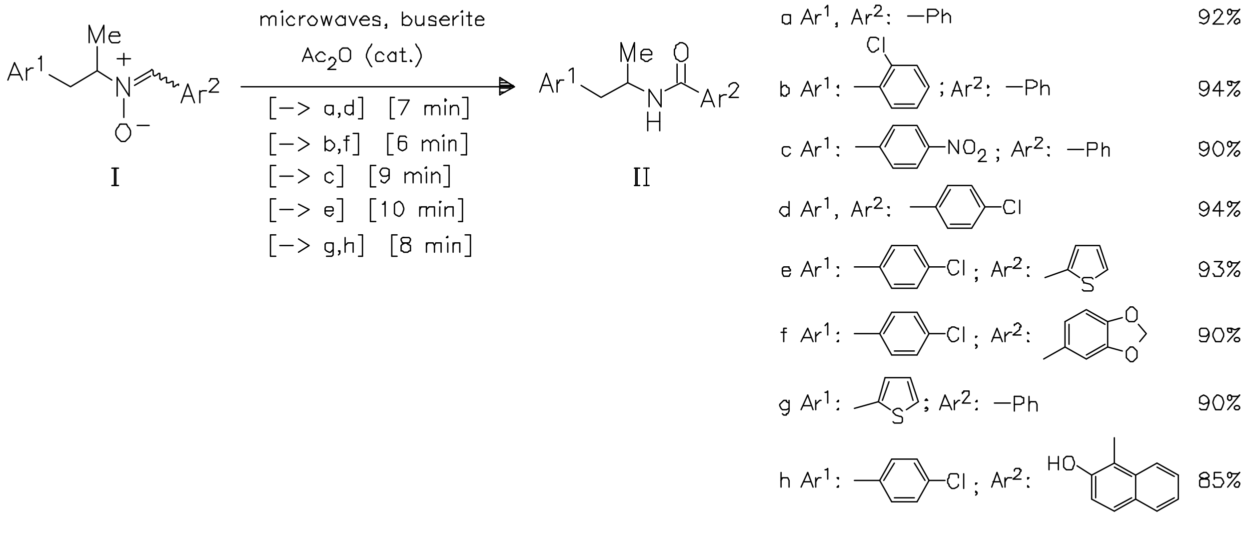
Carboxylic amides
Q 0490

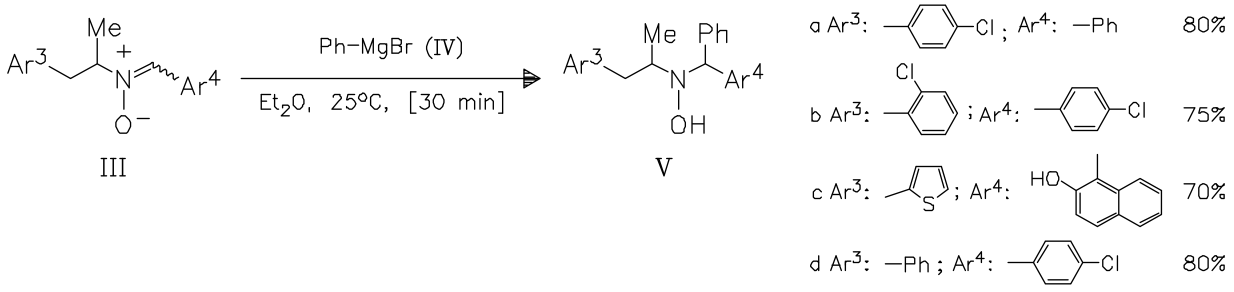
DOI: 10.1002/chin.201335075

35- 075

Acetic Anhydride Induced Rearrangement and Grignard Addition on C-Phenyl-N-(1-methyl-2-aryl)ethyl Nitrones.

— (AMUTHA, C.; SARAVANAN, S.; MUTHUSUBRAMANIAN*, S.; Indian J. Chem., Sect. B: Org. Chem. Incl. Med. Chem. 52 (2013) 5, 646-653 ; Dep. Org. Chem., Madurai Kamaraj Univ., Madurai 625 021,Tamil Nadu, India; Eng.) — R. Langenstrassen





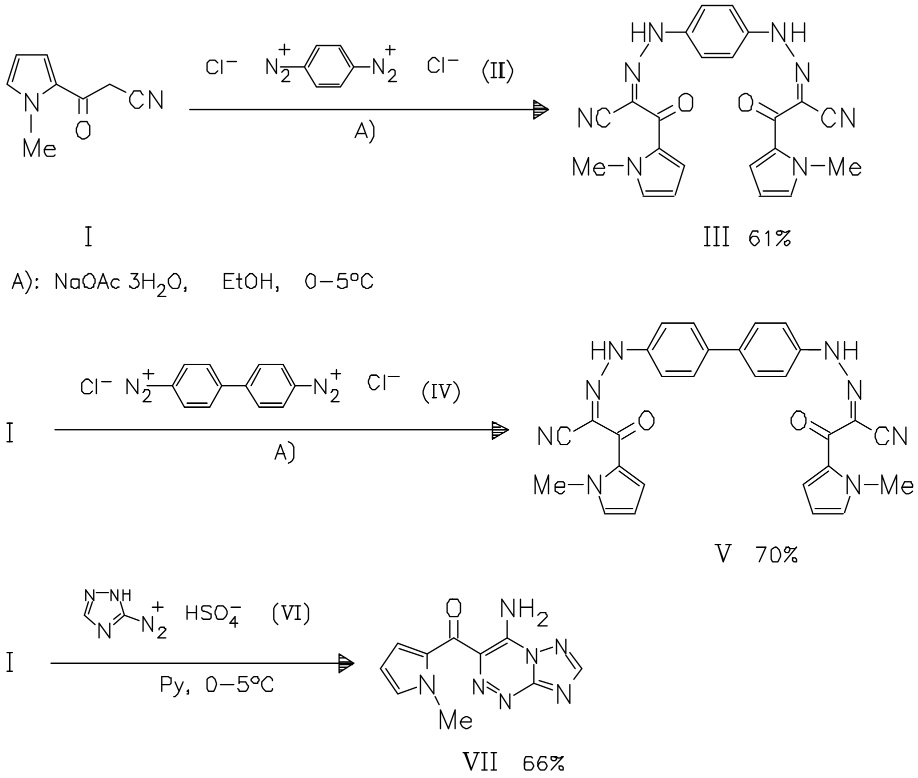
Carboxylic hydrazides

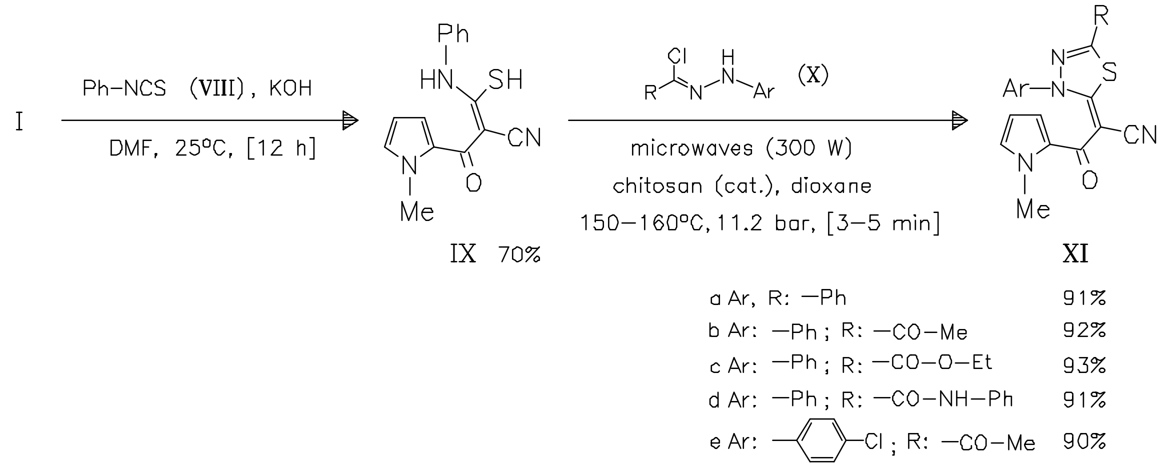
Q 0493

DOI: 10.1002/chin.201335076

35- 076

A Facile Green Synthesis and Anticancer Activity of Bis-arylhydrazononitriles, Triazolo[5,1-c][1,2,4]triazine, and 1,3,4-Thiadiazolines. — Pyrrole derivative (I) is used as starting material for a series of title compounds of type (III), (V), (VII), and (XI). The anticancer activity of the products against five cell lines is tested. (I) and (V) have the highest cytotoxicity values compared to (VII) and (XI), whereas (XI) shows higher activity than (VII). — (GOMHA, S. M.; KHALIL, K. D.; EL-ZANATY, A. M.; RIYADH*, S. M.; Heterocycles 87 (2013) 5, 1109-1120, http://dx.doi.org/10.3987/COM-13-12696 ; Dep. Chem., Fac. Sci., Cairo Univ., Giza 12613, Egypt; Eng.) — M. Bohle



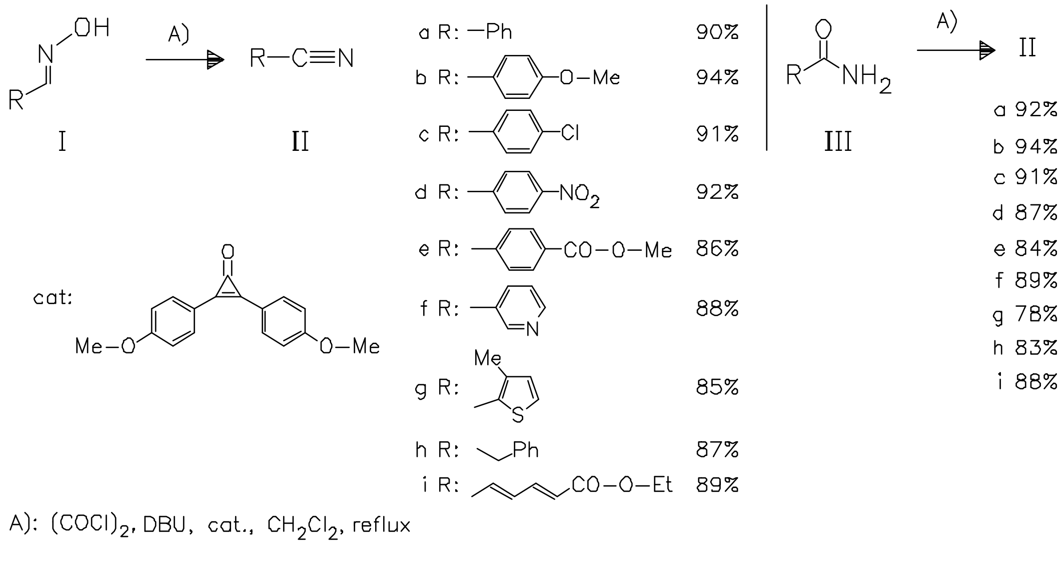


Nitriles
Q 0520

DOI: 10.1002/chin.201335077

35- 077

Cyclopropenone-Catalyzed Direct Conversion of Aldoximes and Primary Amides into Nitriles. — (RAI, A.; YADAV*, L. D. S.; Eur. J. Org. Chem. 2013, 10, 1889-1893, http://dx.doi.org/10.1002/ejoc.201300059 ; Dep. Chem., Univ. Allahabad, Allahabad 211 002, India; Eng.) — Roessler

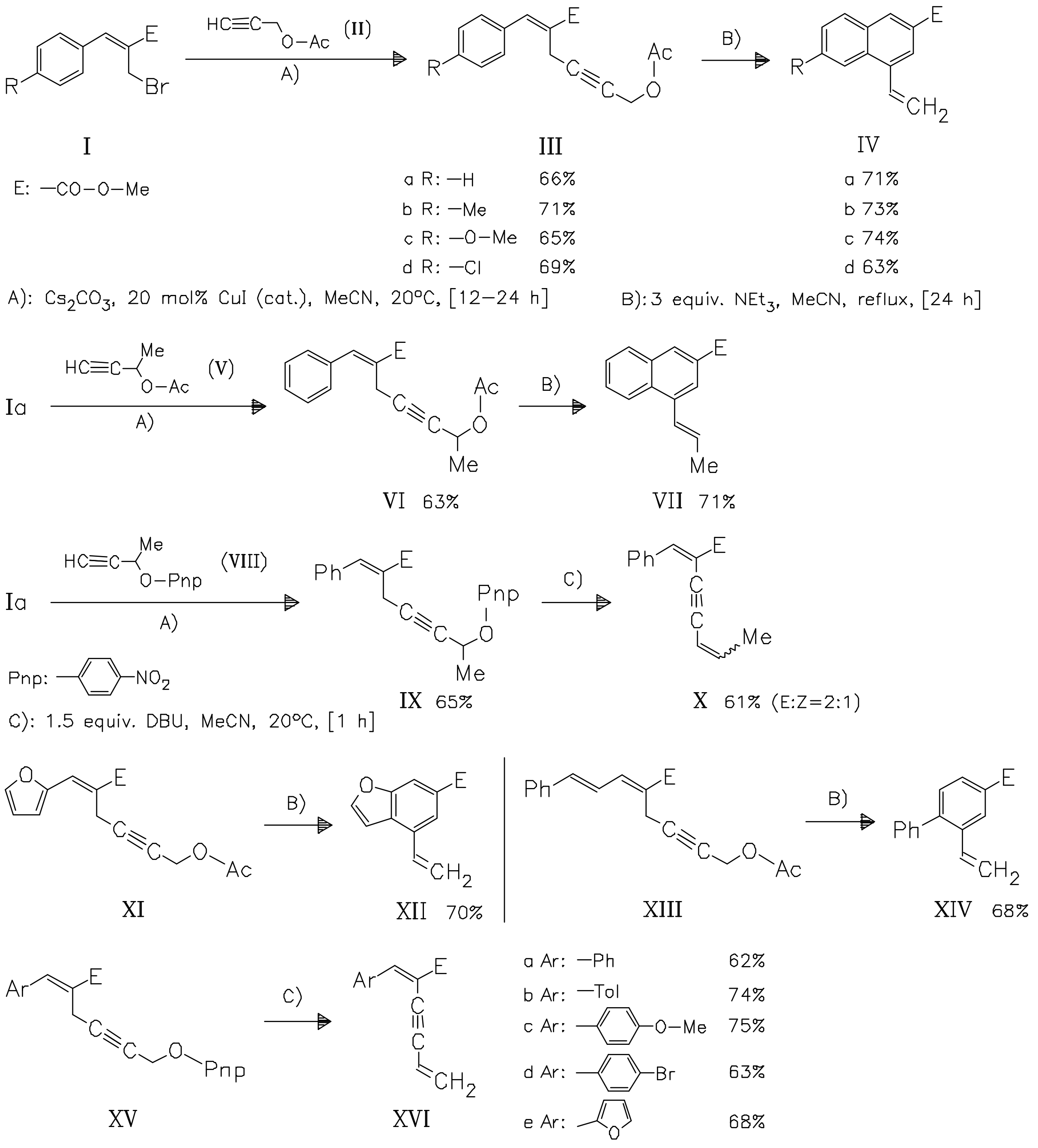


Carboxylic acid esters
Q 0530

DOI: 10.1002/chin.201335078

35- 078

Controlled Synthesis of 1-Vinylnaphthalenes versus (E)-α-(1,3-Enyn-4-yl)-α,β-unsaturated Esters from Morita—Baylis—Hillman Bromides: A Sequential Alkynylation and Competitive 6π-Electrocyclization versus Conjugative Transposition of a Triple Bond. — The judicious choice of leaving group in the propargylic compounds, base, and reaction temperature renders possible the selective preparation of both classes of title compounds. — (LIM, J. W.; KIM, K. H.; KIM, S. H.; KIM*, J. N.; Tetrahedron Lett. 54 (2013) 21, 2595-2599, http://dx.doi.org/10.1016/j.tetlet.2013.03.007 ; Dep. Chem., Inst. Basic Sci., Chonnam Natl. Univ., Gwangju 500-757, S. Korea; Eng.) — Mais

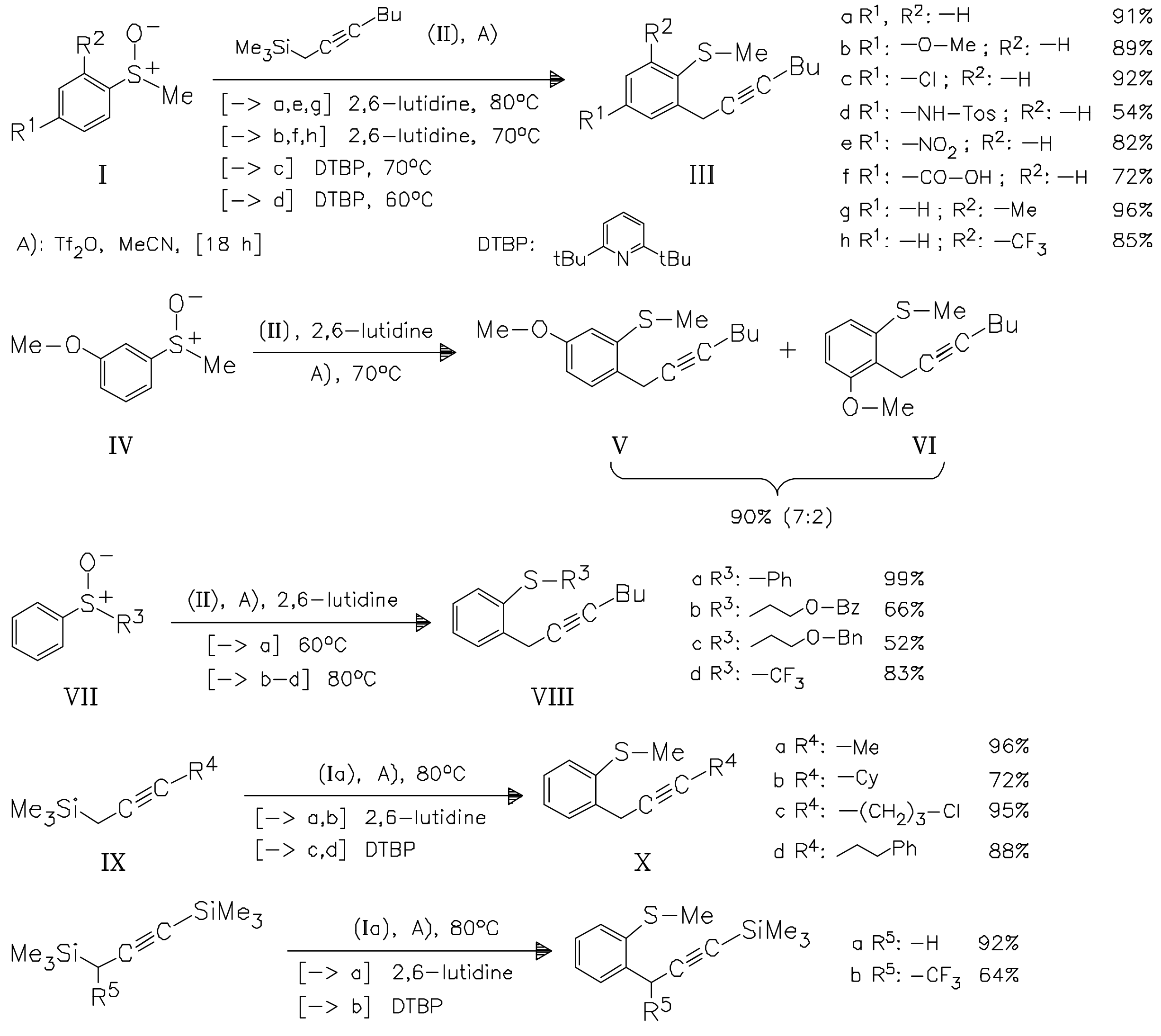


Thioethers
Q 0580

DOI: 10.1002/chin.201335079

35- 079

Nucleophilic ortho-Propargylation of Aryl Sulfoxides: An Interrupted Pummerer/Allenyl Thio-Claisen Rearrangement Sequence. — (EBERHART, A. J.; PROCTER*, D. J.; Angew. Chem., Int. Ed. 52 (2013) 14, 4008-4011, http://dx.doi.org/10.1002/anie.201300223 ; Sch. Chem., Univ. Manchester, Manchester M13 9PL, UK; Eng.) — Roessler



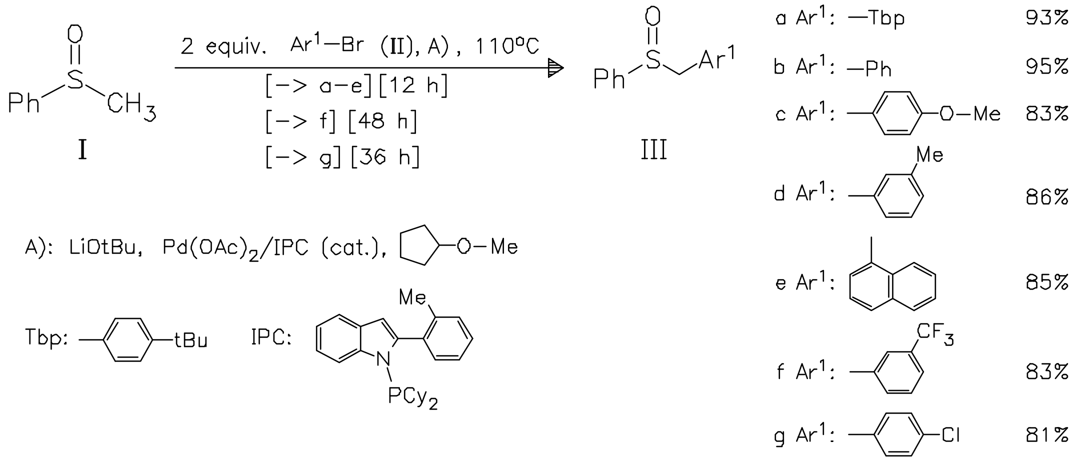
Sulfoxides
Q 0600

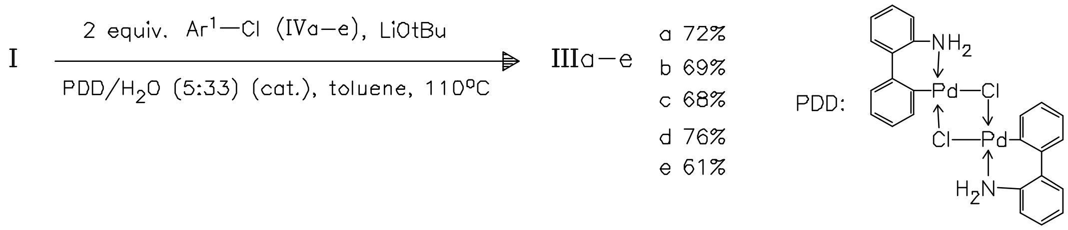
DOI: 10.1002/chin.201335080

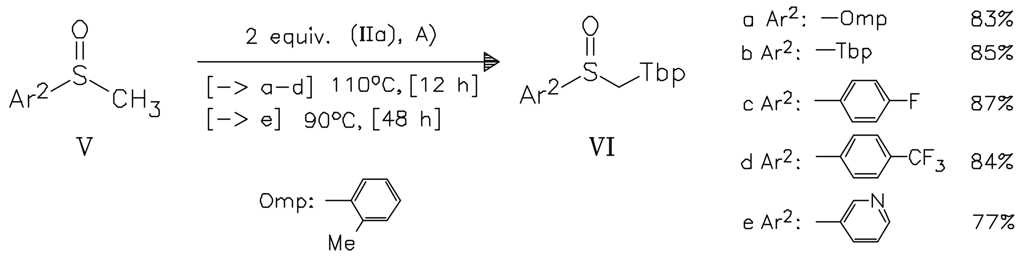
35- 080

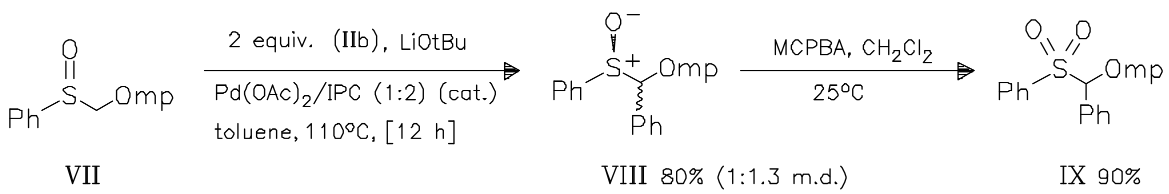
Palladium-Catalyzed Direct Arylation of Methyl Sulfoxides with Aryl Halides.

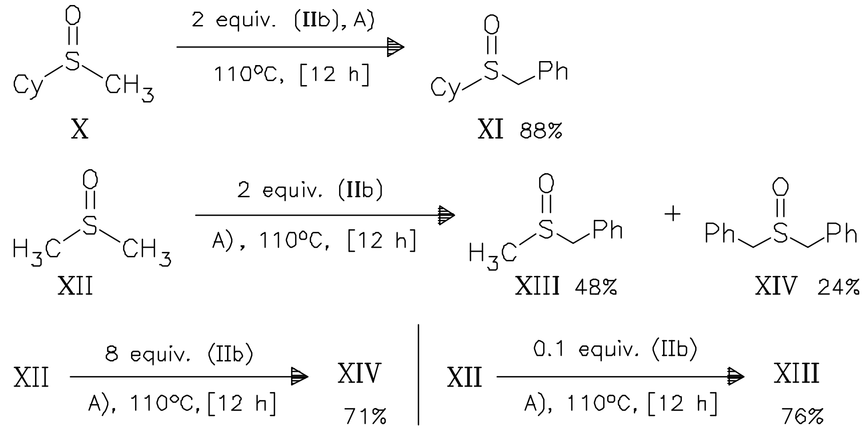
— The reaction of various organyl methyl sulfoxides with aryl bromides proceeds with high yields [viz. (III), (VI)]. Changed reaction conditions are required to use aryl chlorides leading to the products in lower yields. Heteroaromatic halides fail to react. α-Arylation of (VII) affords the inseparable diastereomeric mixture of products which is oxidized to sulfone (IX). In the case of DMSO optimization of the amount of phenyl bromide allows the preparation of mono- and bisarylated products [viz. (XIII), (XIV)]. The compound (IIIf) is a key intermediate in the synthesis of an anticancer agent. — (JIA, T.; BELLOMO, A.; EL BAINA, K.; DREHER, S. D.; WALSH*, P. J.; J. Am. Chem. Soc. 135 (2013) 10, 3740-3743, http://dx.doi.org/10.1021/ja4009776 ; Dep. Chem., Univ. Pa., Philadelphia, PA 19104, USA; Eng.) — Y. Steudel









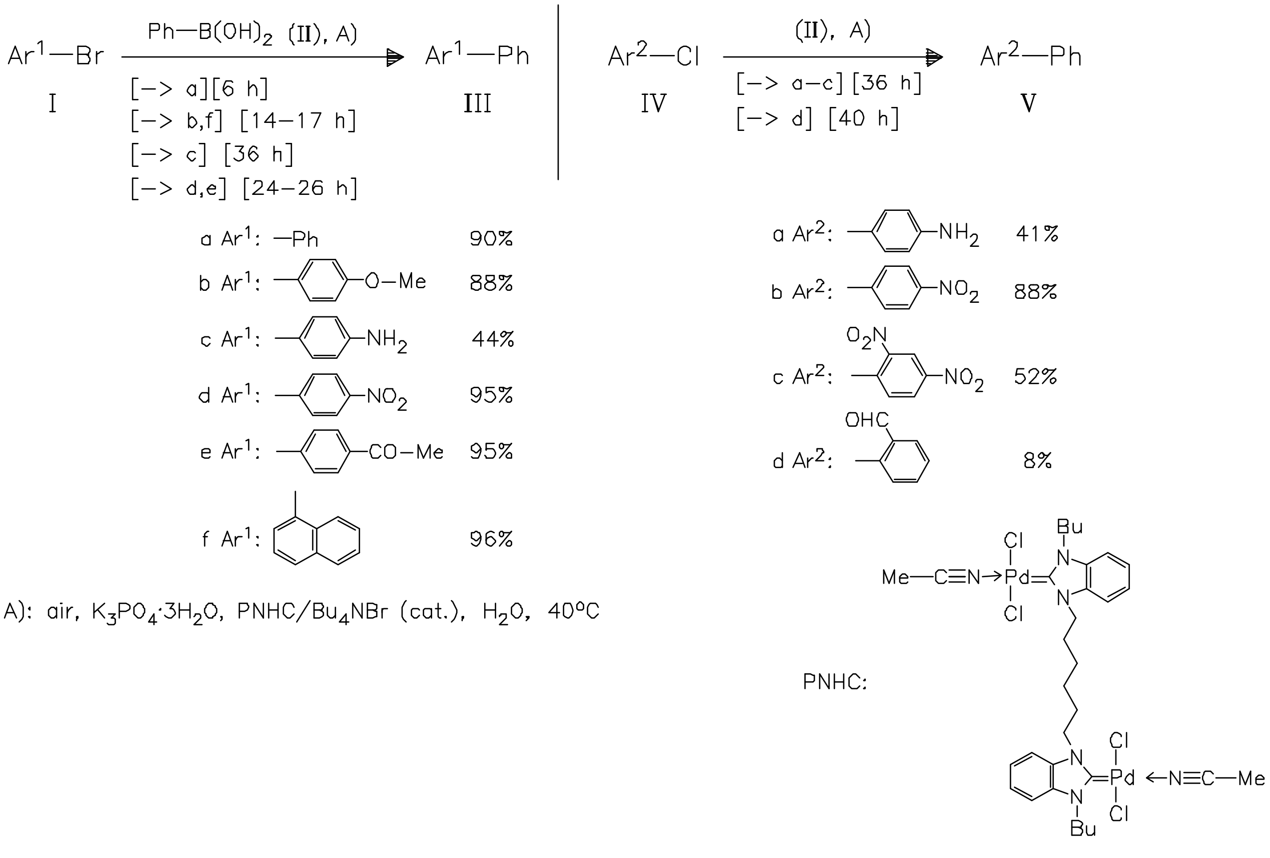


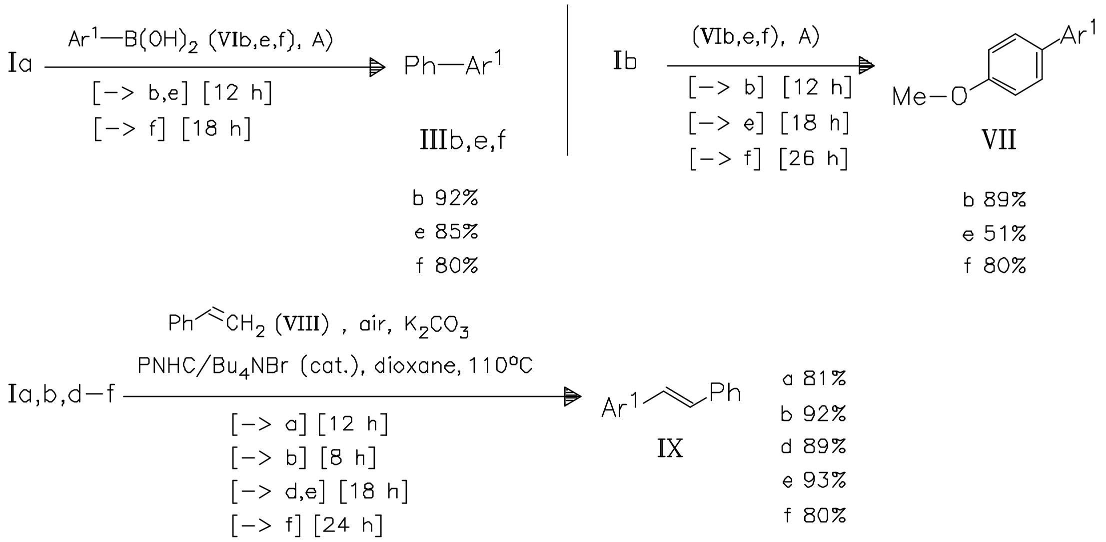
Polyphenyl derivatives
Q 0700

DOI: 10.1002/chin.201335081

35- 081

NHC Pd^{II} Complex Bearing 1,6-Hexylene Linker: Synthesis and Catalytic Activity in the Suzuki—Miyaura and Heck—Mizoroki Reactions. — This new functionalized NHC-catalyst shows efficient catalytic activity in the Suzuki-Miyaura cross-coupling reaction under aerobic conditions and in water as solvent, and can be also used for Heck coupling reactions. — (LIU*, Q.-X.; ZHANG, W.; ZHAO, X.-J.; ZHAO, Z.-X.; SHI, M.-C.; WANG, X.-G.; Eur. J. Org. Chem. 2013, 7, 1253-1261, http://dx.doi.org/10.1002/ejoc.201200954 ; Key Lab. Struct. Perform. Funct. Mol., Tianjin Norm. Univ., Tianjin 300387, Peop. Rep. China; Eng.) — M. Zastrow



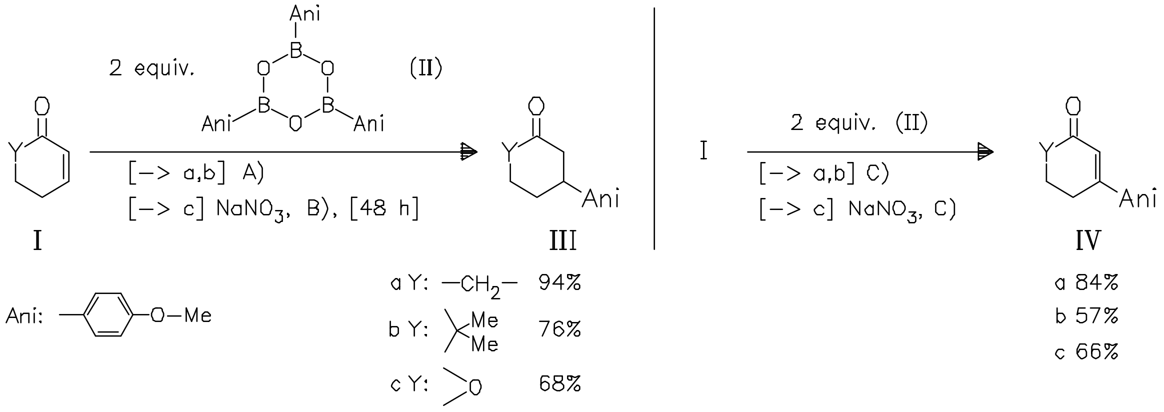


Polyphenyl derivatives
Q 0700

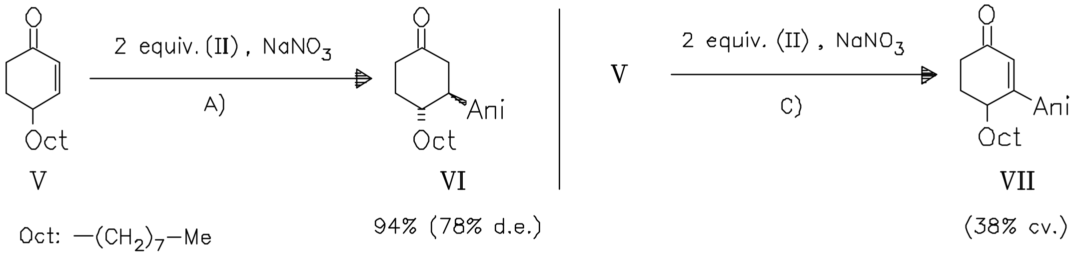
DOI: 10.1002/chin.201335082

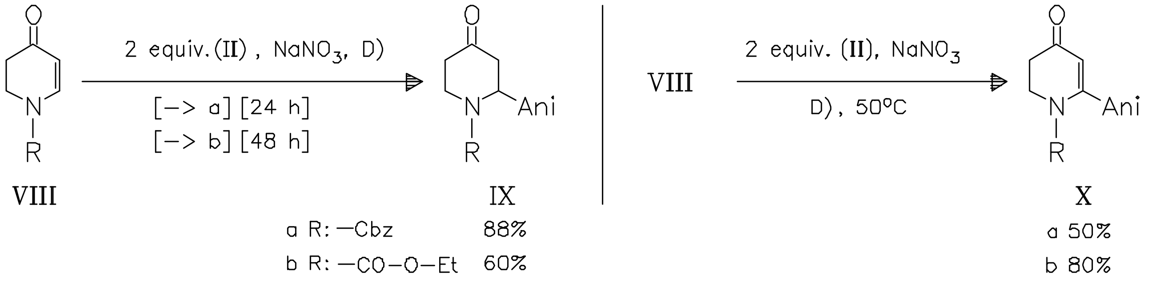
35- 082

Ligand- and Base-Free Pd(II)-Catalyzed Controlled Switching Between Oxidative Heck and Conjugate Addition Reactions. — Switching between oxidative Heck and conjugated addition reaction on cyclic alkenes is achieved by a simple switch of the solvent. Both reactions are ligand- and base-free and tolerant to air and moisture. — (WALKER, S. E.; BOEHNKE, J.; GLEN, P. E.; LEVEY, S.; PATRICK, L.; JORDAN-HORE, J. A.; LEE*, A.-L.; Org. Lett. 15 (2013) 8, 1886-1889, http://dx.doi.org/10.1021/ol400539h ; Inst. Chem. Sci., Heriot-Watt Univ., Riccarton, Edinburgh EH14 4AS, UK; Eng.) — Bartels

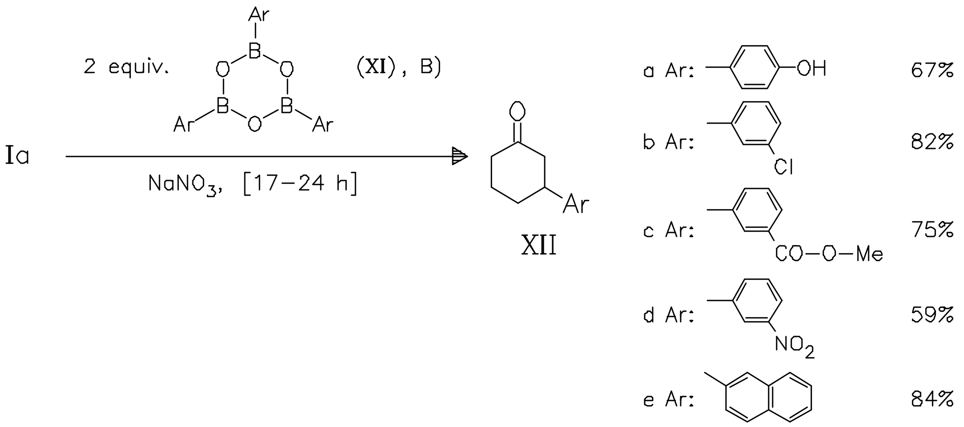


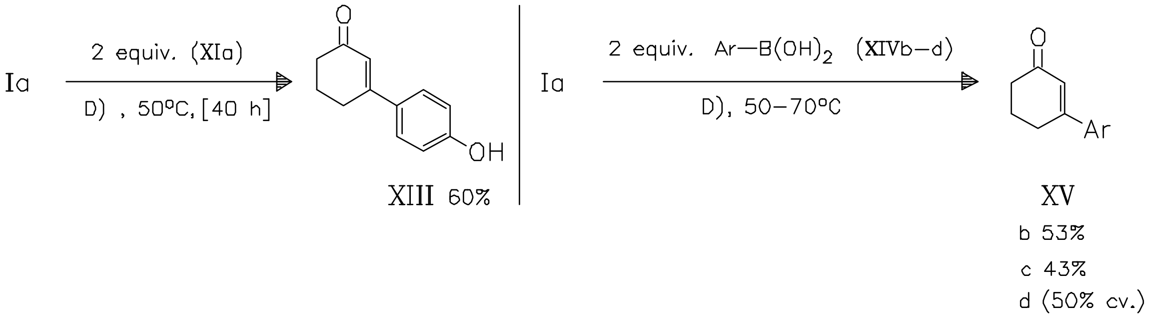
A): $Pd(O{-}Ac)_2$/TfOH (1:2) (cat.), DCE, [24 h]
B): $Pd(O{-}Tf)_2(MeCN)_4$ (cat.), DCE, 25—30°C
C): 1 atm O_2, $Pd(O{-}Ac)_2$/TfOH (1:2) (cat.), DMSO, 50°C, [48—68 h]





D): 1 atm O_2, Pd(O—Tf)$_2$(MeCN)$_4$ (cat.), DMSO, [48—64 h]





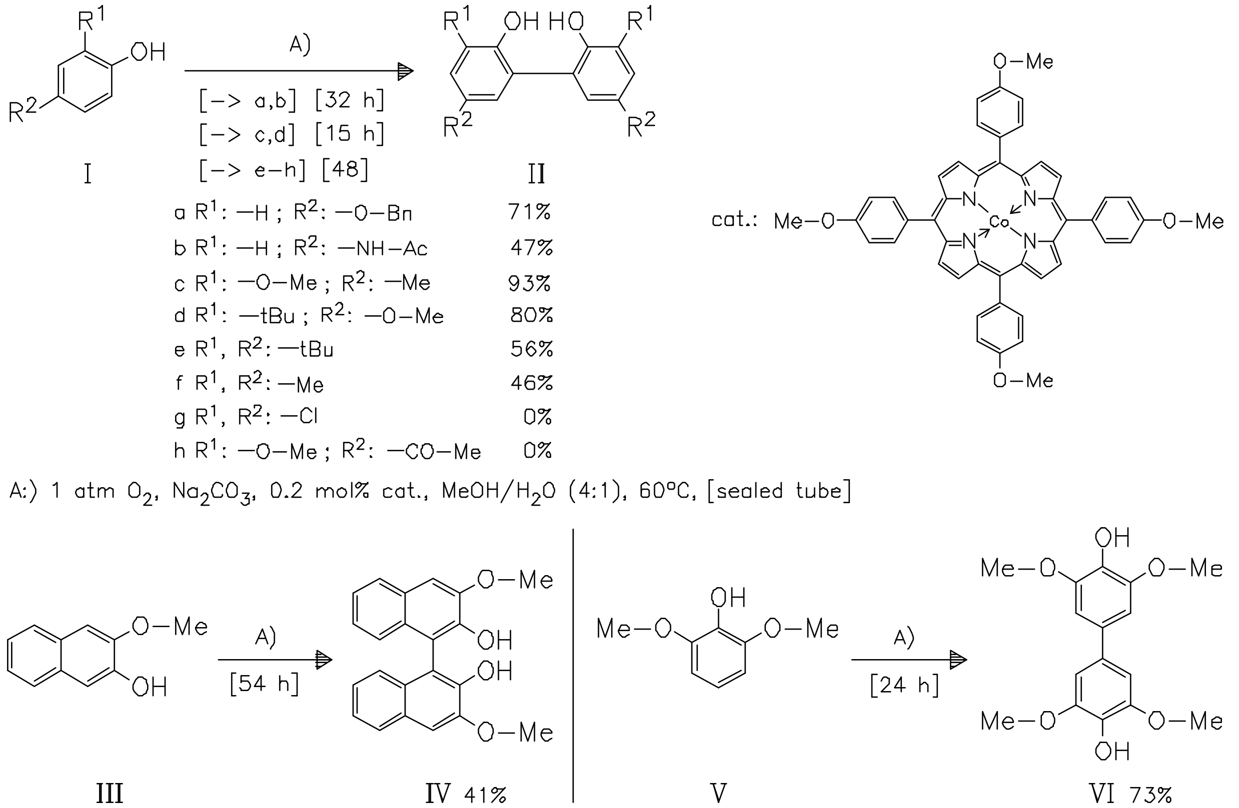
Polyphenyl derivatives
Q 0700

DOI: 10.1002/chin.201335083

35- 083

Cobalt(II)—Porphyrin-Catalyzed Aerobic Oxidation: Oxidative Coupling of Phenols.

— (JIANG, Q.; SHENG, W.; TIAN, M.; TANG, J.; GUO*, C.; Eur. J. Org. Chem. 2013, 10, 1861-1866, http://dx.doi.org/10.1002/ejoc.201201595 ; Coll. Chem. Chem. Eng., Hunan Univ., Changsha, Hunan 410082, Peop. Rep. China; Eng.) — Roessler



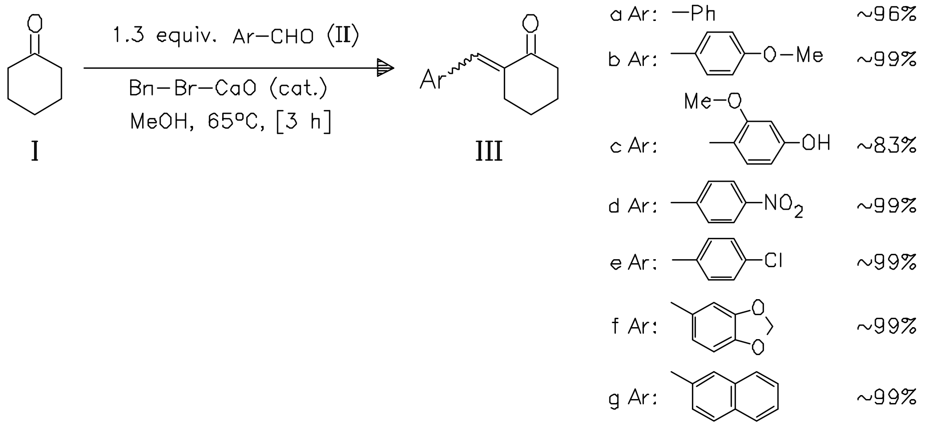
Polyphenylalkene derivatives
Q 0740

DOI: 10.1002/chin.201335084

35- 084

Modified Calcium Oxide as Stable Solid Base Catalyst for Aldol Condensation Reaction.

— (TANG*, Y.; XU, J.; GU, X.; J. Chem. Sci. (Bangalore, India) 125 (2013) 2, 313-320, http://dx.doi.org/10.1007/s12039-013-0362-5 ; Coll. Chem. Chem. Eng., Xi'an Shiyou Univ., Xian 710065, Peop. Rep. China; Eng.) — C. Cyrus

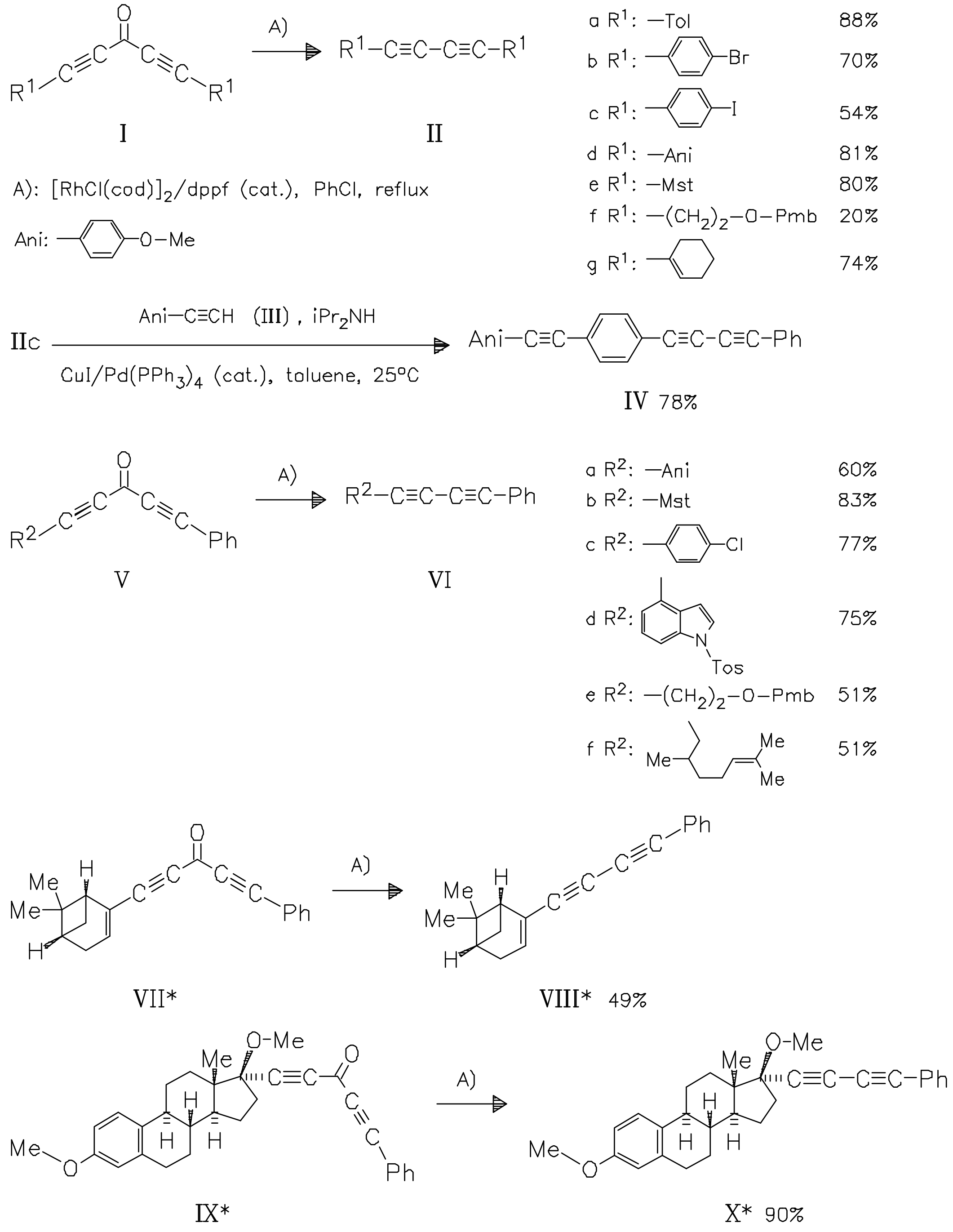


Polyphenylalkyne derivatives
Q 0750

DOI: 10.1002/chin.201335085

35- 085

Rh(I)-Catalyzed Decarbonylation of Diynones via C—C Activation: Orthogonal Synthesis of Conjugated Diynes. — A wide range of symmetrical and unsymmetrical conjugated diynes are prepared. The product (IIc) bearing a halogen functionality undergoes typical cross-coupling reactions [cf. (IV)]. The method is extended to the preparation of the compounds, derived from the natural products as citronellal [cf. (VIf)], myrtenal [cf. (VIII)] or estradiol [cf. (X)]. — (DERMENCI, A.; WHITTAKER, R. E.; DONG*, G.; Org. Lett. 15 (2013) 9, 2242-2245, http://dx.doi.org/10.1021/ol400815y ; Dep. Chem. Biochem., Univ. Tex., Austin, TX 78712, USA; Eng.) — Y. Steudel

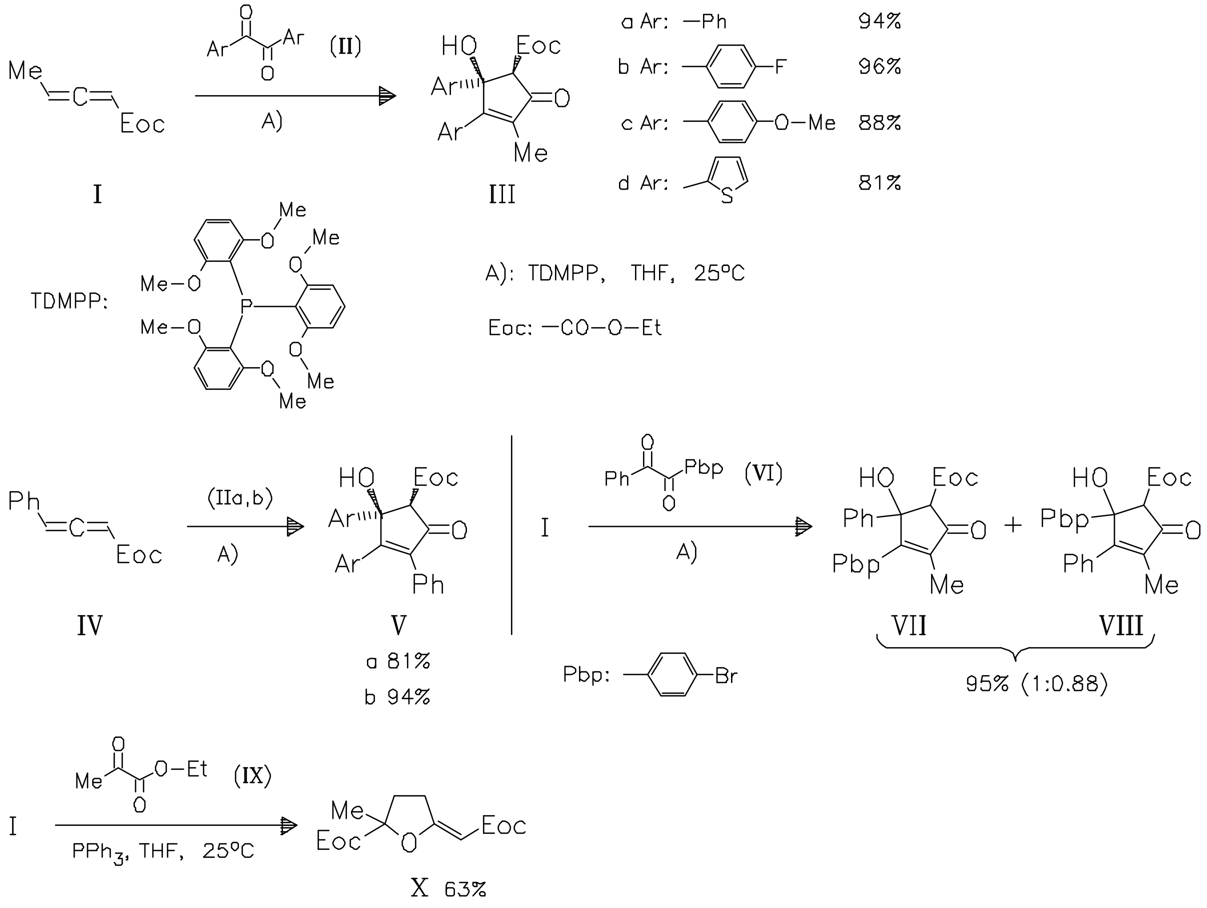


Cycloalkylphenyl derivatives
Q 0760

DOI: 10.1002/chin.201335086

35- 086

Phosphine-Mediated Reaction of 3-Alkyl Allenoates and Diaryl 1,2-Diones: Efficient Diastereoselective Synthesis of Fully Substituted Cyclopentenones. — A novel annulation of allenoate—phosphine zwitterion with acyclic 1,2-diones affording fully substituted cyclopentenones is reported. — (JOSE, A.; LAKSHMI, K. C. S.; SURESH, E.; NAIR*, V.; Org. Lett. 15 (2013) 8, 1858-1861, http://dx.doi.org/10.1021/ol400467v ; Org. Chem. Sect., Natl. Inst. Interdiscip. Sci. Technol., Thiruvananthapuram 695 019, Kerala, India; Eng.) — Bartels

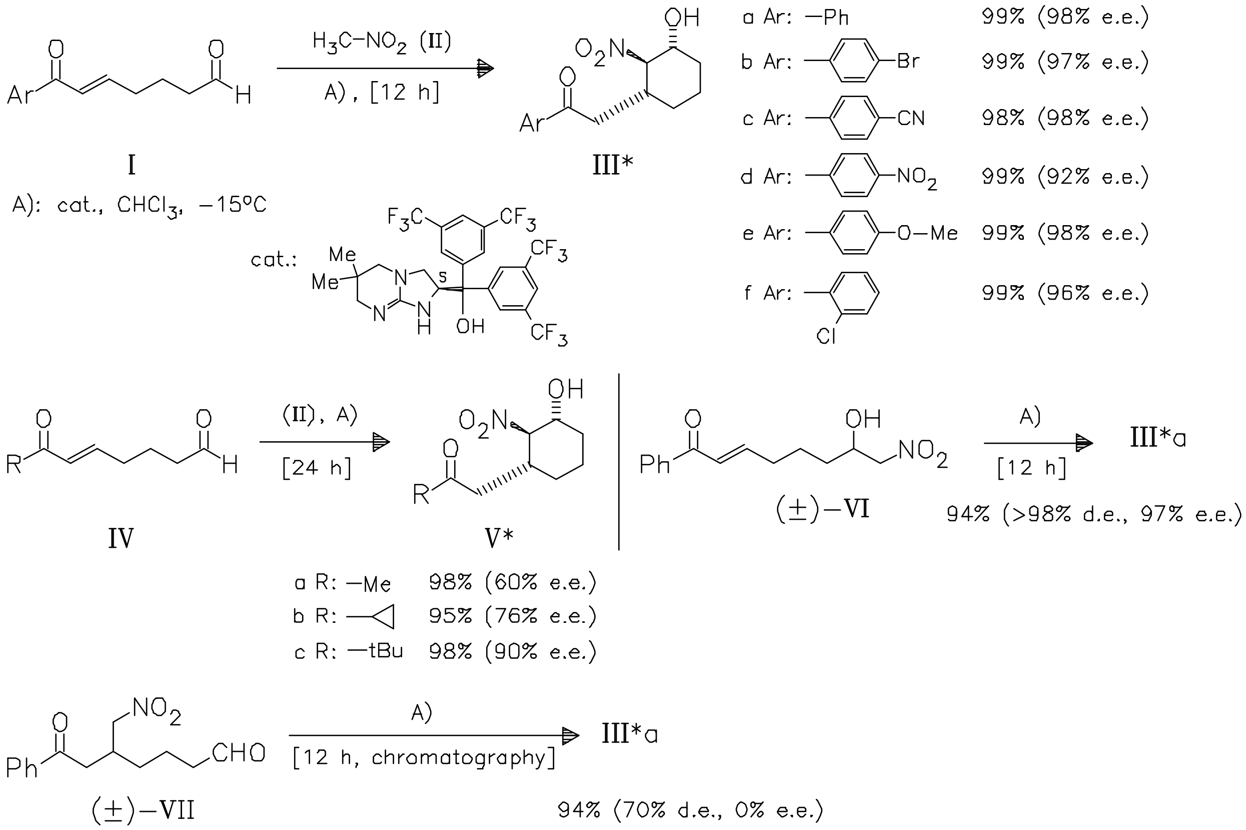


Cycloalkylphenyl derivatives
Q 0760

DOI: 10.1002/chin.201335087

35- 087

Highly Stereoselective Synthesis of Trisubstituted Cyclohexanols Using a Guanidine-Catalyzed Tandem Henry—Michael Reaction. — (DAI, Q.; HUANG, H.; ZHAO*, J. C.-G.; J. Org. Chem. 78 (2013) 8, 4153-4157, http://dx.doi.org/10.1021/jo4001806 ; Dep. Chem., Univ. Tex., San Antonio, TX 78249, USA; Eng.) — C. Gebhardt



Hydrogenated naphthalene derivatives

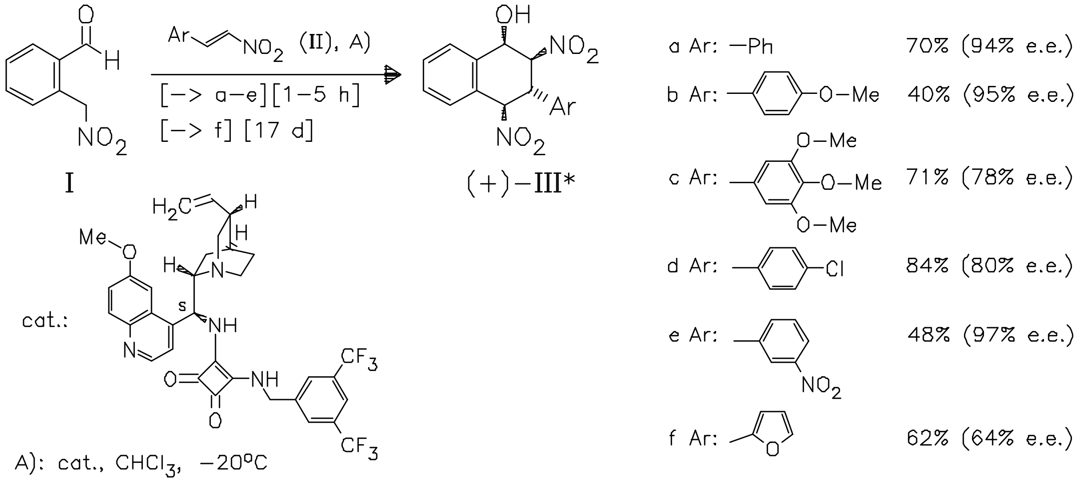
Q 1010

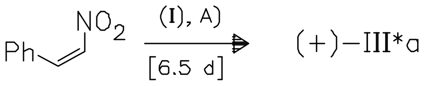
DOI: 10.1002/chin.201335088

35- 088

Asymmetric Synthesis of Functionalized Tetrahydronaphthalenes via an Organocatalytic Nitroalkane-Michael/Henry Domino Reaction.

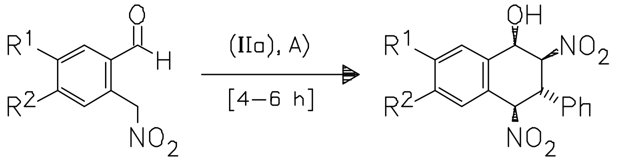
— (ENDERS*, D.; HAHN, R.; ATODIRESEI, I.; Adv. Synth. Catal. 355 (2013) 6, 1126-1136, http://dx.doi.org/10.1002/adsc.201300039 ; Inst. Org. Chem., RWTH Aachen, D-52074 Aachen, Germany; Eng.) — Roessler





IV

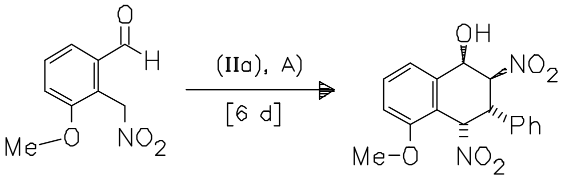
42% (86% e.e.)



V

(+)−VI*

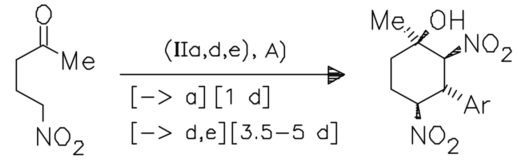
a R^1: −H ; R^2: −Br 35% (81% e.e.)
b R^1: −F ; R^2: −H 45% (77% e.e.)



VII

(−)−VIII*

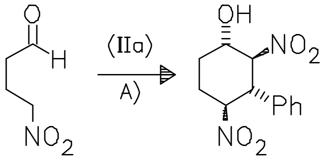
41% (63% e.e.)



IX

(−)−X*

a 61% (89% e.e.)
d 77% (89% e.e.)
e 68% (91% e.e.)



XI

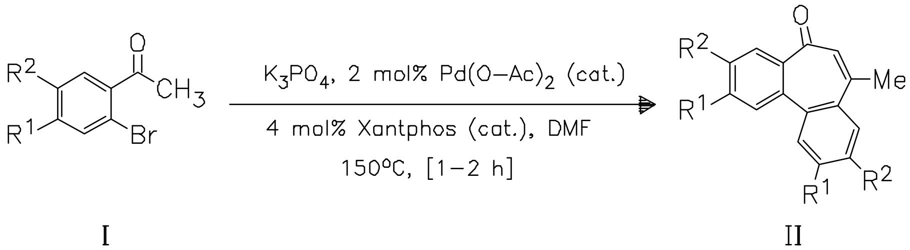
(−)−XII* 25% (97% e.e.)

Fused phenylcycloalkyl derivatives
Q 1040

DOI: 10.1002/chin.201335089

35- 089

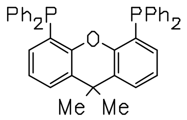
A Domino Palladium Catalysis: Synthesis of 7-Methyl-5H-dibenzo[a,c][7]annulen-5-ones. — The Pd-catalyzed reaction of ortho-bromoacetophenone is proposed to proceed via intermolecular homobiaryl coupling and intramolecular aldol condensation to give the title compounds (II) in moderate yields. — (KRISHNA, J.; REDDY, A. G. K.; SATYANARAYANA*, G.; Synlett 24 (2013) 8, 967-972, http://dx.doi.org/10.1055/s-0032-1338438 ; Ind. Inst. Technol. Hyderabad, Yeddumailaram 502 205, India; Eng.) — Mais

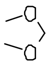


I

II

Xantphos:



a R^1, R^2: −H 45%
b R^1: −H ; R^2: −Me 50%
c R^1−R^2:  41%

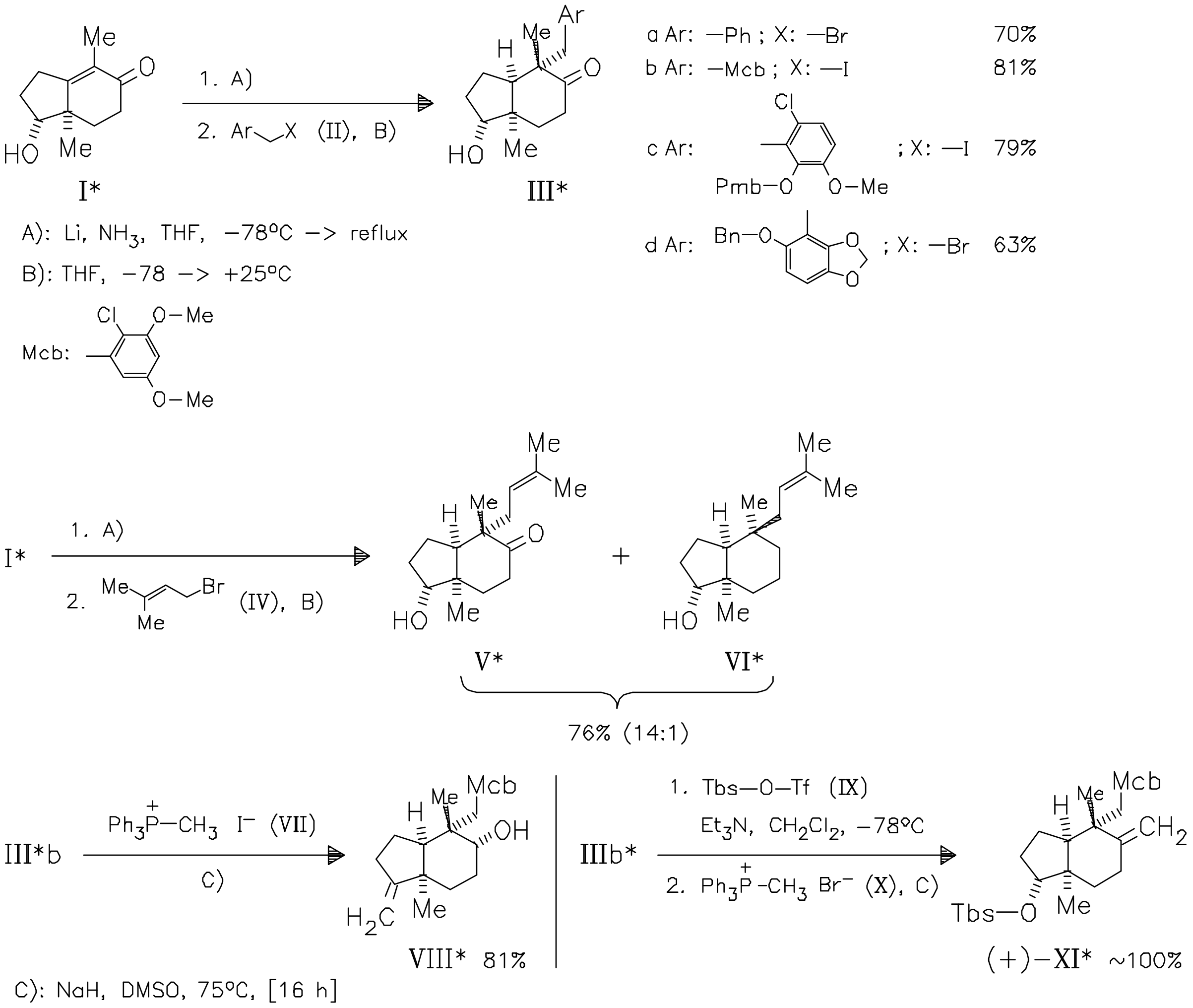
Indan derivatives
Q 1050

DOI: 10.1002/chin.201335090

35- 090

Diastereoselective Synthesis of Complex cis-Hexahydroindanes by Reductive Alkylation.

— (KAPLAN, H. Z.; RENDINA, V. L.; KINGSBURY*, J. S.; J. Org. Chem. 78 (2013) 9, 4620-4626, http://dx.doi.org/10.1021/jo400670y ; Dep. Chem., Merkert Chem. Cent., Boston Coll., Chestnut Hill, MA 02467, USA; Eng.) — Roessler



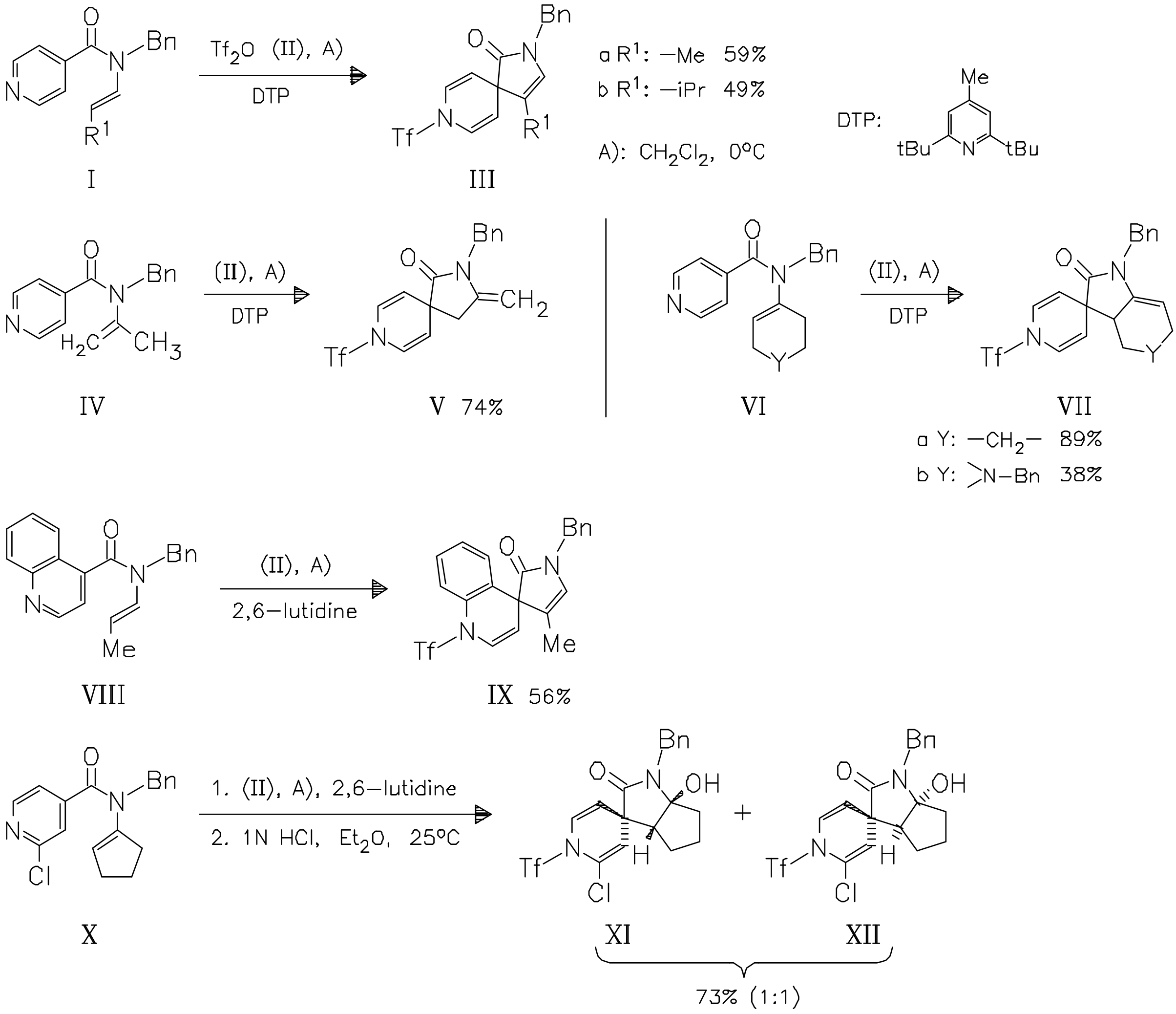
Heterocyclic Compounds

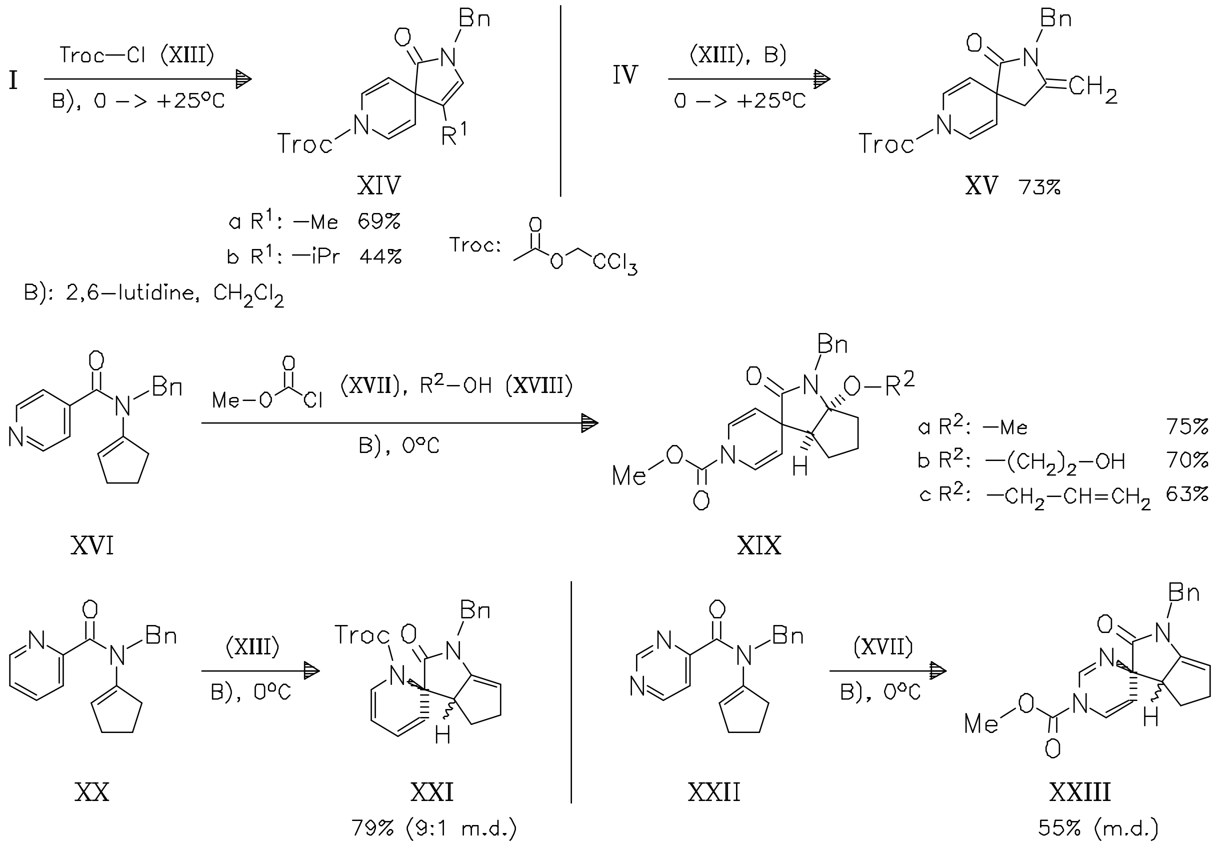
Spirocyclic compounds
R 0015

DOI: 10.1002/chin.201335091

35- 091

Spirocyclic Dihydropyridines by Electrophile-Induced Dearomatizing Cyclization of N-Alkenyl Pyridinecarboxamides. — N-alkenyl pyridinecarboxamides undergo dearomatizing spirocyclization initiated by pyridine acylation and followed by intramolecular trapping of the resulting pyridinium cation. The products are spirocyclic dihydropyridines which are readily convertible into drug-like scaffolds. — (SENCZYSZYN, J.; BRICE, H.; CLAYDEN*, J.; Org. Lett. 15 (2013) 8, 1922-1925, http://dx.doi.org/10.1021/ol400571j ; Sch. Chem., Univ. Manchester, Manchester M13 9PL, UK; Eng.) — Bartels



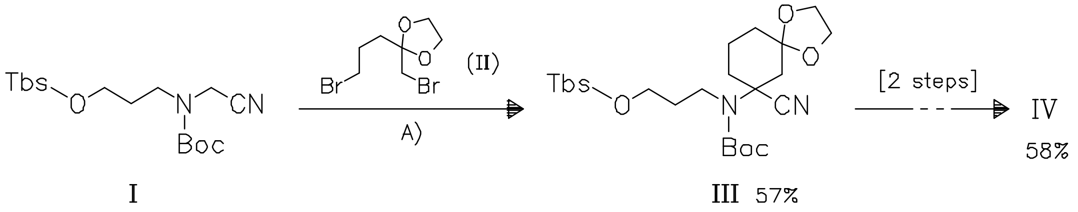


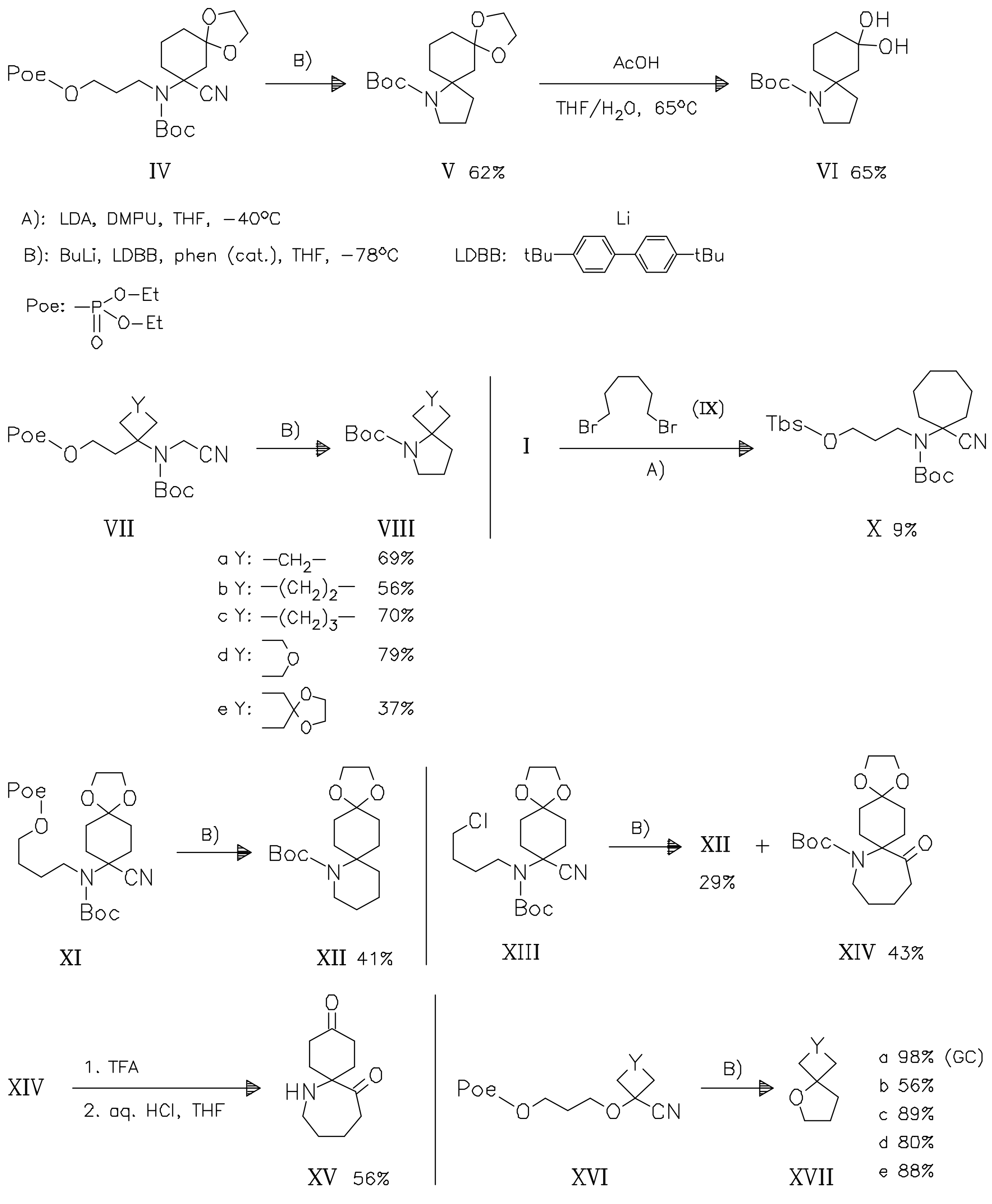
Spirocyclic compounds
R 0015

DOI: 10.1002/chin.201335092

35- 092

Trianion Synthon Approach to Spirocyclic Heterocycles. — A general strategy to construct spirocyclic heterocycles is developed with the key step being a reductive lithiation and cyclization of a nitrile phosphate to form the spirocyclic pyrrolidine, piperidine, or tetrahydrofuran ring. The seven-membered precursor (X) is obtained in poor yield. Reductive lithiation of the phosphate (XI) leads to the expected spiropiperidine (XII). Reductive lithiation of the corresponding chloride affords the compound (XII) along with the spiroazepinone (XIV) arising from the competitive lithiation of the alkyl chloride and cyclization onto the nitrile. — (PERRY, M. A.; HILL, R. R.; RYCHNOVSKY*, S. D.; Org. Lett. 15 (2013) 9, 2226-2229, http://dx.doi.org/10.1021/ol400788q ; Dep. Chem., Univ. Calif., Irvine, CA 92697, USA; Eng.) — Y. Steudel



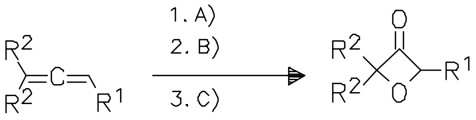

Poe
O
N
Boc
CN
O
O
B)
Boc
N
AcOH
THF/H_2O, 65°C
OH
OH
IV
V 62%
VI 65%
A): LDA, DMPU, THF, −40°C
B): BuLi, LDBB, phen (cat.), THF, −78°C
LDBB: tBu tBu
Li
Poe: —P(=O)(O–Et)(O–Et)
Y
CN
VII
VIII
a Y: $-CH_2-$ 69%
b Y: $-(CH_2)_2-$ 56%
c Y: $-(CH_2)_3-$ 70%
d Y: 79%
e Y: 37%
I
Br
Br
(IX)
A)
Tbs
X 9%
XI
XII 41%
Cl
XIII
XII
29%
+
XIV 43%
XIV
1. TFA
2. aq. HCl, THF
HN
XV 56%
XVI
XVII
a 98% (GC)
b 56%
c 89%
d 80%
e 88%

Oxetane derivatives
R 0035

DOI: 10.1002/chin.201335093

35- 093

Oxetan-3-ones from Allenes via Spirodiepoxides. — Two reaction methods starting with allene epoxidation are reported. The first method proceeds by opening the spirodiepoxide with a halide nucleophile followed by an intramolecular displacement of the halide by an alkoxide. The second method directly transforms the spirodiepoxide by thermal rearrangement. The methods are complementary and stereochemically divergent. — (SHARMA, R.; WILLIAMS*, L. J.; Org. Lett. 15 (2013) 9, 2202-2205, http://dx.doi.org/10.1021/ol400749e ; Dep. Chem. Chem. Biol., Rutgers State Univ. N. J., Piscataway, NJ 08854, USA; Eng.) — M. Duhs



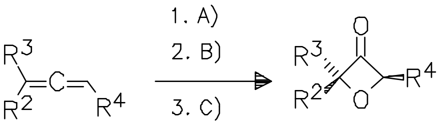
I II

a R^1: —iBu ; R^2: —Bu 92%
b R^1: —◁; R^2: —Bu 93%
c R^1: —Phe ; R^2: —Bu 90%
d R^1: —$(CH_2)_2$—O—Tbs ; R^2: —Me 86%

$\mathrm{I} \xrightarrow[\text{2. D)}]{\text{1. A)}} \mathrm{II}$ a 98% b 95% c 95% d 83%

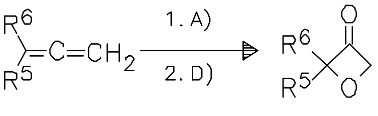
Phe: —$(CH_2)_2$—Ph

A): DMDO, $CHCl_3$, −20°C, [1−2 h]
B): LiBr, THF, 0 −> +25°C, [1−3 h]
C): KOH, DMSO, 25°C, [5−10 min]
D): toluene, 200°C, [1−1.5 h]

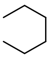


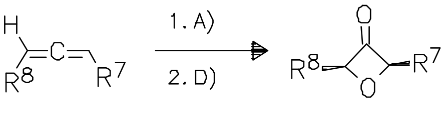
III IV

a R^2: —Me ; R^3: —Bu ; R^4: —Phe 45% (16% d.e.)
b R^2: —Bu ; R^3: —CH_2—O—Bn ; R^4: —iBu 41% (8% d.e.)
c R^2: —Me ; R^3: —$(CH_2)_3$—O—Tbs ; R^4: —Phe 41% (16% d.e.)

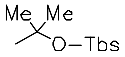


V VI

a R^5—R^6:

68%
b R^5: —$(CH_2)_3$—O—Tbs ; R^6: —H 86%
c R^5: —Phe ; R^6: —H 65%
d R^5, R^6: —Bu 70%



VII VIII

a R^7, R^8: —Bu 88% (33% d.e.)
b R^7:


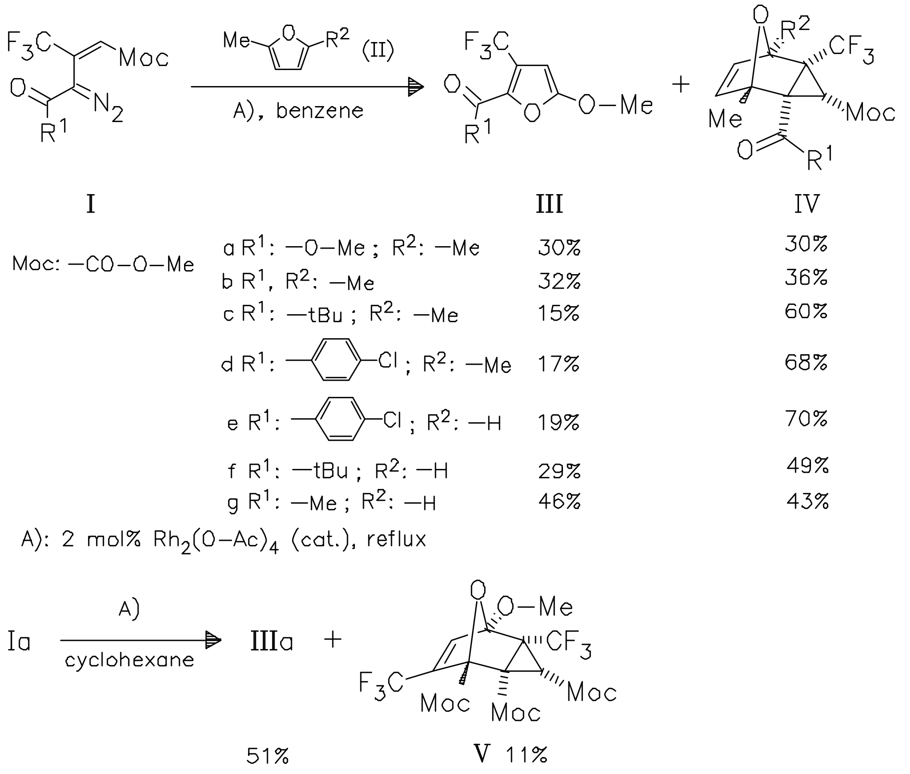
; R^8: —CH_2—O—$SiPh_2$—tBu 73% (78% d.e.)

Furan derivatives
R 0060

DOI: 10.1002/chin.201335094

35- 094

Influence of an Internal Trifluoromethyl Group on the Rhodium(II)-Catalyzed Reactions of Vinyldiazocarbonyl Compounds. — Incorporation of a trifluoromethyl group into the starting compounds strongly reduces the tendency of intermediate vinyloxocarbenoids to undergo intermolecular reactions. Instead, intramolecular [1,3]- and [1,5]-cyclizations afford reactive cyclopropenes and furans, capable of further transformations. — (NIKOLAEV*, V. A.; SUPURGIBEKOV, M. B.; DAVIES, H. M. L.; SIELER, J.; ZAKHAROVA, V. M.; J. Org. Chem. 78 (2013) 9, 4239-4244, http://dx.doi.org/10.1021/jo302726m ; Dep. Chem., St. Petersburg State Univ., St. Petersburg 198504, Russia; Eng.) — Jannicke

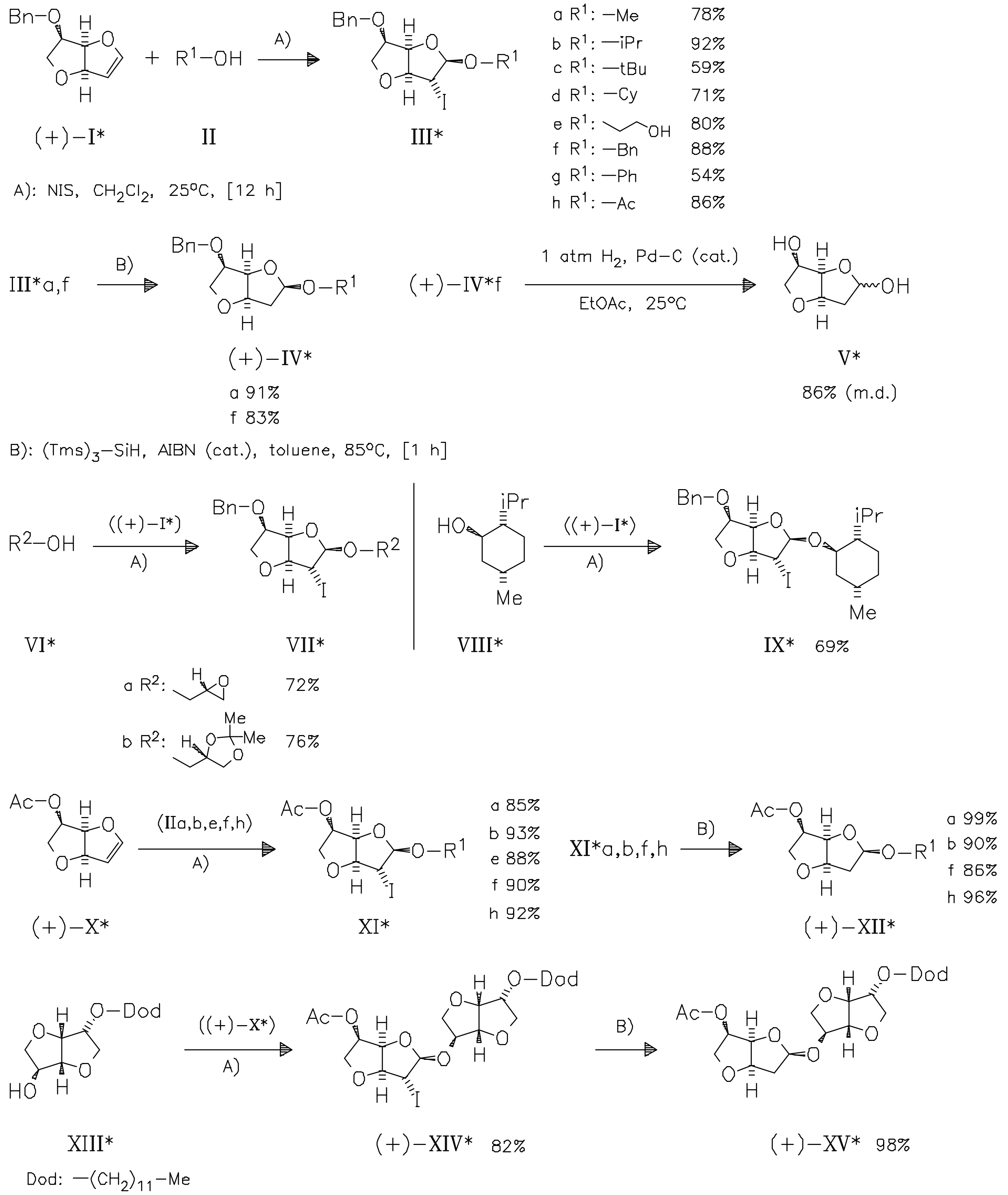


Furan derivatives
R 0060

DOI: 10.1002/chin.201335095

35- 095

Iodoetherification of Isosorbide-Derived Glycals: Access to a Variety of O-Alkyl or O-Aryl Isosorbide Derivatives. — This method gives access to substituted isosorbide derivatives which can be further functionalized. Simple deprotection of (IVf) yields the unusual carbohydrate (V) which recently has been isolated from the fermentation extract of the bacterium Actinosynnema pretiosum ssp auranticum ATCC 31565. — (BERINI*, C.; LAVERGNE, A.; MOLINIER, V.; CAPET, F.; DENIAU, E.; AUBRY, J.-M.; Eur. J. Org. Chem. 2013, 10, 1937-1949, http://dx.doi.org/10.1002/ejoc.201201547 ; ENSCL, Univ. Lille Nord, F-59652 Villeneuve d'Ascq, Fr.; Eng.) — Roessler



A): NIS, CH_2Cl_2, 25°C, [12 h]

B): $(Tms)_3$−SiH, AIBN (cat.), toluene, 85°C, [1 h]

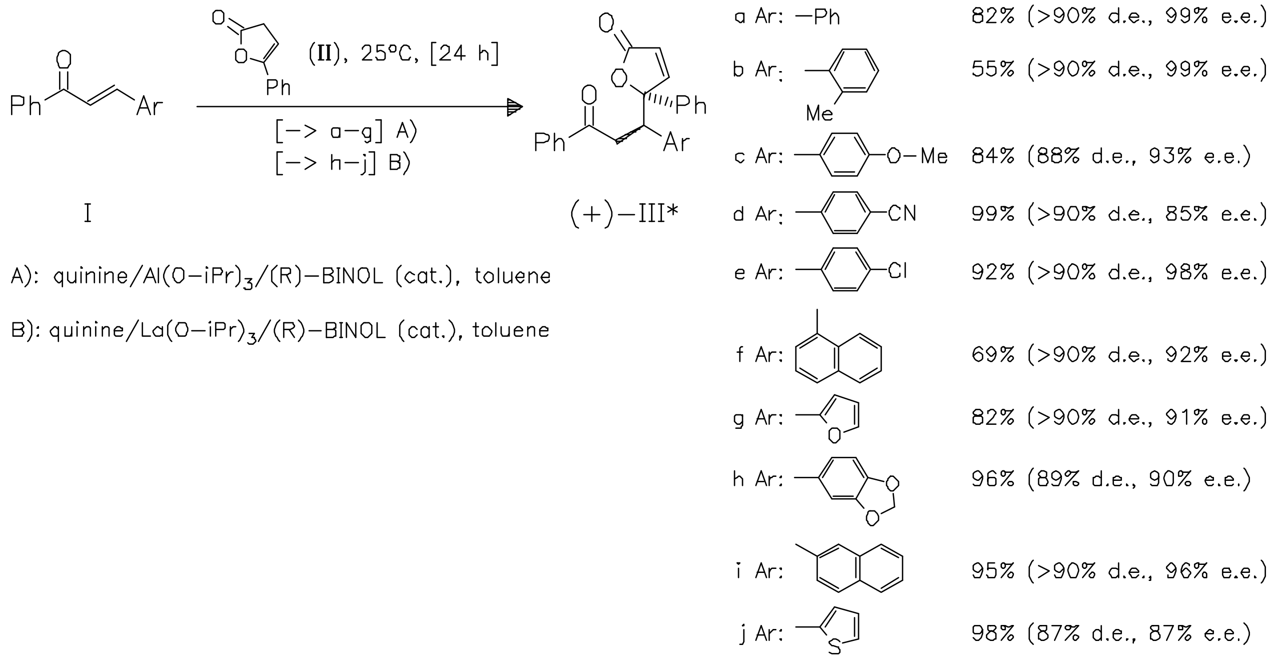
Dod: $-(CH_2)_{11}-Me$

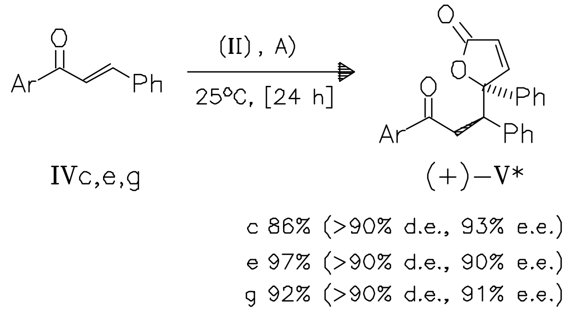
Furan derivatives
R 0060

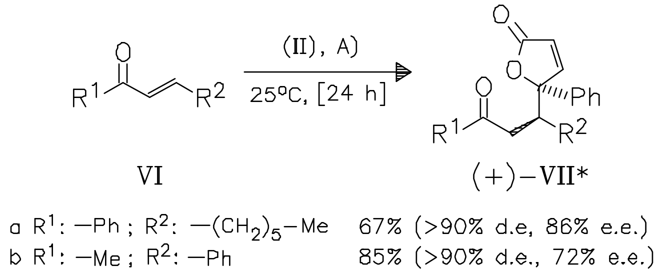
DOI: 10.1002/chin.201335096

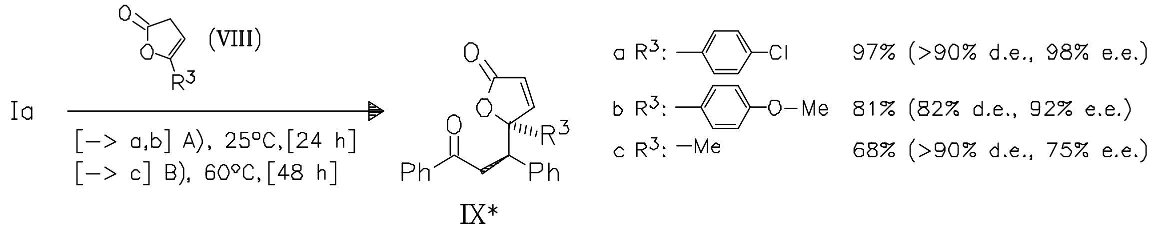
35- 096

Development of Metal/Organo Catalytic Systems for Direct Vinylogous Michael Reactions to Build Chiral γ,γ-Disubstituted Butenolides. — (YANG, D.; WANG, L.; ZHAO, D.; HAN, F.; ZHANG, B.; WANG*, R.; Chem. - Eur. J. 19 (2013) 15, 4691-4694, http://dx.doi.org/10.1002/chem.201204466 ; State Key Lab. Appl. Org. Chem., Inst. Biochem. Mol. Biol., Lanzhou Univ., Lanzhou, Gansu 730000, Peop. Rep. China; Eng.) — M. Zastrow







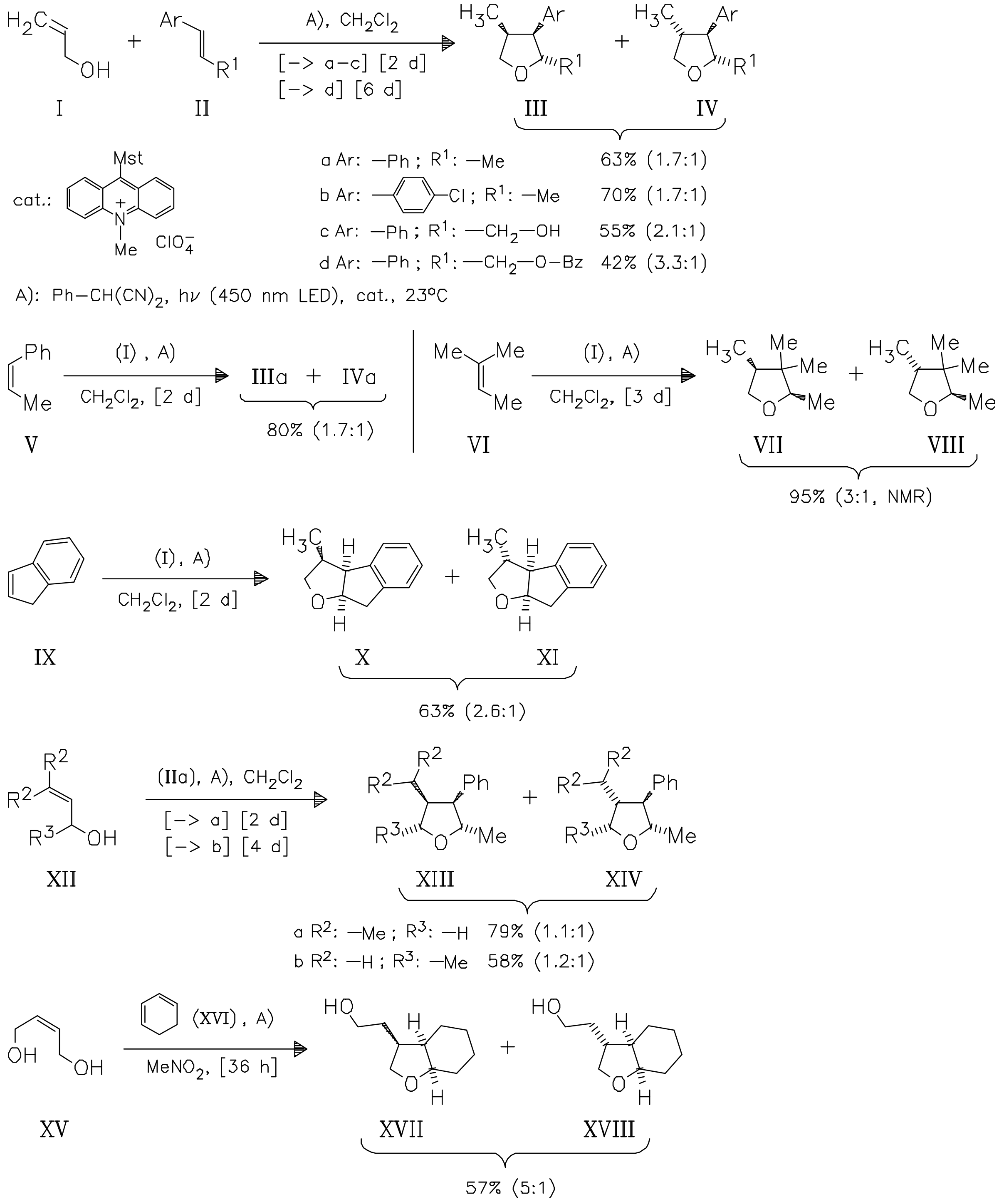


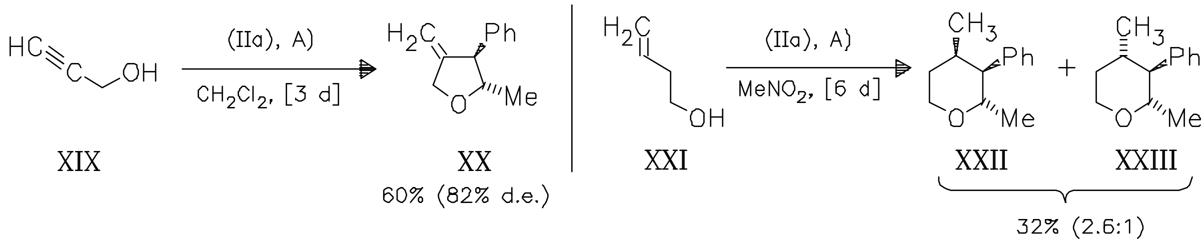
Furan derivatives
R 0060

DOI: 10.1002/chin.201335097

35- 097

Synthesis of Highly Substituted Tetrahydrofurans by Catalytic Polar-Radical-Crossover Cycloadditions of Alkenes and Alkenols. — The products are isolated as inseparable mixtures of diastereomers, some also containing traces of additional diastereomers not shown in the scheme. — (GRANDJEAN, J.-M. M.; NICEWICZ*, D. A.; Angew. Chem., Int. Ed. 52 (2013) 14, 3967-3971, http://dx.doi.org/10.1002/anie.201210111 ; Dep. Chem., Univ. N. C., Chapel Hill, NC 27599, USA; Eng.) — Roessler



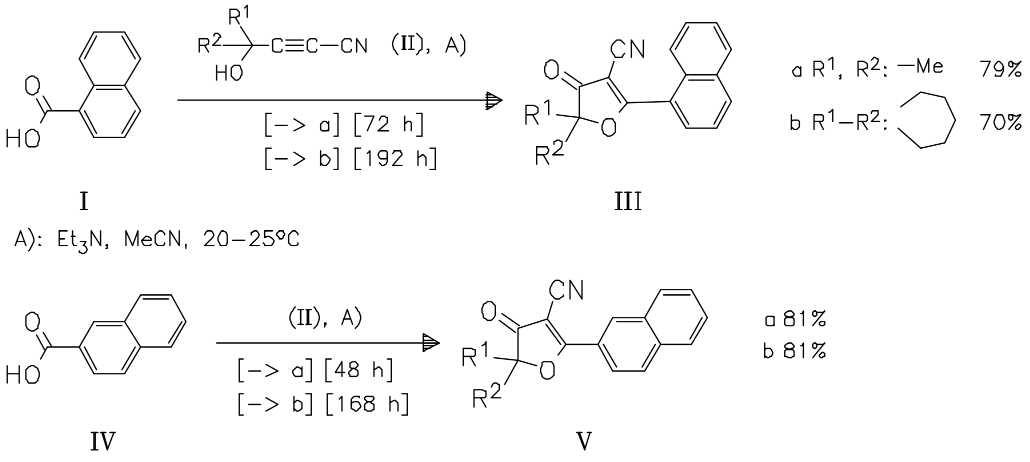


Furan derivatives
R 0060

DOI: 10.1002/chin.201335098

35- 098

One-Pot Tandem Synthesis of Fluorescent 5-Naphthyl-3(2H)-furanones. — (MAL'KINA, A.; VOLOSTNYKH, O. G.; PETRUSHENKO, K. B.; SHEMYAKINA, O. A.; NOSYREVA, V. V.; USHAKOV, I. A.; TROFIMOV*, B. A.; Tetrahedron 69 (2013) 18, 3714-3720, http://dx.doi.org/10.1016/j.tet.2013.03.007 ; A. E. Favorsky Inst. Chem., Sib. Branch, Russ. Acad. Sci., Irkutsk 664033, Russia; Eng.) — U. Scheffler

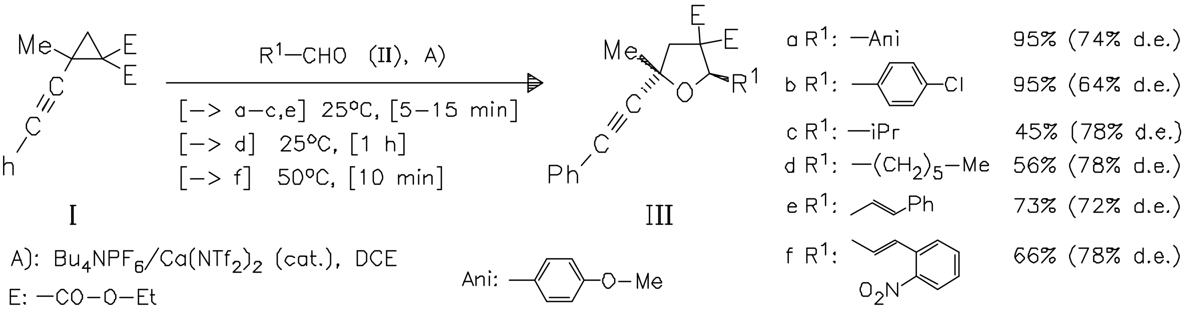


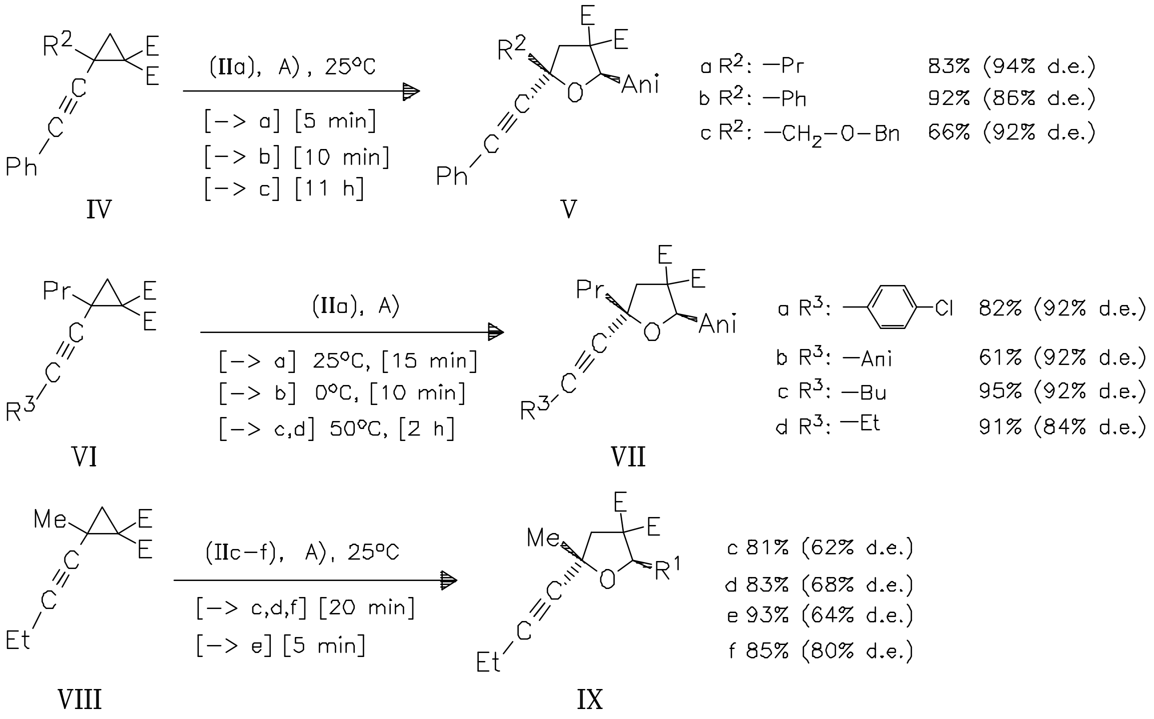
Furan derivatives
R 0060

DOI: 10.1002/chin.201335099

35- 099

The Alkynyl Moiety as a Donor for Donor—Acceptor Cyclopropanes. — A calcium-catalyzed [3 + 2]-cycloaddition of aldehydes with a new type of quaternary donor site cyclopropanes, bearing an alkyne moiety as the sole donor entity, is presented. The method provides an unprecedented general access to highly substituted tetrahydrofurans bearing an alkyne moiety with excellent diastereoselectivities. — (HAUBENREISSER, S.; HENSENNE, P.; SCHROEDER, S.; NIGGEMANN*, M.; Org. Lett. 15 (2013) 9, 2262-2265, http://dx.doi.org/10.1021/ol400809n ; Inst. Org. Chem., RWTH Aachen, D-52074 Aachen, Germany; Eng.) — Y. Steudel



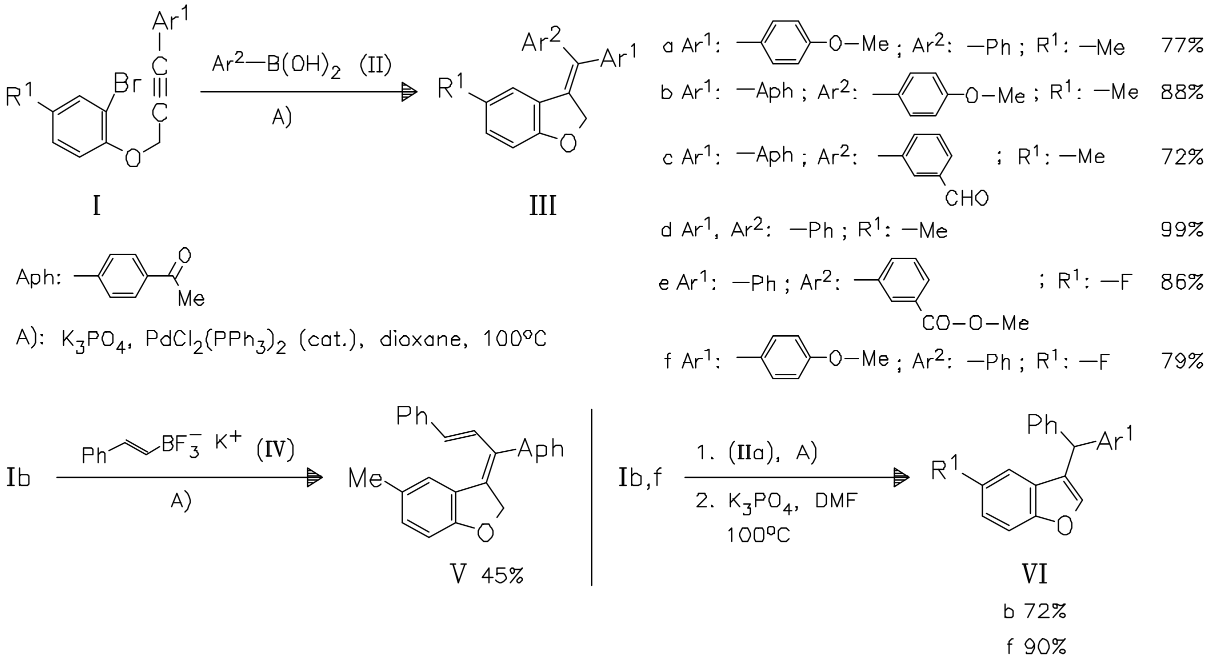


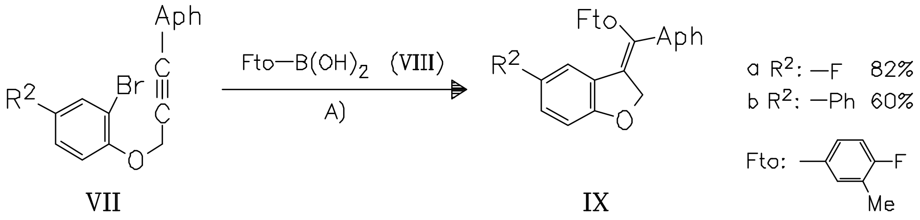
Benzofuran derivatives

R 0070 DOI: 10.1002/chin.201335100

35- 100

Palladium-Catalyzed Cascade Reactions of 1-(3-Arylprop-2-ynyloxy)-2-bromo Benzene Derivatives with Organoboron Compounds. — The methodology allows a new access to various 2-unsubstituted, 3-functionalized benzofuran skeletons. — (ARCADI*, A.; BLESI, F.; CACCHI, S.; FABRIZI, G.; GOGGIAMANI, A.; MARINELLI, F.; J. Org. Chem. 78 (2013) 9, 4490-4498, http://dx.doi.org/10.1021/jo400503f ; Dip. Sci. Fis. Chim., Univ. Studi L'Aquila, Coppito, I-67010 L'Aquila, Italy; Eng.) — Jannicke



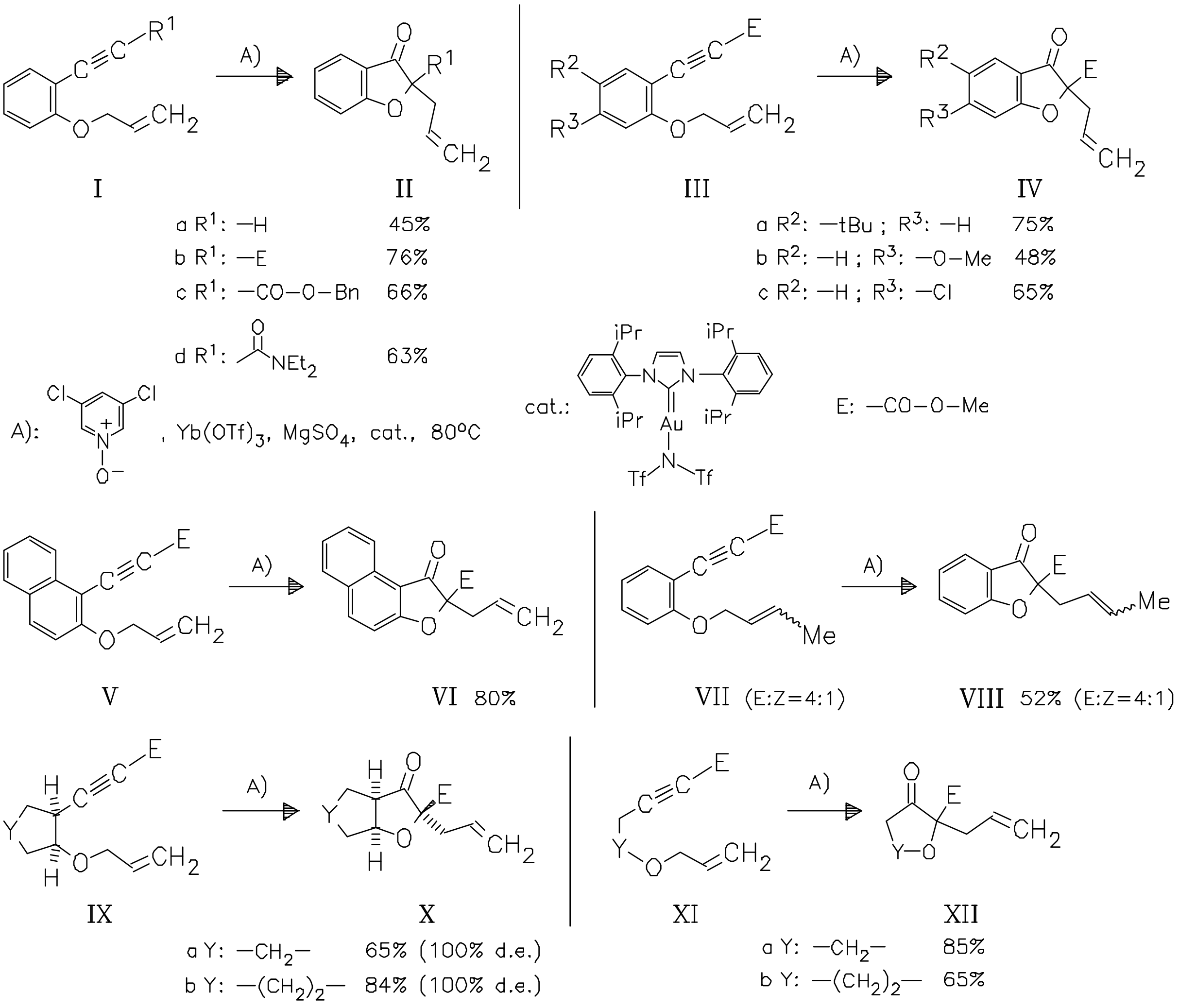


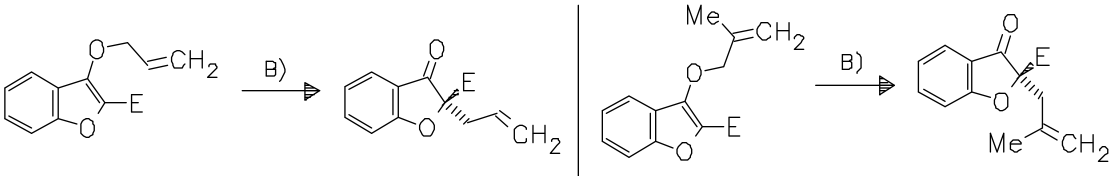
Benzofuran derivatives
R 0070

DOI: 10.1002/chin.201335101

35- 101

Gold-Catalyzed Rearrangement of Allylic Oxonium Ylides: Efficient Synthesis of Highly Functionalized Dihydrofuran-3-ones. — The novel reaction affords the title compounds from readily available starting materials and in a one-pot procedure. Moreover, the authors developed an efficient approach for the synthesis of enantioenriched benzofuranone-3-one derivatives through an asymmetric Claisen-rearrangement reaction. — (FU, J.; SHANG, H.; WANG, Z.; CHANG, L.; SHAO, W.; YANG, Z.; TANG*, Y.; Angew. Chem., Int. Ed. 52 (2013) 15, 4198-4202, http://dx.doi.org/10.1002/anie.201208305 ; Dep. Pharmacol. Pharm. Sci., Tsinghua Univ., Beijing 100084, Peop. Rep. China; Eng.) — M. Zastrow

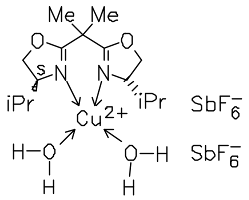




XIII (S)−XIV 98% (80% e.e.) XV (S)−XVI 95% (91% e.e.)

B): BOX (cat.), Et_2O/CH_2Cl_2 (7:3), 25°C

BOX:

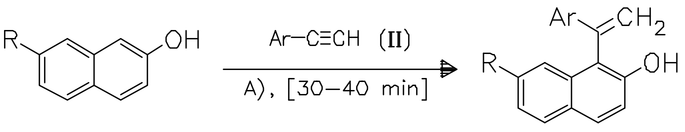


Benzofuran derivatives
R 0070 DOI: 10.1002/chin.201335102

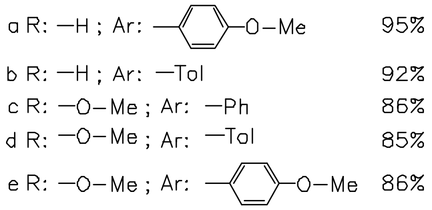
35- 102

A Simple and Efficient Synthesis of 2,3-Diarylnaphthofurans Using Sequential Hydroarylation/Heck Oxyarylation.

— (RAO, V. K.; SHELKE, G. M.; TIWARI, R.; PARANG*, K.; KUMAR, A.; Org. Lett. 15 (2013) 9, 2190-2193, http://dx.doi.org/10.1021/ol400738r ; Dep. Biomed. Pharm. Sci., Univ. R. I., Kingston, RI 02881, USA; Eng.) — M. Duhs

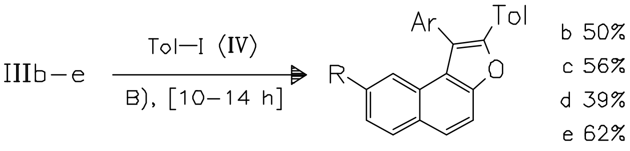


I III

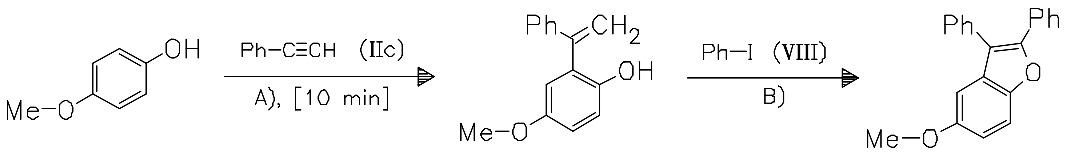


A): microwaves, $In(O{-}Tf)_3$ (cat.), toluene, 120°C, 30 psi

B): Cs_2CO_3, 5 mol% $Pd(O{-}Ac)_2$/10 mol% PPh_3 (cat.), DMA, 140°C



V



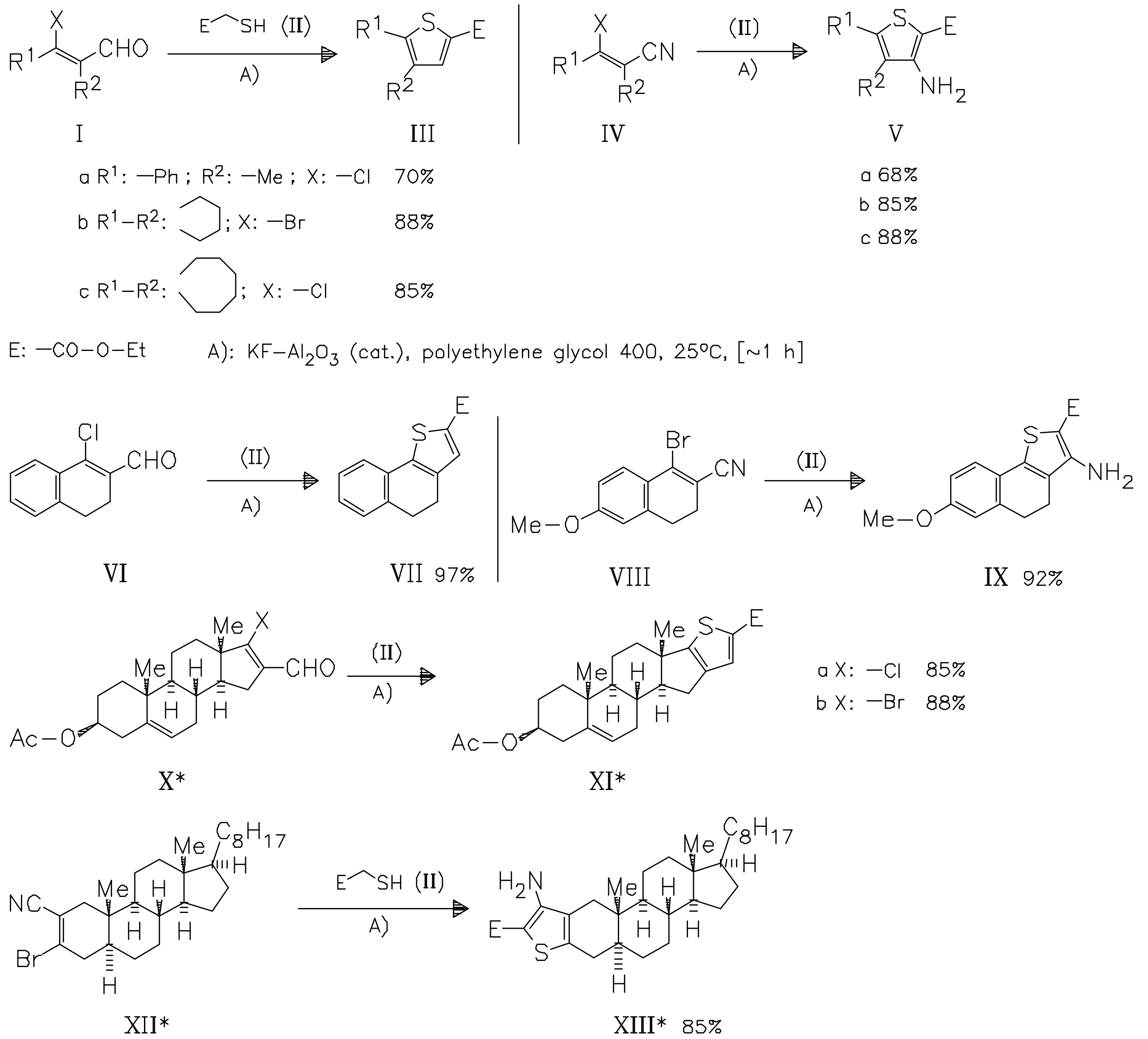
VI VII 68% IX 75%

Thiophene derivatives
R 0090

DOI: 10.1002/chin.201335103

35- 103

KF/Al$_2$O$_3$/PEG-400: An Efficient Catalytic System for the Fiesselmann-Type Synthesis of Thiophene Derivatives. — A simple protocol is developed to synthesize novel non-steroidal and steroidal thiophenes via reaction of β-halo-α,β-unsaturated aldehydes with thioacetic acid ethyl ester. — (BEZBORUAH, P.; GOGOI*, P.; GOGOI, J.; BORUAH, R. C.; Synthesis 45 (2013) 10, 1341-1348, http://dx.doi.org/10.1055/s-0033-1338299 ; Med. Chem. Div., North-East Inst. Sci. Technol., Jorhat 785 006, India; Eng.) — Mais

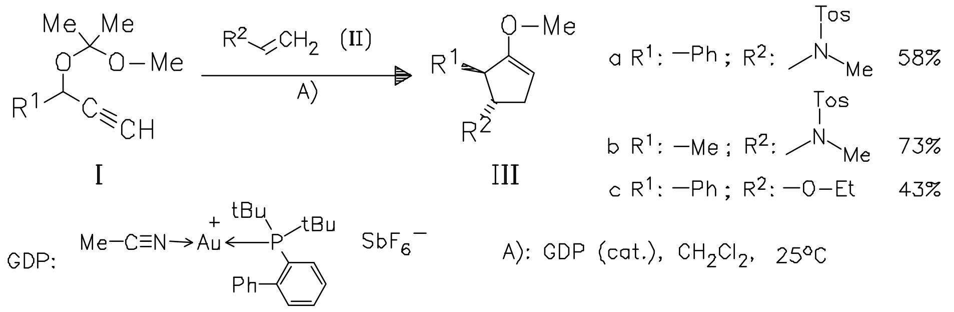


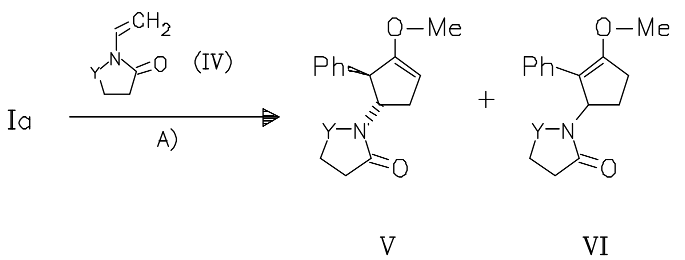
Pyrrole derivatives
R 0120

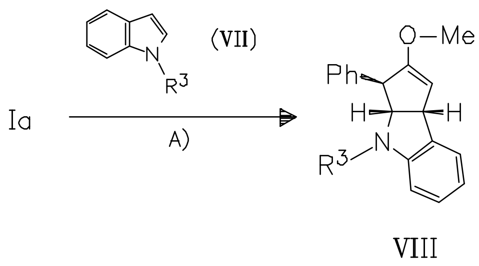
DOI: 10.1002/chin.201335104

35- 104

Gold(I)-Catalyzed Alkene Cycloaddition Reactions of Propargyl Acetals. — This is a comparative study on gold-catalyzed cycloadditions between alkenes and propargyl acetals or esters yielding a variety of cycloaddition products. — (IQBAL, N.; SPERGER, C. A.; FIKSDAHL*, A.; Eur. J. Org. Chem. 2013, 5, 907-914, http://dx.doi.org/10.1002/ejoc.201201328 ; Dep. Chem., Norw. Univ. Sci. Technol., N-7491 Trondheim, Norway; Eng.) — M. Zastrow

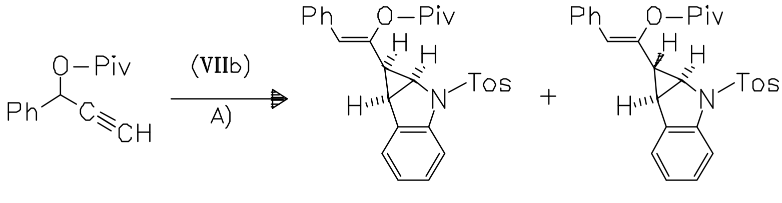






		V	VI
a	Y: —$(CH_2)_2$—	22%	51%
b	Y: —CH_2—	0%	61%
c	Y: —O—	14%	35%

		VIII
a	R^3: —Ac	65%
b	R^3: —Tos	73%
c	R^3: —H	49%



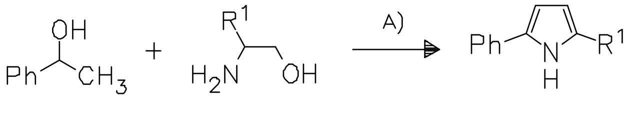
IX X 8% XI 58%

Pyrrole derivatives
R 0120

DOI: 10.1002/chin.201335105

35- 105

Direct Synthesis of Pyrroles by Dehydrogenative Coupling of β-Aminoalcohols with Secondary Alcohols Catalyzed by Ruthenium Pincer Complexes. — (SRIMANI, D.; BEN-DAVID, Y.; MILSTEIN*, D.; Angew. Chem., Int. Ed. 52 (2013) 14, 4012-4015, http://dx.doi.org/10.1002/anie.201300574 ; Dep. Org. Chem., Weizmann Inst. Sci., Rehovot 76100, Israel; Eng.) — Roessler

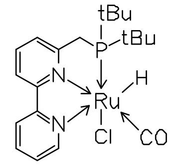


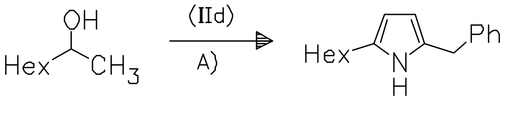
I
II
III

a R^1: —Me 71%
b R^1: —iBu 78%
c R^1: —iPr 83%
d R^1: —CH_2—Ph 85%
e R^1: —Ph 62%

A): 0.5 equiv. KOtBu, 0.5 mol% cat., toluene, reflux, [24 h]

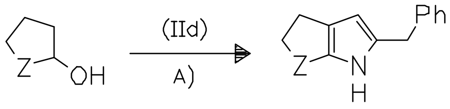
cat.:





IV
V 82%

Hex: —$(CH_2)_5$—Me



VI
VII

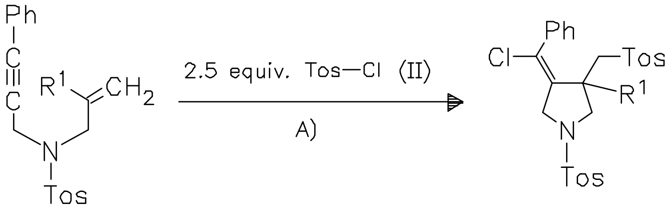
a Z: —CH_2— 55%
b Z: —$(CH_2)_2$— 50%
c Z: —$(CH_2)_3$— 59%

Pyrrole derivatives
R 0120

DOI: 10.1002/chin.201335106

35- 106

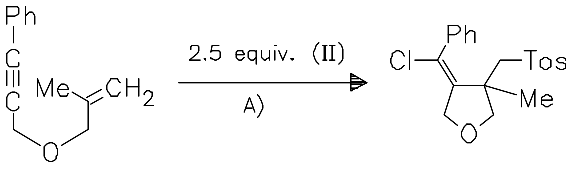
Rhodium-Catalyzed Carbocyclization and Chlorosulfonylation of 1,6-Enynes with Sulfonyl Chlorides. — Optimized conditions are elaborated and applied to the reaction of various enynes bearing an N-linker and to one oxygen analogue (IV) with TosCl. The concomitant formation of C—C, C—S and C—Cl bonds produces 5-membered heterocyclic systems with an (E)-configurated exocyclic double bond. The method is extended to sulfonyl chlorides (XI) and a successful bromination/ iodination of substrate (X). — (CHEN, C.; SU, J.; TONG*, X.; Chem. - Eur. J. 19 (2013) 16, 5014-5018, http://dx.doi.org/10.1002/chem.201204039 ; Shanghai Key Lab. Funct. Mater. Chem., East China Univ. Sci. Technol., Shanghai 200237, Peop. Rep. China; Eng.) — Lindner



I
III

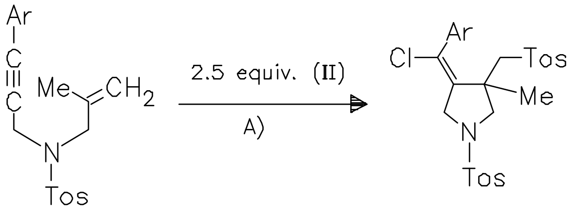
a R^1: —H 45% (impure)
b R^1: —Et 62%
c R^1: —Ph 41%

A): 1 equiv. LiCl·H_2O, 10 mol% $[RhCl(cod)]_2$/11 mol% dppf (cat.), dioxane, reflux, [36 h]



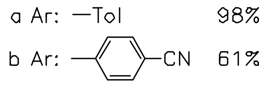
IV

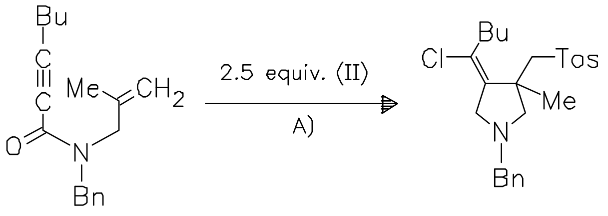
V 75%



VI

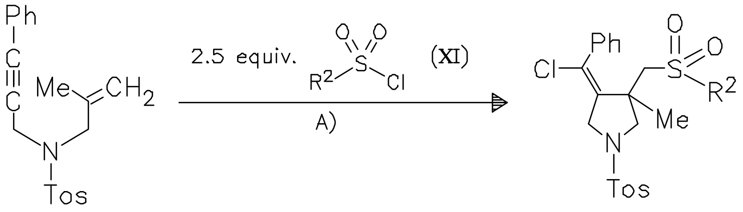
VII





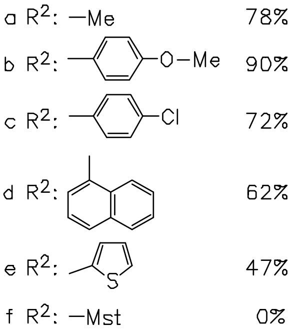
VIII

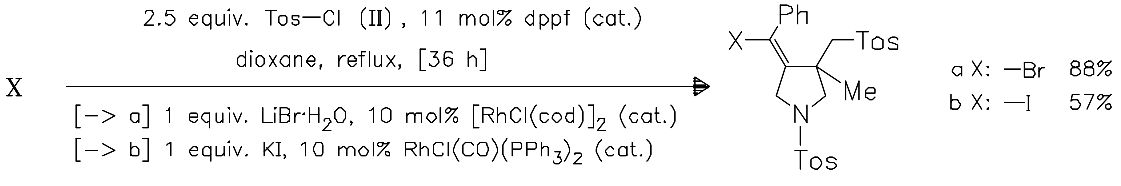
IX 40%



X

XII





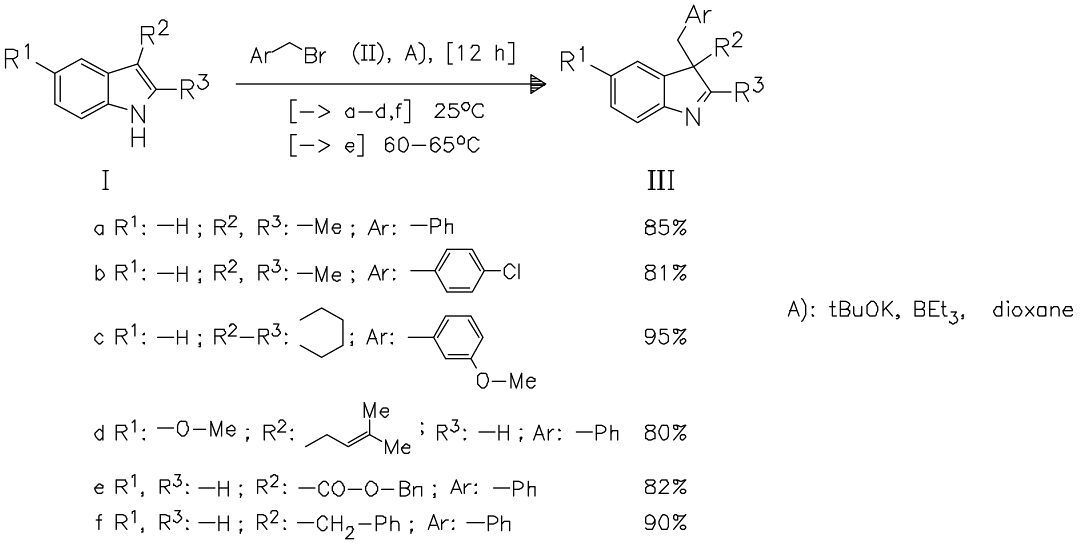
XIII

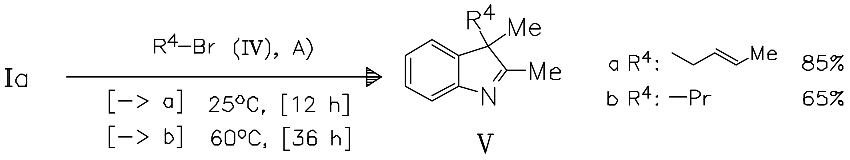
Indole derivatives
R 0140

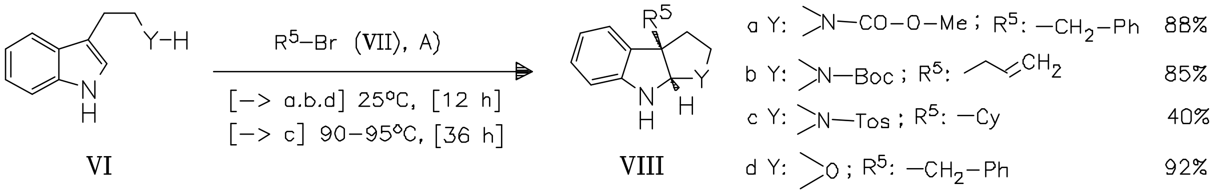
DOI: 10.1002/chin.201335107

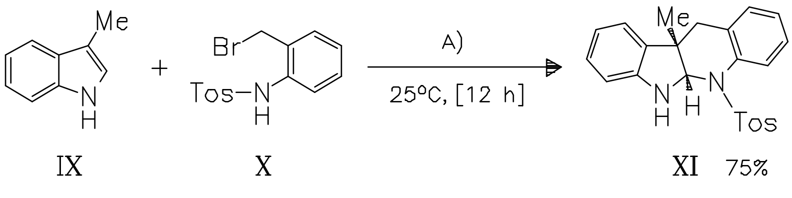
35- 107

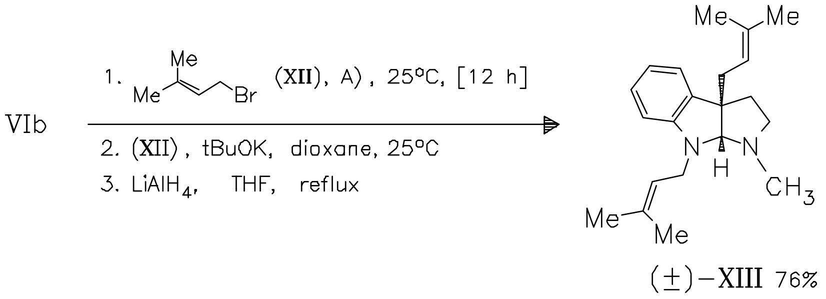
N-Indolyltriethylborate: A Useful Reagent for Synthesis of C3-Quaternary Indolenines. — N-Indolyltriethylborate is found to be a useful reagent for dearomatizing C3-alkylation of 3-substituted indoles with alkyl halides. The reaction proceeds under mild conditions with a broad range of substrates to give indolenines, pyrroloindolines, furoindoline, and hexahydropyridoindoline in high yields. The utility of the method is demonstrated in the total synthesis of debromoflustramine B (XIII). — (LIN, A.; YANG*, J.; HASHIM, M.; Org. Lett. 15 (2013) 8, 1950-1953, http://dx.doi.org/10.1021/ol4005992 ; Dep. Chem., Tex. A&M Univ., College Station, TX 77843, USA; Eng.) — Bartels









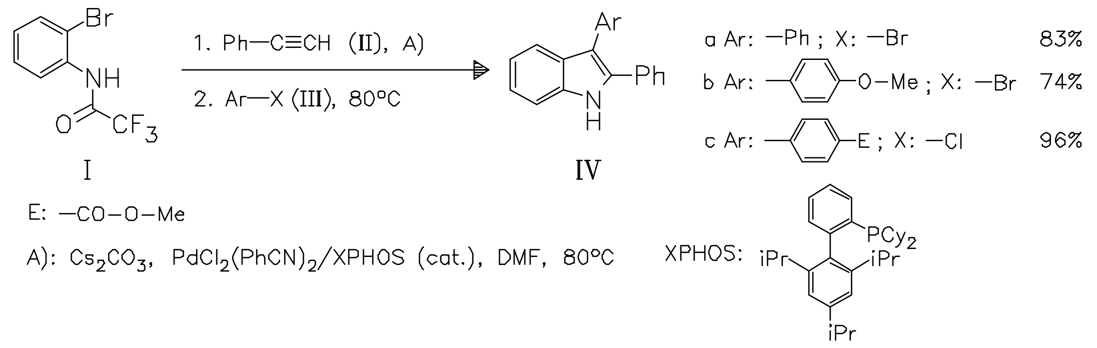


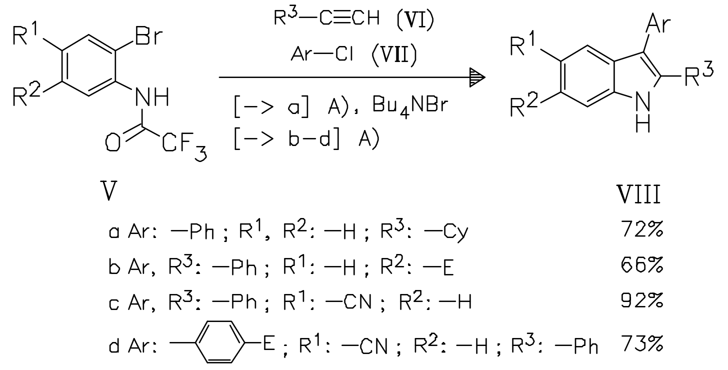
Indole derivatives
R 0140

DOI: 10.1002/chin.201335108

35- 108

One-Pot and Regiospecific Synthesis of 2,3-Disubstituted Indoles from 2-Bromoanilides via Consecutive Palladium-Catalyzed Sonogashira Coupling, Amidopalladation, and Reductive Elimination. — This method can be run as a reaction sequence or as a one-pot reaction. — (LU*, B. Z.; WEI, H.-X.; ZHANG, Y.; ZHAO, W.; DUFOUR, M.; LI, G.; FARINA, V.; SENANAYAKE, C. H.; J. Org. Chem. 78 (2013) 9, 4558-4562, http://dx.doi.org/10.1021/jo302679f ; Dep. Chem. Dev., Boehringer Ingelheim Pharm. Inc., Ridgefield, CT 06877, USA; Eng.) — Roessler



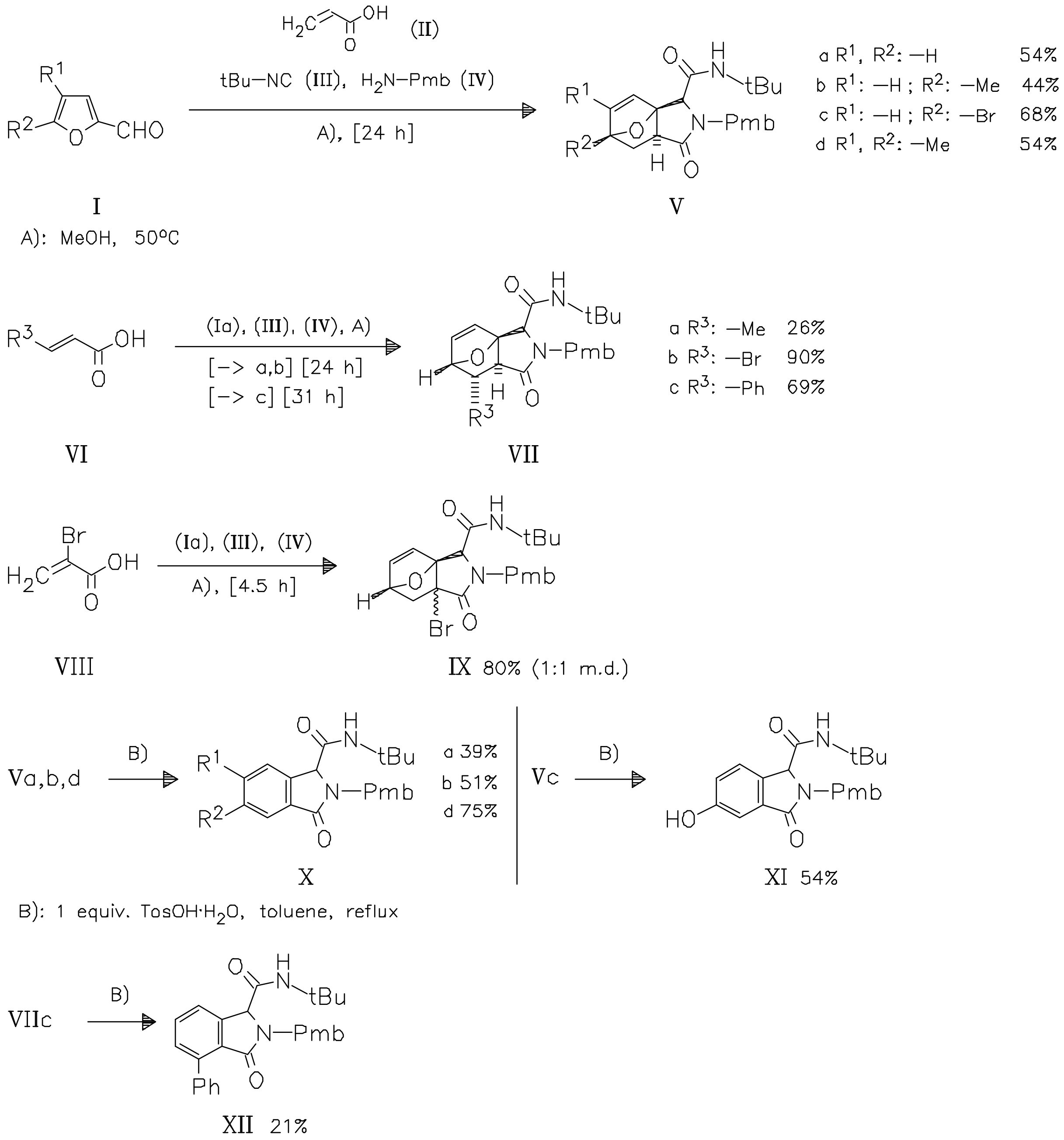


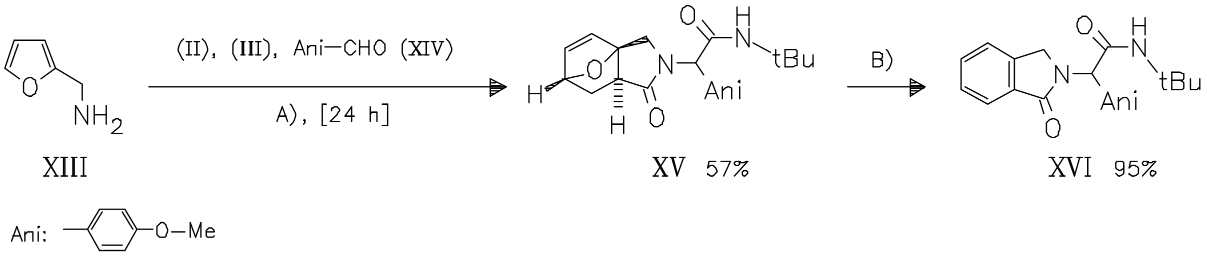
Isoindole derivatives
R 0140

DOI: 10.1002/chin.201335109

35- 109

A Mild Entry to Isoindolinones from Furfural as Renewable Resource. — A convenient transformation of furfural, its derivatives, or furfurylamine into fused heterocyclic compounds is described. This process provides a straightforward access to isoindolinones from a renewable resource via tandem Ugi-Diels-Alder reaction followed by ring opening and aromatization. Five bonds are created and water is the sole by-product in this two-step sequence. With the exception of 2-bromoacrylic acid (VIII) as substrate, only a single diastereoisomer is obtained from the initiatory tandem Ugi-Diels-Alder process. — (CAILLOT, G.; HEGDE, S.; GRAS*, E.;
New J. Chem. 37 (2013) 4, 1195-1200, http://dx.doi.org/10.1039/c3nj41050a ;
Lab. Chim. Coord., CNRS, Inst. Natl. Polytech., Univ. Paul Sabatier,
F-31077 Toulouse, Fr.; Eng.) — H. Haber



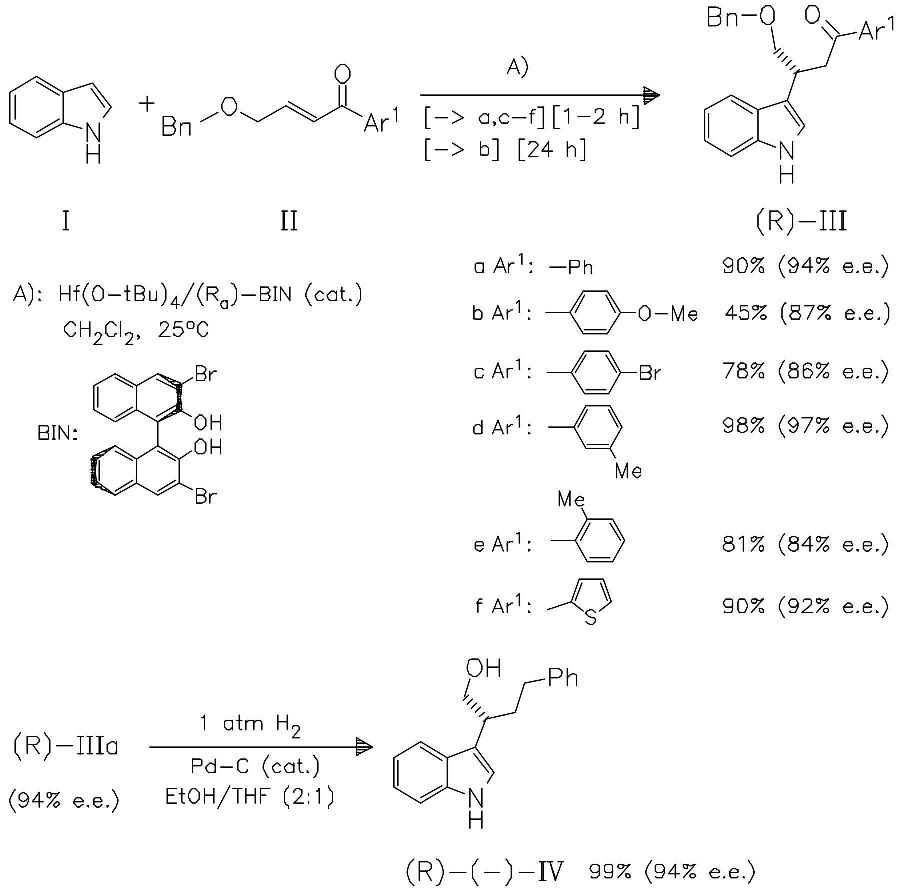


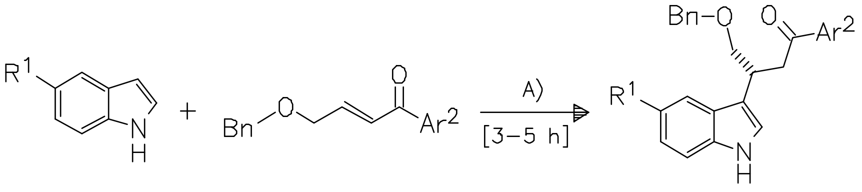
Indole derivatives
R 0140

DOI: 10.1002/chin.201335110

35- 110

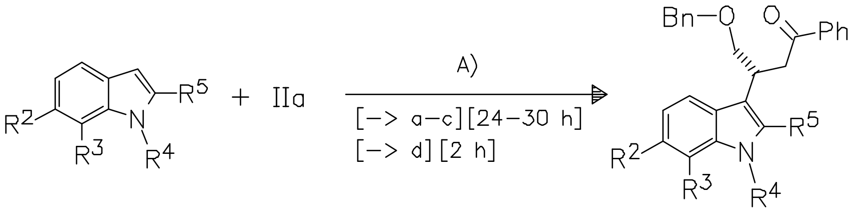
Enantioselective Friedel—Crafts Alkylation of Indoles with (E)-1-Aryl-4-benzyloxybut-2-en-1-ones Catalyzed by an (R)-3,3'-Br_2BINOLate—Hafnium(IV) Complex. — This method uses N-unprotected indoles. The reaction products can be efficiently transformed into tryptophol derivatives, e. g. compound (IV). — (BLAY, G.; FERNANDEZ, I.; MUNOZ, M. C.; PEDRO*, J. R.; VILA, C.; Eur. J. Org. Chem. 2013, 10, 1902-1907, http://dx.doi.org/10.1002/ejoc.201201636 ; Dep. Quim. Org., Fac. Quim., Univ. Valencia, E-46100 Burjassot, Valencia, Spain; Eng.) — Roessler





V VI (R)-(+)-VII

a	Ar^2: —Ph ; R^1: —Me	94% (97% e.e.)
b	Ar^2: —Ph ; R^1: —O—Me	80% (94% e.e.)
c	Ar^2: —Ph ; R^1: —F	93% (92% e.e.)
d	Ar^2: —Tol ; R^1: —F	85% (93% e.e.)



VIII (R)-(+)-IX

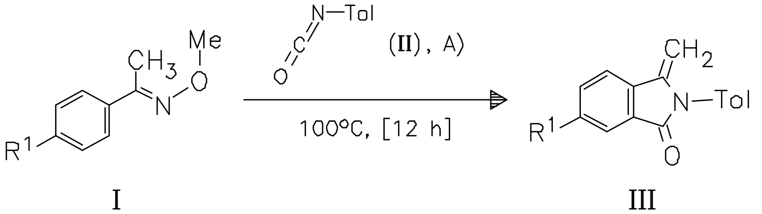
a	R^2: —F ; R^3, R^4, R^5: —H	70% (68% e.e.)
b	R^5: —Me ; R^2, R^3, R^4: —H	74% (92% e.e.)
c	R^3: —Me ; R^2, R^4, R^5: —H	48% (51% e.e.)
d	R^4: —Me ; R^2, R^3, R^5: —H	65% (5% e.e.)

Isoindole derivatives
R 0140

DOI: 10.1002/chin.201335111

35- 111

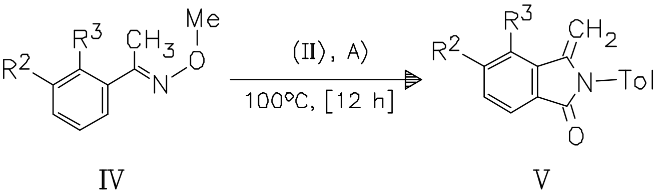
Rhodium(III)-Catalyzed Amidation of Aryl Ketone O-Methyl Oximes with Isocyanates by C—H Activation: Convergent Synthesis of 3-Methyleneisoindolin-1-ones. — The novel title reaction affords different substituted isoindolin-1-ones without any additives and is environmentally benign. Moreover, this protocol gives access to the products (XV) and (XVI), which are useful substrates for the synthesis of complex natural products. — (ZHOU, B.; HOU, W.; YANG, Y.; LI*, Y.; Chem. - Eur. J. 19 (2013) 15, 4701-4706, http://dx.doi.org/10.1002/chem.201204448 ; Shanghai Inst. Mater. Med., Chin. Acad. Sci., Shanghai 201203, Peop. Rep. China; Eng.) — M. Zastrow



I III

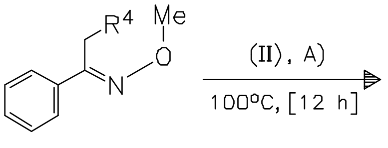
a	R^1: —H	88%
b	R^1: —O—Me	92%
c	R^1: —CO—O—Me	82%
d	R^1: —CF_3	80%
e	R^1: —F	83%

A): $[Rh(C_5Me_5)(MeCN)_3](SbF_6)_2$ (cat.), DCE, [sealed tube]



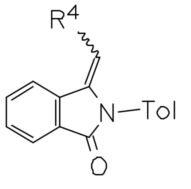
IV V

a	R^2: —Me ; R^3: —H	76%
b	R^2: —H ; R^3: —Cl	65%

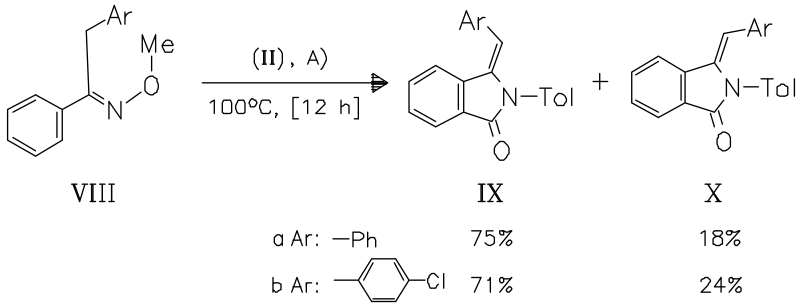


VI VII

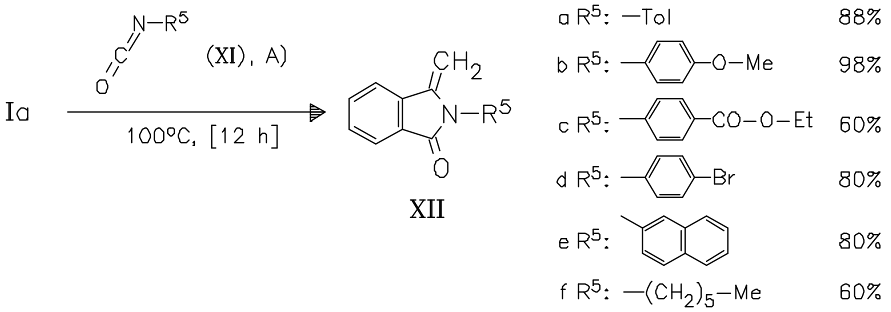
a	R^4: —Me	86% (E:Z=1.62:1)
b	R^4: —iPr	94% (E:Z=1.75:1)



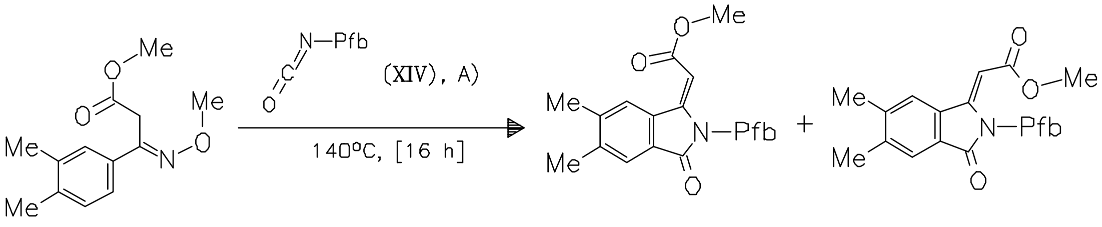
VII



VIII IX X



XII



XIII Pfb: —F XV 73% XVI 12%

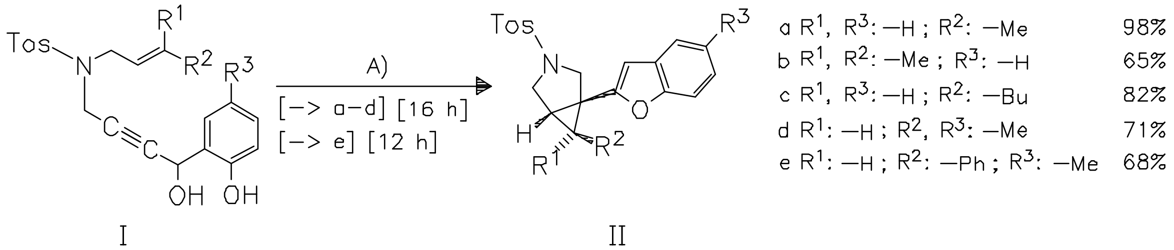
Indole derivatives

R 0140

DOI: 10.1002/chin.201335112

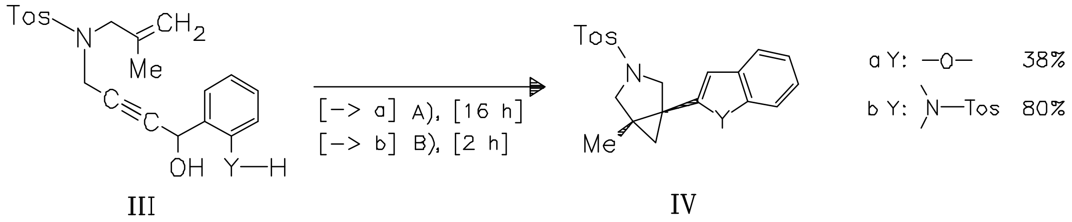
35- 112

Calcium-Catalyzed Cyclopropanation. — This cascade reaction yields indolyl- or benzofuranyl-substituted 3-azabicyclo[3.1.0]hexane derivatives with high diastereoselectivity. — (HAVEN, T.; KUBIK, G.; HAUBENREISSER, S.; NIGGEMANN*, M.; Angew. Chem., Int. Ed. 52 (2013) 14, 4016-4019, http://dx.doi.org/10.1002/anie.201209053 ; Inst. Org. Chem., RWTH Aachen, D-52074 Aachen, Germany; Eng.) — Roessler

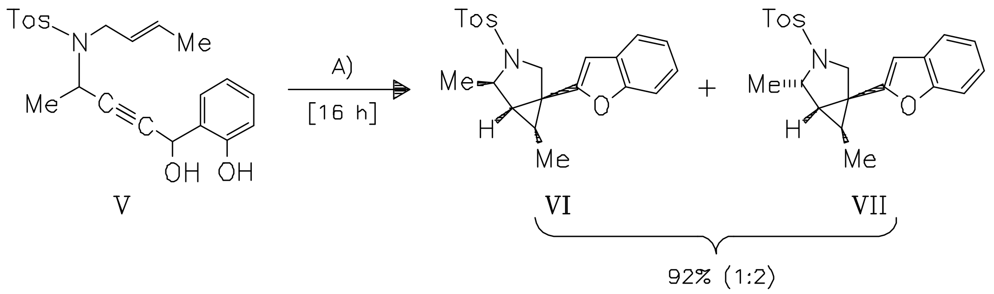


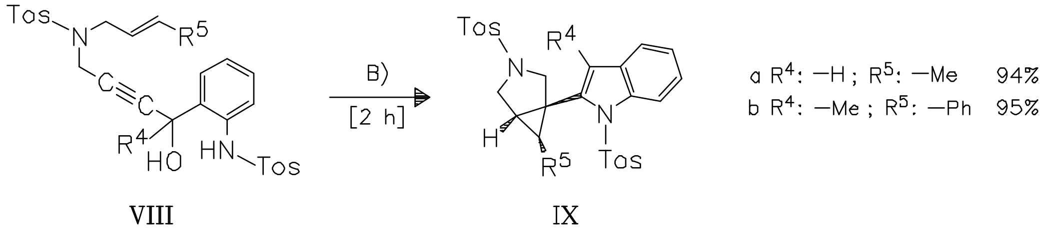
I II

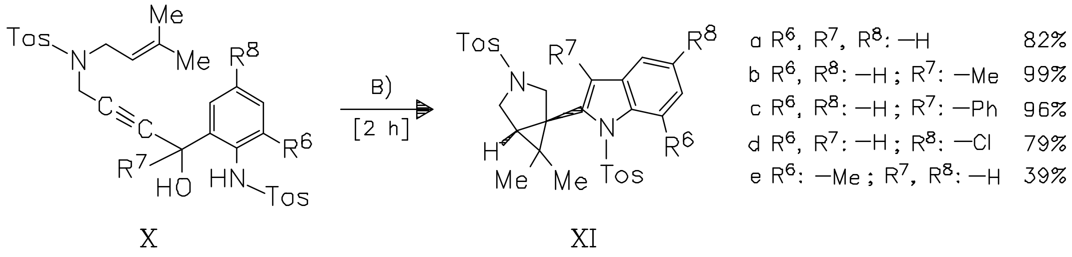
A): 5 mol% $Ca(NTf_2)_2/Bu_4NSbF_6$ (1:1) (cat.), DCE, 25°C



B): 5 mol% $Ca(NTf_2)_2/Bu_4NPF_6$ (1:1) (cat.), CH_2Cl_2, 40°C





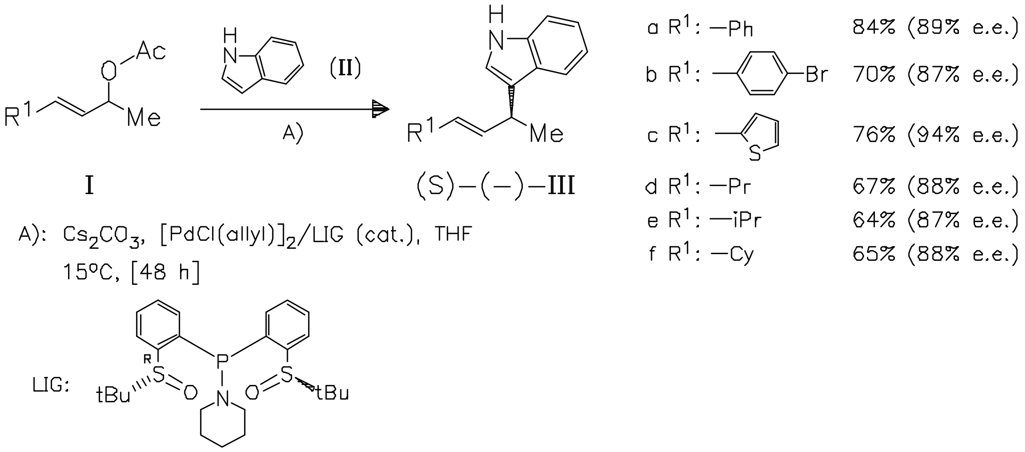


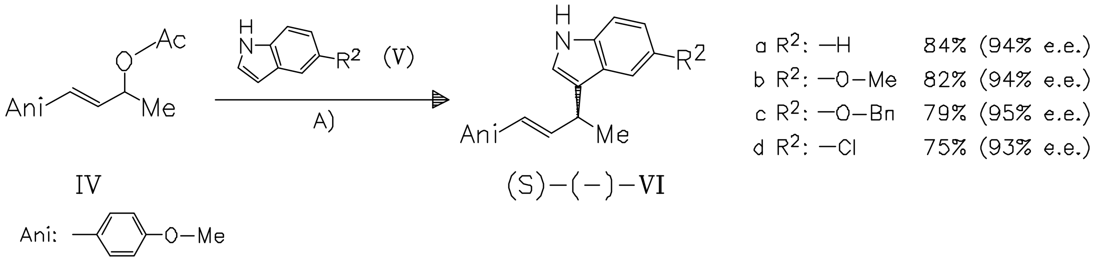
Indole derivatives
R 0140

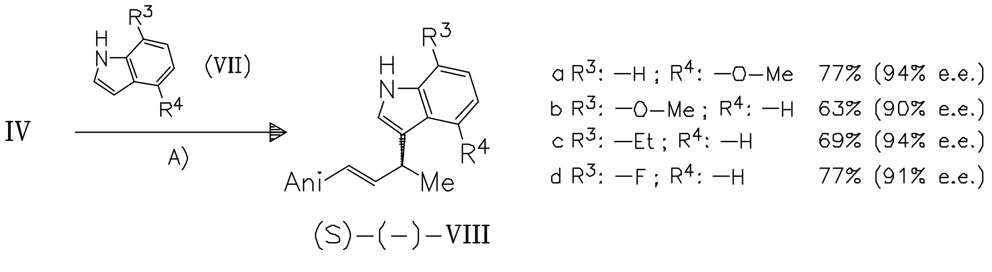
DOI: 10.1002/chin.201335113

35- 113

Hydrogen-Bond-Promoted Palladium Catalysis: Allylic Alkylation of Indoles with Unsymmetrical 1,3-Disubstituted Allyl Acetates Using Chiral Bis(sulfoxide) Phosphine Ligands. — (DU, L.; CAO, P.; XING, J.; LOU, Y.; JIANG, L.; LI, L.; LIAO*, J.; Angew. Chem., Int. Ed. 52 (2013) 15, 4207-4211, http://dx.doi.org/10.1002/anie.201209485 ; Nat. Prod. Res. Cent., Chengdu Inst. Biol., Chin. Acad. Sci., Chengdu 610041, Peop. Rep. China; Eng.) — M. Zastrow





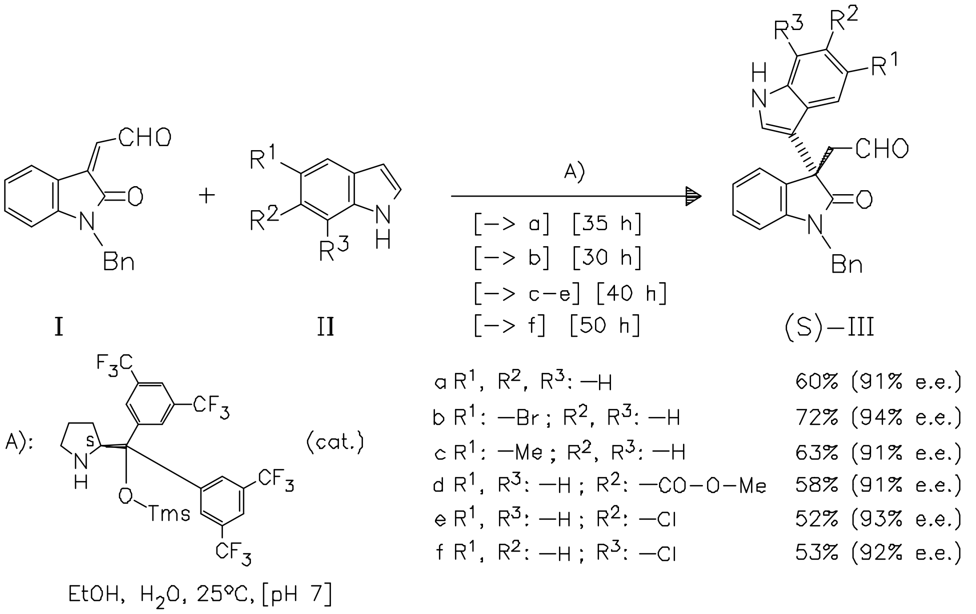


Indole derivatives
R 0140

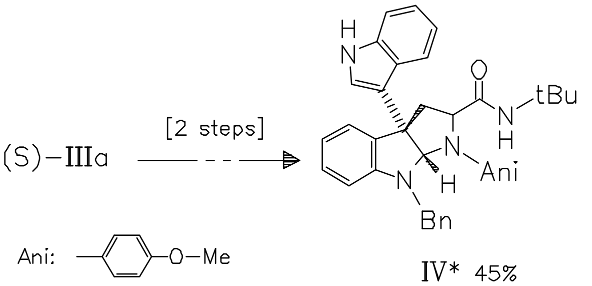
DOI: 10.1002/chin.201335114

35- 114

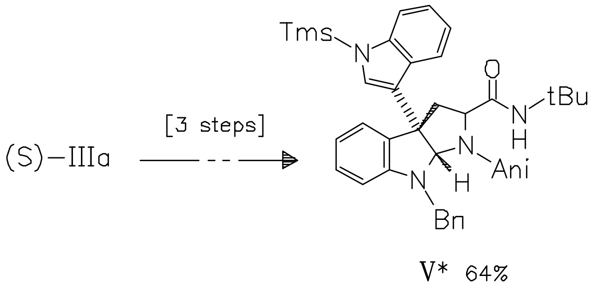
Organocatalytic Michael Addition of Indoles to Isatylidene-3-acetaldehydes: Application to the Formal Total Synthesis of (-)-Chimonanthine. — The reaction tolerates a wide range of substitution and functional groups and proceeds with moderate yields and high enantioselectivities. The use of the buffer enhances the enantioselectivity of the reaction. The product (IIIa) and its enantiomer are used for the preparation of the core structure of (+)-gliocladin C [cf. (IV), (V)] and for the formal total synthesis of (-)-chimonanthine [cf. (VI)]. — (LIU, R.; ZHANG*, J.; Org. Lett. 15 (2013) 9, 2266-2269, http://dx.doi.org/10.1021/ol400845c ; Dep. Chem., East China Norm. Univ., Shanghai 200062, Peop. Rep. China; Eng.) — Y. Steudel



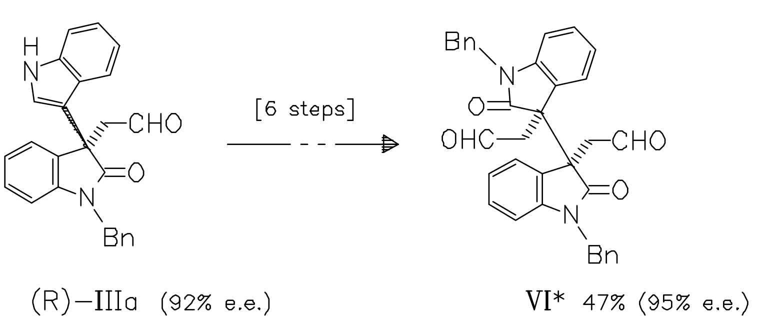
a	R^1, R^2, R^3: —H	60% (91% e.e.)
b	R^1: —Br ; R^2, R^3: —H	72% (94% e.e.)
c	R^1: —Me ; R^2, R^3: —H	63% (91% e.e.)
d	R^1, R^3: —H ; R^2: —CO—O—Me	58% (91% e.e.)
e	R^1, R^3: —H ; R^2: —Cl	52% (93% e.e.)
f	R^1, R^2: —H ; R^3: —Cl	53% (92% e.e.)



IV* 45%

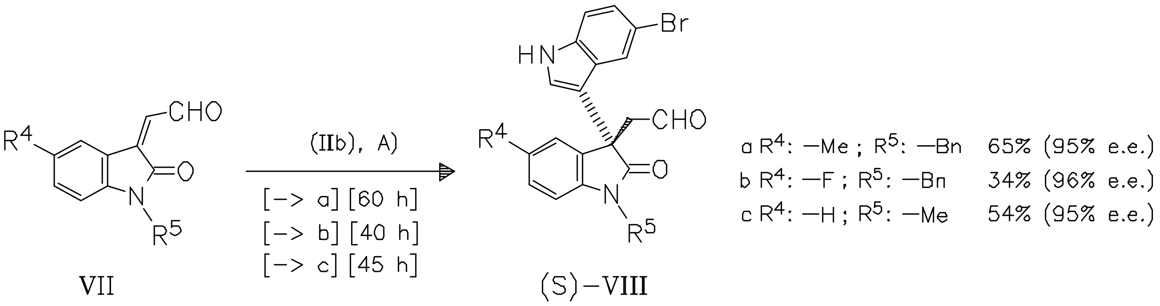


V* 64%



(R)-IIIa (92% e.e.)

VI* 47% (95% e.e.)

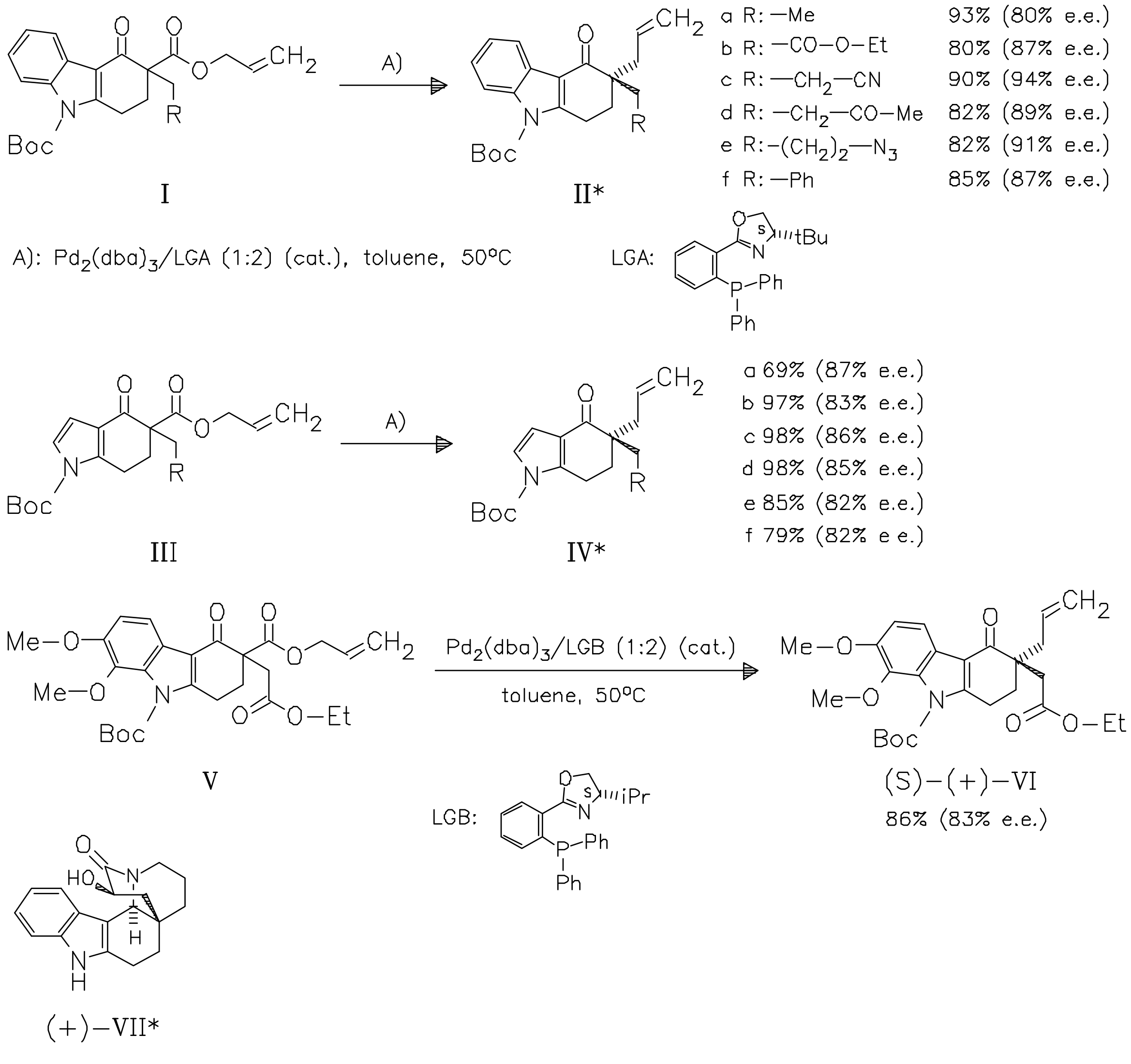


Carbazole derivatives
R 0150

DOI: 10.1002/chin.201335115

35- 115

Enantioselective Palladium-Catalyzed Decarboxylative Allylation of Carbazolones and Indolones: Formal Synthesis of (+)-Kopsihainanine A. — The synthesis of a wide range of different substituted chiral carbazolones and indolones is described. The carbazolone (IIc) can be used as starting material for the formal synthesis of (+)-kopsihainanine A (VII). — (GARTSHORE, C. J.; LUPTON*, D. W.; Angew. Chem., Int. Ed. 52 (2013) 15, 4113-4116, http://dx.doi.org/10.1002/anie.201209069 ; Sch. Chem., Monash Univ., Clayton, Victoria 3800, Australia; Eng.) — M. Zastrow



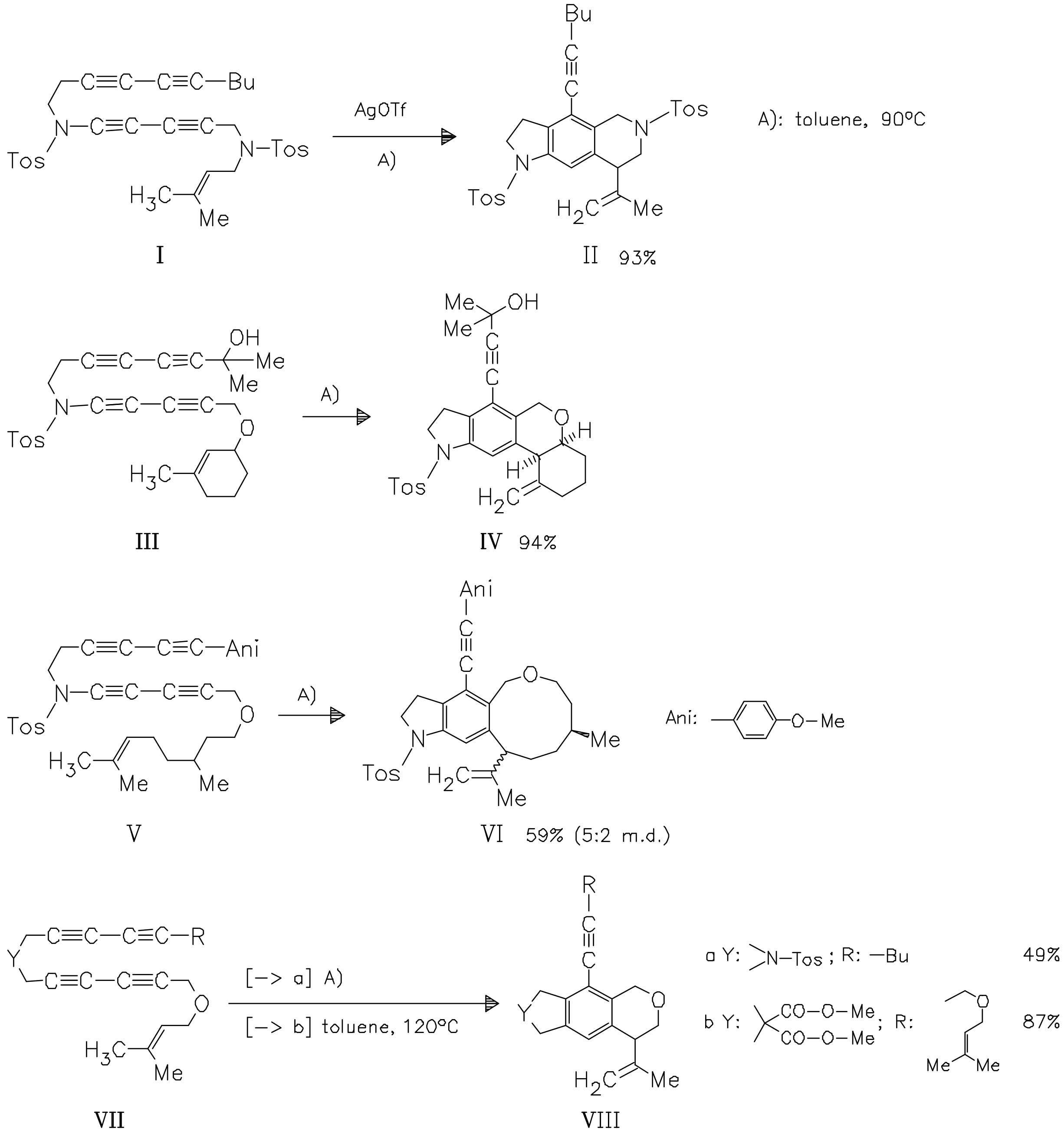
Fused pyrrole derivatives

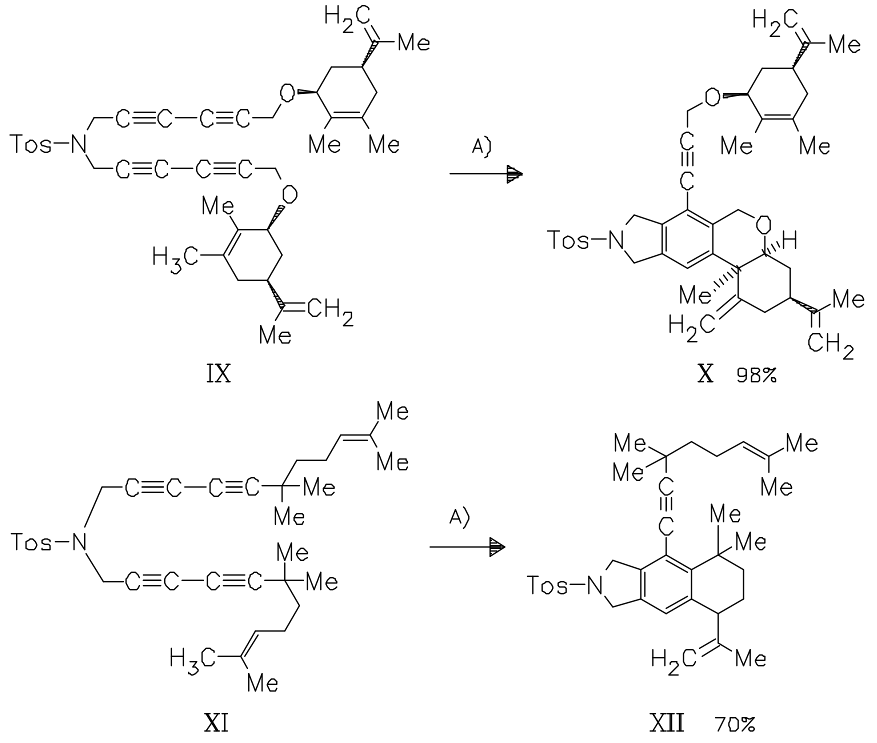
R 0160

DOI: 10.1002/chin.201335116

35- 116

Alder-Ene Reactions of Arynes. — Intramolecular ene reactions of aryne intermediates, generated from the corresponding acyclic alkynes, afford tri- or tetracyclic products. The tether size that connects the ene-donor to the 1,3-diyne moiety and substituent patterns on the alkene significantly affects the efficiency of the ring-closure. But, the heteroatom in the tether seems to have greatest impact on the reactivity. — (KARMAKAR, R.; MAMIDIPALLI, P.; YUN, S. Y.; LEE*, D.; Org. Lett. 15 (2013) 8, 1938-1941, http://dx.doi.org/10.1021/ol4005905 ; Dep. Chem., Univ. Ill., Chicago, IL 60607, USA; Eng.) — Bartels



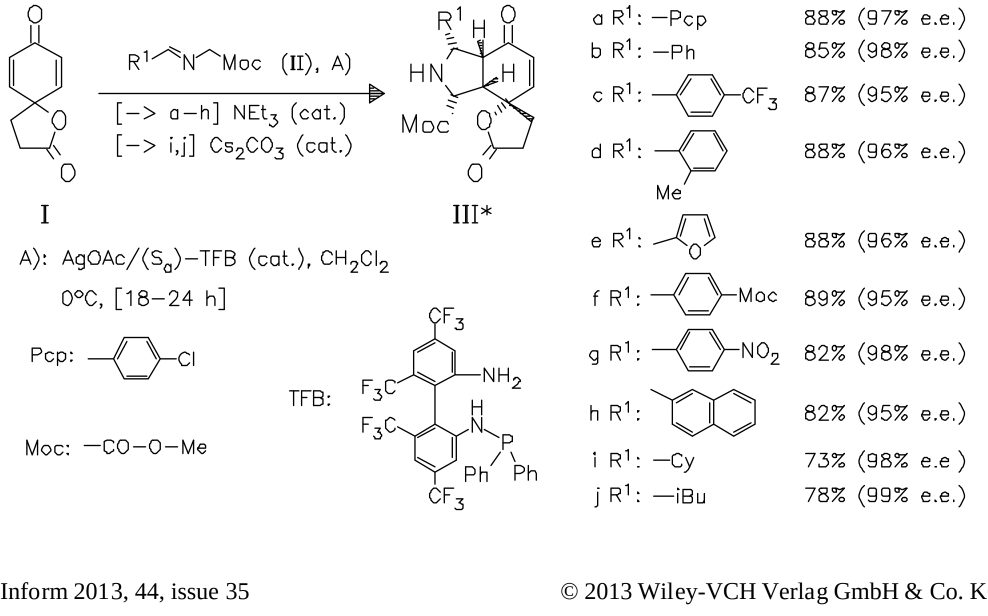


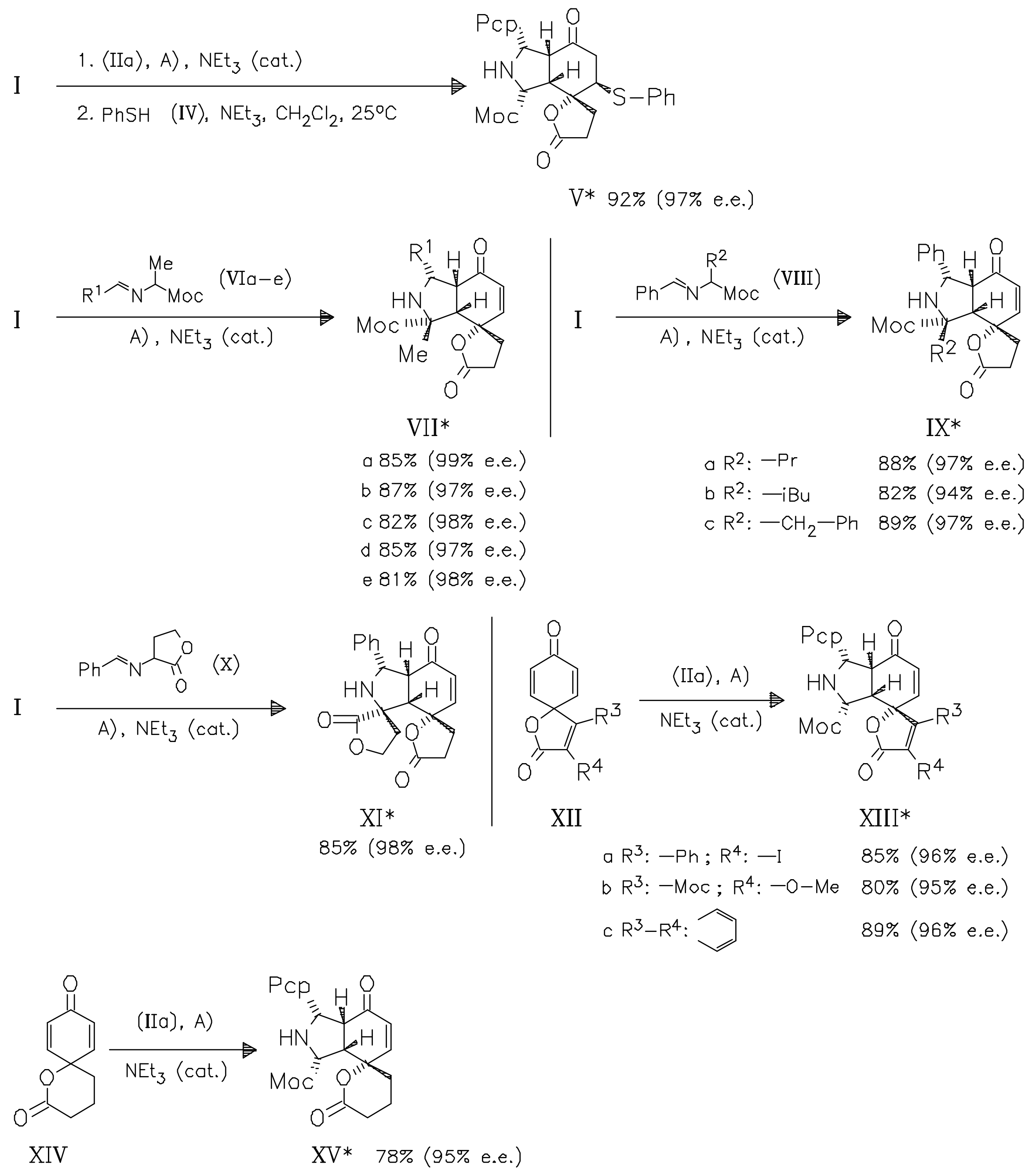
Fused pyrrole derivatives
R 0160

DOI: 10.1002/chin.201335117

35- 117

Silver-Catalyzed Enantioselective Desymmetrization: Facile Access to Spirolactone-Pyrrolidines Containing a Spiro Quaternary Stereogenic Center. — The title method represents the first catalytic asymmetric synthesis of highly functional spirolactonepyrrolidine derivatives bearing five contiguous stereocenters and one unique spiro quaternary stereocenter. The products are obtained with nearly complete diastereoselectivity and excellent enantioselectivity. The reaction is applicable to a broad range of substrates. One-pot protocol is used to carry out the desymmetrization and subsequent sulfa-Michael addition to afford (V). — (LIU, K.; TENG, H.-L.; YAO, L.; TAO, H.-Y.; WANG*, C.-J.; Org. Lett. 15 (2013) 9, 2250-2253, http://dx.doi.org/10.1021/ol400821q ; Coll. Chem. Mol. Sci., Wuhan Univ., Wuhan, Hubei 430072, Peop. Rep. China; Eng.) — Y. Steudel





V* 92% (97% e.e.)

VII*

a 85% (99% e.e.)
b 87% (97% e.e.)
c 82% (98% e.e.)
d 85% (97% e.e.)
e 81% (98% e.e.)

IX*

a R^2: —Pr 88% (97% e.e.)
b R^2: —iBu 82% (94% e.e.)
c R^2: —CH$_2$—Ph 89% (97% e.e.)

XI*
85% (98% e.e.)

XII

XIII*

a R^3: —Ph ; R^4: —I 85% (96% e.e.)
b R^3: —Moc ; R^4: —O—Me 80% (95% e.e.)
c R^3–R^4: 89% (96% e.e.)

XIV

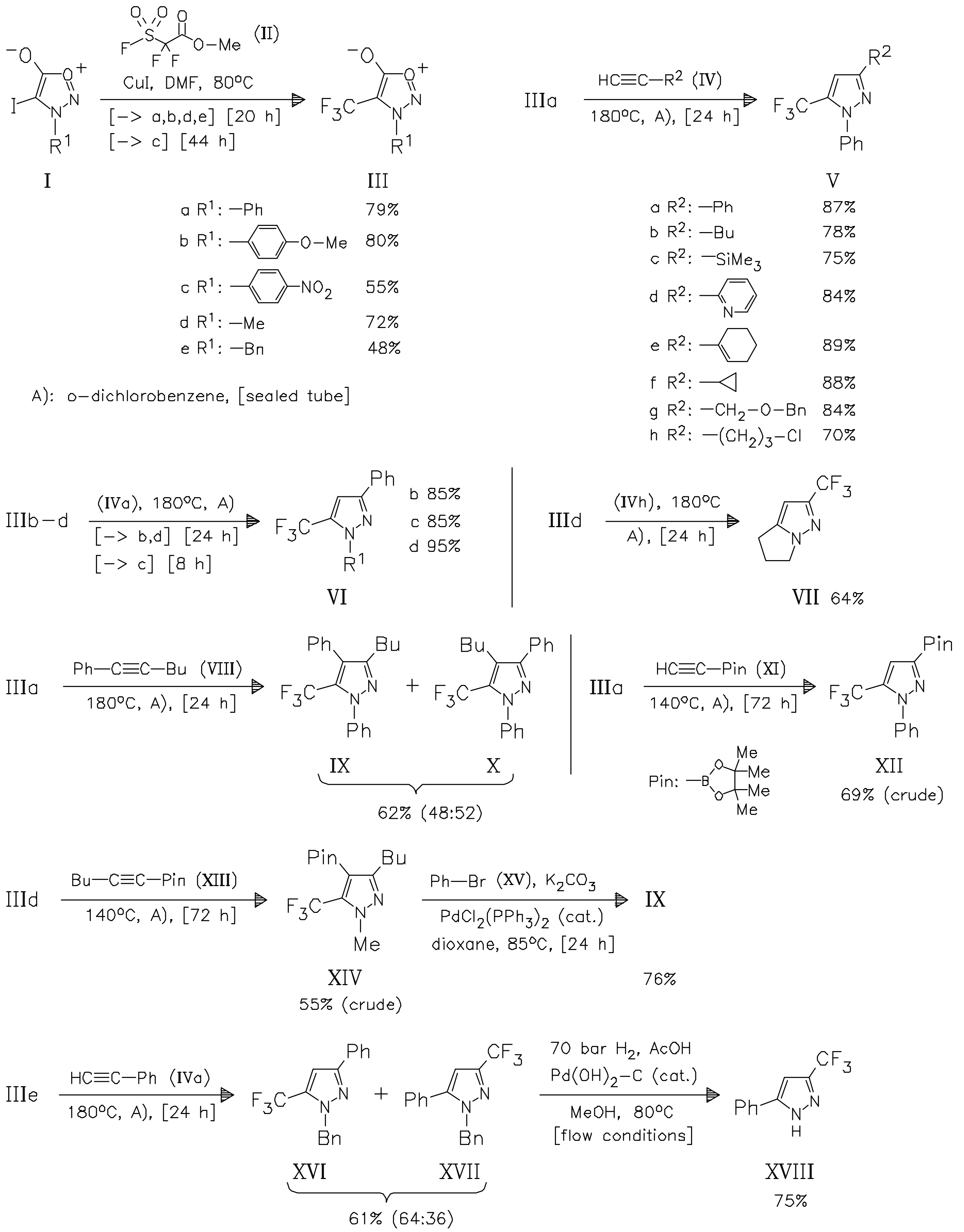
XV* 78% (95% e.e.)

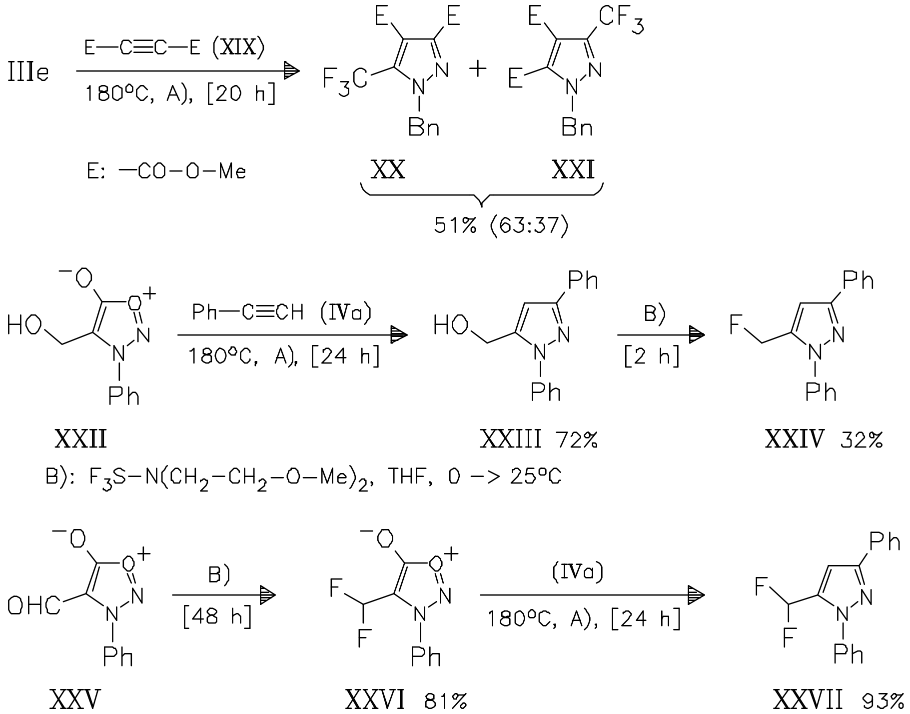
Pyrazole derivatives
R 0180

DOI: 10.1002/chin.201335118

35- 118

Synthesis of 4-Fluoromethylsydnones and Their Participation in Alkyne Cycloaddition Reactions. — A highly regioselective synthesis of 5-fluoromethylpyrazoles is presented. For the N-Bn protected substrate (IIIe) an unexpected alkyne insertion is observed which provides the 3-fluoromethylpyrazole (XVIII). Further the chemistry is applied to the synthesis of 5-fluoromethyl- (XXIV) and 5-difluoromethylpyrazoles (XXVII). — (FOSTER, R. S.; ADAMS, H.; JAKOBI, H.; HARRITY*, J. P. A.; J. Org. Chem. 78 (2013) 8, 4049-4064, http://dx.doi.org/10.1021/jo400381a ; Dep. Chem., Univ. Sheffield, Sheffield S3 7HF, UK; Eng.) — C. Gebhardt


I
(II)
CuI, DMF, 80°C
[-> a,b,d,e] [20 h]
[-> c] [44 h]
III
a R1: —Ph 79%
b R1: 4-MeO-C6H4 80%
c R1: 4-NO2-C6H4 55%
d R1: —Me 72%
e R1: —Bn 48%
A): o-dichlorobenzene, [sealed tube]
IIIa
HC≡C—R2 (IV)
180°C, A), [24 h]
V
a R2: —Ph 87%
b R2: —Bu 78%
c R2: —SiMe3 75%
d R2: 2-pyridyl 84%
e R2: cyclohexenyl 89%
f R2: cyclopropyl 88%
g R2: —CH2—O—Bn 84%
h R2: —(CH2)3—Cl 70%
IIIb−d
(IVa), 180°C, A)
[-> b,d] [24 h]
[-> c] [8 h]
VI
b 85%
c 85%
d 95%
IIId
(IVh), 180°C
A), [24 h]
VII 64%
IIIa
Ph—C≡C—Bu (VIII)
180°C, A), [24 h]
IX
X
62% (48:52)
IIIa
HC≡C—Pin (XI)
140°C, A), [72 h]
Pin:
XII
69% (crude)
IIId
Bu—C≡C—Pin (XIII)
140°C, A), [72 h]
XIV
55% (crude)
Ph—Br (XV), K2CO3
PdCl2(PPh3)2 (cat.)
dioxane, 85°C, [24 h]
IX
76%
IIIe
HC≡C—Ph (IVa)
180°C, A), [24 h]
XVI
XVII
61% (64:36)
70 bar H2, AcOH
Pd(OH)2—C (cat.)
MeOH, 80°C
[flow conditions]
XVIII
75%

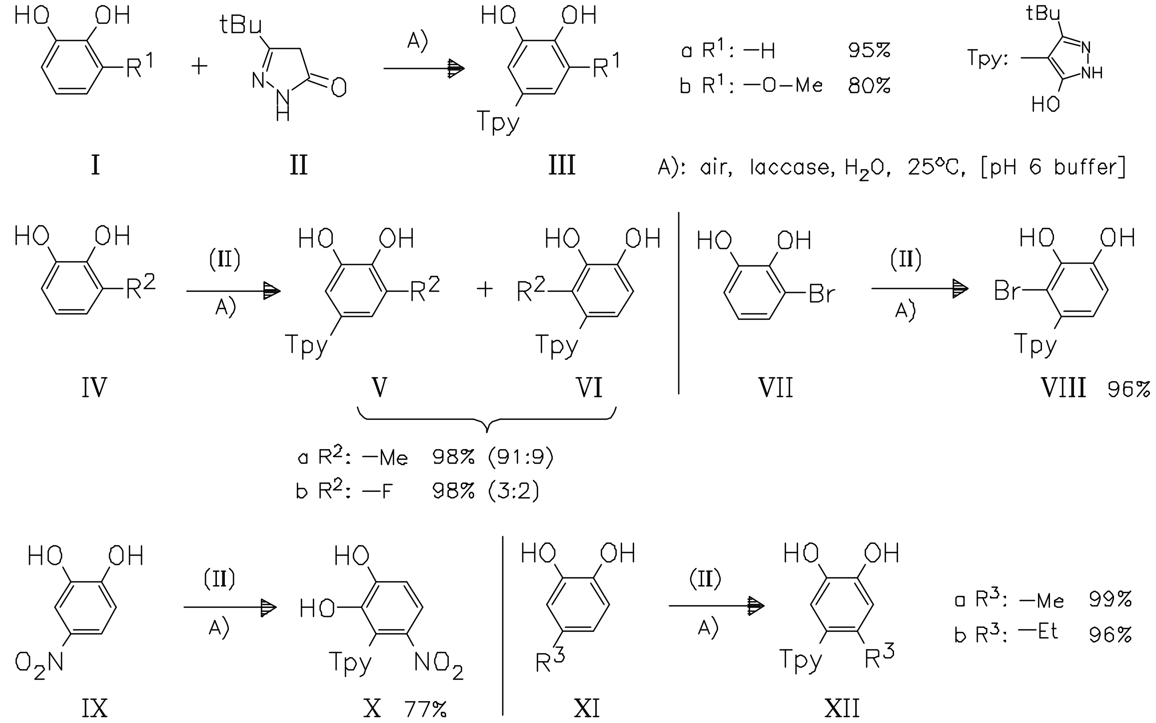


Pyrazole derivatives
R 0180

DOI: 10.1002/chin.201335119

35- 119

Laccase-Catalyzed Reaction of 3-tert-Butyl-1H-pyrazol-5(4H)-one with Substituted Catechols Using Air as an Oxidant. — (EMIRDAG-OEZTUERK, S.; HAJDOK, S.; CONRAD, J.; BEIFUSS*, U.; Tetrahedron 69 (2013) 18, 3664-3668, http://dx.doi.org/10.1016/j.tet.2013.03.023 ; Inst. Chem., Univ. Hohenheim, D-70599 Stuttgart, Germany; Eng.) — U. Scheffler

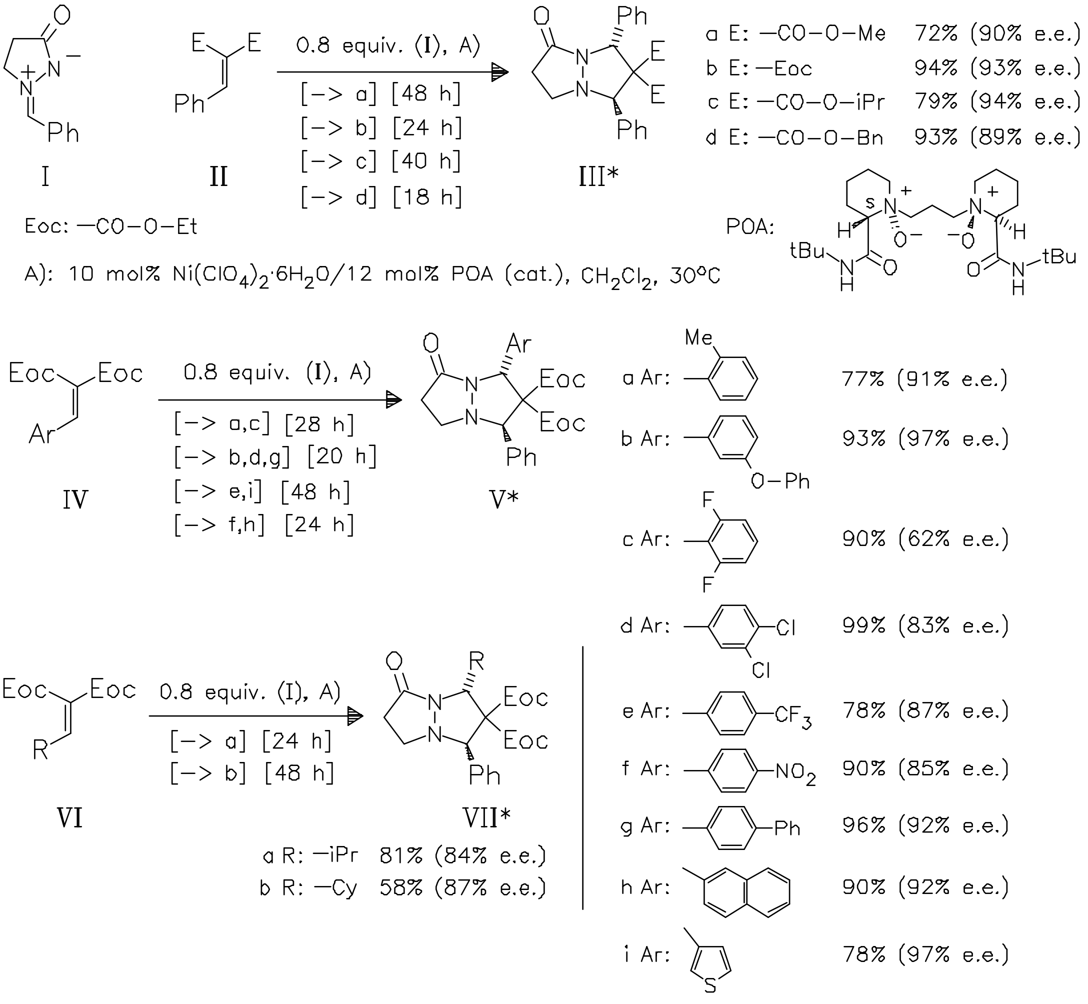


Pyrazole derivatives
R 0180

DOI: 10.1002/chin.201335120

35- 120

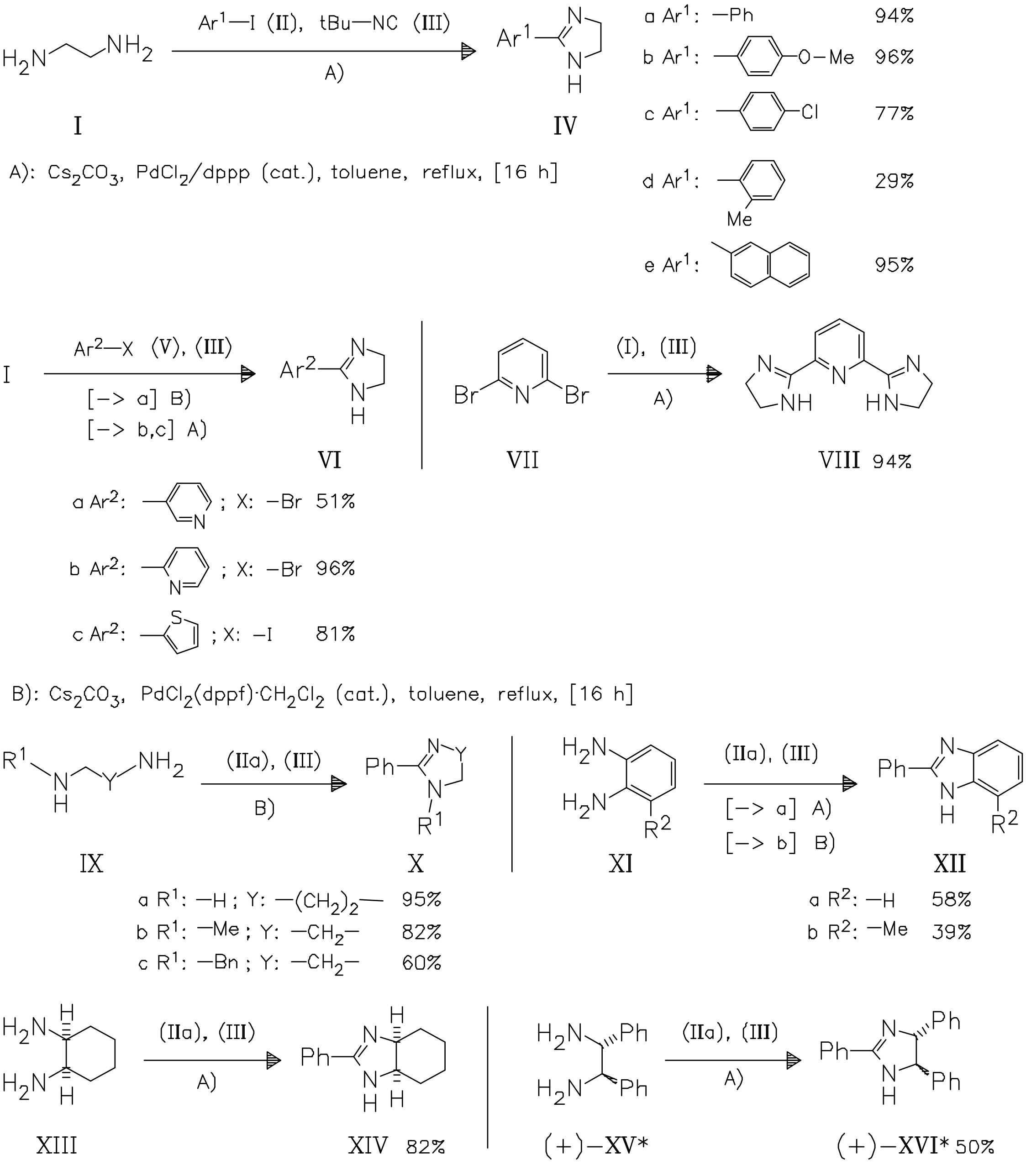
Nickel(II)-Catalyzed Enantioselective 1,3-Dipolar Cycloaddition of Azomethine Imines with Alkylidene Malonates. — Optimized conditions render possible the preparation of various pyrazolidinone derivatives as important substructures. Single trans isomers are formed with good to excellent yields and enantioselectivities. — (LI, J.; LIAN, X.; LIU, X.; LIN, L.; FENG*, X.; Chem. - Eur. J. 19 (2013) 16, 5134-5140, http://dx.doi.org/10.1002/chem.201203891 ; Key Lab. Green Chem. Technol., Sichuan Univ., Chengdu, Sichuan 610064, Peop. Rep. China; Eng.) — Lindner

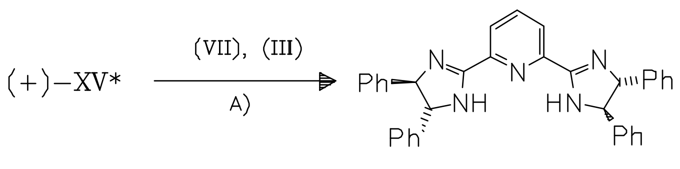


Imidazole derivatives
R 0190
DOI: 10.1002/chin.201335121

35- 121

Palladium-Catalyzed Multicomponent Synthesis of 2-Aryl-2-imidazolines from Aryl Halides and Diamines. — The variation of the diamine component also produces 2-aryl-1H-benzimidazoles [e.g. (XII)] and the 2-aryl-1,4,5,6-tetrahydropyrimidine (Xa). The one-pot synthesis is extended to the synthesis of the chiral pybim ligand (XVII) which has found application in ruthenium-catalyzed asymmetric transfer hydrogenation and epoxidation reactions. — (GEDEN, J. V.; PANCHOLI, A. K.; SHIPMAN*, M.; J. Org. Chem. 78 (2013) 8, 4158-4164, http://dx.doi.org/10.1021/jo400252n ; Dep. Chem., Univ. Warwick, Coventry CV4 7AL, UK; Eng.) — C. Gebhardt





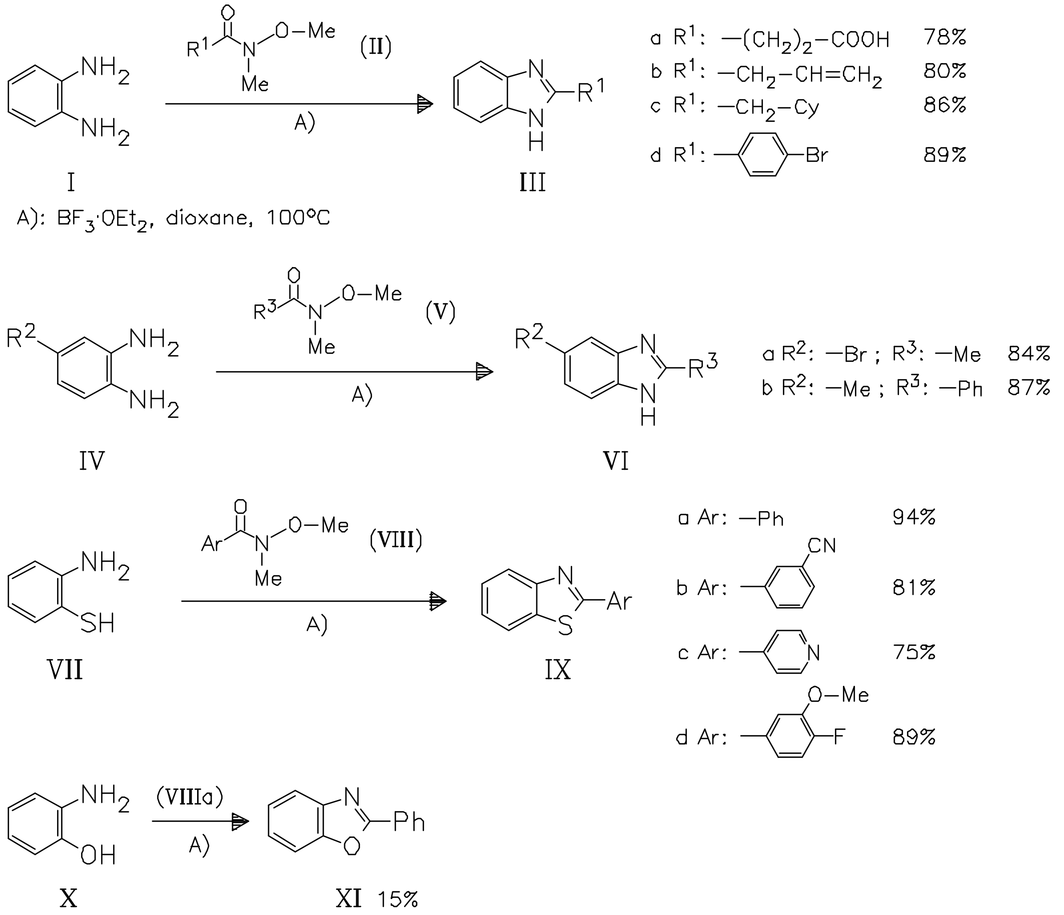
(+)−XVII* 51%

Benzimidazole derivatives
R 0200

DOI: 10.1002/chin.201335122

35- 122

Weinreb Amide as an Efficient Reagent in the One-Pot Synthesis of Benzimidazoles and Benzothiazoles. — The cyclocondensation of o-phenylenediamines or o-aminothiophenol with Weinreb amides is efficiently promoted by $BF_3{\cdot}OEt_2$ to give the title compounds in good yields. The process can be extended to o-aminophenol with limited success. — (BOMMEGOWDA, Y. K.; LINGARAJU, G. S.; THAMAS, S.; KUMAR, K. S. V.; KUMARA, C. S. P.; RANGAPPA*, K. S.; SADASHIVA, M. P.; Tetrahedron Lett. 54 (2013) 21, 2693-2695, http://dx.doi.org/10.1016/j.tetlet.2013.03.075 ; Dep. Stud. Chem., Univ. Mysore, Manasagangotri, Mysore 570 006, India; Eng.) — Mais

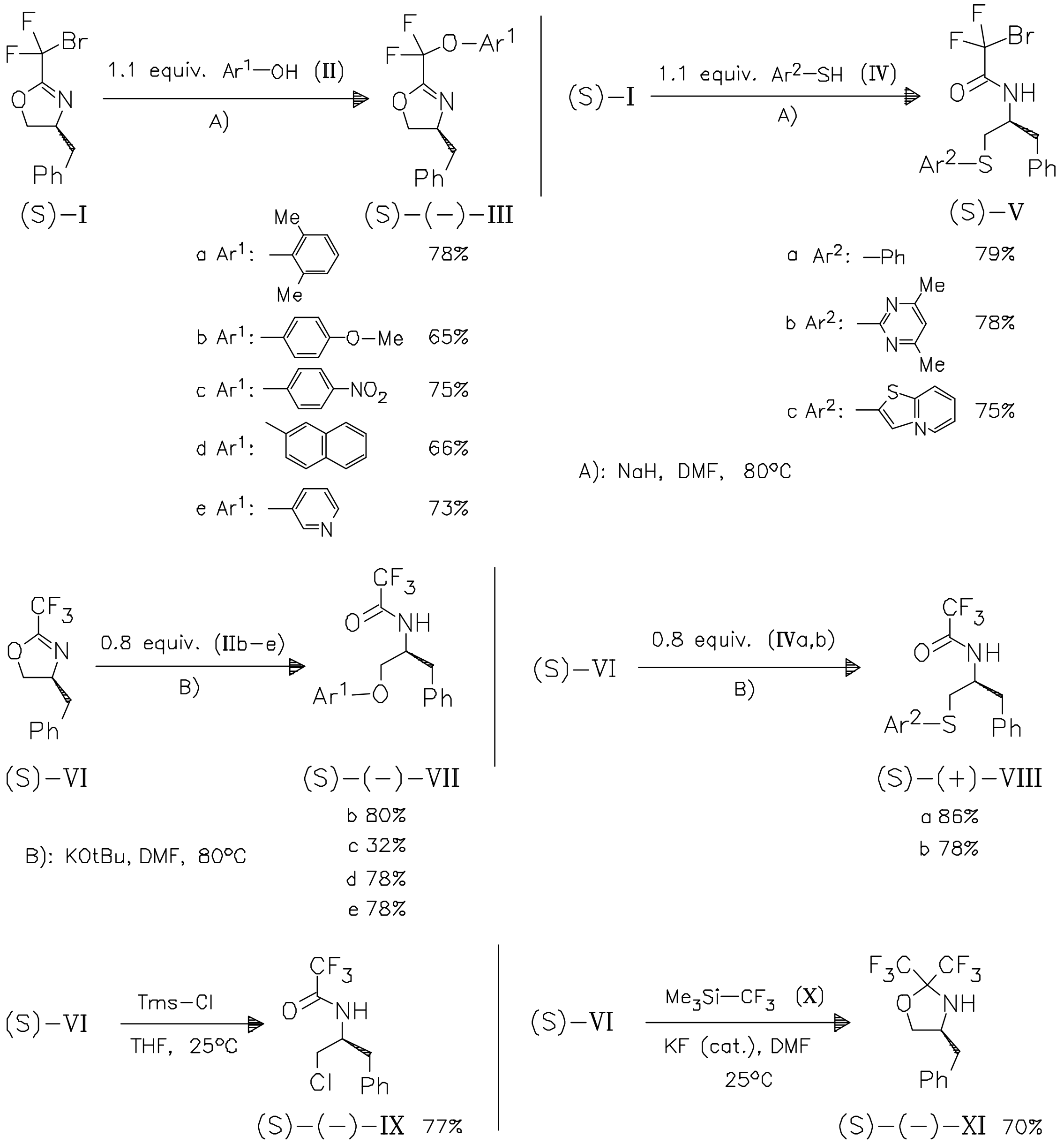


Oxazole derivatives
R 0220

DOI: 10.1002/chin.201335123

35- 123

Nucleophile-Dependent Regioselective Reaction of (S)-4-Benzyl-2-fluoroalkyl-1,3-oxazolines. — Substituted oxazolines, oxazolidines, or fluorinated acetamides are obtained depending on the nucleophile used. — (JIANG*, H.; et al.; J. Org. Chem. 78 (2013) 9, 4261-4269, http://dx.doi.org/10.1021/jo400073d ; Dep. Chem., Shanghai Univ., Shanghai 200444, Peop. Rep. China; Eng.) — Jannicke

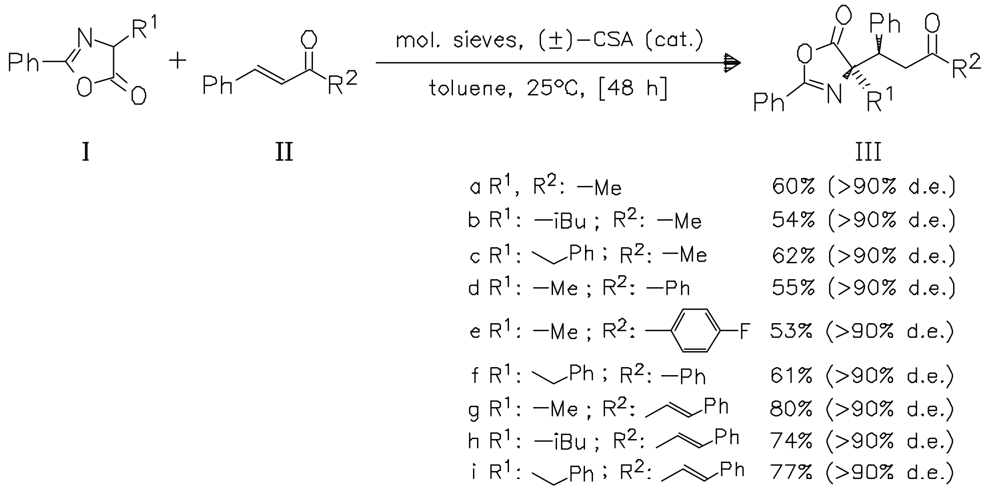


Oxazole derivatives
R 0220

DOI: 10.1002/chin.201335124

35- 124

Broensted Acid Catalyzed Highly Diastereoselective Michael-Type Addition of Azlactones to Enones. — (AVILA, E. P.; DE MELLO, A. C.; DINIZ, R.; AMARANTE*, G. W.; Eur. J. Org. Chem. 2013, 10, 1881-1883, http://dx.doi.org/10.1002/ejoc.201300076 ; Dep. Chem., Fed. Univ. Juiz de Fora, 36036 Juiz de Fora, Minas Gerais, Brazil; Eng.) — Roessler

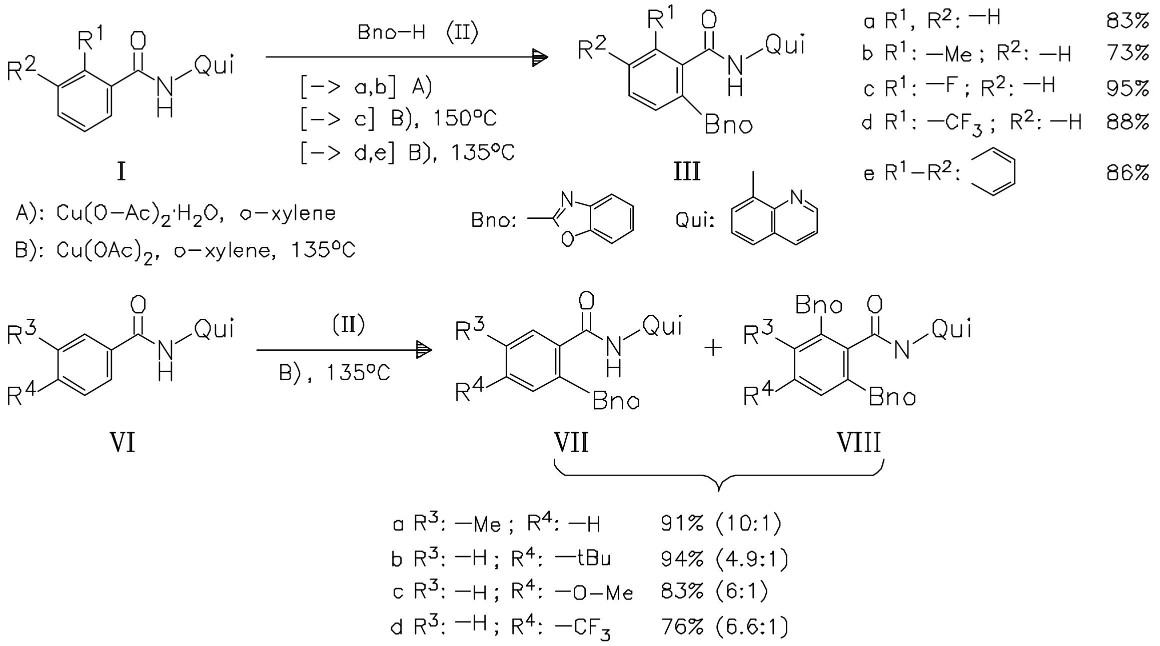


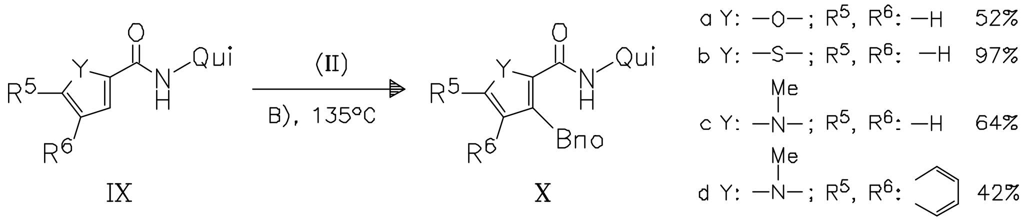
Benzoxazole derivatives
R 0230

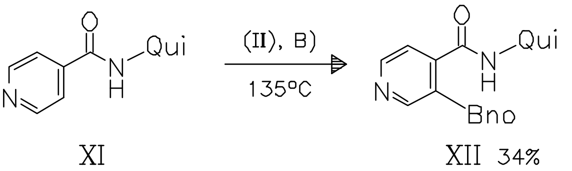
DOI: 10.1002/chin.201335125

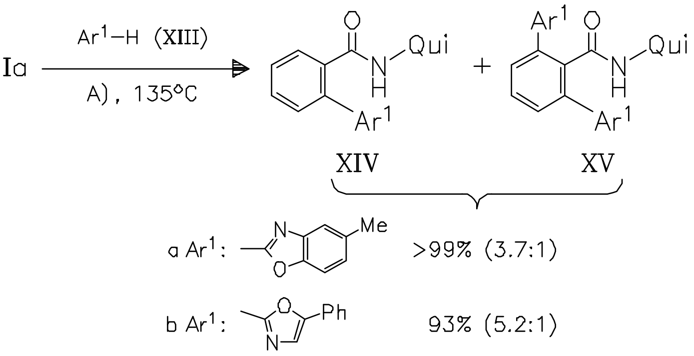
35- 125

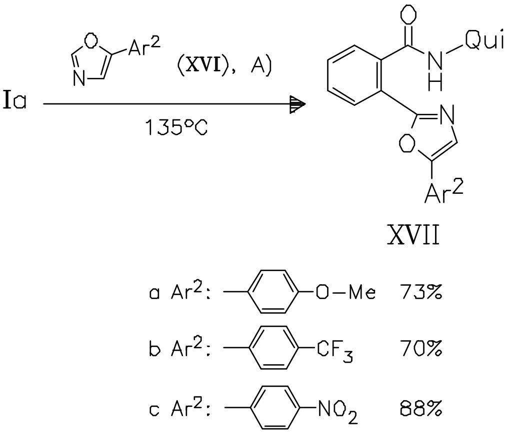
Copper-Mediated C—H/C—H Biaryl Coupling of Benzoic Acid Derivatives and 1,3-Azoles. — The title coupling reaction based on a double N,N-coordination strategy. This broadens the substrate scope of both non-acidic arenes and 1,3-azoles. The directing group Qui can be easily removed [viz. (V)]. — (NISHINO, M.; HIRANO*, K.; SATOH, T.; MIURA, M.; Angew. Chem., Int. Ed. 52 (2013) 16, 4457-4461, http://dx.doi.org/10.1002/anie.201300587 ; Dep. Appl. Chem., Fac. Eng., Osaka Univ., Suita, Osaka 565, Japan; Eng.) — C. Gebhardt

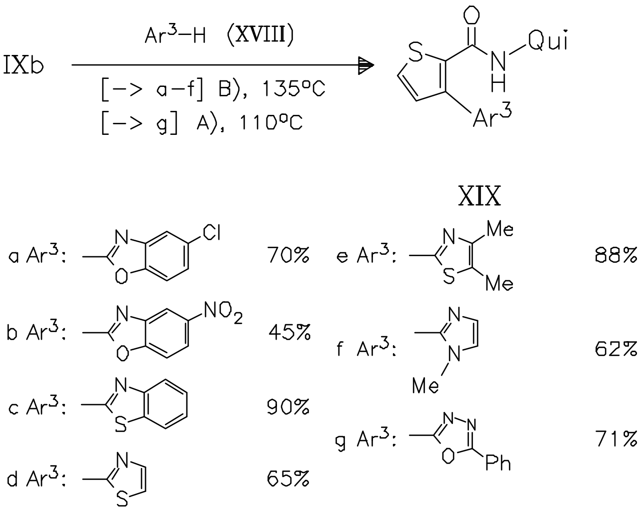


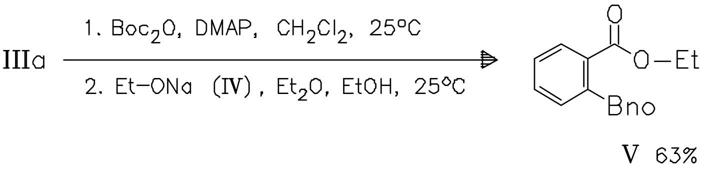

IX
(II)
B), 135°C
X
Qui
Bno
a Y: —O—; R5, R6: —H 52%
b Y: —S—; R5, R6: —H 97%
c Y: —N(Me)—; R5, R6: —H 64%
d Y: —N(Me)—; R5, R6: 42%

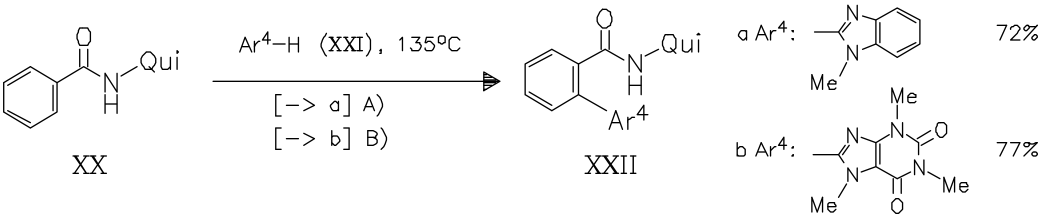

XI
(II), B)
135°C
XII 34%


Ia
Ar1—H (XIII)
A), 135°C
XIV
XV
a Ar1: >99% (3.7:1)
b Ar1: 93% (5.2:1)


Ia
(XVI), A)
135°C
XVII
a Ar2: —O—Me 73%
b Ar2: —CF3 70%
c Ar2: —NO2 88%


IXb
Ar3—H (XVIII)
[-> a-f] B), 135°C
[-> g] A), 110°C
XIX
a Ar3: 70%
b Ar3: 45%
c Ar3: 90%
d Ar3: 65%
e Ar3: 88%
f Ar3: 62%
g Ar3: 71%


IIIa
1. Boc2O, DMAP, CH2Cl2, 25°C
2. Et—ONa (IV), Et2O, EtOH, 25°C
V 63%

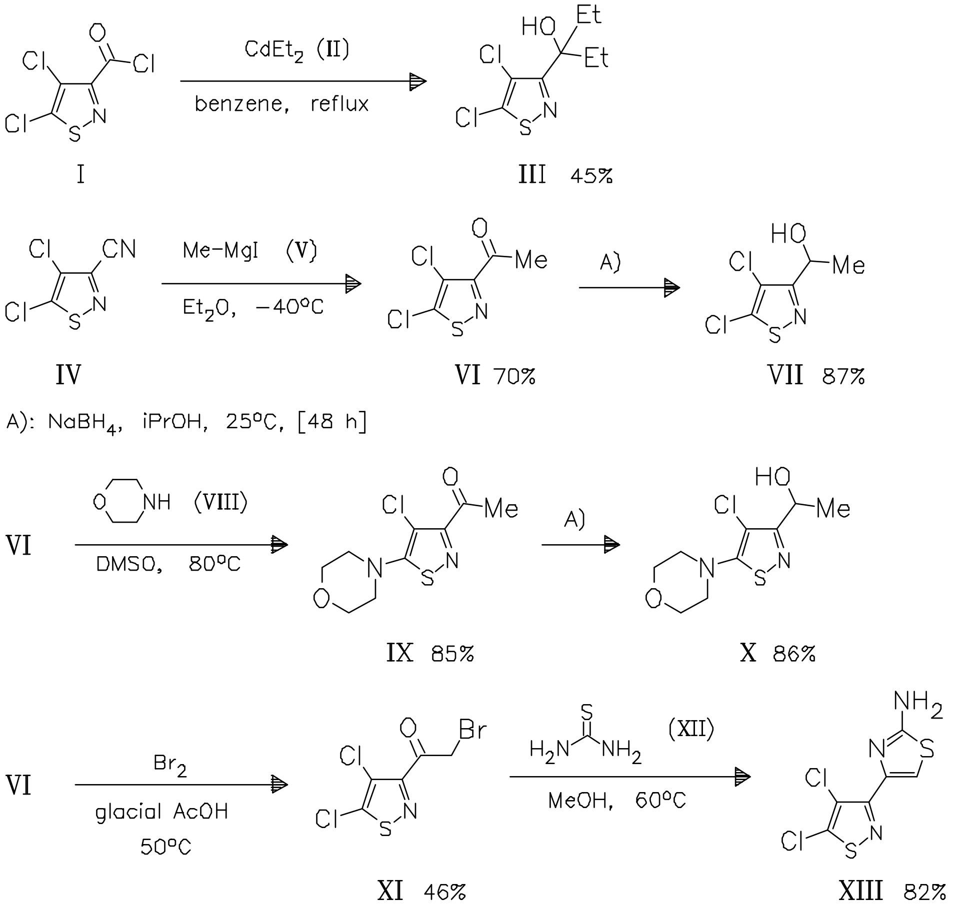

XX
Ar4—H (XXI), 135°C
[-> a] A)
[-> b] B)
XXII
a Ar4: 72%
b Ar4: 77%

Thiazole derivatives
R 0260

DOI: 10.1002/chin.201335126

35- 126

Synthesis of Alkyl (4,5-Dichloroisothiazol-3-yl) Ketones and Some of Their Derivatives. — (POTKIN*, V. I.; KLETSKOV, A. V.; PETKEVICH, S. K.; CHOTYANOVICH, M. O.; ZUBENKO, Y. S.; KULCHITSKY, V. A.; Russ. J. Org. Chem. 49 (2013) 2, 283-287, http://dx.doi.org/10.1134/S1070428013020176 ; Inst. Phys. Org. Chem., Natl. Acad. Sci. Belarus, Minsk 220072, Belarus; Eng.) — M. Bohle

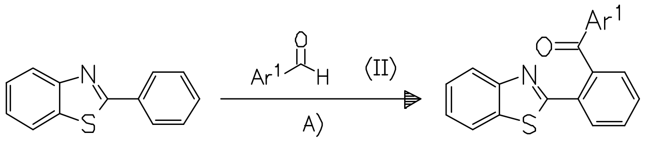


Benzothiazole derivatives
R 0270

DOI: 10.1002/chin.201335127

35- 127

Palladium-Catalyzed ortho-Aroylation of 2-Arylbenzothiazoles and 2-Arylbenzoxazoles with Aldehydes. — This reaction has high regioselectivities and tolerates a wide range of functional groups. — (BANERJEE, A.; SANTRA, S. K.; GUIN, S.; ROUT, S. K.; PATEL*, B. K.; Eur. J. Org. Chem. 2013, 7, 1367-1376, http://dx.doi.org/10.1002/ejoc.201201503 ; Dep. Chem., Indian Inst. Technol. Guwahati, North Guwahati 781 039, India; Eng.) — Roessler

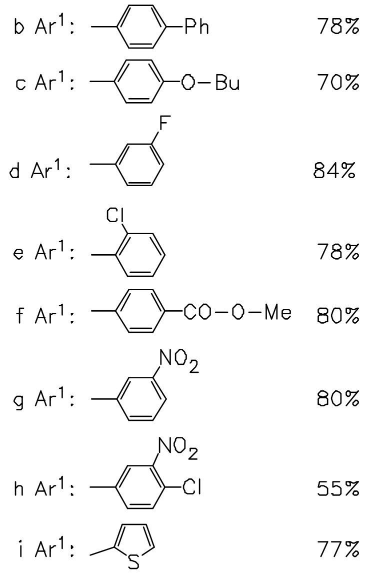


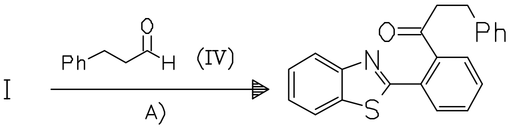
I

III

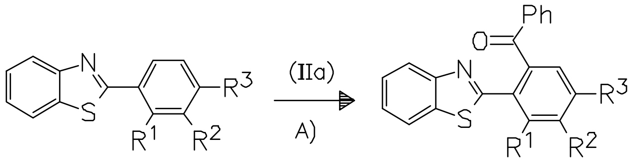
A): tBuOOH, Pd(O-Ac)$_2$ (cat.), toluene, 110°C

a Ar^1: —Ph 75%





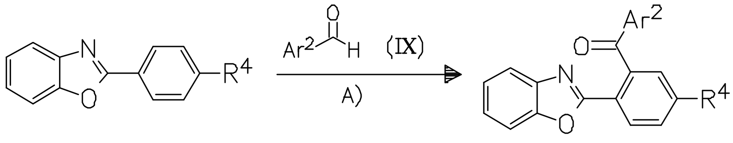
V 40%



VI

VII

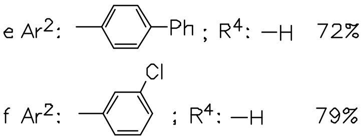
a R^1, R^2: —H ; R^3: —tBu 73%
b R^1, R^2: —H ; R^3: —O—Bu 68%
c R^1, R^2: —H ; R^3: —Cl 70%
d R^1, R^3: —H ; R^2: —Br 80%
e R^1: —Cl ; R^2, R^3: —H 65%



VIII

X

a Ar^2: —Ph ; R^4: —H 78%
b Ar^2: —Ph ; R^4: —Me 70%
c Ar^2: —Ph ; R^4: —O—Me 68%
d Ar^2: —Ph ; R^4: —Cl 72%

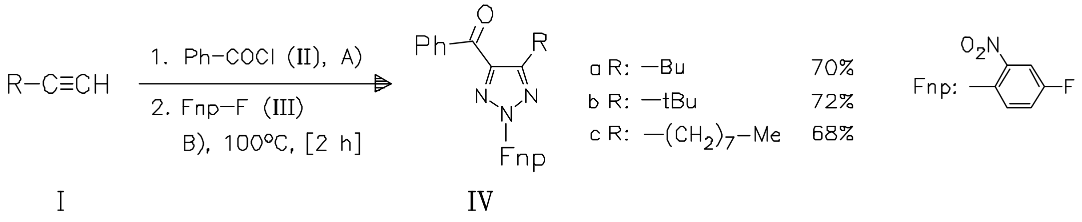


Triazole derivatives
R 0280

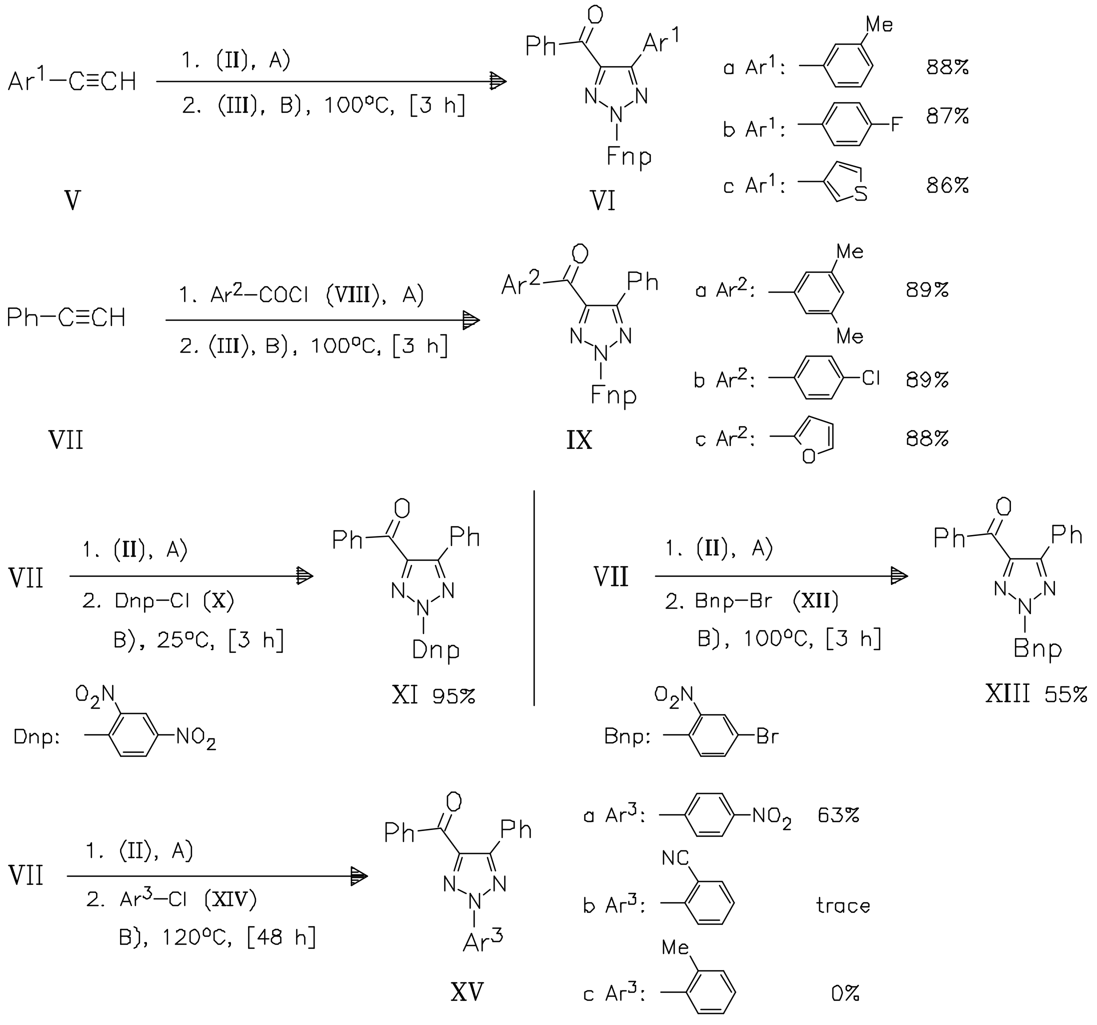
DOI: 10.1002/chin.201335128

35- 128

One-Pot Synthesis of 2,4,5-Trisubstituted 1,2,3-Triazoles Through the Cascade Reactions of Acid Chlorides, Terminal Acetylenes, Sodium Azide and Aryl Halides. — Sonogashira coupling, 1,3-dipolar cycloaddition, and N-arylation are successfully combined in a one-pot cascade reaction affording regioselectively 2,4,5-trisubstituted 1,2,3-triazoles. The N-arylation step is clearly affected by electronic effects with strongly electron-deficient aryl halides as the most reactive ones. — (LIU, X.; LI, J.; CHEN*, B.; New J. Chem. 37 (2013) 4, 965-968, http://dx.doi.org/10.1039/c3nj40912k ; State Key Lab. Appl. Org. Chem., Lanzhou Univ., Lanzhou, Gansu 730000, Peop. Rep. China; Eng.) — H. Haber



A): 3 equiv. NEt_3, ultrasound, $PdCl_2(PPh_3)_2/CuI$ (cat.), neat, 25°C, [1 h]
B): NaN_3, 0.5 equiv. K_2CO_3, DMSO

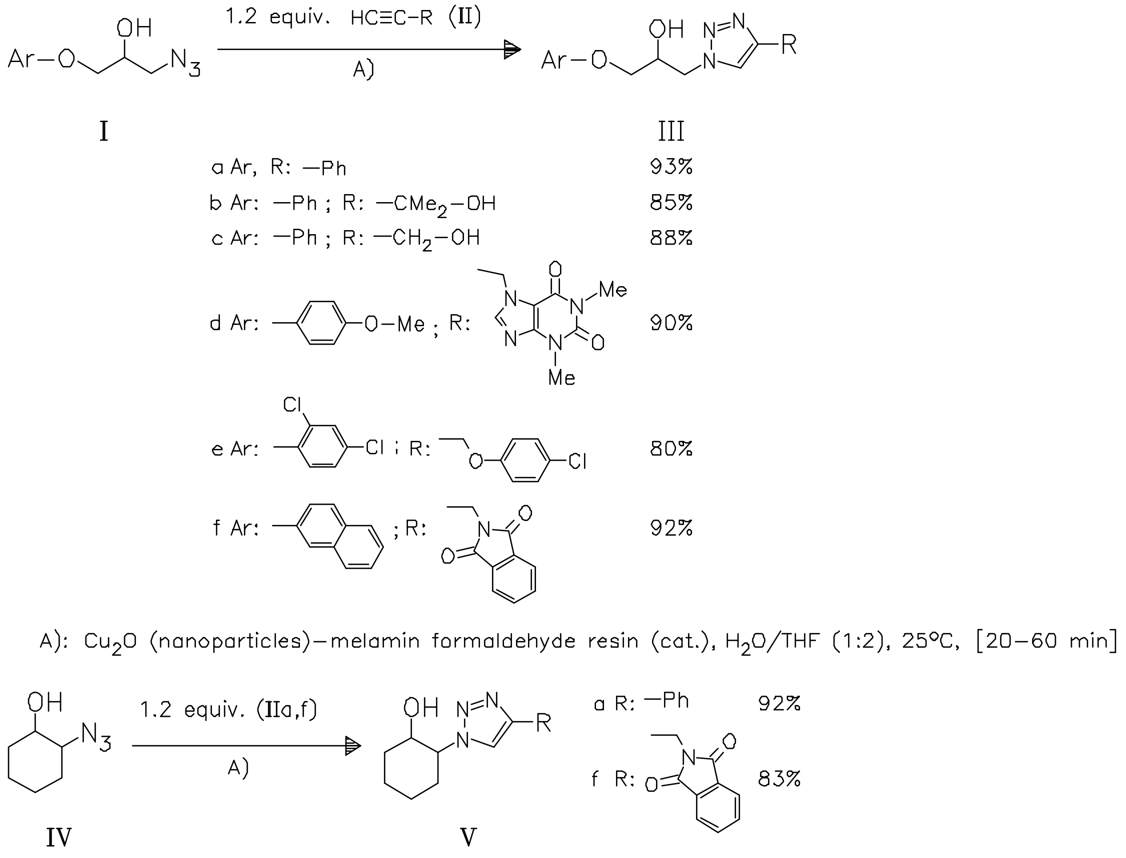


Triazole derivatives
R 0280

DOI: 10.1002/chin.201335129

35- 129

Doped Nano-Sized Copper(I) Oxide (Cu_2O) on Melamine—Formaldehyde Resin: A Highly Efficient Heterogeneous Nano Catalyst for "Click" Synthesis of Some Novel 1H-1,2,3-Triazole Derivatives Having Antibacterial Activity. — (SOLTANI RAD*, M. N.; BEHROUZ, S.; MOVAHEDIAN, A.; DOROODMAND, M. M.; GHASEMI, Y.; RASOUL-AMINI, S.; GANDOMANI, A.-R. A.; REZAIE, R.; Helv. Chim. Acta 96 (2013) 4, 688-701, http://dx.doi.org/10.1002/hlca.201200224 ; Dep. Chem., Fac. Basic Sci., Shiraz Univ. Technol., Shiraz 71555, Iran; Eng.) — B. Voigt



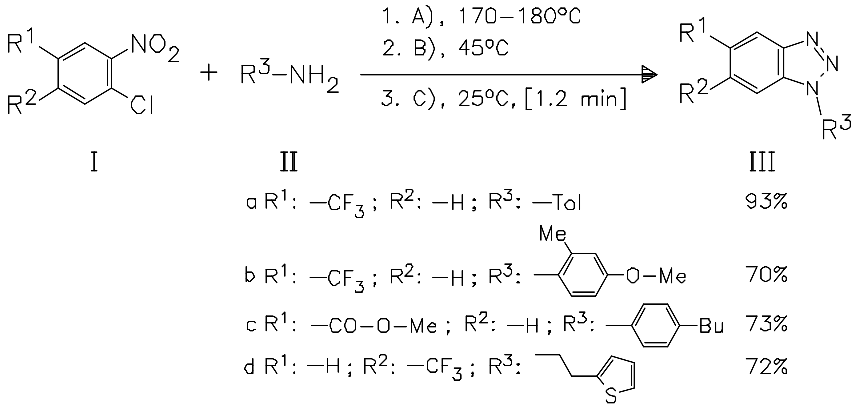
A): Cu_2O (nanoparticles)—melamin formaldehyde resin (cat.), H_2O/THF (1:2), 25°C, [20—60 min]

Triazole derivatives
R 0280

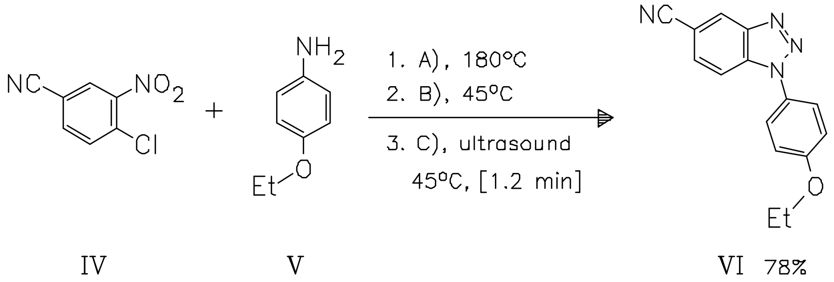
DOI: 10.1002/chin.201335130

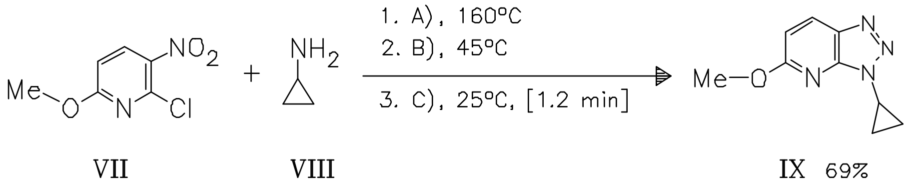
35- 130

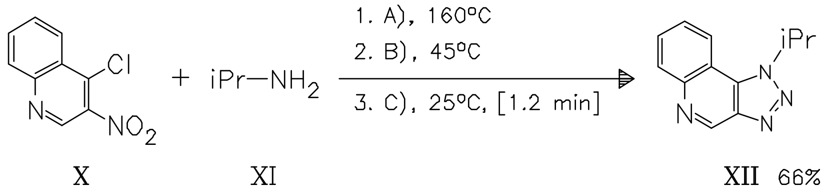
Continuous-Flow Synthesis of 1-Substituted Benzotriazoles from Chloronitrobenzenes and Amines in a C—N Bond Formation/Hydrogenation/Diazotization/ Cyclization Sequence. — (CHEN, M.; BUCHWALD*, S. L.; Angew. Chem., Int. Ed. 52 (2013) 15, 4247-4250, http://dx.doi.org/10.1002/anie.201300615 ; Dep. Chem., MIT, Cambridge, MA 02139, USA; Eng.) — M. Zastrow

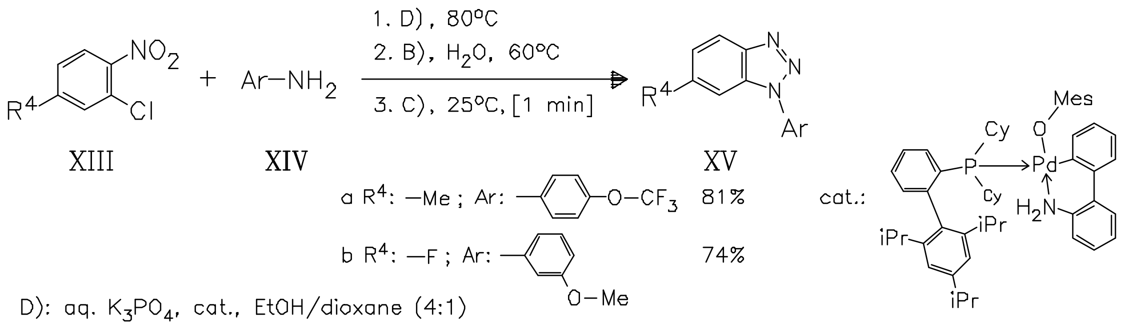


A): $EtN(iPr)_2$, DMA, $Me-(CH_2)_5-OH$, [30 min, continuous flow]
B): H_2, Pd–C (cat.), CH_2Cl_2, [1–1.5 min, continuous flow]
C): 3N aq. HCl, aq. $NaNO_2$, [continuous flow]

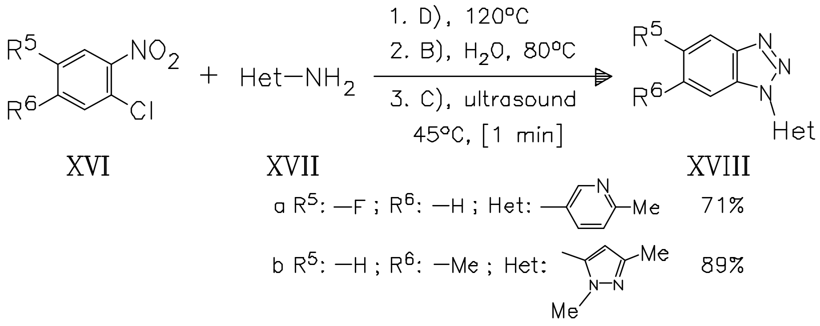


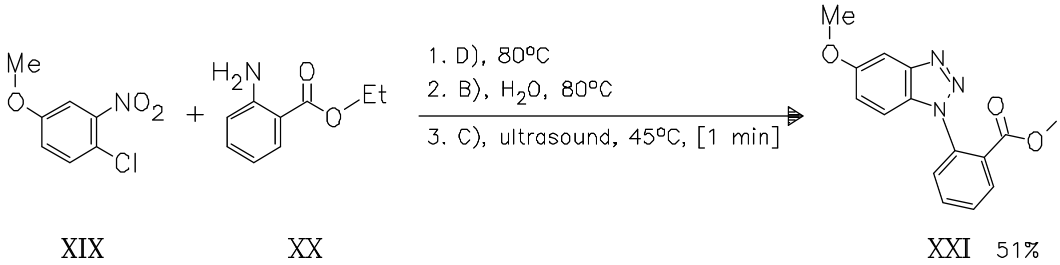






D): aq. K_3PO_4, cat., EtOH/dioxane (4:1)



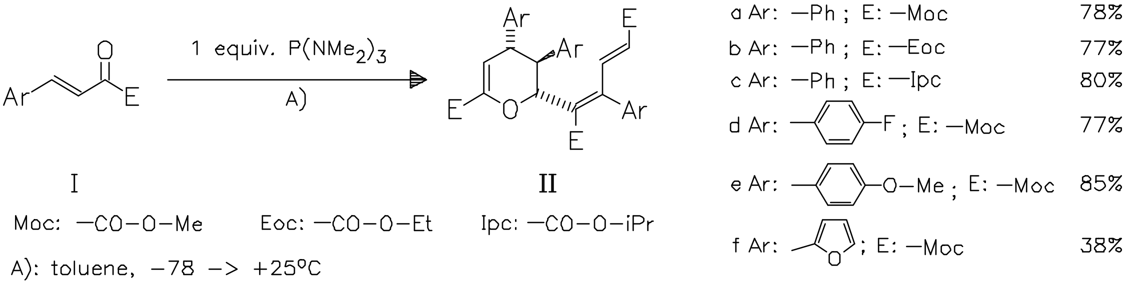


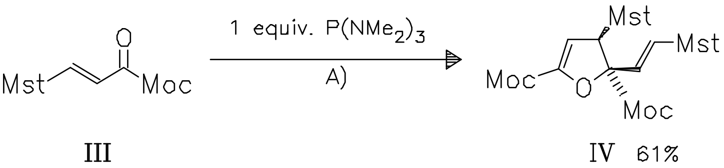
Pyran derivatives
R 0340

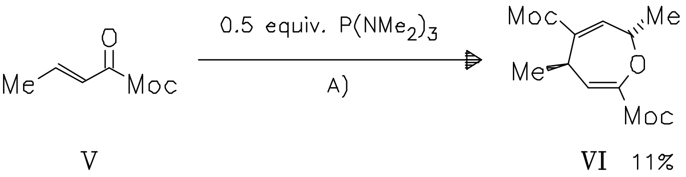
DOI: 10.1002/chin.201335131

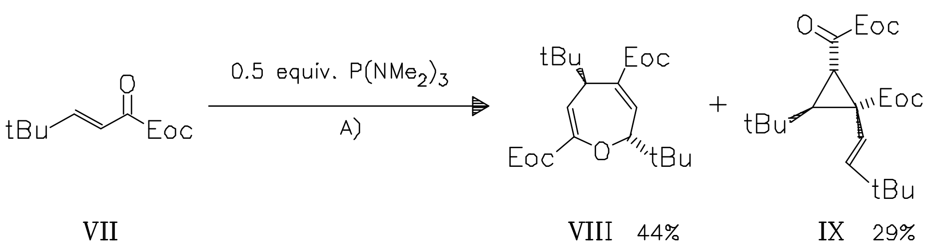
35- 131

Reductive Homocondensation of Benzylidene- and Alkylidenepyruvate Esters by a P(NMe$_2$)$_3$-Mediated Tandem Reaction. — A P(III)-mediated trimerization of unsaturated keto esters to diverse oxygenated heterocycles is reported. The transformation is initiated by the Kukhtin—Ramirez addition of the phosphorous reagent to the vinyl-substituted α-dicarbonyl substrate and gives the heterocyclic product via a resonance delocalized oxyphosphonium dienolate intermediate. — (WANG, S. R.; RADOSEVICH*, A. T.; Org. Lett. 15 (2013) 8, 1926-1929, http://dx.doi.org/10.1021/ol400576e ; Dep. Chem., Pa. State Univ., University Park, PA 16802, USA; Eng.) — Bartels









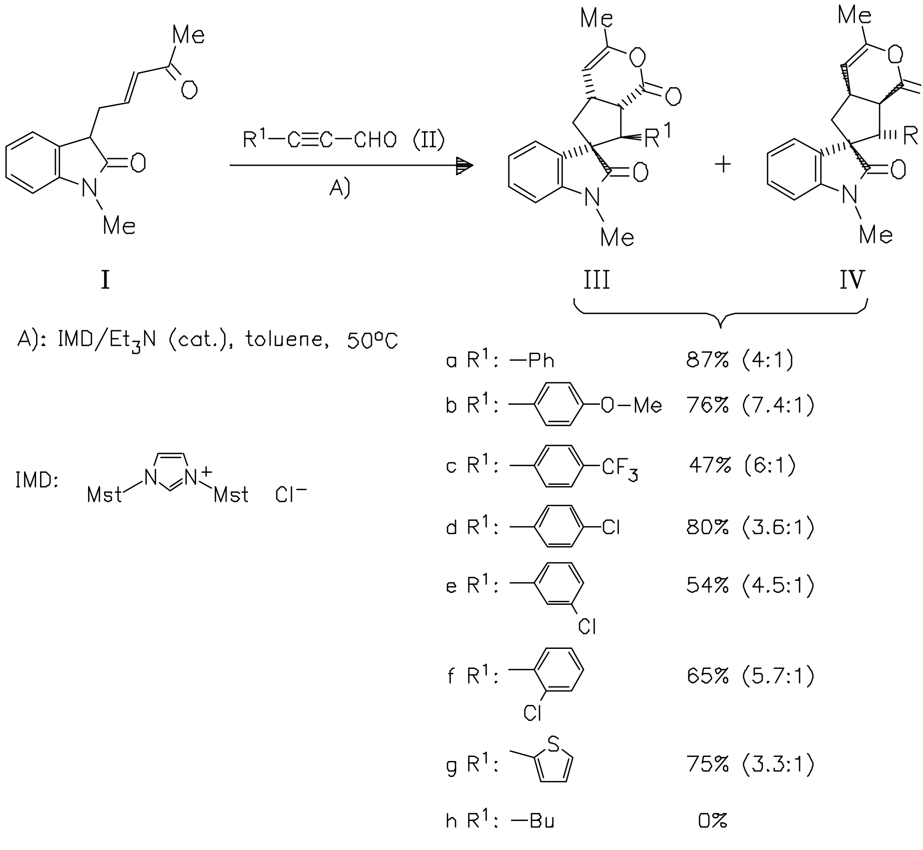
Pyran derivatives
R 0340

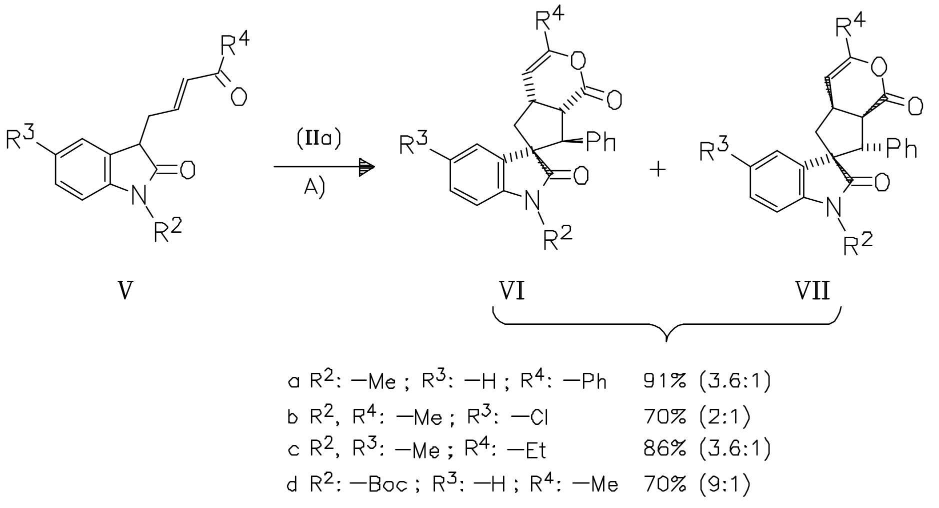
DOI: 10.1002/chin.201335132

35- 132

Assembly of Spirooxindole Derivatives Containing Four Consecutive Stereocenters by Using Cascade Reactions Catalyzed by an N-Heterocyclic Carbene.

— An efficient organocatalytic Michael/Michael/lactonization cascade reaction provides an unusual tricyclic oxindole system. A mechanism is proposed. — (ZHOU*, B.; LUO, Z.; LI, Y.; Chem. - Eur. J. 19 (2013) 14, 4428-4431, http://dx.doi.org/10.1002/chem.201203436 ; Shanghai Inst. Mater. Med., Chin. Acad. Sci., Shanghai 201203, Peop. Rep. China; Eng.) — C. Gebhardt





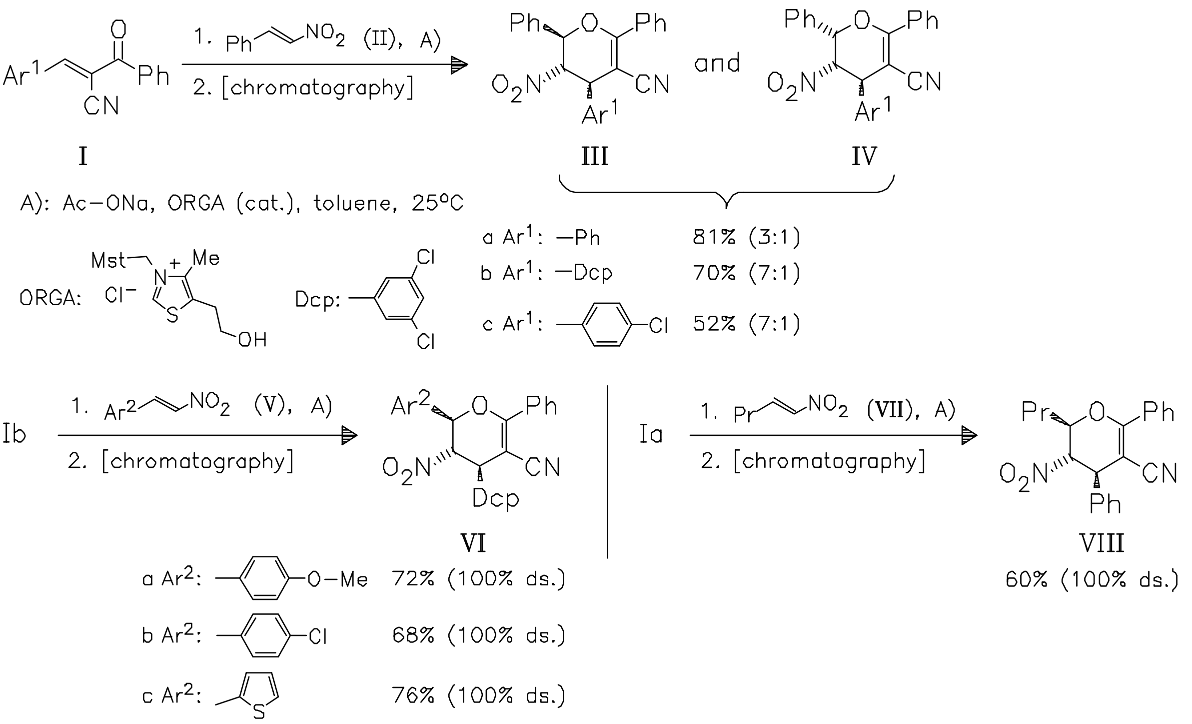
a R^2: —Me ; R^3: —H ; R^4: —Ph 91% (3.6:1)
b R^2, R^4: —Me ; R^3: —Cl 70% (2:1)
c R^2, R^3: —Me ; R^4: —Et 86% (3.6:1)
d R^2: —Boc ; R^3: —H ; R^4: —Me 70% (9:1)

Pyran derivatives
R 0340

DOI: 10.1002/chin.201335133

$\boxed{35\text{- }133}$

N-Heterocyclic Carbene Catalyzed [4 + 2] Cycloaddition of Nitroalkenes with Oxodienes. — A plausible catalytic cycle for the unprecedented [4 + 2] cycloaddition of nitroalkenes and oxodienes is given. — (CHEN, X.-Y.; SUN, L.-H.; YE*, S.; Chem. - Eur. J. 19 (2013) 14, 4441-4445, http://dx.doi.org/10.1002/chem.201204539 ; Beijing Natl. Lab. Mol. Sci., Inst. Chem., Chin. Acad. Sci., Beijing 100190, Peop. Rep. China; Eng.) — C. Gebhardt

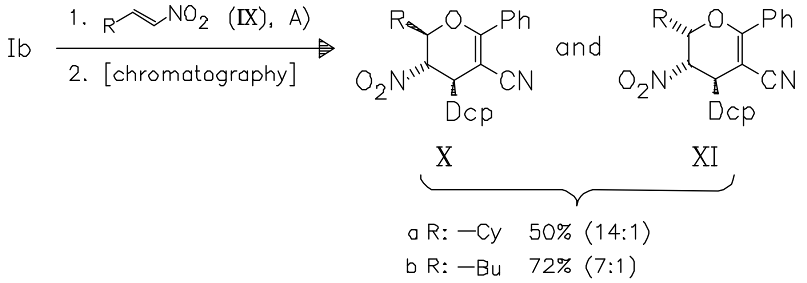


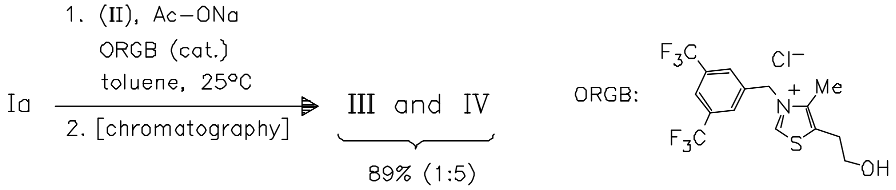
A): Ac—ONa, ORGA (cat.), toluene, 25°C

a Ar^1: —Ph 81% (3:1)
b Ar^1: —Dcp 70% (7:1)
c Ar^1: 4-chlorophenyl 52% (7:1)

a Ar^2: 4-methoxyphenyl 72% (100% ds.)
b Ar^2: 4-chlorophenyl 68% (100% ds.)
c Ar^2: 2-thienyl 76% (100% ds.)

VIII: 60% (100% ds.)



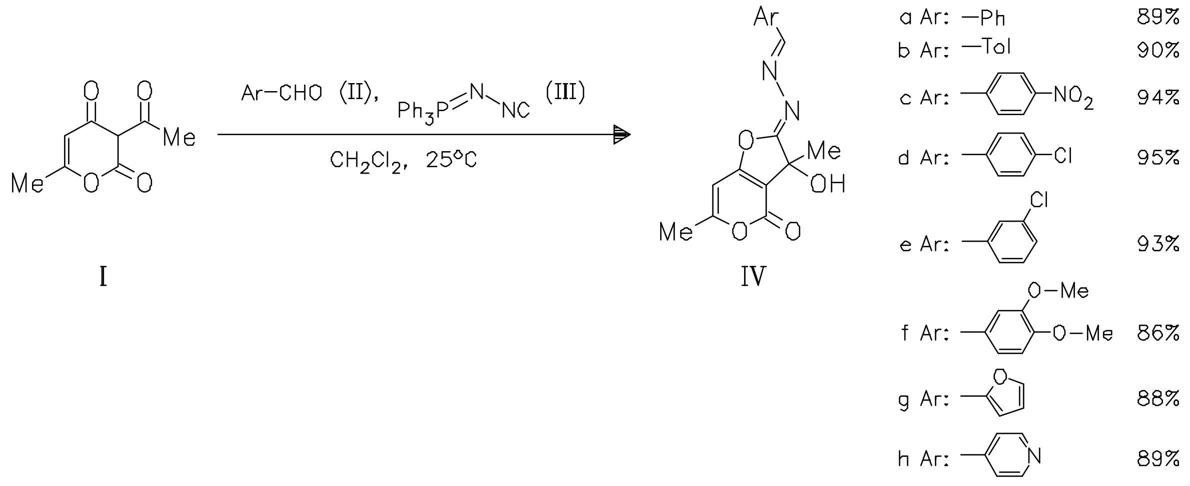


Pyran derivatives
R 0340

DOI: 10.1002/chin.201335134

35- 134

A Simple Synthesis of 2-[(Arylmethylidene)hydrazinylidene]-3-hydroxy--4H-furo[3,2-c]pyran-4(3H)-ones — [via a three-component reaction of 3-acetyl-pyran-2,4(3H)-dione, (isocyanoimino)-triphenylphosphorane and aromatic aldehydes]. — (ADIB*, M.; ANSARI, S.; ZHU, L.-G.; RAHIMI-NASRABADI, M.; Helv. Chim. Acta 96 (2013) 4, 675-681, http://dx.doi.org/10.1002/hlca.201200419 ; Sch. Chem., Coll. Sci., Univ. Tehran, Tehran, Iran; Eng.) — B. Voigt



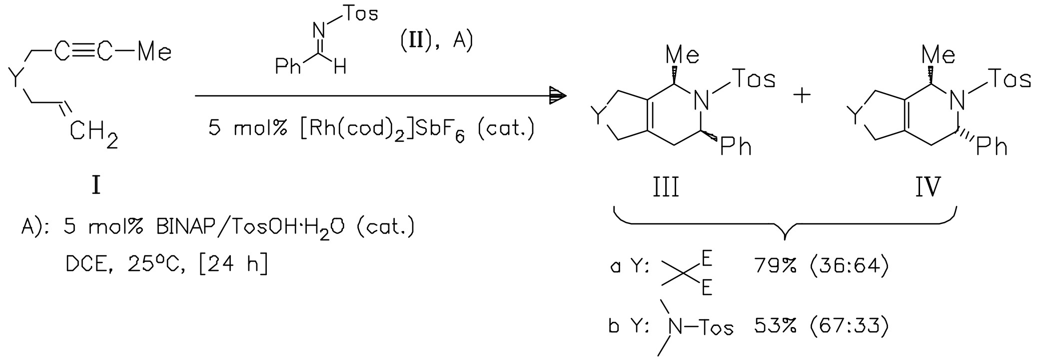
Pyran derivatives
R 0340

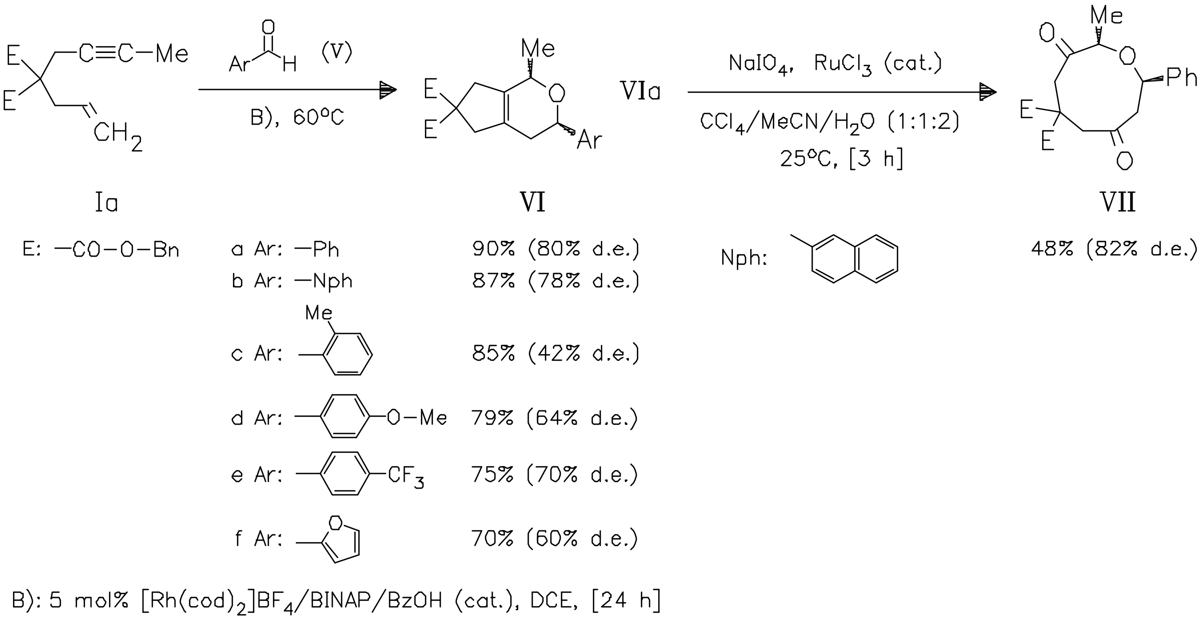
DOI: 10.1002/chin.201335135

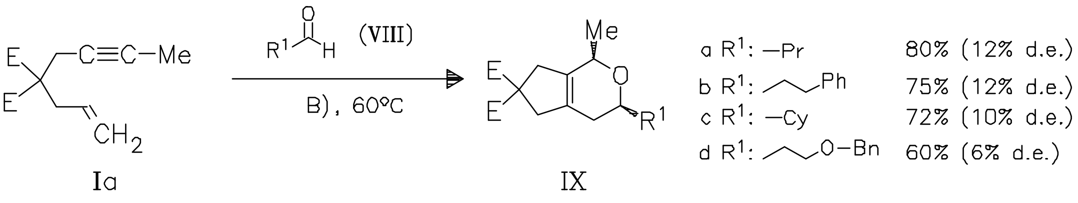
35- 135

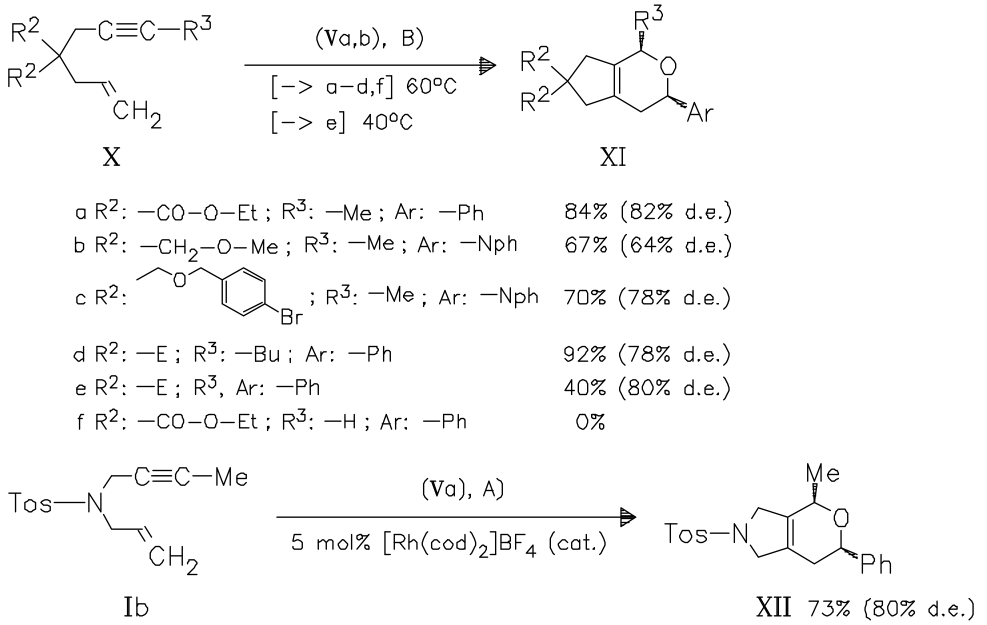
One-Pot Cycloisomerization/Hetero-Diels—Alder Reaction of 1,6-Enynes with Aldehydes Catalyzed by Rhodium and a Broensted Acid. —

This one-pot protocol features mild conditions and high atom efficiency. A variety of annulated dihydropyranes is generated from readily available starting materials. — (ISHIDA, M.; TANAKA*, K.; Org. Lett. 15 (2013) 9, 2120-2123, http://dx.doi.org/10.1021/ol4005849 ; Japan Sci. Technol. Corp., Saitama 332, Japan; Eng.) — M. Duhs







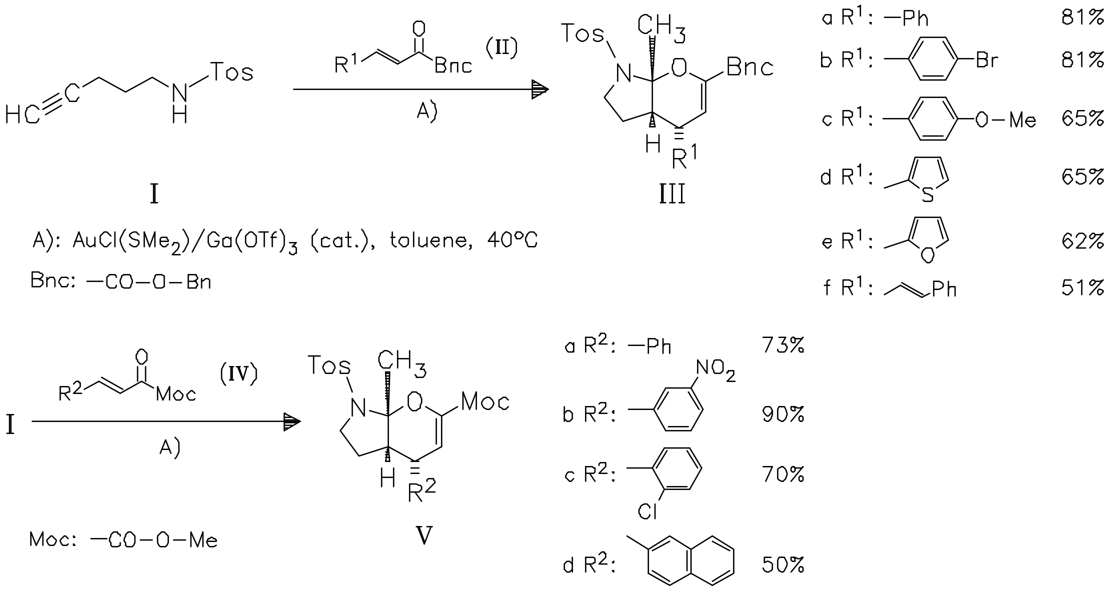


Pyran derivatives
R 0340

DOI: 10.1002/chin.201335136

35- 136

Synthesis of Fused Bicyclic Aminals Through Sequential Gold/Lewis Acid Catalysis. — The products are biologically important and are formed along with the small amounts of the spirocyclic derivatives. — (WANG, X.; YAO, Z.; DONG, S.; WEI, F.; WANG, H.; XU*, Z.; Org. Lett. 15 (2013) 9, 2234-2237, http://dx.doi.org/10.1021/ol400803f ; Key Lab. Colloid Interface Chem., Shandong Univ., Jinan, Shandong 250100, Peop. Rep. China; Eng.) — Y. Steudel



A): AuCl(SMe$_2$)/Ga(OTf)$_3$ (cat.), toluene, 40°C

Bnc: —CO—O—Bn

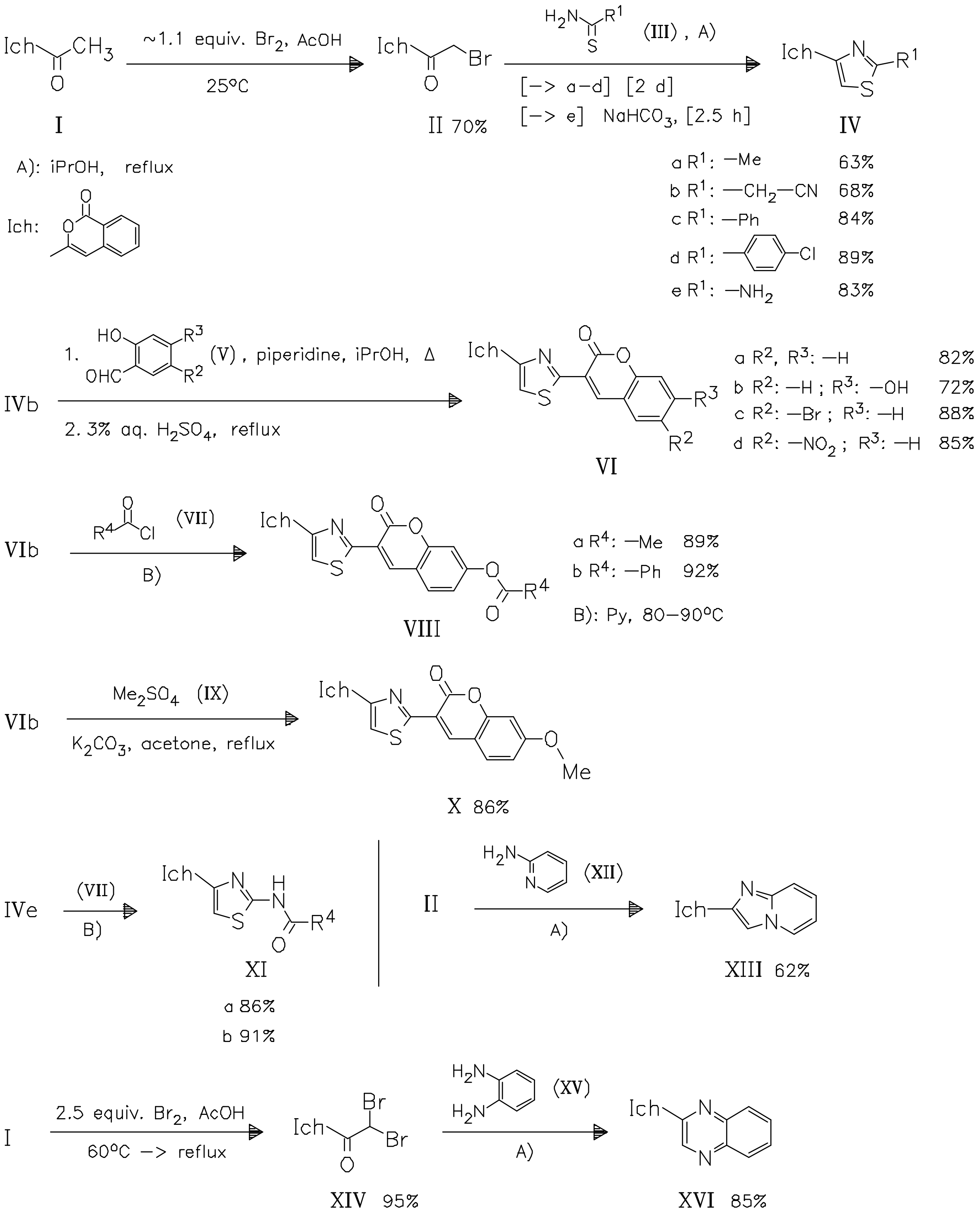
Moc: —CO—O—Me

Benzopyran derivatives
R 0350

DOI: 10.1002/chin.201335137

35- 137

Synthesis of 3-Hetaryl-1H-isochromen-1-ones Based on 3-(2-Bromoacetyl)-1H-isochromen-1-one (II). — (SHABLYKINA*, O. V.; SHABLYKIN, O. V.; ISHCHENKO, V. V.; VORONAYA, A. V.; KHILYA, V. P.; Chem. Heterocycl. Compd. (N. Y., NY, U. S.) 48 (2013) 11, 1621-1627, http://dx.doi.org/10.1007/s10593-013-1183-7 ; Taras Shevchenko Natl. Univ., Kiev 01601, Ukraine; Eng.) — C. Cyrus

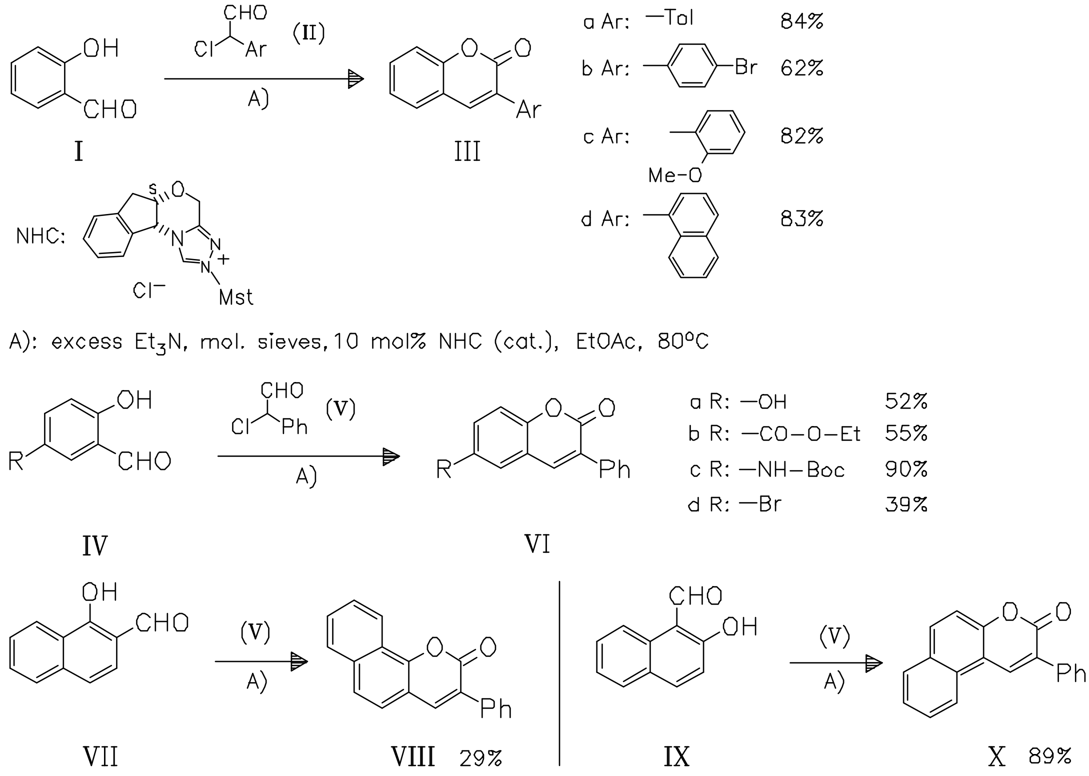


Benzopyran derivatives
R 0350

DOI: 10.1002/chin.201335138

35- 138

Synthesis of 3-Arylcoumarins Through N-Heterocyclic Carbene Catalyzed Condensation and Annulation of 2-Chloro-2-arylacetaldehydes with Salicylaldehydes. — (JIANG, Y.; CHEN*, W.; LU, W.; Tetrahedron 69 (2013) 18, 3669-3676, http://dx.doi.org/10.1016/j.tet.2013.03.025 ; Dep. Chem., Zhejiang Univ., Hangzhou 310028, Peop. Rep. China; Eng.) — U. Scheffler



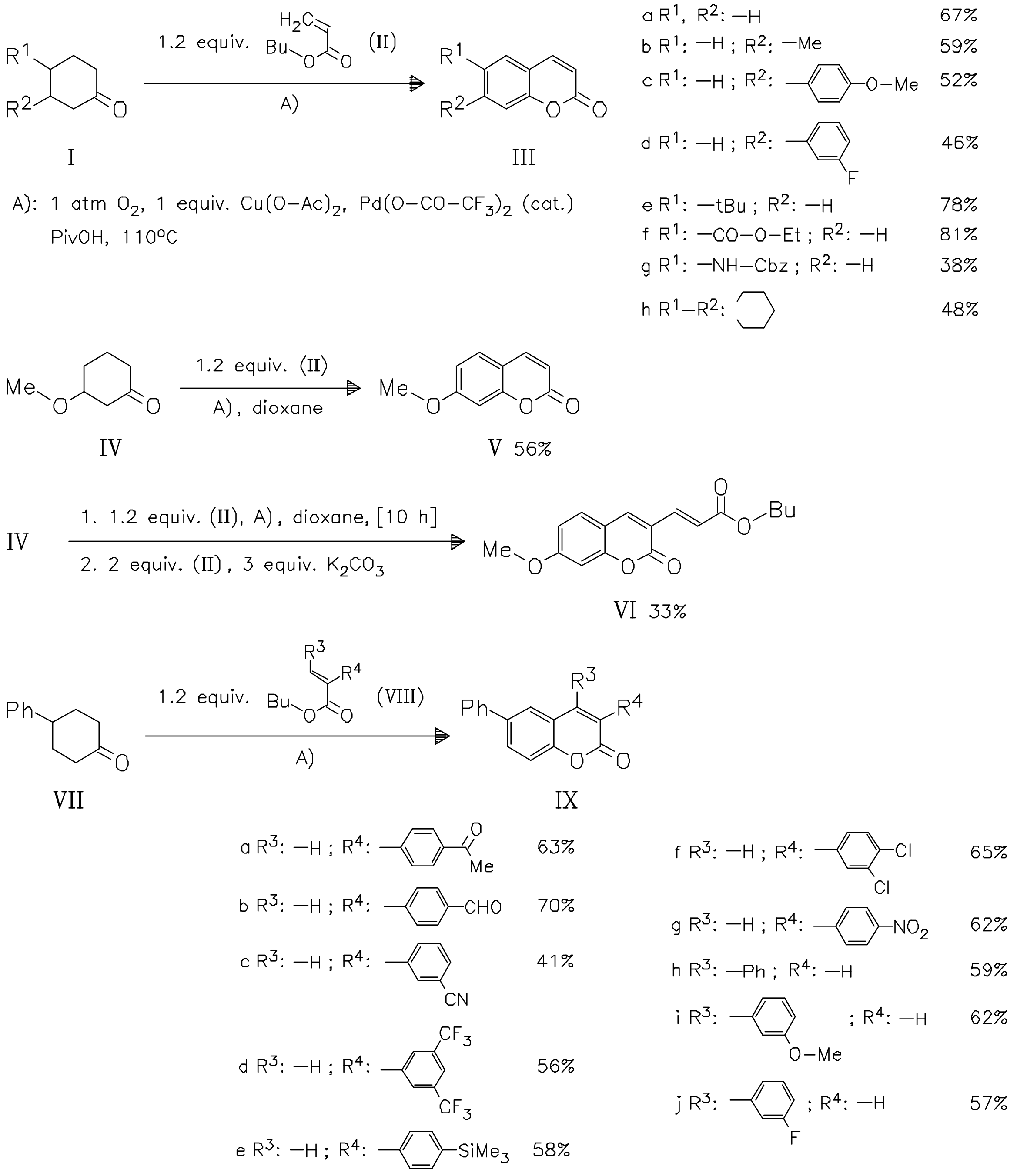
Benzopyran derivatives
R 0350

DOI: 10.1002/chin.201335139

35- 139

One-Pot Catalysis of Dehydrogenation of Cyclohexanones to Phenols and Oxidative Heck Coupling: Expedient Synthesis of Coumarins. —

A simple procedure is elaborated for the preparation of coumarins (III) by an oxidation of cyclohexanones (I) followed by an oxidative Heck coupling-cyclization process of resulting phenols with butyl acrylate. The sequential addition of butyl acrylate and K_2CO_3 to the solution of the crude product (V) leads to 3-alkenylated coumarin (VI). — (KIM, D.; MIN, M.; HONG*, S.; Chem. Commun. (Cambridge) 49 (2013) 38, 4021-4023, http://dx.doi.org/10.1039/c3cc41296b ; Dep. Chem., Korea Adv. Inst. Sci. Technol., Daejeon 305-701, S. Korea; Eng.) — R. Staver

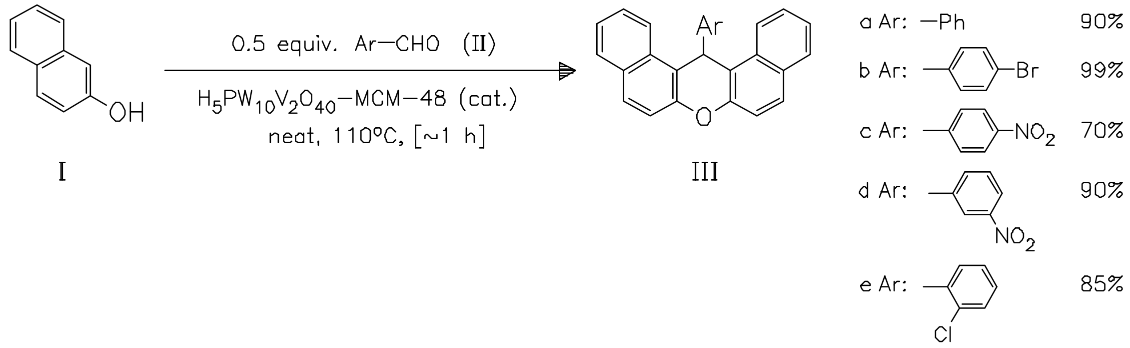


Xanthene derivatives
R 0360

DOI: 10.1002/chin.201335140

35- 140

Assembling of $H_5PW_{10}V_2O_{40}$/MCM-48 and Studying Its Superior Catalytic Performance in the Synthesis of 14-Aryl-14H-dibenzo[a,j]xanthenes. — The title silica-supported Keggin-type catalyst allows for a highly efficient and green synthesis of dibenzoxanthone derivatives (III) via condensation of β-naphthol with aryl aldehydes (8 examples). — (TAYEBEE*, R.; MALEKI, B.; J. Chem. Sci. (Bangalore, India) 125 (2013) 2, 335-344, http://dx.doi.org/10.1007/s12039-013-0372-3 ; Dep. Chem., Sabzevar Univ., Sabzevar 397, Iran; Eng.) — C. Cyrus

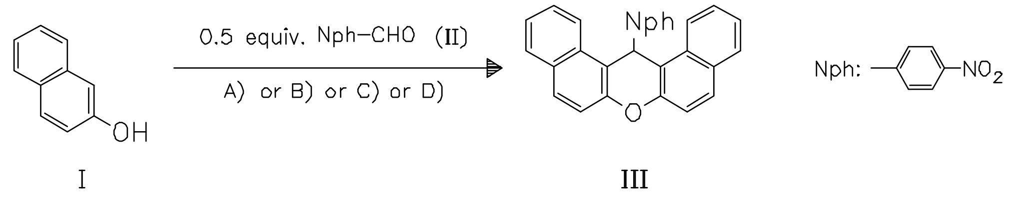


Xanthene derivatives
R 0360

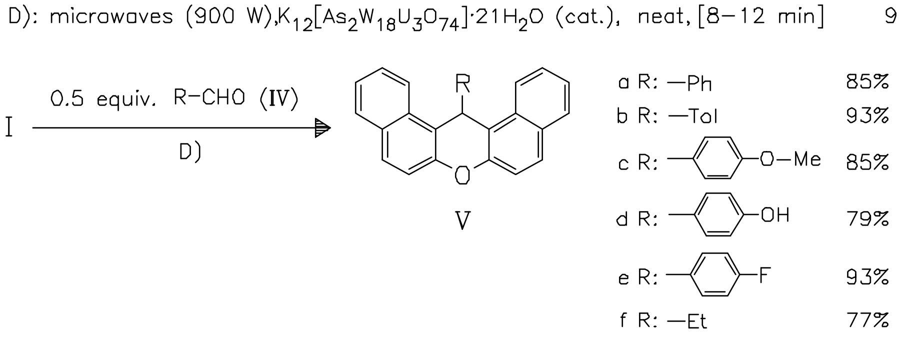
DOI: 10.1002/chin.201335141

35- 141

Catalytic Application of Two Novel Sandwich-Type Polyoxometalates in Synthesis of 14-Substituted-14H-dibenzo[a,j]xanthenes. — A facile and efficient method for the one-pot synthesis of title dibenzoxanthenes from β-naphthol and various aldehydes is given using two novel sandwich-type polyoxometalates as efficient catalysts. — (SHESHMANI, S.; J. Chem. Sci. (Bangalore, India) 125 (2013) 2, 345-351, http://dx.doi.org/10.1007/s12039-013-0384-z ; Dep. Chem., Islamic Azad Univ., Tehran, Iran; Eng.) — C. Cyrus



A): $K_{12}[As_2W_{18}Cu_3O_{68}]\cdot 30H_2O$ (cat.), neat, 125°C, [2—4 h] 93%
B): microwaves (900 W), $K_{12}[As_2W_{18}Cu_3O_{68}]\cdot 30H_2O$ (cat.), neat, [15—25 min] 91%
C): $K_{12}[As_2W_{18}U_3O_{74}]\cdot 21H_2O$ (cat.), neat, 125°C, [2—4 h] 91%
D): microwaves (900 W), $K_{12}[As_2W_{18}U_3O_{74}]\cdot 21H_2O$ (cat.), neat, [8—12 min] 95%

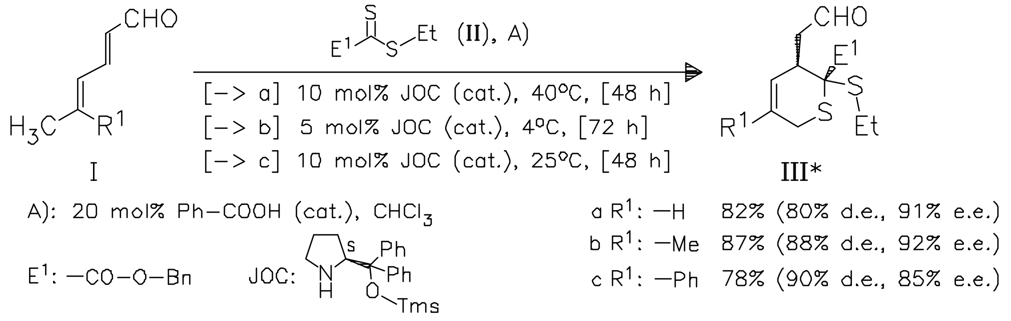


Thiopyran derivatives
R 0370

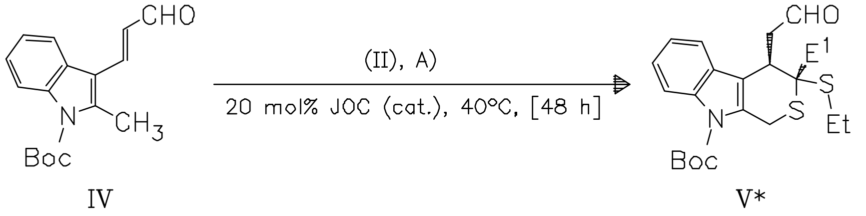
DOI: 10.1002/chin.201335142

35- 142

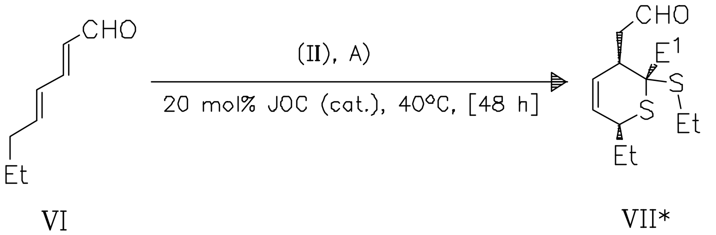
Asymmetric Organocatalytic Thio-Diels—Alder Reactions via Trienamine Catalysis. — (JIANG, H.; CRUZ, D. C.; LI, Y.; LAURIDSEN, V. H.; JOERGENSEN*, K. A.; J. Am. Chem. Soc. 135 (2013) 13, 5200-5207, http://dx.doi.org/10.1021/ja4007244 ; Dep. Chem., Aarhus Univ., DK-8000 Aarhus, Den.; Eng.) — U. Scheffler



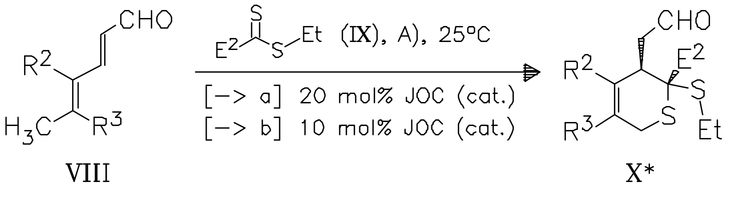
a R^1: -H 82% (80% d.e., 91% e.e.)
b R^1: -Me 87% (88% d.e., 92% e.e.)
c R^1: -Ph 78% (90% d.e., 85% e.e.)



84% (60% d.e., 92% e.e.)



62% (70% d.e., 85% e.e.)



E^2: -CO-O-iPr

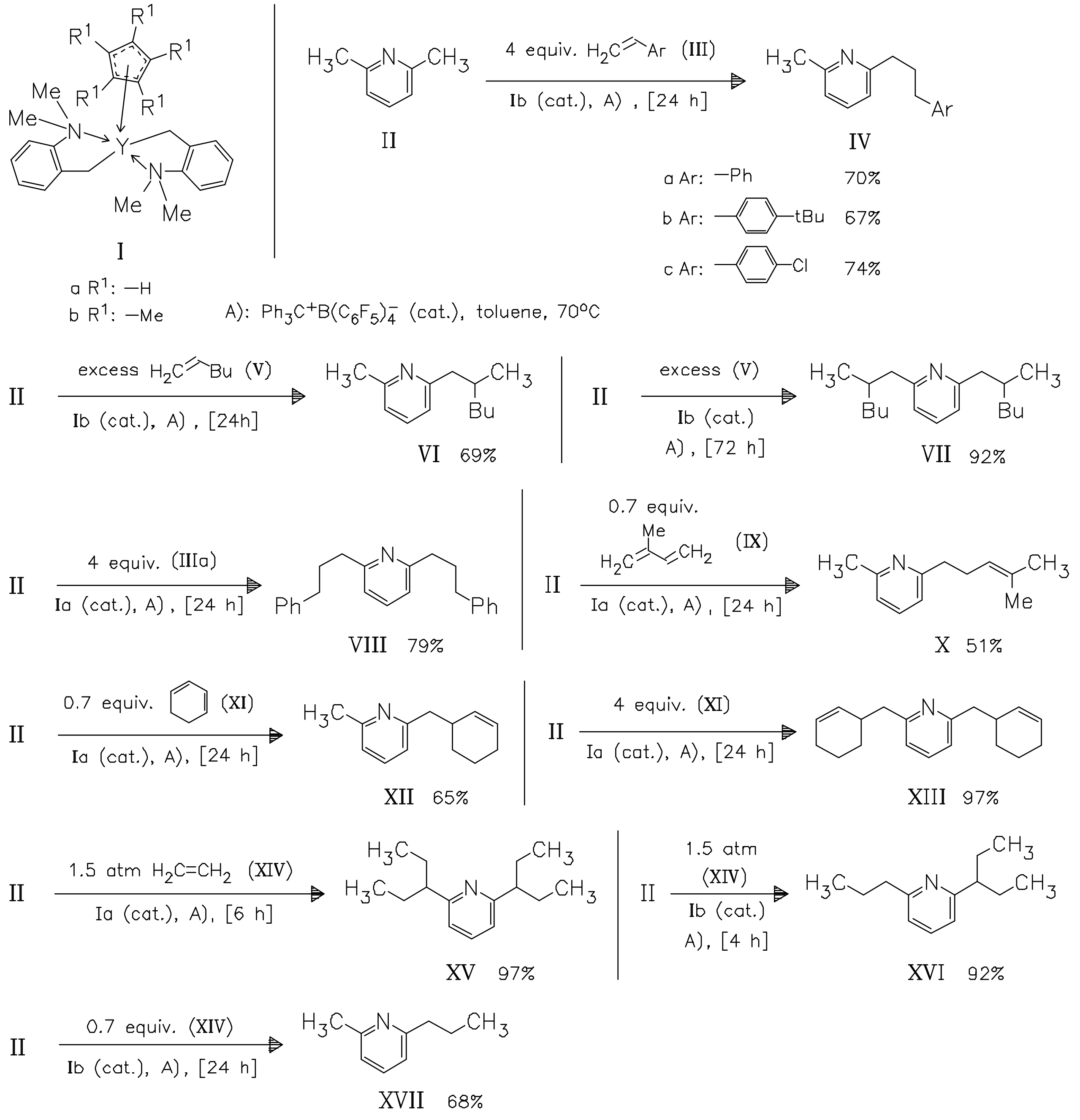
a R^2, R^3: -Me 78% (84% d.e., 97% e.e.)
b R^2: -H ; R^3: -Ph 70% (96% d.e., 95% e.e.)

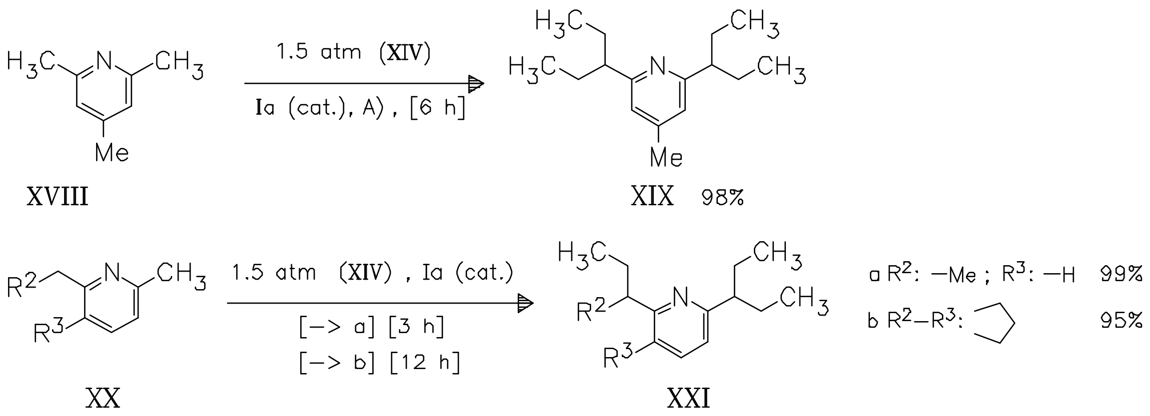
Pyridine derivatives
R 0380

DOI: 10.1002/chin.201335143

35- 143

Yttrium-Catalyzed Addition of Benzylic C—H Bonds of Alkyl Pyridines to Olefins. — An excellent catalytic system for the ortho-selective benzylic C—H addition of various dialkyl pyridines is presented. A variety of olefins and 1,3-conjugated dienes is applied leading to a new family of alkylated and allylated pyridine derivatives. The number of alkylations of the educt can be controlled by the choice of the catalyst, the reaction time, and the amount of the olefin. The ortho-selectivity is demonstrated by the reaction of the pyridines (XVIII) and (XX). — (GUAN, B.-T.; WANG, B.; NISHIURA, M.; HOU*, Z.; Angew. Chem., Int. Ed. 52 (2013) 16, 4418-4421, http://dx.doi.org/10.1002/anie.201208867 ; Organomet. Chem. Lab., RIKEN, Adv. Sci. Inst., Saitama 351-01, Japan; Eng.) — C. Gebhardt



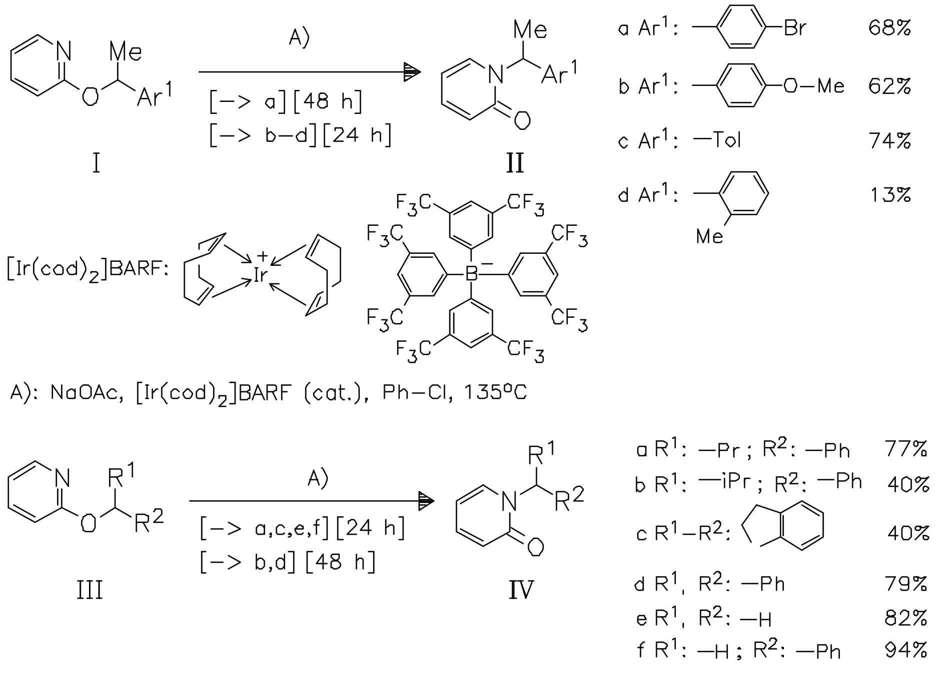


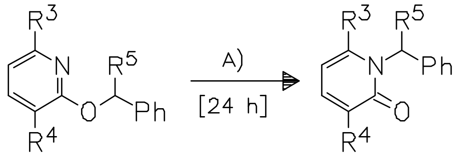
Pyridine derivatives
R 0380

DOI: 10.1002/chin.201335144

35- 144

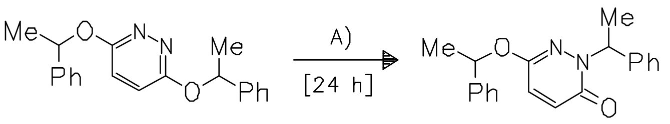
Ir(I)-Catalyzed Synthesis of N-Substituted Pyridones from 2-Alkoxypyridines via C—O Bond Cleavage. — A cationic Ir(I) complex catalyzes O-to-N-alkyl migration in pyridines bearing a secondary O-alkyl group. This transformation gives the corresponding N-alkylpyridones in moderate to good yields. The addition of sodium acetate plays a key role in suppressing β-hydrogen elimination. —
(PAN, S.; RYU, N.; SHIBATA*, T.; Org. Lett. 15 (2013) 8, 1902-1905, http://dx.doi.org/10.1021/ol400557z ; Dep. Chem. Biochem., Sch. Adv. Sci. Eng., Waseda Univ., Shinjuku, Tokyo 169-8555, Japan; Eng.) — Bartels





V VI

a R^3: —H ; R^4, R^5: —Me 76%
b R^3: —H ; R^4: —Cl ; R^5: —Ph 73%
c R^3, R^5: —Me ; R^4: —H 0%

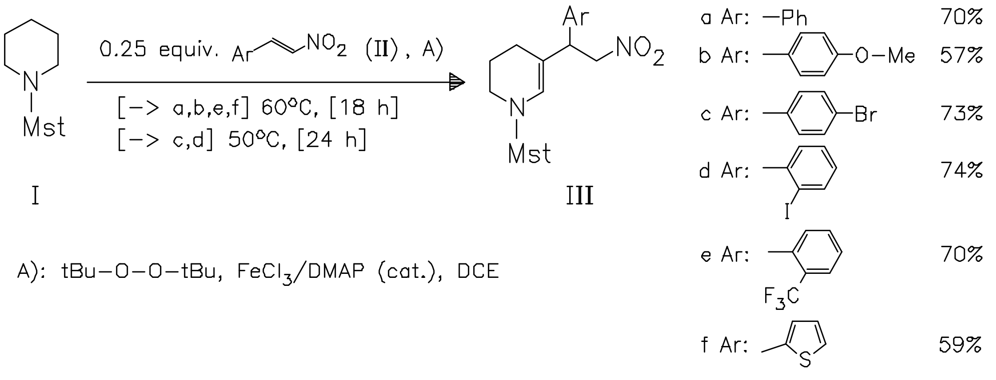


VII VIII 51%

Pyridine derivatives
R 0380 DOI: 10.1002/chin.201335145

35- 145

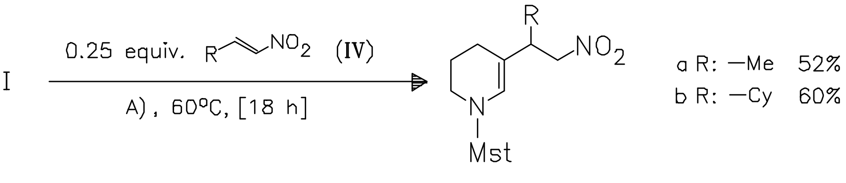
Iron-Catalyzed Oxidative C(3)—H Functionalization of Amines. — The title reaction is applicable to both cyclic and acyclic substrates under mild conditions using nitroalkenes as coupling partner. — (TAKASU, N.; OISAKI*, K.; KANAI, M.; Org. Lett. 15 (2013) 8, 1918-1921, http://dx.doi.org/10.1021/ol400568u ; Grad. Sch. Pharm. Sci., Univ. Tokyo, Bunkyo, Tokyo 113, Japan; Eng.) — Bartels



I III

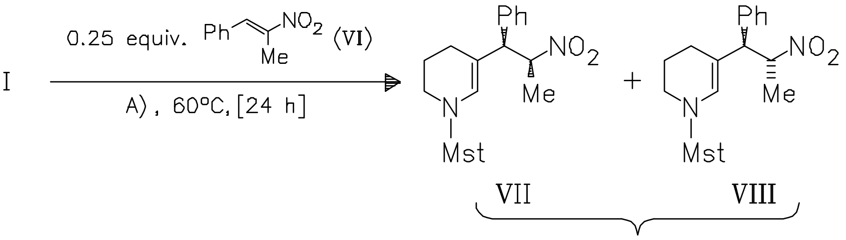
A): tBu—O—O—tBu, $FeCl_3$/DMAP (cat.), DCE

a Ar: —Ph 70%
b Ar: —C_6H_4—O—Me 57%
c Ar: —C_6H_4—Br 73%
d Ar: 74%
e Ar: 70%
f Ar: 59%



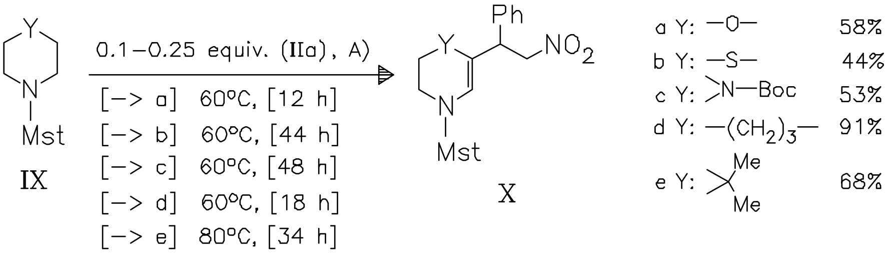
I V

a R: —Me 52%
b R: —Cy 60%



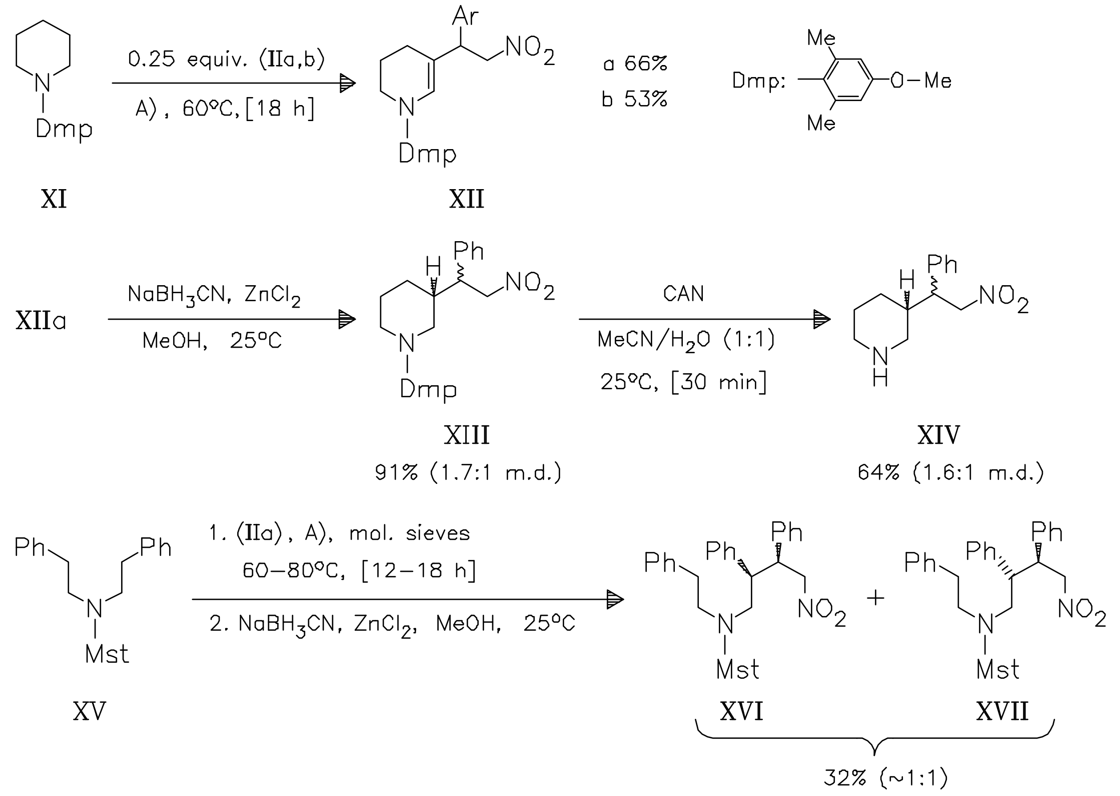
I VII VIII

41% (~1:1)



IX X

a Y: —O— 58%
b Y: —S— 44%
c Y: >N—Boc 53%
d Y: —$(CH_2)_3$— 91%
e Y: $>C(Me)_2$ 68%

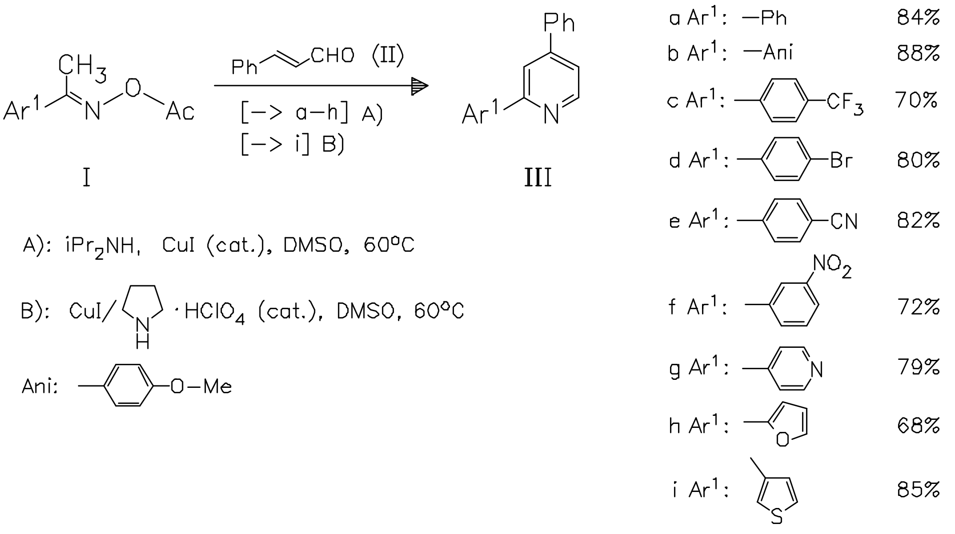


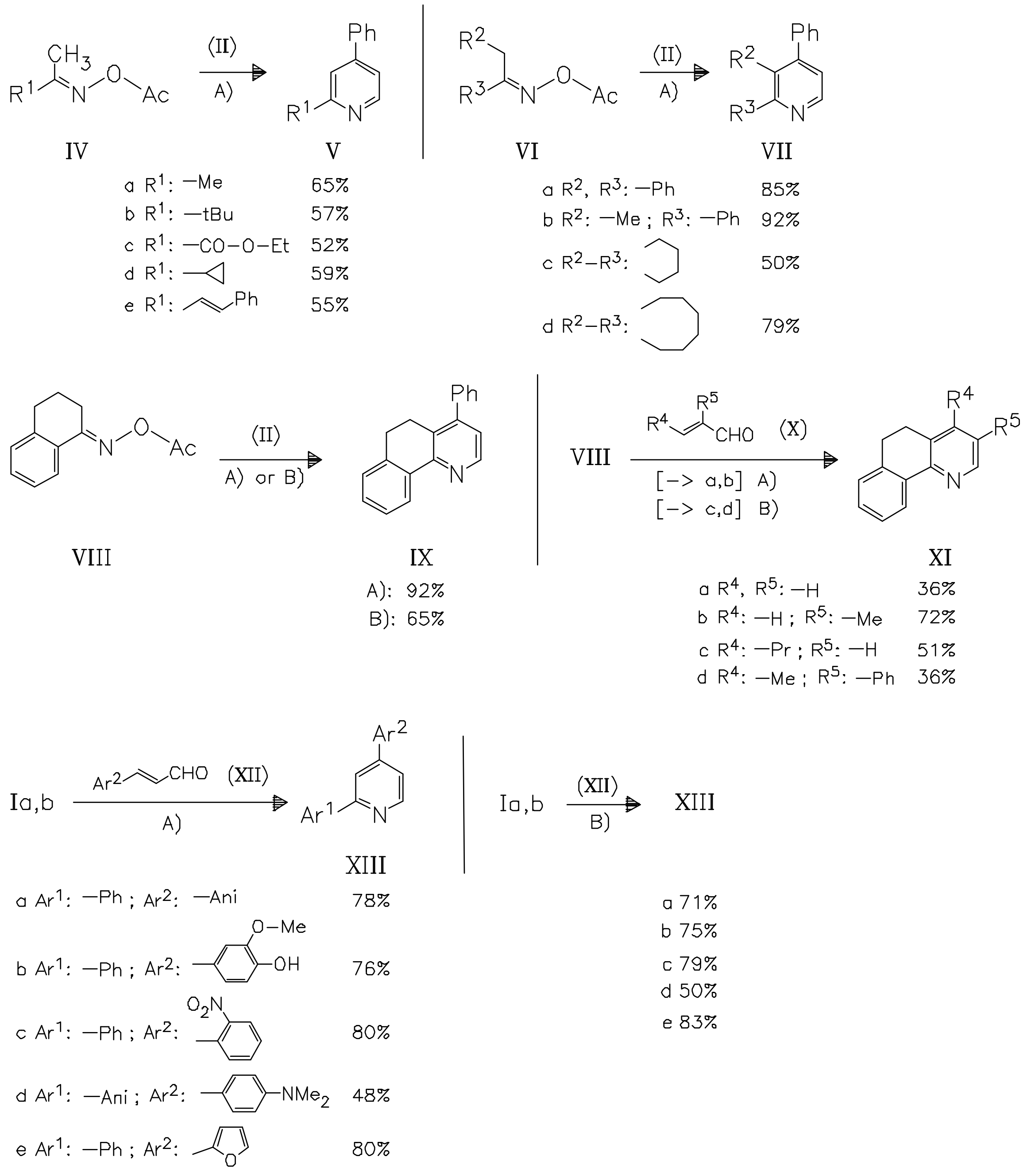
Pyridine derivatives
R 0380

DOI: 10.1002/chin.201335146

35- 146

Modular Pyridine Synthesis from Oximes and Enals Through Synergistic Copper/Iminium Catalysis. — Redox activity of copper is combined with the iminium activation strategy to construct various pyridine derivatives, including polysubstituted pyridines. — (WEI, Y.; YOSHIKAI*, N.; J. Am. Chem. Soc. 135 (2013) 10, 3756-3759, http://dx.doi.org/10.1021/ja312346s ; Div. Chem. Biol. Chem., Sch. Phys. Math. Sci., Nanyang Technol. Univ., Singapore 637371, Singapore; Eng.) — Y. Steudel



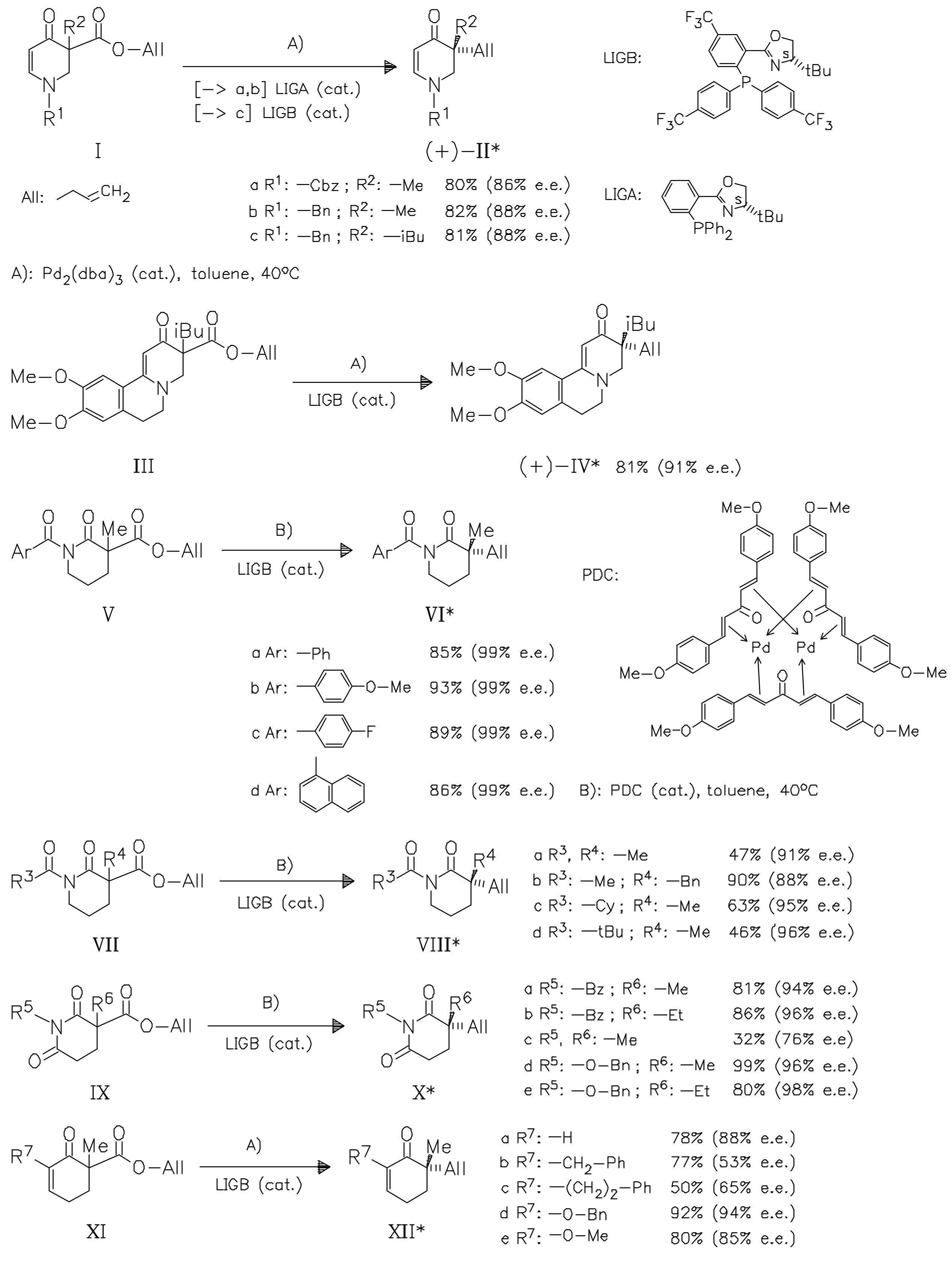


Pyridine derivatives
R 0380

DOI: 10.1002/chin.201335147

35- 147

Expanding Insight into Asymmetric Palladium-Catalyzed Allylic Alkylation of N-Heterocyclic Molecules and Cyclic Ketones. — Novel substrates are applied in the palladium-catalyzed decarboxylative allylic alkylation. The reason for the high enantioselectivity for imides and lactones lies both in electronic and steric effects. — (BENNETT, N. B.; DUQUETTE, D. C.; KIM, J.; LIU, W.-B.; MARZIALE, A. N.; BEHENNA, D. C.; VIRGIL, S. C.; STOLTZ*, B. M.; Chem. - Eur. J. 19 (2013) 14, 4414-4418, http://dx.doi.org/10.1002/chem.201300030 ; Div. Chem. Chem. Eng., Calif. Inst. Technol., Pasadena, CA 91125, USA; Eng.) — C. Gebhardt



a R^1: −Cbz ; R^2: −Me 80% (86% e.e.)
b R^1: −Bn ; R^2: −Me 82% (88% e.e.)
c R^1: −Bn ; R^2: −iBu 81% (88% e.e.)

A): $Pd_2(dba)_3$ (cat.), toluene, 40°C

(+)−IV* 81% (91% e.e.)

a Ar: −Ph 85% (99% e.e.)
b Ar: 93% (99% e.e.)
c Ar: 89% (99% e.e.)
d Ar: 86% (99% e.e.)

B): PDC (cat.), toluene, 40°C

a R^3, R^4: −Me 47% (91% e.e.)
b R^3: −Me ; R^4: −Bn 90% (88% e.e.)
c R^3: −Cy ; R^4: −Me 63% (95% e.e.)
d R^3: −tBu ; R^4: −Me 46% (96% e.e.)

a R^5: −Bz ; R^6: −Me 81% (94% e.e.)
b R^5: −Bz ; R^6: −Et 86% (96% e.e.)
c R^5, R^6: −Me 32% (76% e.e)
d R^5: −O−Bn ; R^6: −Me 99% (96% e.e.)
e R^5: −O−Bn ; R^6: −Et 80% (98% e.e.)

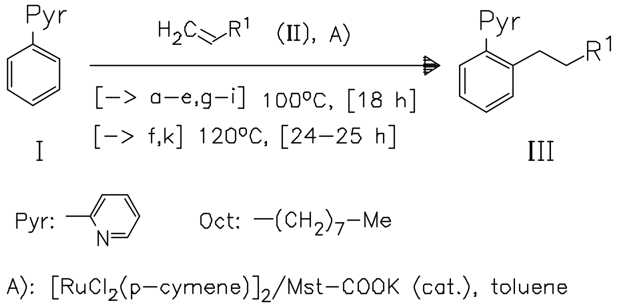
a R^7: −H 78% (88% e.e.)
b R^7: $-CH_2-Ph$ 77% (53% e.e.)
c R^7: $-(CH_2)_2-Ph$ 50% (65% e.e.)
d R^7: −O−Bn 92% (94% e.e.)
e R^7: −O−Me 80% (85% e.e.)

Pyridine derivatives
R 0380

DOI: 10.1002/chin.201335148

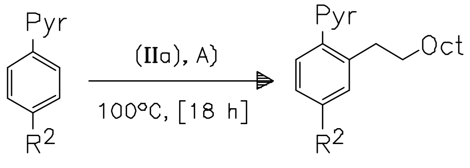
35- 148

Carboxylate-Assisted Ruthenium(II)-Catalyzed Hydroarylations of Unactivated Alkenes Through C—H Cleavage. — (SCHINKEL, M.; MAREK, I.; ACKERMANN*, L.; Angew. Chem., Int. Ed. 52 (2013) 14, 3977-3980, http://dx.doi.org/10.1002/anie.201208446 ; Inst. Org. Biomol. Chem., Georg-August-Univ., D-37077 Goettingen, Germany; Eng.) — Roessler



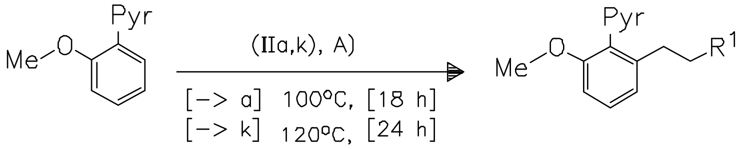
A): $[RuCl_2(p\text{-cymene})]_2$/Mst-COOK (cat.), toluene

a R^1: —Oct 82%
b R^1: —Bu 78%
c R^1: $-SiMe_3$ 75%
d R^1: $-SiEt_3$ 63%
e R^1: $-(CH_2)_8-O-Me$ 79%
f R^1: $-(CH_2)_8-OH$ 45%
g R^1: $-(CH_2)_9-CO-Me$ 82%
h R^1: $-(CH_2)_4-O-CO-Me$ 80%
i R^1: $-(CH_2)_8-Cl$ 78%
k R^1: $-(CF_2)_5-CF_3$ 78%



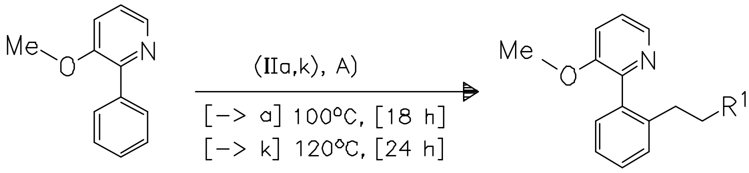
IV V

a R^2: —Me 76%
b R^2: —O—Me 79%
c R^2: —F 73%
d R^2: $-CF_3$ 75%



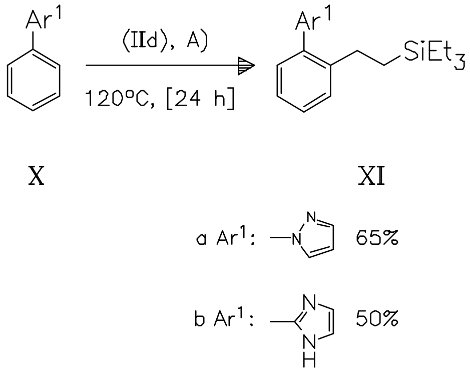
VI VII

a 84%
k 84%



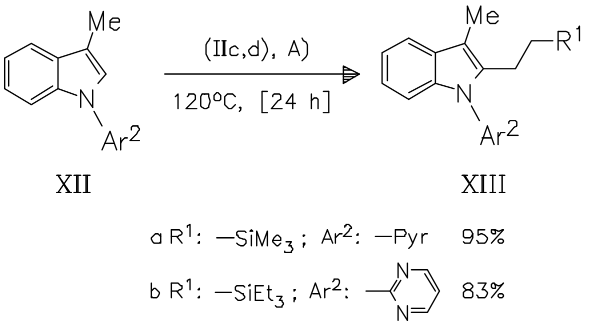
VIII IX

a 81%
k 78%



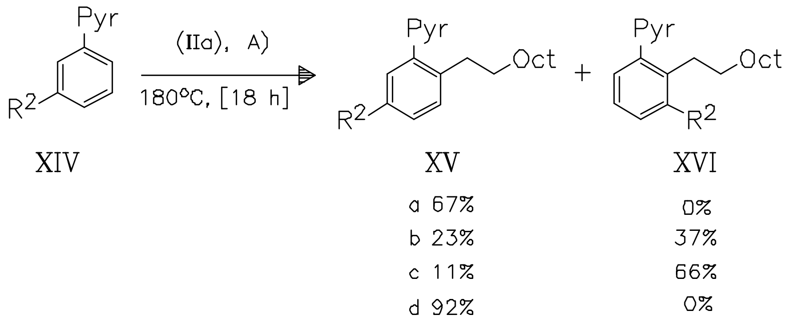
X XI

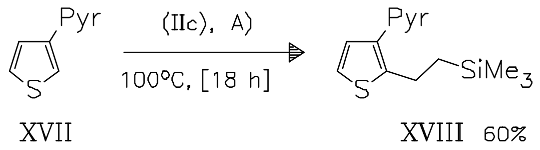
a Ar^1: 65%
b Ar^1: 50%



XII XIII

a R^1: $-SiMe_3$; Ar^2: —Pyr 95%
b R^1: $-SiEt_3$; Ar^2: 83%



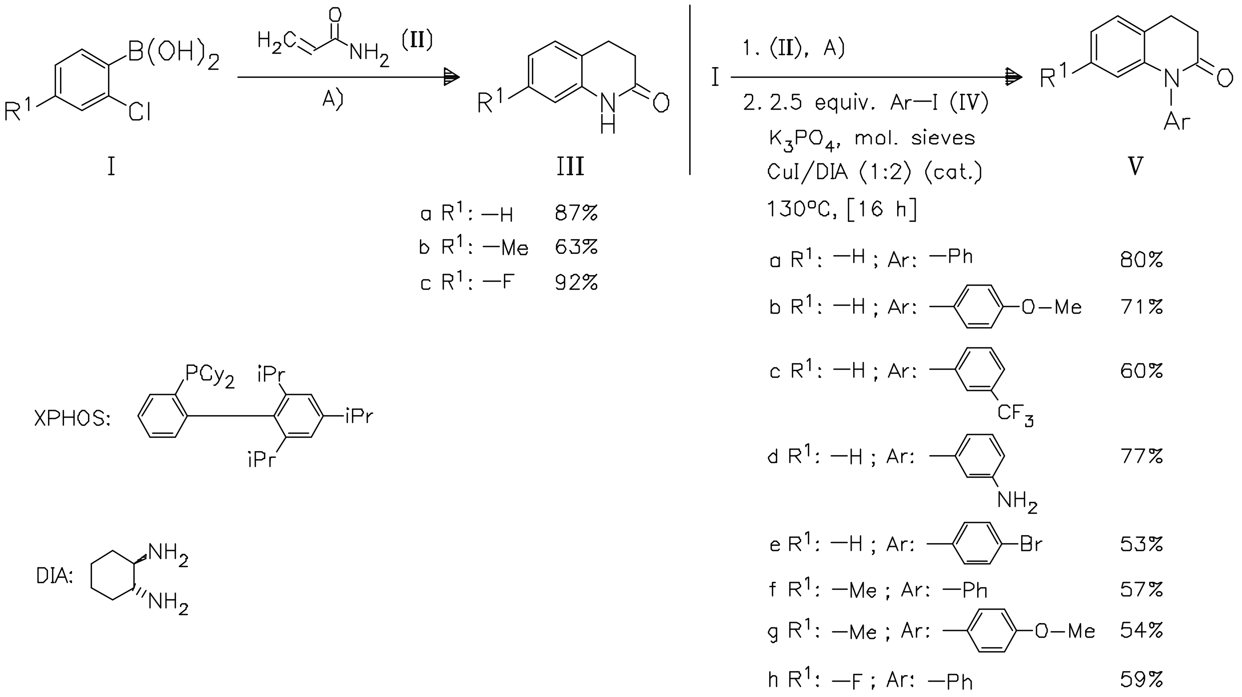


Quinoline derivatives
R 0410

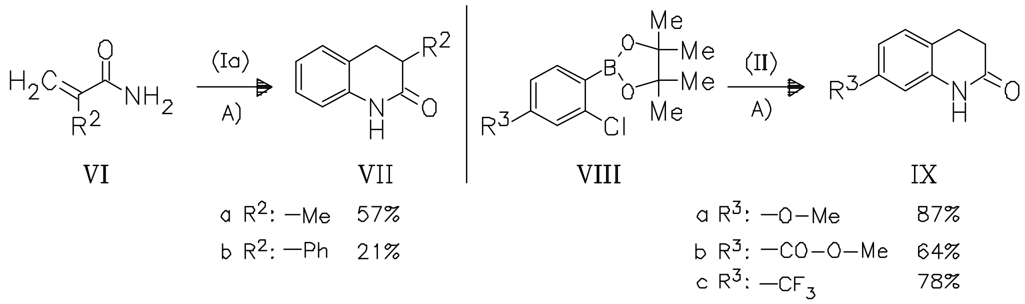
DOI: 10.1002/chin.201335149

35- 149

Multicomponent Multicatalyst Reactions (MC)^{2}R: One-Pot Synthesis of 3,4-Dihydroquinolinones. — A new Rh/Pd-catalyzed conjugation-addition/amidation/amidation reaction sequence is presented. — (ZHANG, L.; SONAGLIA, L.; STACEY, J.; LAUTENS*, M.; Org. Lett. 15 (2013) 9, 2128-2131, http://dx.doi.org/10.1021/ol4006008 ; Dep. Chem., Univ. Toronto, Toronto, Ont. M5S 3H6, Can.; Eng.) — M. Duhs



A): K_3PO_4, 2 mol% $[RhCl(cod)]_2$/2.5 mol% $[PdCl(allyl)]_2$/10 mol% XPHOS (cat.)
Et$-CMe_2-OH$/MeOH (10:1), 110°C, [16 h]



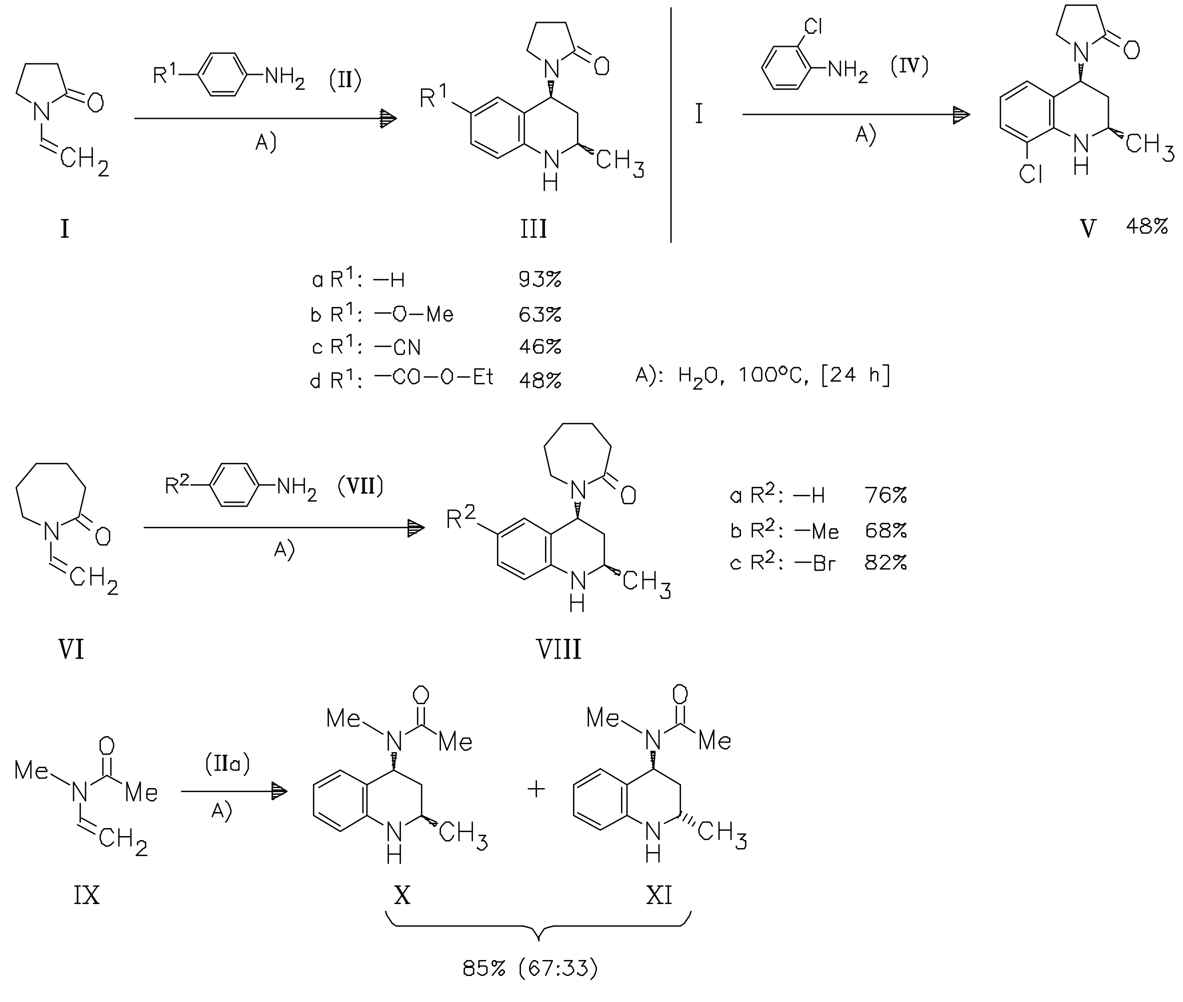
Quinoline derivatives

R 0410

DOI: 10.1002/chin.201335150

35- 150

Catalyst-Free Diastereoselective Synthesis of 2-Methyl-4-amino-1,2,3,4-tetrahydro-quinoline Derivatives in Water. — The reaction of anilines with cyclic tert-enamides affords 2,4-dibsubstituted tetrahydroquinoline units with complete cis diastereoselectivity. N-Methyl-N-vinylacetamide (IX) yields a cis/trans mixture. — (WU, L.; JIANG, R.; YANG, J.-M.; WANG*, S.-Y.; JI, S.-J.; Tetrahedron Lett. 54 (2013) 22, 2849-2852, http://dx.doi.org/10.1016/j.tetlet.2013.03.091 ; Key Lab. Org. Synth., Coll. Chem. Chem. Eng., Soochow Univ., Suzhou 215123, Peop. Rep. China; Eng.) — Mais



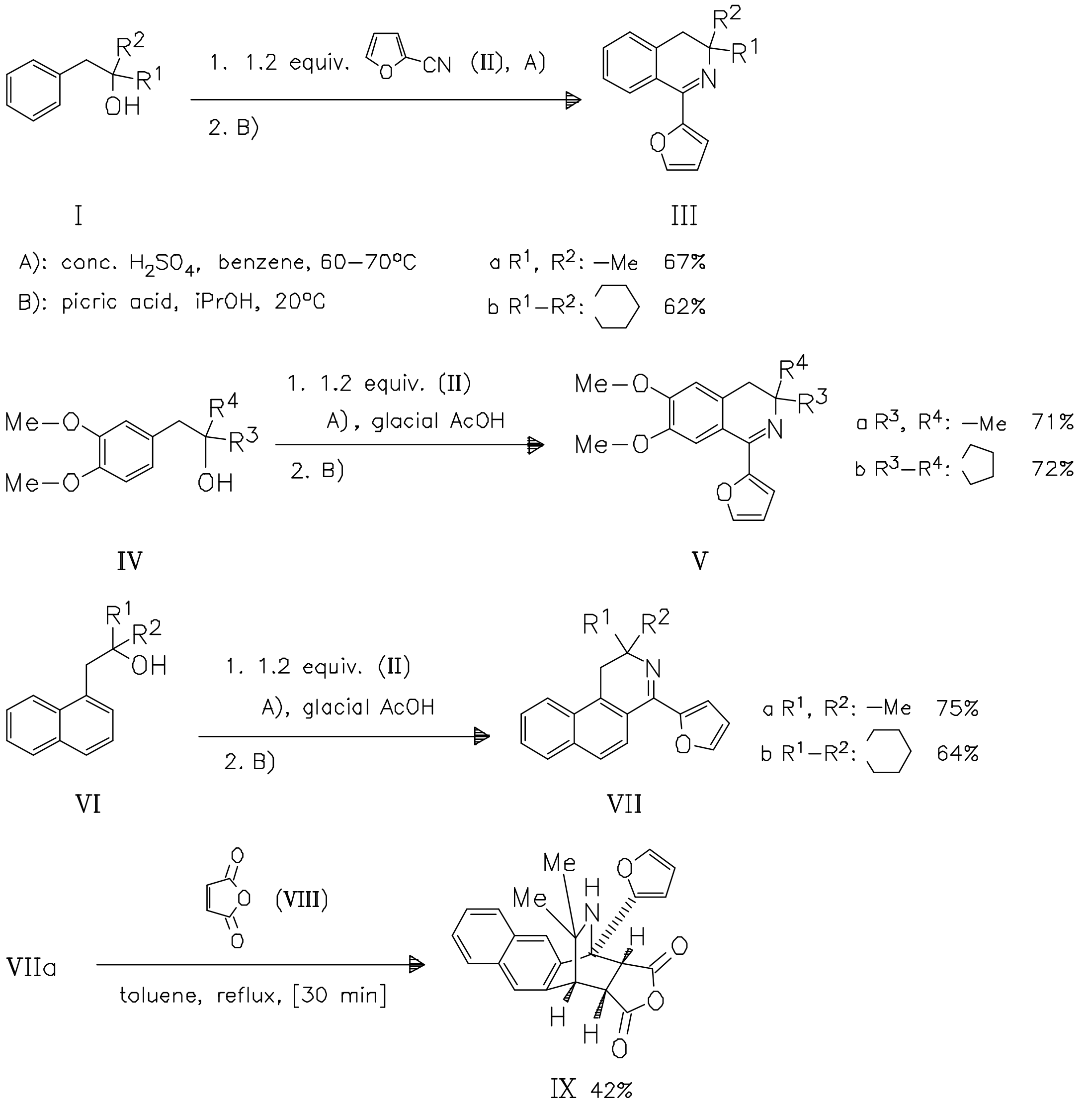
Isoquinoline derivatives

R 0420

DOI: 10.1002/chin.201335151

35- 151

Synthesis of 3,3-Dialkyl-1-(2-furyl)-3,4-dihydroisoquinolines and Their Reaction with Maleic Anhydride. — (MIKHAILOVSKII*, A. G.; ALIEV, Z. G.; SURIKOVA, O. V.; EFREMOVA, N. G.; Chem. Heterocycl. Compd. (N. Y., NY, U. S.) 48 (2013) 11, 1659-1664, http://dx.doi.org/10.1007/s10593-013-1189-1 ; Perm State Pharm. Acad., Perm 614990, Russia; Eng.) — C. Cyrus



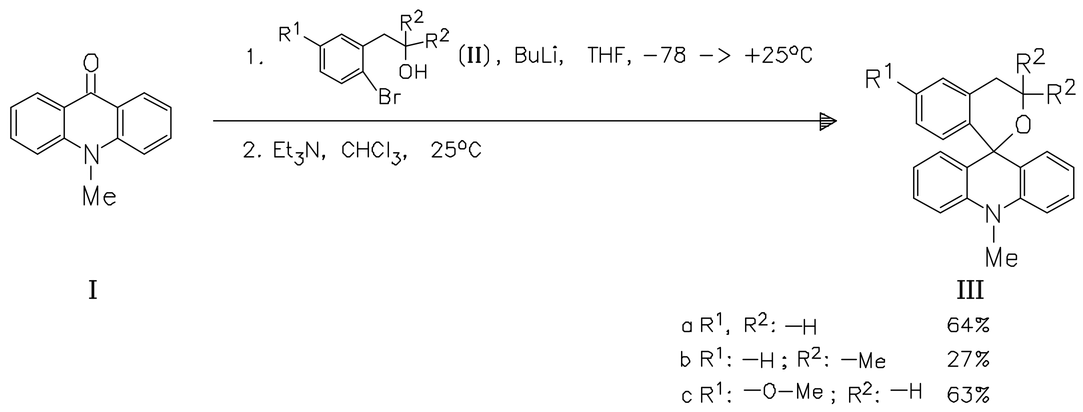
Acridine derivatives

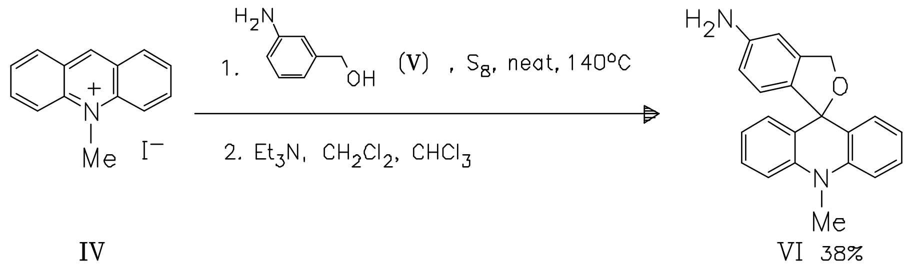
R 0430

DOI: 10.1002/chin.201335152

35- 152

Molecular Photoswitches Based on Spiro-Acridans. — Novel thermally-reversible photochromic spiro-acridans are prepared and their photoactivity is reported. — (RASKOSOVA, A.; STOESSER, R.; ABRAHAM*, W.; Chem. Commun. (Cambridge) 49 (2013) 38, 3964-3966, http://dx.doi.org/10.1039/c3cc41135d ; Inst. Chem., Humboldt-Univ., D-12489 Berlin, Germany; Eng.) — R. Staver





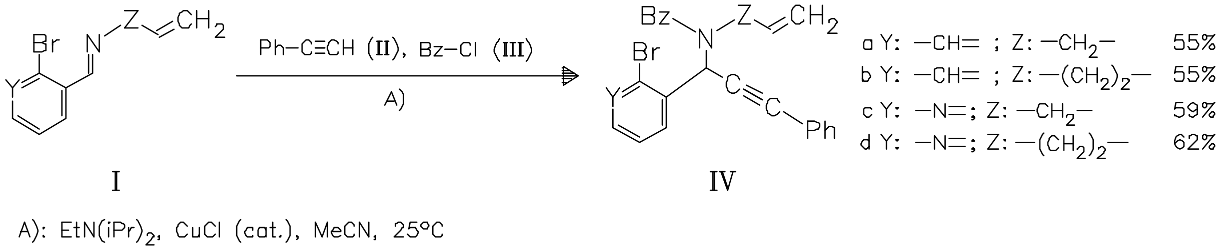
Fused pyridine derivatives
R 0450

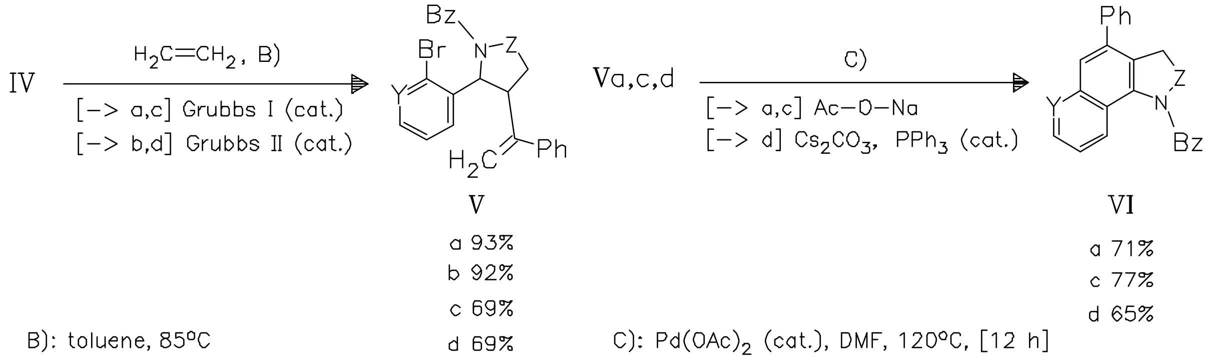
DOI: 10.1002/chin.201335153

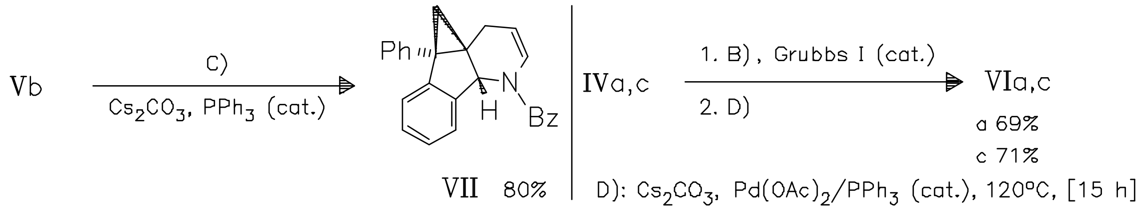
35- 153

Divergent Reaction Pathways of Homologous and Isosteric Propargyl Amides in Sequential Ru/Pd-Catalyzed Annulations for the Synthesis of Heterocycles. —

The divergent reaction pathway includes a Cu-catalyzed three-component reaction, a ring closing metathesis (RCM) and a Heck cyclization. A one-pot protocol for the RCM/Heck reaction is also presented. — (RAIKAR, S. N.; MALINAKOVA*, H. C.; J. Org. Chem. 78 (2013) 8, 3832-3846, http://dx.doi.org/10.1021/jo400246d ; Dep. Chem., Univ. Kans., Lawrence, KS 66045, USA; Eng.) — C. Gebhardt

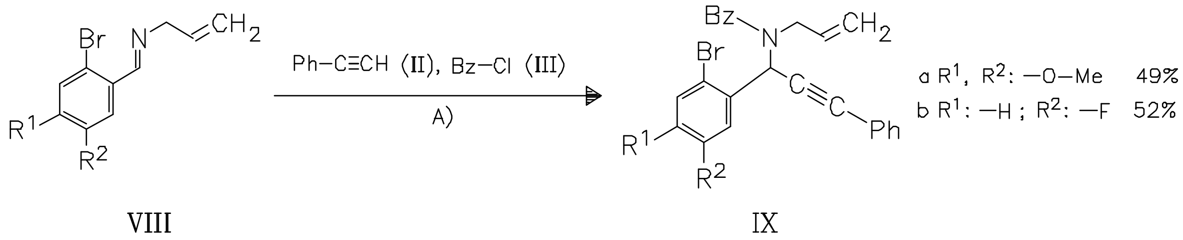




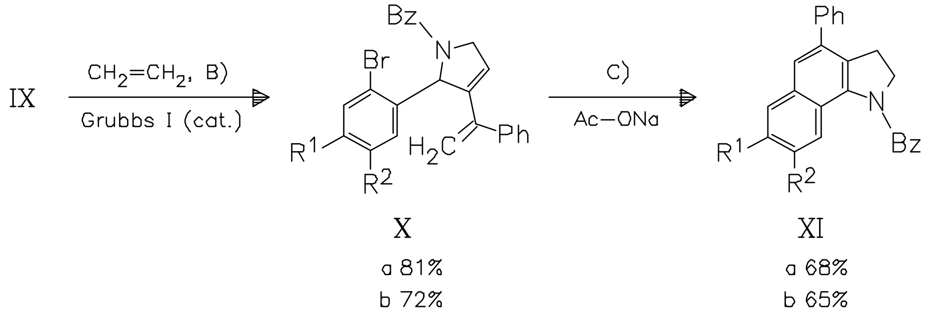


Vb
C)
Cs2CO3, PPh3 (cat.)
Ph
H
N
Bz
VII 80%
IVa,c
1. B), Grubbs I (cat.)
2. D)
VIa,c
a 69%
c 71%
D): Cs2CO3, Pd(OAc)2/PPh3 (cat.), 120°C, [15 h]

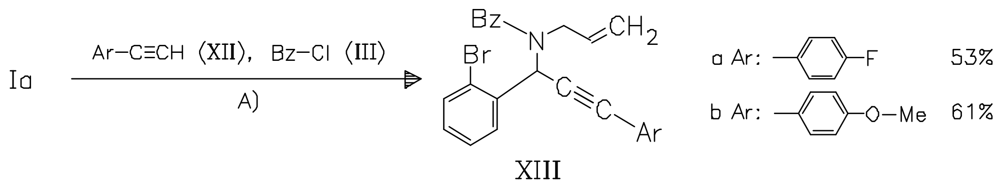
IVb
1. B), Grubbs II (cat.)
2. D)
VII
75%
IVd
1. B), Grubbs II (cat.)
2. D)
VId + Vd
61% 25%



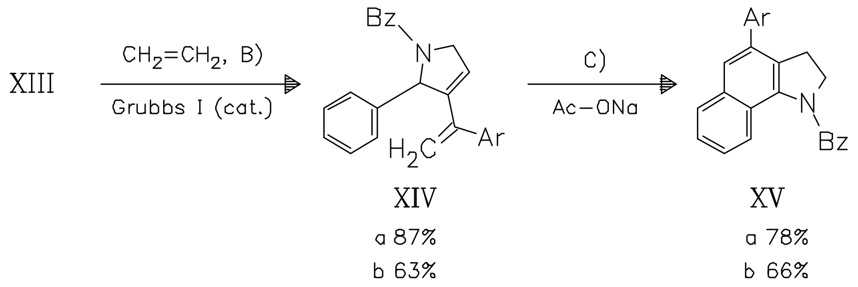
Br
N
CH2
R1
R2
VIII
Ph—C≡CH (II), Bz—Cl (III)
A)
Bz
N
CH2
Br
C≡C
Ph
R1
R2
IX
a R1, R2: —O—Me 49%
b R1: —H ; R2: —F 52%



IX
CH2=CH2, B)
Grubbs I (cat.)
Bz
N
Br
R1
R2
H2C
Ph
X
a 81%
b 72%
C)
Ac—ONa
Ph
N
Bz
R1
R2
XI
a 68%
b 65%



Ia
Ar—C≡CH (XII), Bz—Cl (III)
A)
Bz
N
CH2
Br
C≡C
Ar
XIII
a Ar: —F 53%
b Ar: —O—Me 61%



XIII
CH2=CH2, B)
Grubbs I (cat.)
Bz
N
H2C
Ar
XIV
a 87%
b 63%
C)
Ac—ONa
Ar
N
Bz
XV
a 78%
b 66%

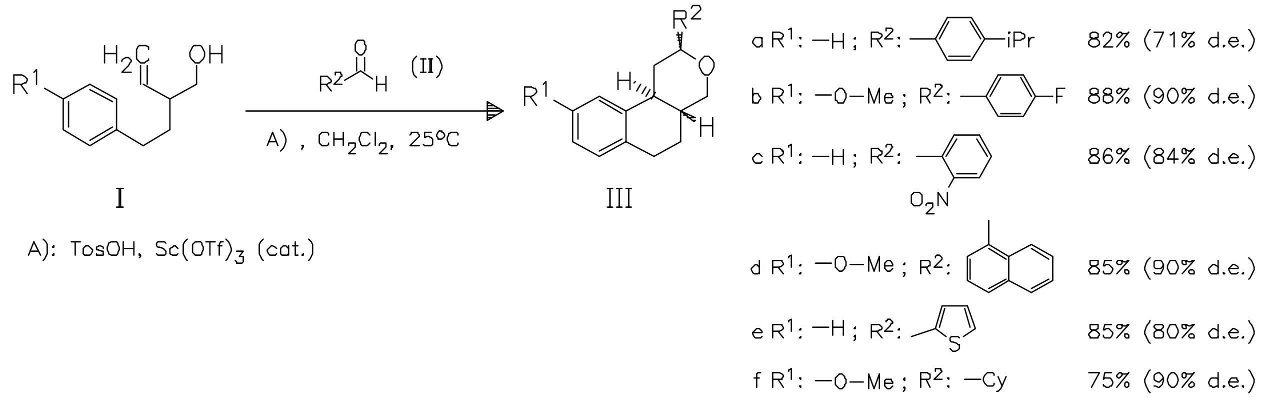
Fused pyridine derivatives
R 0450

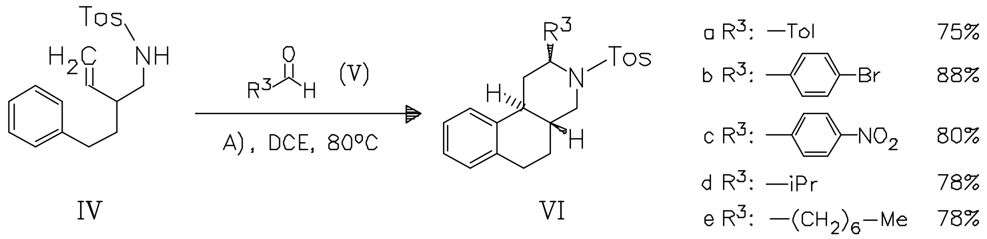
DOI: 10.1002/chin.201335154

35- 154

The Prins Cascade Cyclization Reaction for the Synthesis of Angularly-Fused Tetrahydropyran and Piperidine Derivatives.

— (REDDY*, B. V. S.; KUMAR, H.; BORKAR, P.; YADAV, J. S.; SRIDHAR, B.; Eur. J. Org. Chem. 2013, 10, 1993-1999, http://dx.doi.org/10.1002/ejoc.201201387 ; Nat. Prod. Chem., Indian Inst. Chem. Technol., Hyderabad 500 007, India; Eng.) — Roessler





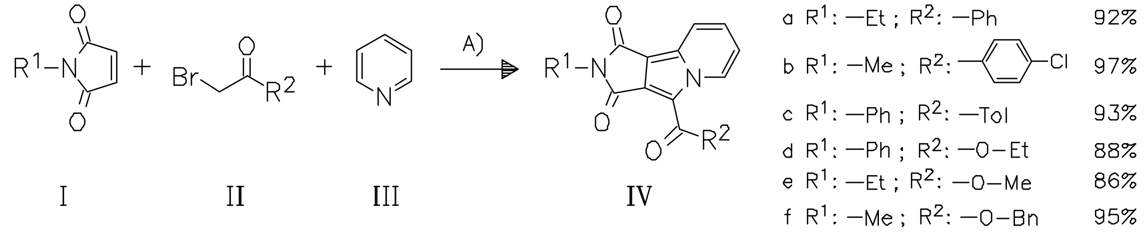
Fused pyridine derivatives
R 0450

DOI: 10.1002/chin.201335155

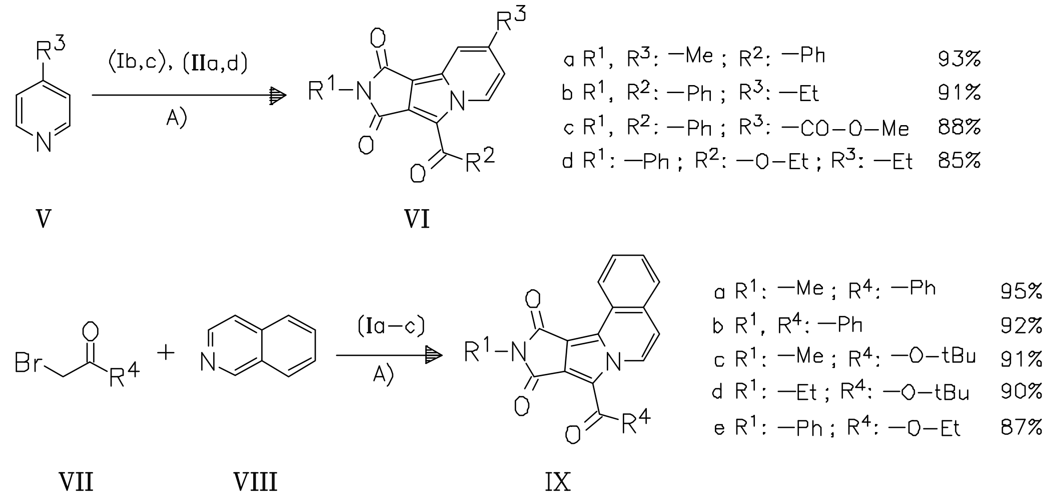
35- 155

One-Pot Synthesis of Pyrrolo[3,4-a]indolizine-1,3-diones Through [3 + 2] Cycloaddition-Oxidation Reaction Catalyzed by Cu^{II} Salt and O_2 as the Oxidant.

— (LIU, Y.; HU, H.-Y.; SU, X.-B.; SUN, J.-W.; CAO*, C.-S.; SHI, Y.-H.; Eur. J. Org. Chem. 2013, 10, 2020-2026, http://dx.doi.org/10.1002/ejoc.201201488 ; Coll. Chem. Chem. Eng., Xuzhou Norm. Univ., Jiangsu, Xuzhou 221116, Peop. Rep. China; Eng.) — Roessler



A): 1 atm O_2, 30 mol% $CuCl_2{\cdot}H_2O$ (cat.), MeCN, reflux, [24 h]



Fused pyridine derivatives

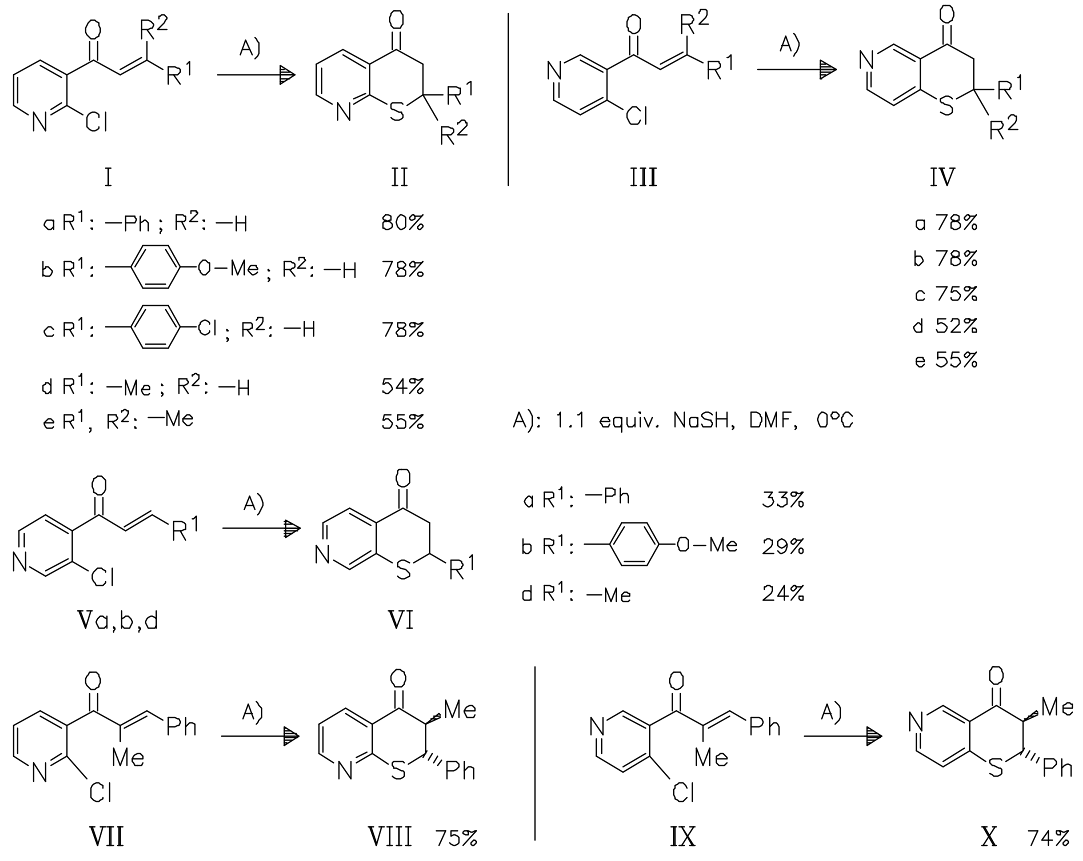
R 0450

DOI: 10.1002/chin.201335156

35- 156

A Convenient Synthesis of 2,3-Dihydro-4H-thiopyrano[2,3-b]-, -[2,3-c]-, or -[3,2-c]pyridin-4-ones by the Reaction of the Corresponding 1-(Chloropyridinyl)alk-2-en-1-ones with NaSH.

— (KOBAYASHI*, K.; IMAOKA, A.; Helv. Chim. Acta 96 (2013) 4, 624-632, http://dx.doi.org/10.1002/hlca.201200543 ; Dep. Chem. Biotechnol., Grad. Sch. Eng., Tottori Univ., Koyama, Tottori 680, Japan; Eng.) — B. Voigt

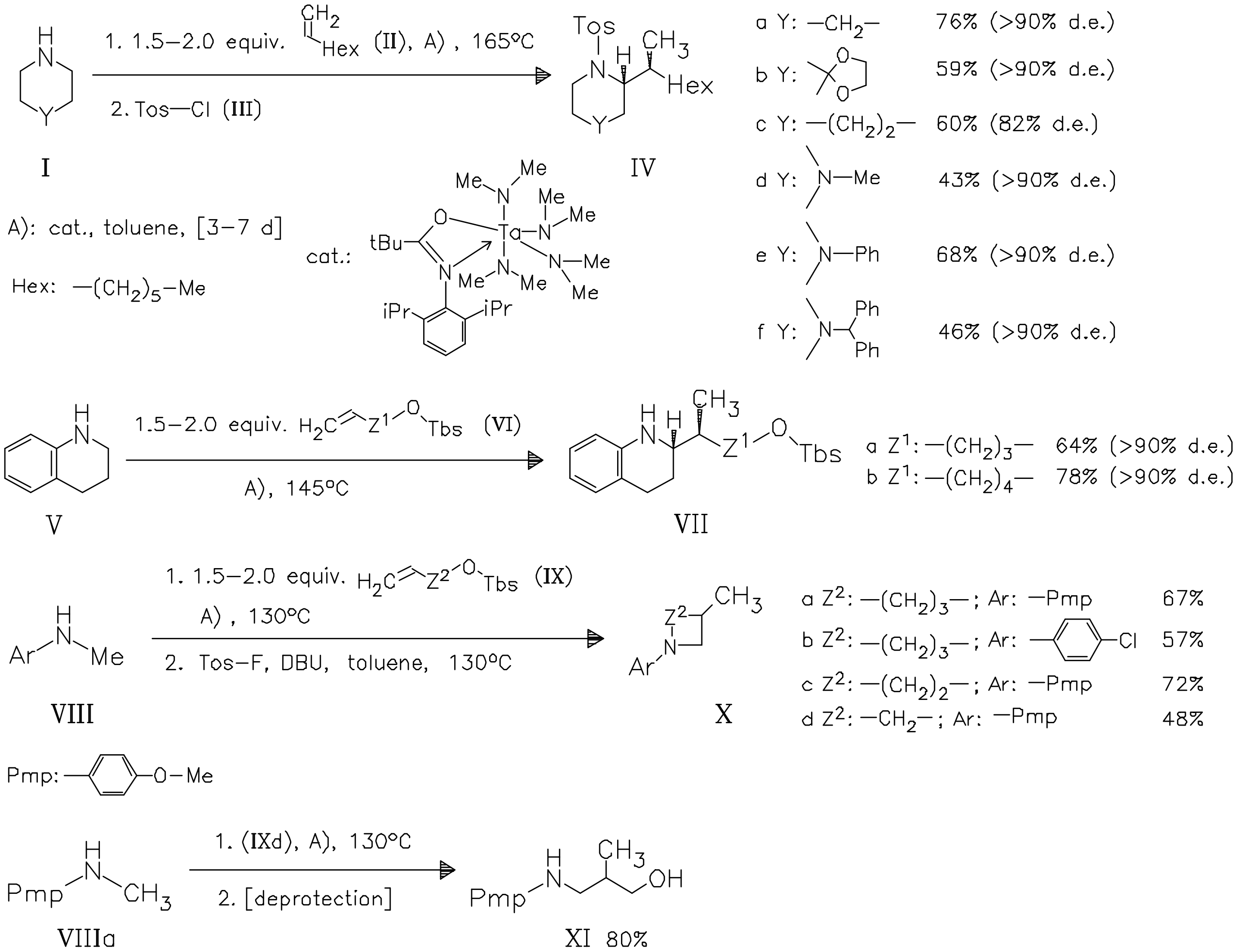


Fused pyridine derivatives
R 0450

DOI: 10.1002/chin.201335157

35- 157

Tantalum Catalyzed Hydroaminoalkylation for the Synthesis of α- and β-Substituted N-Heterocycles. — α-Alkylated piperidine, piperazine, and azepane products are prepared in an atom-economic reaction with excellent regio- and diastereoselectivity. β-Substituted N-heterocycles are synthesized in a one-pot alkylation/cyclization procedure generating 3-methylated azetidines, pyrrolidines, and piperidines. Furthermore, hydroaminoalkylation of an allylalcohol with (VIIIa) is achieved for the first time giving the corresponding methylated aminoalcohol (XI) after deprotection. — (PAYNE, P. R.; GARCIA, P.; EISENBERGER, P.; YIM, J. C.-H.; SCHAFER*, L. L.; Org. Lett. 15 (2013) 9, 2182-2185, http://dx.doi.org/10.1021/ol400729v ;
Dep. Chem., Univ. British Columbia, Vancouver, B. C. V6T 1Z1, Can.; Eng.) —
M. Duhs



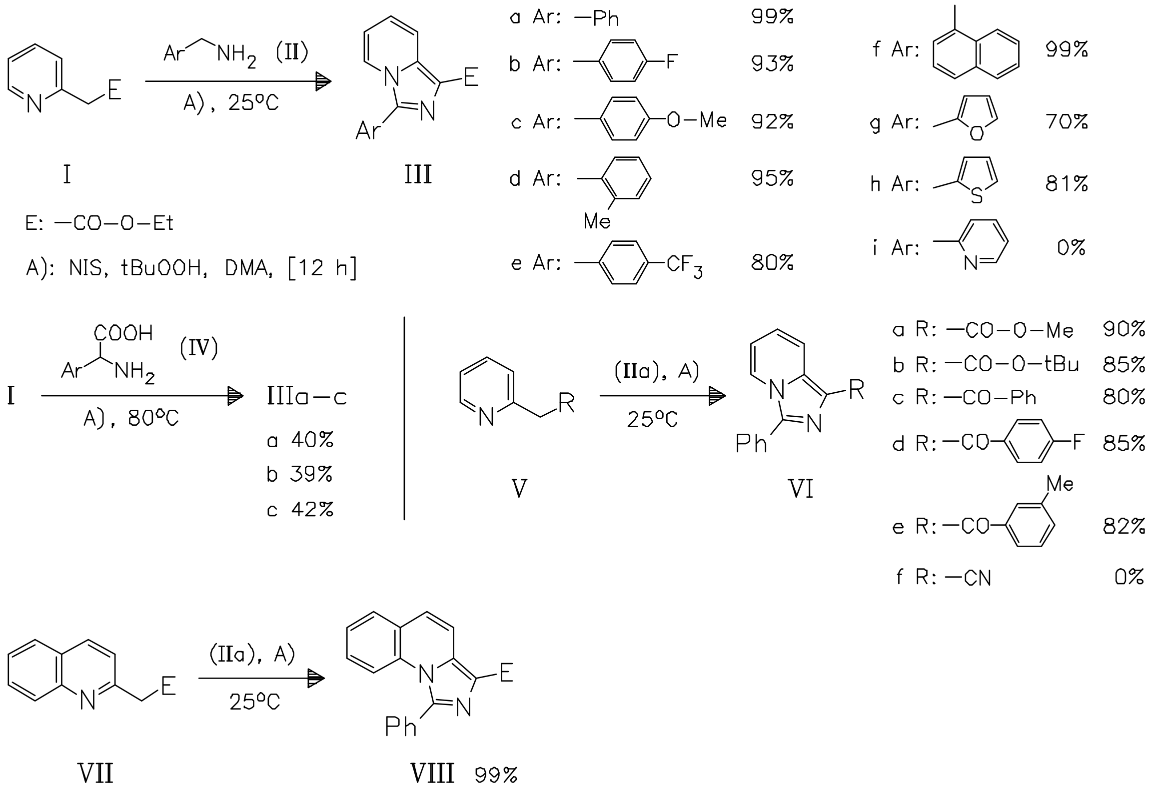
Fused pyridine derivatives

R 0450

DOI: 10.1002/chin.201335158

35- 158

Mild Metal-Free Sequential Dual Oxidative Amination of C(sp^3)—H Bonds: Efficient Synthesis of Imidazo[1,5-a]pyridines. — The reaction proceeds via two oxidative C—N couplings and one oxidative dehydrogenation. No inert atmosphere and dry solvents are required and water and alcohol are the only waste products. Broad substrate scope is shown. A carbonyl group in the side chain is needed as the substrate (Vf) with the cyano-group fails to react. — (YAN, Y.; ZHANG, Y.; ZHA, Z.; WANG*, Z.; Org. Lett. 15 (2013) 9, 2274-2277, http://dx.doi.org/10.1021/ol4008487 ; Hefei Natl. Lab. Phys. Sci. Microscale, Univ. Sci. Technol. China, Hefei 230026, Peop. Rep. China; Eng.) — Y. Steudel



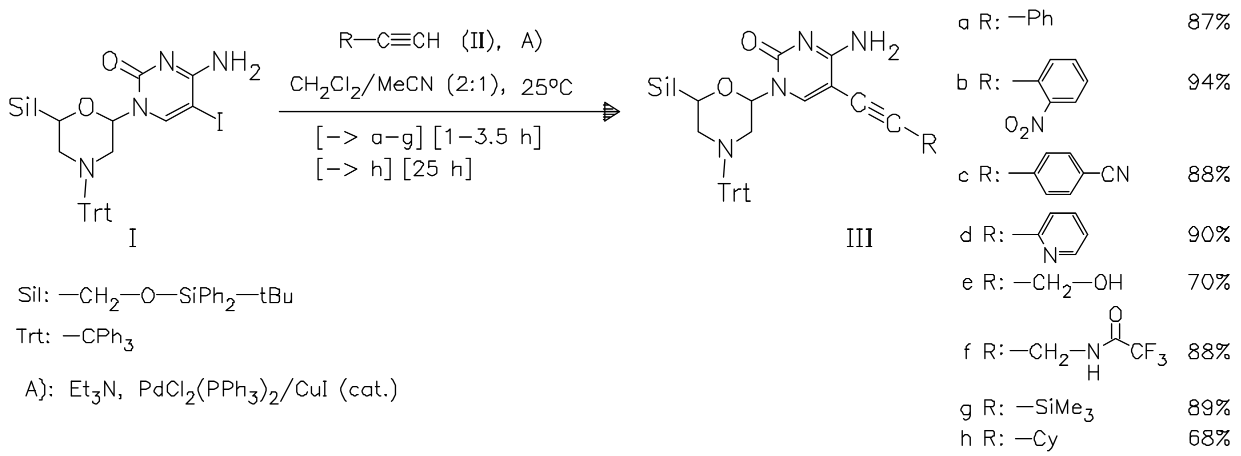
Pyrimidine derivatives

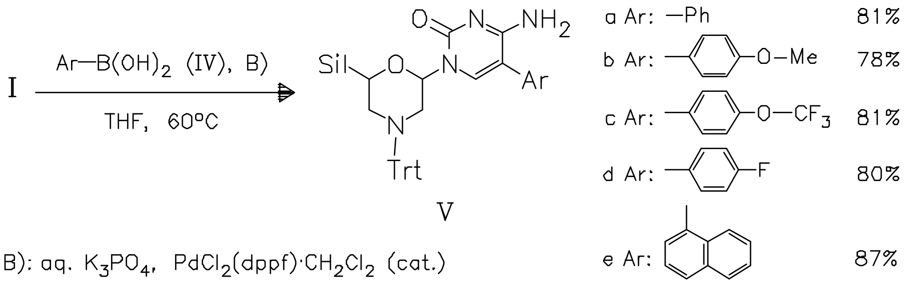
R 0510

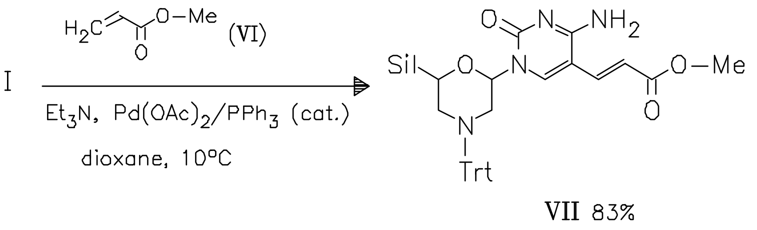
DOI: 10.1002/chin.201335159

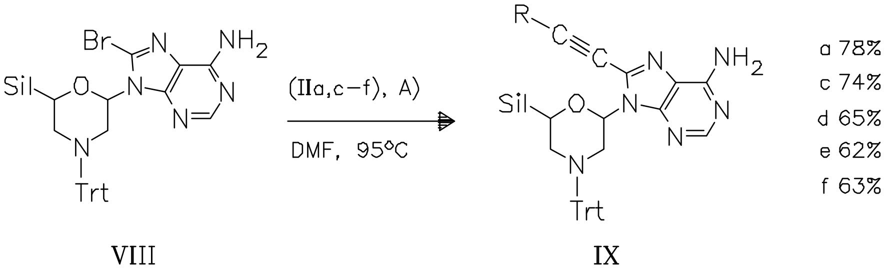
35- 159

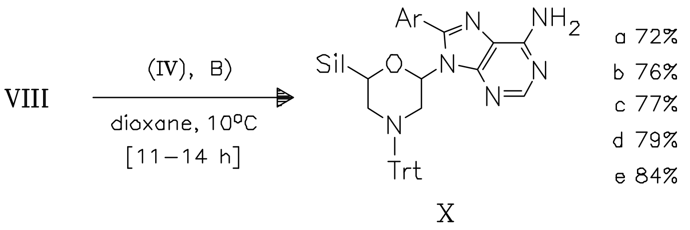
Synthesis of Nucleobase-Functionalized Morpholino-Modified Nucleoside Monomers Through Palladium-Catalyzed Cross-Coupling Reactions. — The corresponding halogenated title nucleoside monomers are converted via the Sonogashira and Suzuki cross-coupling reaction to a wide range of different substituted C-C-bond coupled products. During their study on the Heck coupling reaction of compound (I), the authors discovered that a Michael addition between (I) and methyl acrylate or acrylonitrile can also take place. — (NANDI, B.; PATTANAYAK, S.; PAUL, S.; SINHA*, S.; Eur. J. Org. Chem. 2013, 7, 1271-1286, http://dx.doi.org/10.1002/ejoc.201201384 ; Dep. Org. Chem., Indian Assoc. Cultiv. Sci., Kolkata 700 032, India; Eng.) — M. Zastrow

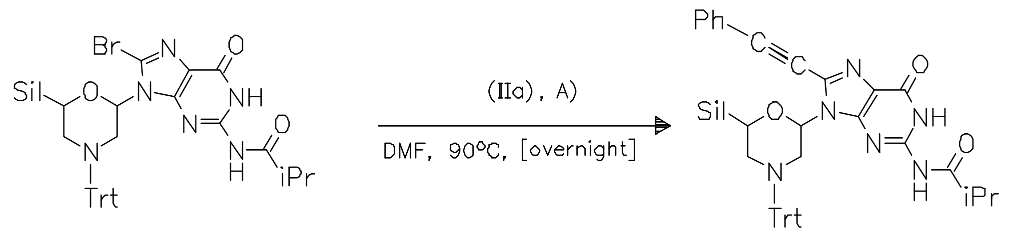

I
R—C≡CH (II), A)
CH2Cl2/MeCN (2:1), 25°C
[-> a-g] [1-3.5 h]
[-> h] [25 h]
III
Sil: —CH2—O—SiPh2—tBu
Trt: —CPh3
A): Et3N, PdCl2(PPh3)2/CuI (cat.)
a R: —Ph 87%
b R: O2N 94%
c R: CN 88%
d R: N 90%
e R: —CH2—OH 70%
f R: —CH2—NH—CO—CF3 88%
g R: —SiMe3 89%
h R: —Cy 68%


I
Ar—B(OH)2 (IV), B)
THF, 60°C
V
B): aq. K3PO4, PdCl2(dppf)·CH2Cl2 (cat.)
a Ar: —Ph 81%
b Ar: O—Me 78%
c Ar: O—CF3 81%
d Ar: F 80%
e Ar: 87%


I
(VI)
Et3N, Pd(OAc)2/PPh3 (cat.)
dioxane, 10°C
VII 83%


VIII
(IIa,c-f), A)
DMF, 95°C
IX
a 78%
c 74%
d 65%
e 62%
f 63%


VIII
(IV), B)
dioxane, 10°C
[11-14 h]
X
a 72%
b 76%
c 77%
d 79%
e 84%



XI XII 88%

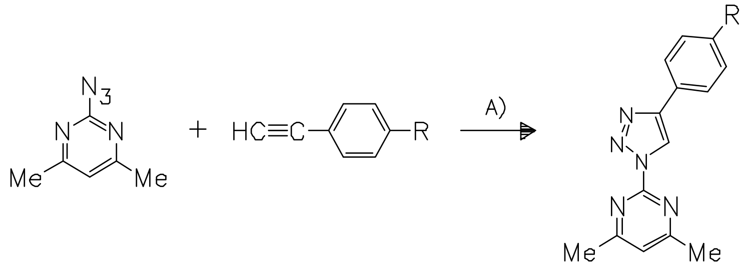
Pyrimidine derivatives
R 0510

DOI: 10.1002/chin.201335160

35- 160

One "Click" to Access Push—Triazole—Pull Fluorophores Incorporating a Pyrimidine Moiety: Structure—Photophysical Properties Relationships. —

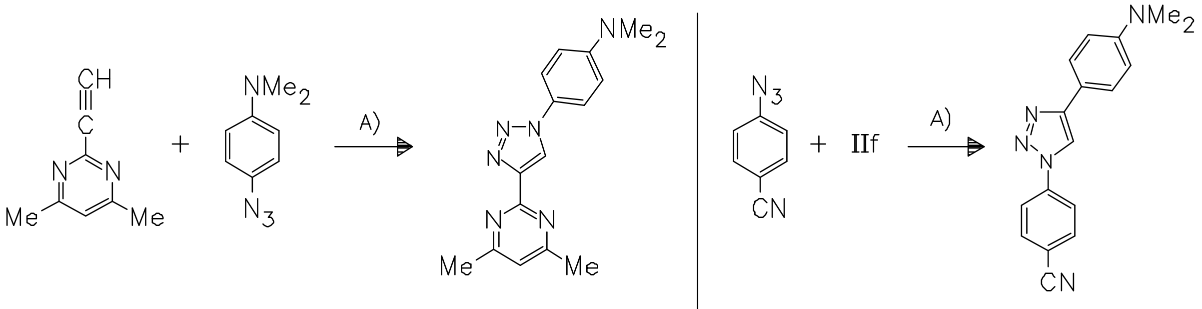
(CORNEC, A.-S.; BAUDEQUIN*, C.; FIOL-PETIT, C.; PLE, N.; DUPAS, G.; RAMONDENC, Y.; Eur. J. Org. Chem. 2013, 10, 1908-1915, http://dx.doi.org/10.1002/ejoc.201201033 ; Lab. Chim. Org. Bio-org. React. Anal., Inst. Natl. Sci. Appl. Rouen, Univ. Rouen, F-76821 Mont-Saint-Aignan, Fr.; Eng.) — Roessler



I II III

a	R: $-H$	89%
b	R: $-Me$	72%
c	R: $-CF_3$	75%
d	R: $-F$	82%
e	R: $-O-Me$	99%
f	R: $-NMe_2$	79%
g	R: $-NPh_2$	96%
h	R: $-NH_2$	58%

A): $CuSO_4 \cdot 5H_2O$/sodium ascorbate (cat.), tBuOH/H_2O (1:1), 60°C, [72 h]



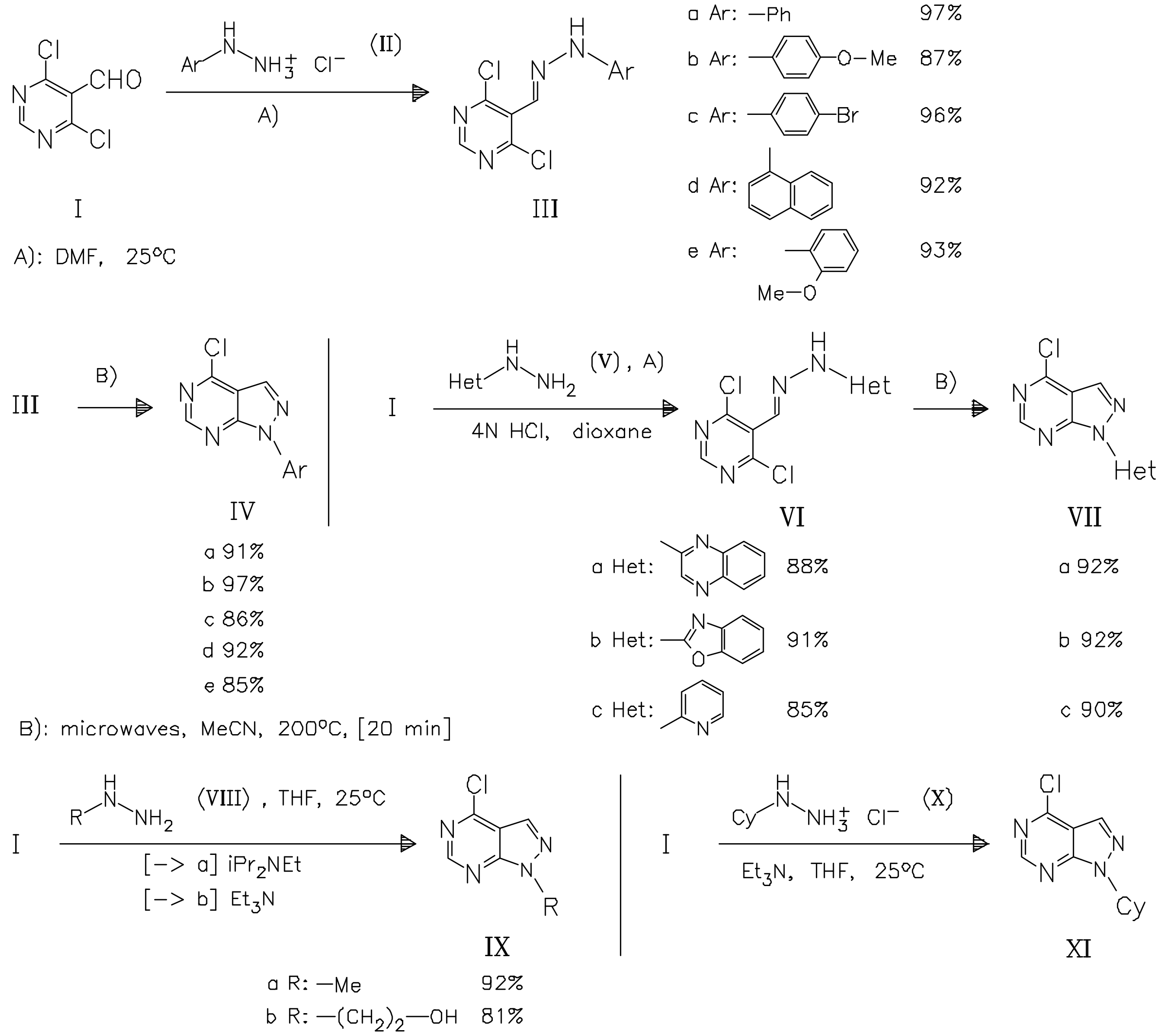
IV V VI 45% VII VIII 10%

Fused pyrimidine derivatives
R 0515

DOI: 10.1002/chin.201335161

35- 161

Selective Synthesis of 1-Substituted 4-Chloropyrazolo[3,4-d]pyrimidines. — The conversion of 4,6-dichloropyrimidine-5-carboxaldehyde (I) with hydrazines into 1-substituted pyrazolopyrimidines is presented. For aromatic hydrazines, the conversion proceeds via a two-step procedure carried out in the absence of a base. For aliphatic hydrazines, the reaction sequence proceeds as a single step in the presence of an external base. — (BABU, S.; MORRILL, C.; ALMSTEAD, N. G.; MOON*, Y.-C.; Org. Lett. 15 (2013) 8, 1882-1885, http://dx.doi.org/10.1021/ol4005382 ;
PTC Ther., South Plainfield, NJ 07080, USA; Eng.) — Bartels

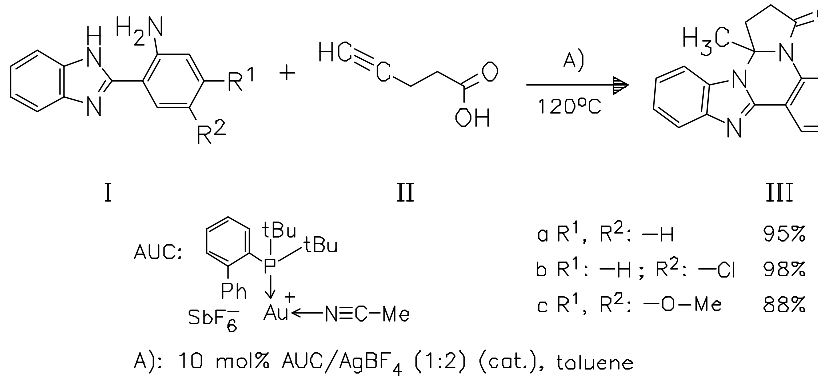


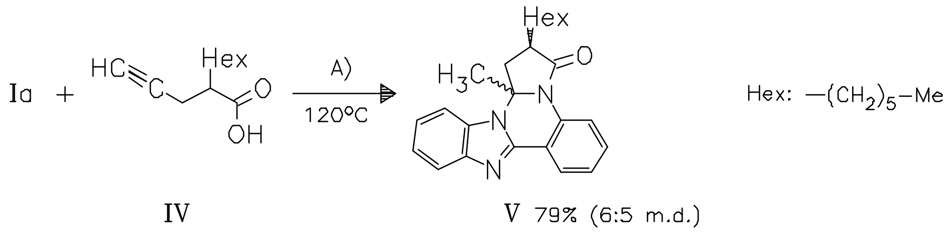
Fused pyrimidine derivatives
R 0515

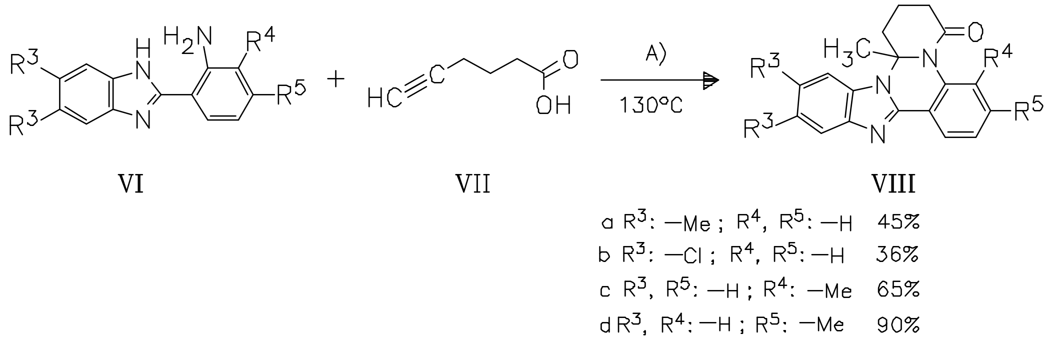
DOI: 10.1002/chin.201335162

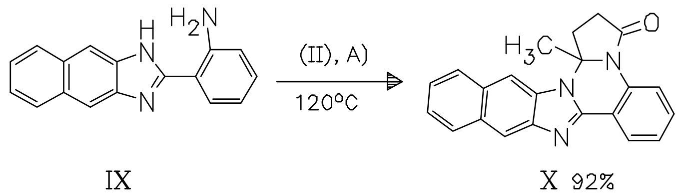
35- 162

Au(I)/Ag(I)-Catalyzed Cascade Approach for the Synthesis of Benzo[4,5]imidazo[1,2-c]pyrrolo[1,2-a]quinazolinones. — The method provides a facile and efficient access to various title compounds including homologues of type (VIII). The products are of biological interest. — (JI, X.; ZHOU*, Y.; WANG, J.; ZHAO, L.; JIANG, H.; LIU, H.; J. Org. Chem. 78 (2013) 9, 4312-4318, http://dx.doi.org/10.1021/jo400228g ; State Key Lab. Drug Res., Shanghai Inst. Mater. Med., Chin. Acad. Sci., Shanghai 201203, Peop. Rep. China; Eng.) — Jannicke







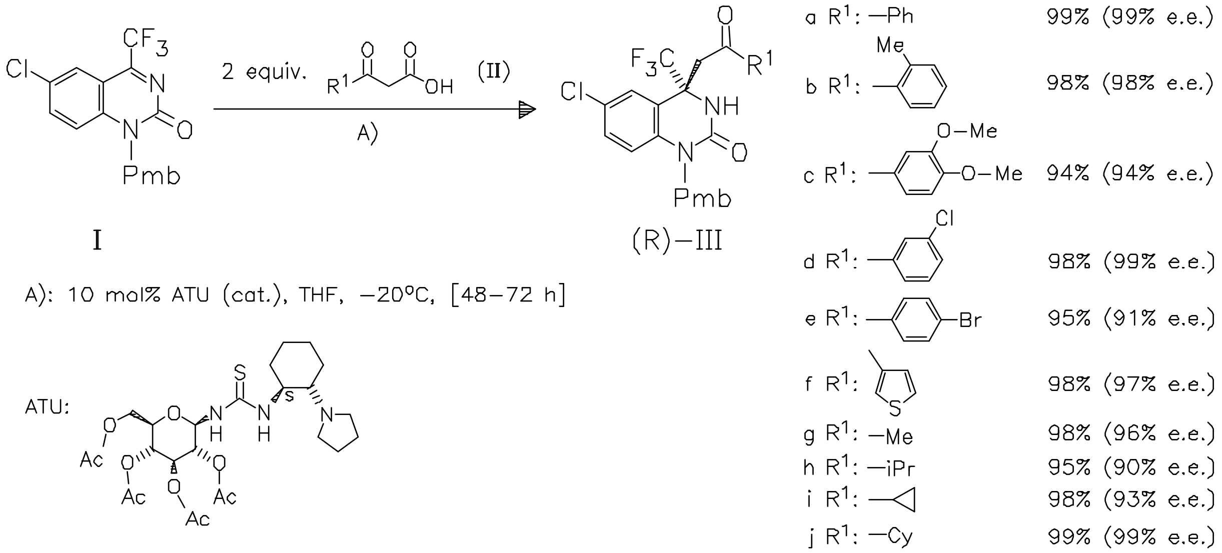


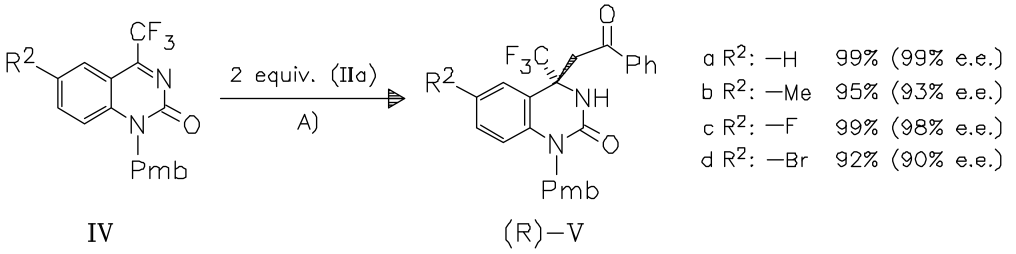
Fused pyrimidine derivatives
R 0515

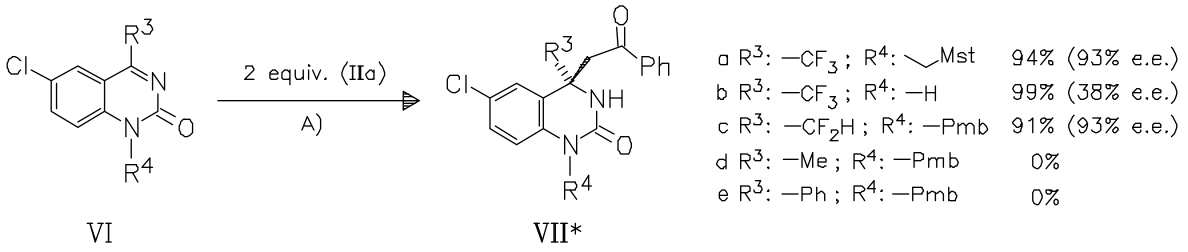
DOI: 10.1002/chin.201335163

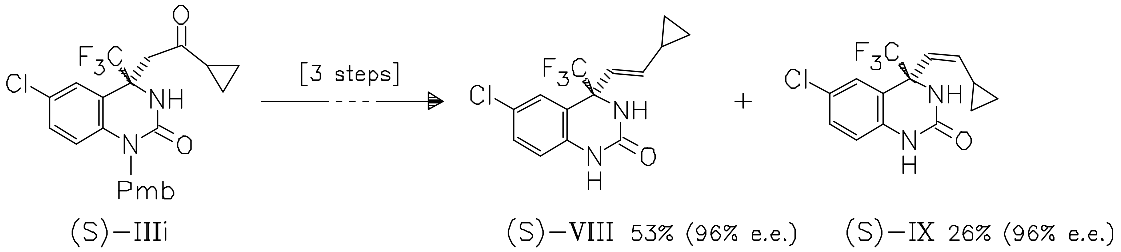
35- 163

Hydrogen-Bond-Directed Enantioselective Decarboxylative Mannich Reaction of β-Ketoacids with Ketimines: Application to the Synthesis of anti-HIV Drug DPC 083. — This is the first hydrogen-bond-directed enantioselective decarboxylative Mannich reaction of β-ketoacids with ketimines affording quinazolinone derivatives with quaternary stereocenters in high yields and with excellent enantioselectivities using saccharide-based amino-thiourea organocatalysts. The potential of this reaction is demonstrated in the short asymmetric synthesis of the anti-HIV drug DPC 083 ((S)-VIII) and its (Z)-isomer ((S)-IX) from compound ((S)-IIIi), which is prepared via the title reaction using ent-ATU as organocatalyst. — (YUAN, H.-N.; WANG, S.; NIE, J.; MENG, W.; YAO, Q.; MA*, J.-A.; Angew. Chem., Int. Ed. 52 (2013) 14, 3869-3873, http://dx.doi.org/10.1002/anie.201210361 ; Dep. Chem., Tianjin Univ., Tianjin 300072, Peop. Rep. China; Eng.) — Roessler







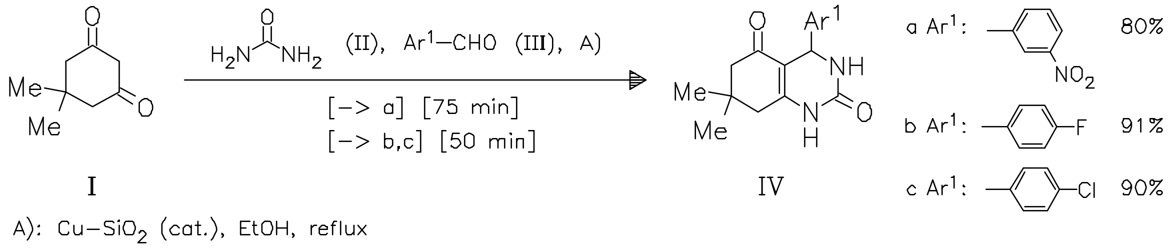


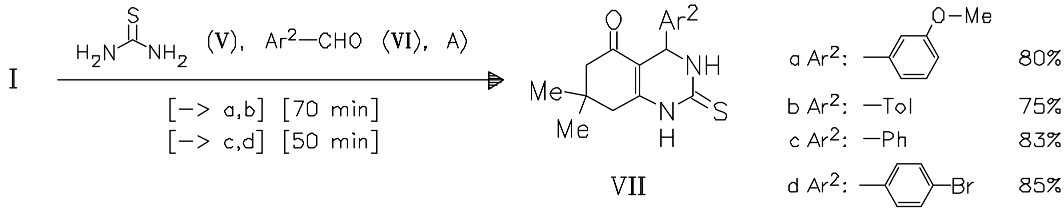
Fused pyrimidine derivatives
R 0515

DOI: 10.1002/chin.201335164

35- 164

Cu/SiO₂: A Recyclable Catalyst for the Synthesis of Octahydroquinazolinone. — A simple one-pot three-component condensation allows the access to the desired heterocyclic scaffold in a short time and with high yields. — (HERAVI*, M. M.; KARIMI, N.; HAMIDI, H.; OSKOOIE, H. A.; Chin. Chem. Lett. 24 (2013) 2, 143-144, http://dx.doi.org/10.1016/j.cclet.2013.01.003 ; Dep. Chem., Sch. Sci., Alzahra Univ., Vanak, Tehran, Iran; Eng.) — Mais



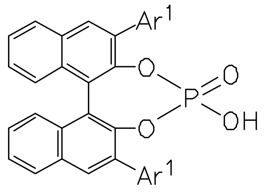


Pyrazine derivatives
R 0550

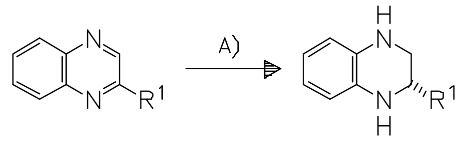
DOI: 10.1002/chin.201335165

35- 165

Cooperative Iron—Broensted Acid Catalysis: Enantioselective Hydrogenation of Quinoxalines and 2H-1,4-Benzoxazines. — Among the agents tested, chiral acids (I) and iron complex IIC are found to be the most efficient ones for the title reactions and the reductive amination investigated for the preparation of (Va). Other iron complexes such as (X) and (XI) afford higher yields, but a reduced enantioselectivity. — (FLEISCHER, S.; ZHOU, S.; WERKMEISTER, S.; JUNGE, K.; BELLER*, M.; Chem. - Eur. J. 19 (2013) 16, 4997-5003, http://dx.doi.org/10.1002/chem.201204236 ; Leibniz-Inst. Katal., Univ. Rostock, D-18059 Rostock, Germany; Eng.) — Lindner

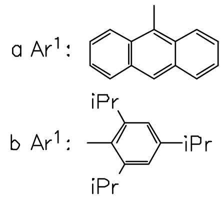


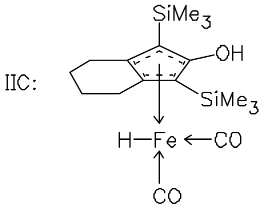
I



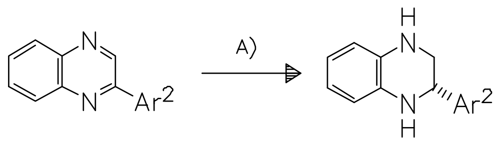
II (S)−III

a R^1: −Bu 94% (66% e.e.)
b R^1: −Cy 94% (76% e.e.)

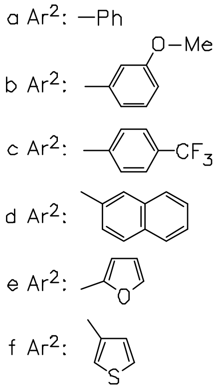




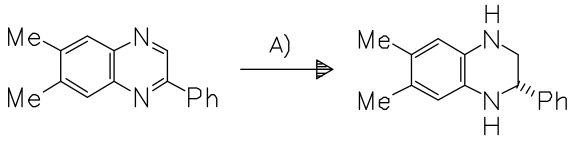
A): 5 bar H_2, 1mol% (R)−Ia/3 mol% IIC (cat.), toluene, 60°C, [24 h]



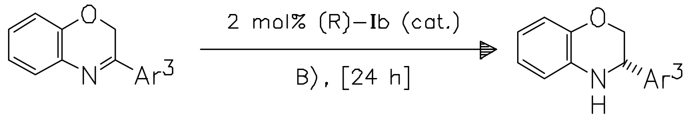
IV (S)−V



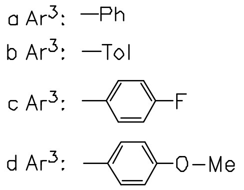
a 90% (88% e.e.)
b 83% (90% e.e.)
c 91% (84% e e.)
d 97% (94% e.e.)
e 95% (60% e.e.)
f 96% (88% e.e.)



VI (S)−VII 80% (76% e.e.)

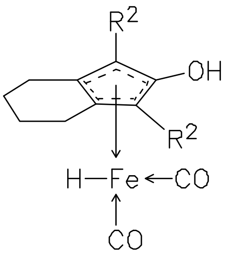


VIII (S)−IX



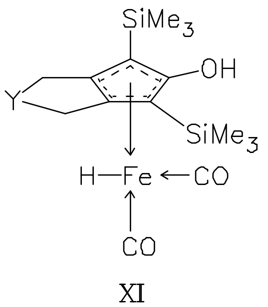
a 90% (74% e.e.)
b 76% (60% e.e.)
c 74% (68% e.e.)
d 69% (58% e.e.)

B): 5 bar H_2, 5 mol% IIC (cat.), toluene, 60°C



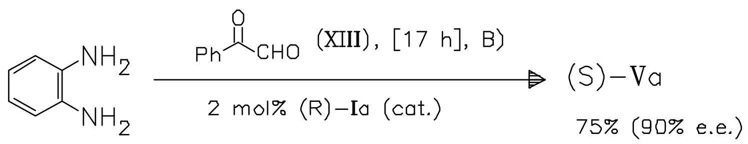
a R^2: $-SiMe_2-iPr$
b R^2: $-SiMe_2-Cy$
c R^2: $-SiEt_3$

X



a Y: −O−
b Y: $-CH_2-$

XI



XII

$$\mathrm{XII} \xrightarrow[\text{5 mol\% Xa (cat.)}]{\text{(XIII), C)}} \text{(S)-Va} \quad 96\%\ (84\%\ \text{e.e.})$$

$$\mathrm{XII} \xrightarrow[\text{5 mol\% XIa (cat.)}]{\text{(XIII), C)}} \text{(S)-Va} \quad 90\%\ (84\%\ \text{e.e.})$$

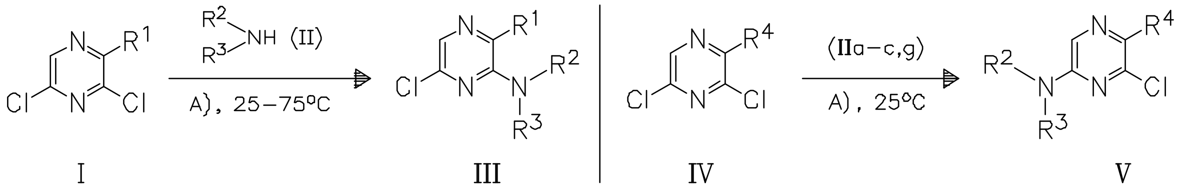
C): 5 bar H_2, 2 mol% (R)–Ia (cat.), toluene, 60°C, [17 h]

Pyrazine derivatives
R 0550

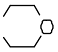
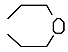
DOI: 10.1002/chin.201335166

35- 166

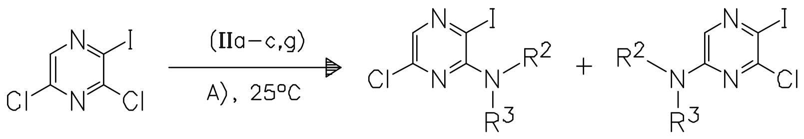
Studies on the Regioselective Nucleophilic Aromatic Substitution (S_NAr) Reaction of 2-Substituted 3,5-Dichloropyrazines. — An electron-withdrawing group in 2-position of the pyrazine directs the nucleophilic attack preferentially to the 5-position, whereas electron-donating groups in 2-position promote the substitution at the 3-position. — (SCALES*, S.; et al.; Org. Lett. 15 (2013) 9, 2156-2159, http://dx.doi.org/10.1021/ol4006695 ; La Jolla Lab., Pfizer Global Res. Dev., Pfizer Inc., San Diego, CA 92121, USA; Eng.) — M. Duhs



I III IV V

III			IV → V	
a	R^1: –Me ; R^2: –Bu ; R^3: –H	46%	a R^2: –Bu ; R^3: –H ; R^4: –CO–O–Me	74%
b	R^1: –Me ; R^2, R^3: –Et	59%	b R^2, R^3: –Et ; R^4: –CO–O–Me	59%
c	R^1: –Me ; R^2: –CH_2–CF_3 ; R^3: –H	0%	c R^2: –CH_2–CF_3 ; R^3: –H ; R^4: –CO–O–Me	53%
d	R^1: –O–Me ; R^2: –Bu ; R^3: –H	85%	d R^2: –Bu ; R^3: –H ; R^4: –CN	50%
e	R^1: –O–Me ; R^2, R^3: –Et	46%	e R^2, R^3: –Et ; R^4: –CN	56%
f	R^1: –O–Me ; R^2: –CH_2–CF_3 ; R^3: –H	46%	f R^2: –CH_2–CF_3 ; R^3: –H ; R^4: –CN	62%
g	R^1: –O–Me ; R^2–R^3: 	82%	g R^2–R^3:  ; R^4: –CN	69%

A): CsF, DMSO



VI VII VIII

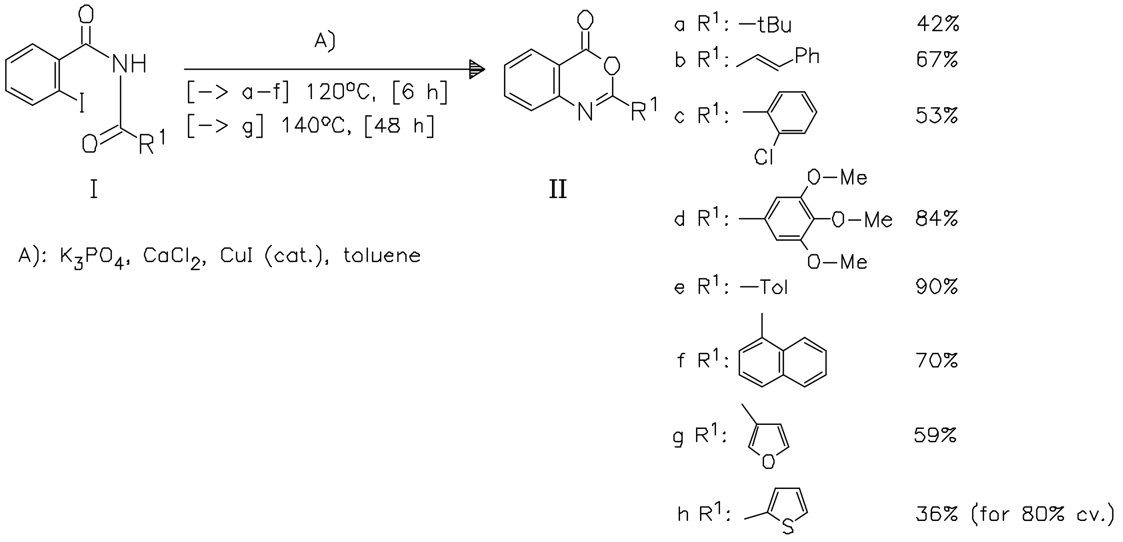
	VII	VIII
a	54%	21%
b	51%	20%
c	42%	11%
g	59%	19%

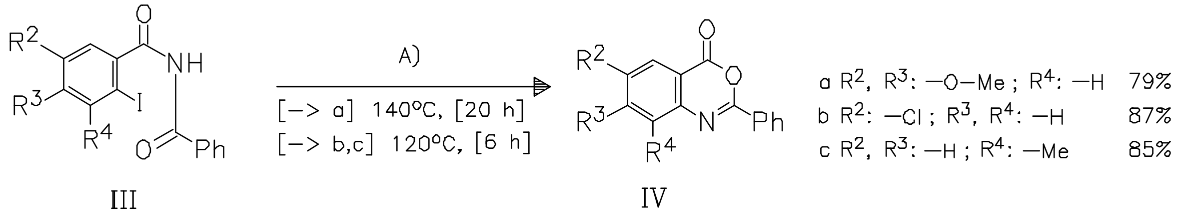
Oxazine derivatives
R 0595

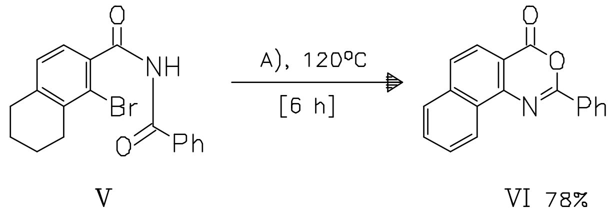
DOI: 10.1002/chin.201335167

35- 167

Copper-Catalyzed C—N Bond Formation/Rearrangement Sequence: Synthesis of 4H-3,1-Benzoxazin-4-ones. — [as potential biologically important agents]. — (GE, Z.-Y.; XU, Q.-M.; FEI, X.-D.; TANG, T.; ZHU*, Y.-M.; JI, S.-J.; J. Org. Chem. 78 (2013) 9, 4524-4529, http://dx.doi.org/10.1021/jo400515y ; Coll. Pharm. Sci., Soochow Univ., Suzhou 215123, Peop. Rep. China; Eng.) — Jannicke





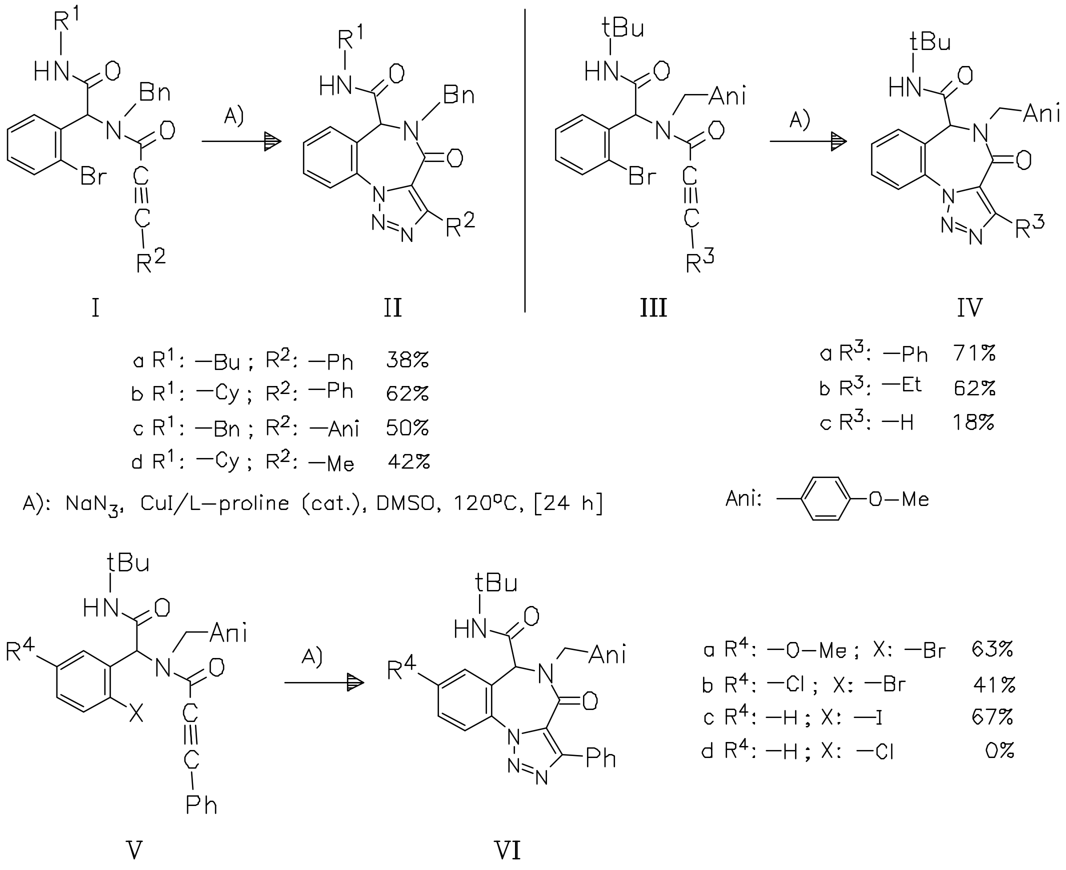


Multi-membered N-heterocycles
R 0690

DOI: 10.1002/chin.201335168

35- 168

Diversely Substituted Triazolo[1,5-a][1,4]benzodiazepinones: A Post-Ugi Copper-Catalyzed Tandem Azide—Alkyne Cycloaddition/Ullmann C—N Coupling Approach. — The authors also describe the synthesis of the Ugi four-component reaction adducts (I), (III), and (V). — (VACHHANI, D. D.; KUMAR, A.; MODHA, S. G.; SHARMA, S. K.; PARMAR, V. S.; VAN DER EYCKEN*, E. V.; Eur. J. Org. Chem. 2013, 7, 1223-1227, http://dx.doi.org/10.1002/ejoc.201201587 ; Lab. Org. Microwave-Assisted Chem., Dep. Chem., Univ. Leuven, B-3001 Leuven, Belg.; Eng.) — M. Zastrow



a R^1: —Bu ; R^2: —Ph 38%
b R^1: —Cy ; R^2: —Ph 62%
c R^1: —Bn ; R^2: —Ani 50%
d R^1: —Cy ; R^2: —Me 42%

a R^3: —Ph 71%
b R^3: —Et 62%
c R^3: —H 18%

A): NaN_3, CuI/L—proline (cat.), DMSO, 120°C, [24 h]

Ani: —C_6H_4—O—Me

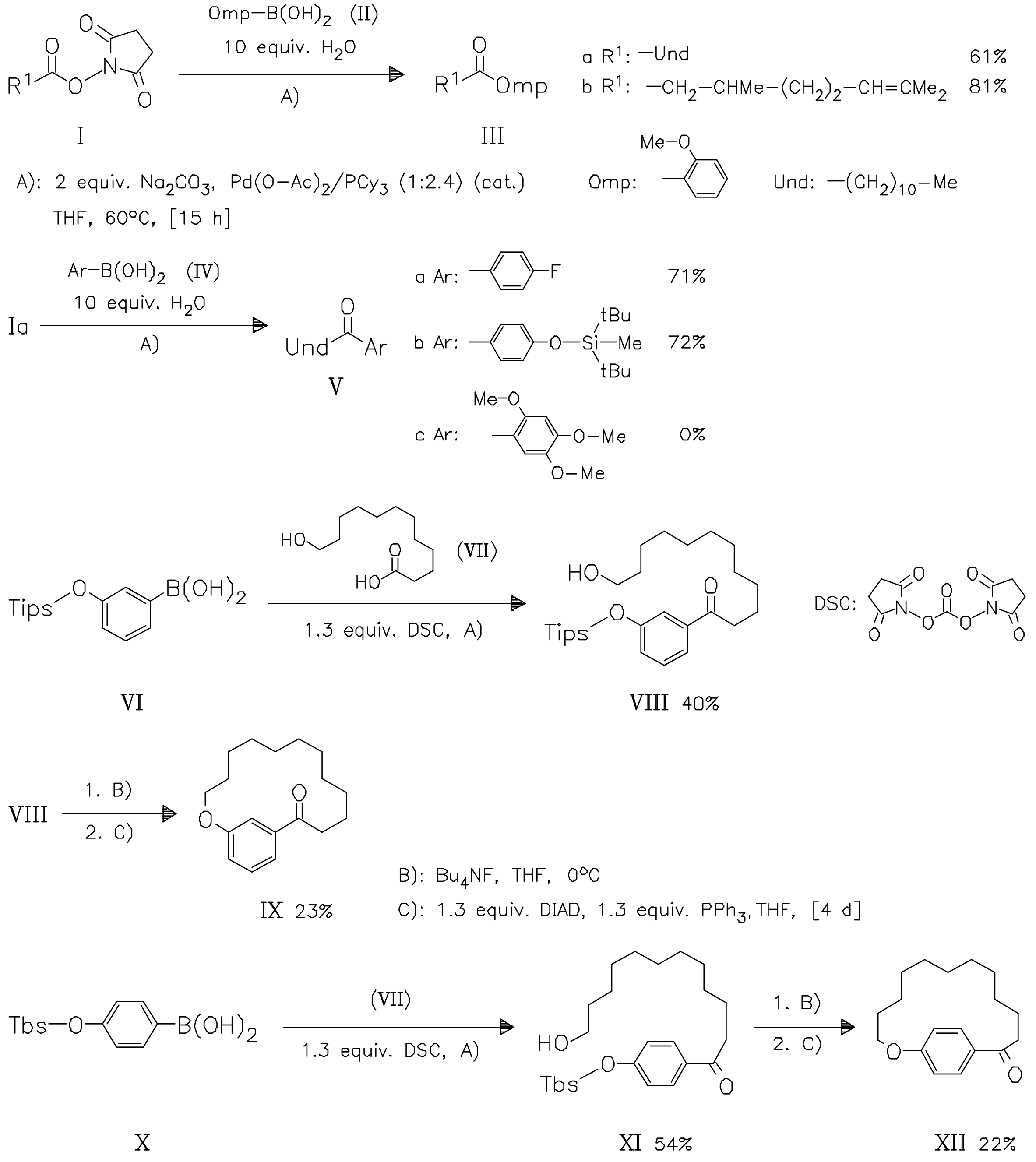
a R^4: —O—Me ; X: —Br 63%
b R^4: —Cl ; X: —Br 41%
c R^4: —H ; X: —I 67%
d R^4: —H ; X: —Cl 0%

Multi-membered O,S-heterocycles
R 0691

DOI: 10.1002/chin.201335169

35- 169

Synthesis of Macrocyclic Ketones Exploiting Palladium-Catalyzed Activation of Carboxylic Acids as an Enabling Step. — A novel synthesis of macrocyclic aryl-ketones via Pd-catalyzed cross-coupling of arylboronic acids and carboxylic acids, either before or in situ activated by the treatment with disuccinimidyl carbonate, is disclosed. The subsequent Mitsunobu reaction proceeds most suitable under high dilution conditions. — (KAPDI*, A. R.; FAIRLAMB, I. J. S.; New J. Chem. 37 (2013) 4, 961-964, http://dx.doi.org/10.1039/c3nj40943k ; Dep. Chem., Univ. York, Heslington, York YO10 5DD, UK; Eng.) — H. Haber



Organoelement Compounds

Organo-boron compounds

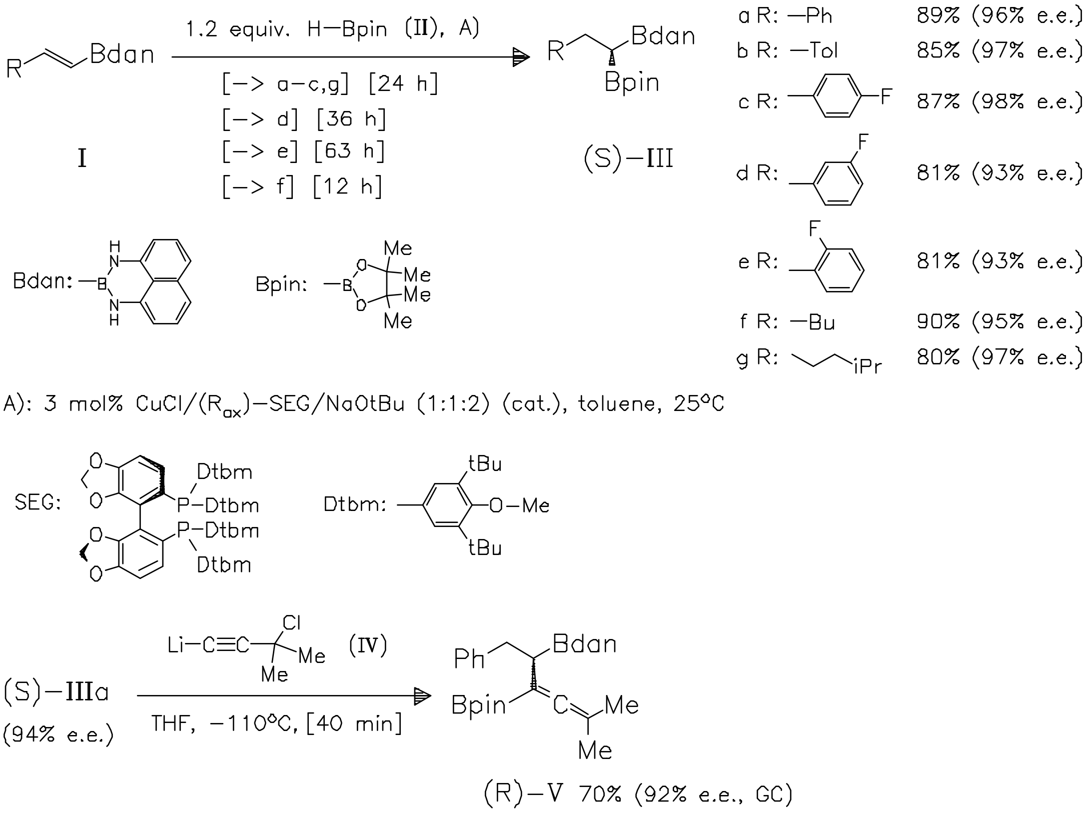
S 0040

DOI: 10.1002/chin.201335170

35- 170

Regio- and Enantioselective Copper(I)-Catalyzed Hydroboration of Borylalkenes: Asymmetric Synthesis of 1,1-Diborylalkanes. —

(FENG, X.; JEON, H.; YUN*, J.; Angew. Chem., Int. Ed. 52 (2013) 14, 3989-3992, http://dx.doi.org/10.1002/anie.201208610 ; Dep. Chem., Sung Kyun Kwan Univ., Suwon 440-746, S. Korea; Eng.) — Roessler



Organo-silicon compounds

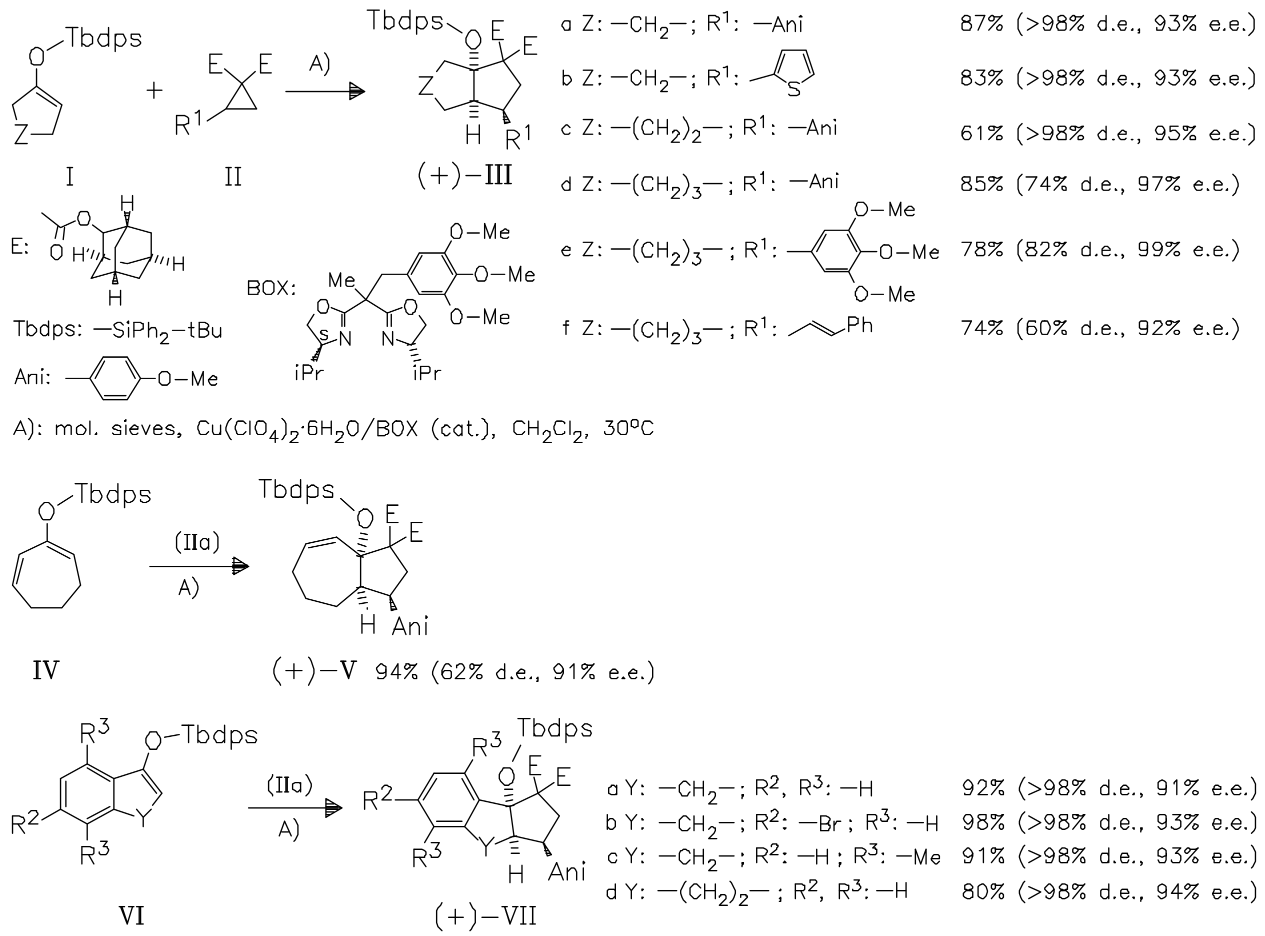
S 0060

DOI: 10.1002/chin.201335171

35- 171

Highly Enantioselective [3 + 2] Annulation of Cyclic Enol Silyl Ethers with Donor—Acceptor Cyclopropanes: Accessing 3a-Hydroxy [n.3.0]Carbobicycles.

— This is the first [3 + 2] annulation of enol silyl ethers with cyclopropanes. This method can also be used for the kinetic resolution of less reactive derivatives of (II), e. g. with R^1 = Ph. — (XU, H.; QU, J.-P.; LIAO, S.; XIONG, H.; TANG*, Y.; Angew. Chem., Int. Ed. 52 (2013) 14, 4004-4007, http://dx.doi.org/10.1002/anie.201300032 ; State Key Lab. Organomet. Chem., Shanghai Inst. Org. Chem., Chin. Acad. Sci., Shanghai 200032, Peop. Rep. China; Eng.) — Roessler



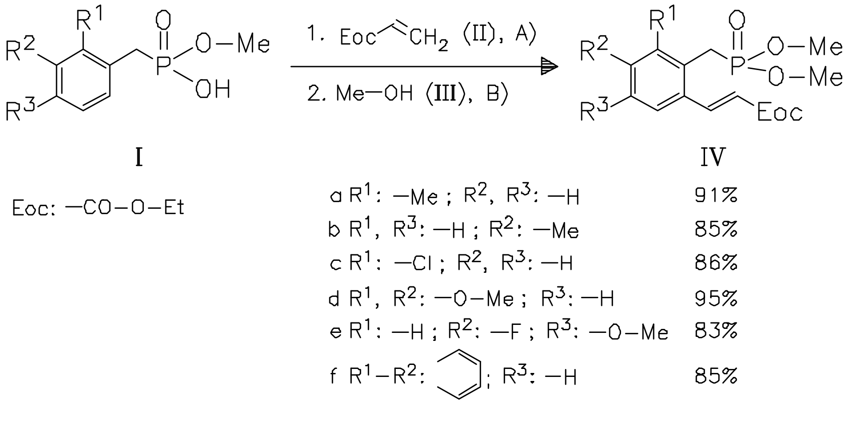
A): mol. sieves, $Cu(ClO_4)_2 \cdot 6H_2O$/BOX (cat.), CH_2Cl_2, 30°C

Organo-phosphorus compounds
S 0080

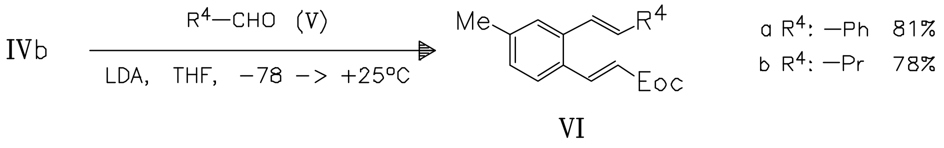
DOI: 10.1002/chin.201335172

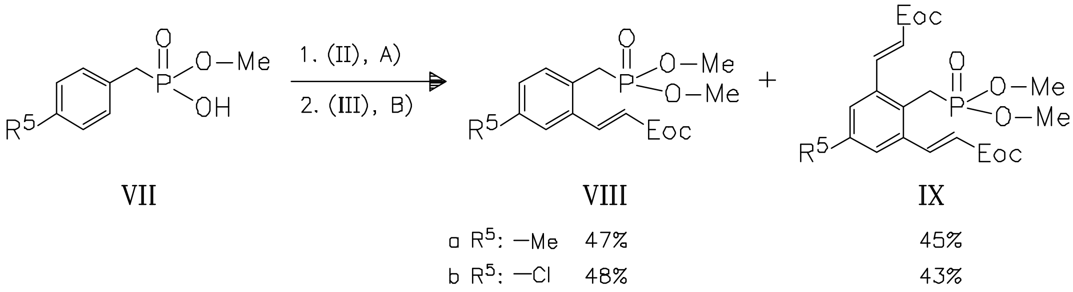
35- 172

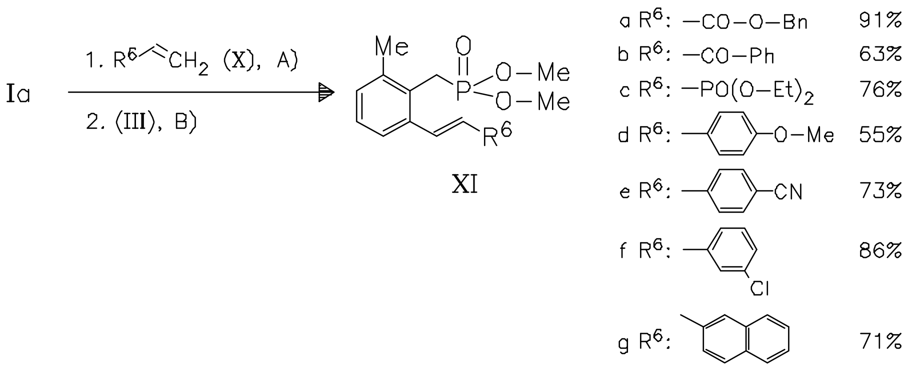
Palladium(II)-Catalyzed ortho-Olefination of Benzylic Phosphonic Monoesters. — A method for direct ortho-olefination of benzylic phosphonates based on Pd(II)-catalyzed C—H activation reactions using the phosphoryloxy directing group is described. — (MENG, X.; KIM*, S.; Org. Lett. 15 (2013) 8, 1910-1913, http://dx.doi.org/10.1021/ol400565r ; Div. Chem. Biol. Chem., Sch. Phys. Math. Sci., Nanyang Technol. Univ., Singapore 637371, Singapore; Eng.) — Bartels



A): AgOAc, $Pd(O-Ac)_2$ (cat.), dioxane, 110°C, [24 h]
B): Tms−CHN_2, 25°C







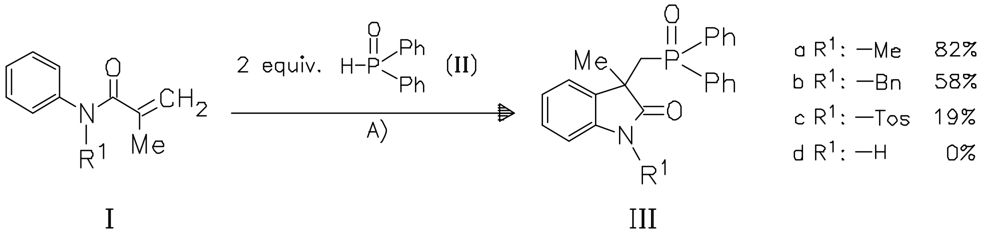
Organo-phosphorus compounds

S 0080

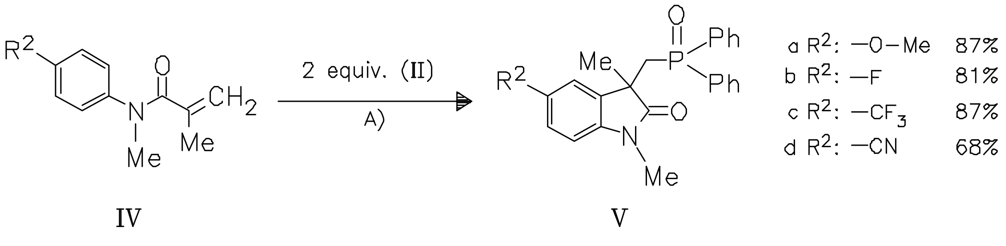
DOI: 10.1002/chin.201335173

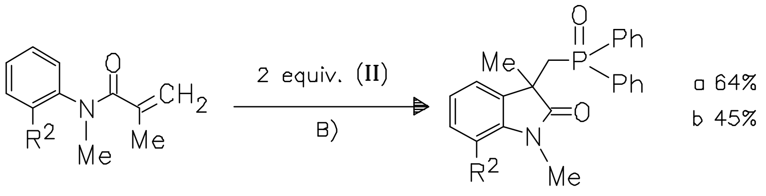
35- 173

Direct Annulations Toward Phosphorylated Oxindoles: Silver-Catalyzed Carbon-Phosphorus Functionalization of Alkenes. — (LI, Y.-M.; SUN, M.; WANG, H.-L.; TIAN, Q.-P.; YANG*, S.-D.; Angew. Chem., Int. Ed. 52 (2013) 14, 3972-3976, http://dx.doi.org/10.1002/anie.201209475 ; State Key Lab. Appl. Org. Chem., Lanzhou Univ., Lanzhou, Gansu 730000, Peop. Rep. China; Eng.) — Roessler



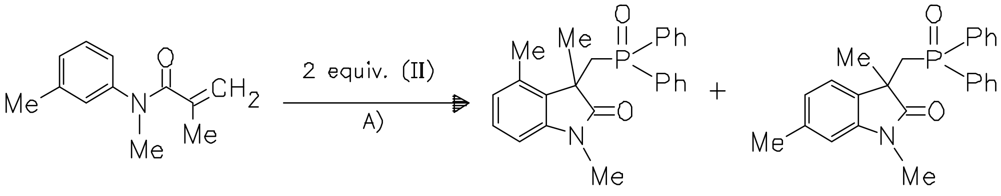
A): 0.5 equiv. $Mg(NO_3)_2 \cdot 6H_2O$, 5 mol% $AgNO_3$ (cat.), MeCN, 100°C, [12 h]





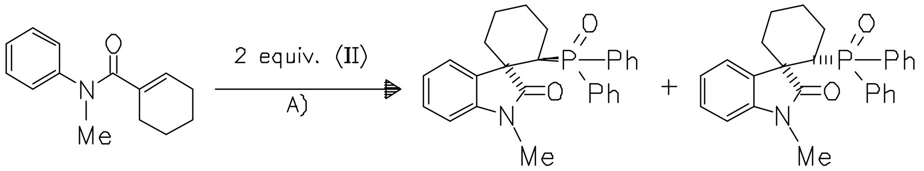
B): 0.5 equiv. $Mg(NO_3)_2 \cdot 6H_2O$
20 mol% $AgNO_3$ (cat.)
MeCN, 100°C, [12 h]

VIa,b VII



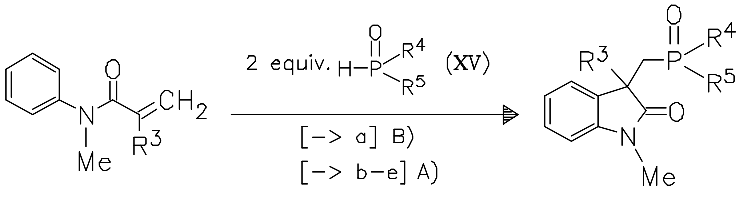
VIII IX X

78% (1.7:1)

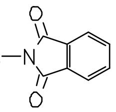


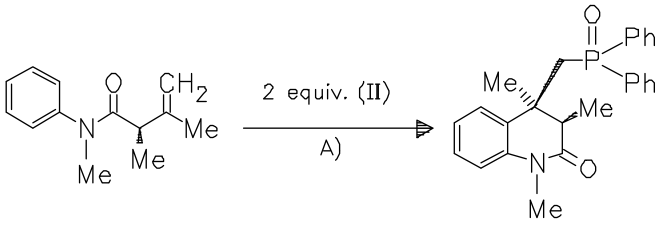
XI XII XIII

82% (3.8:1)

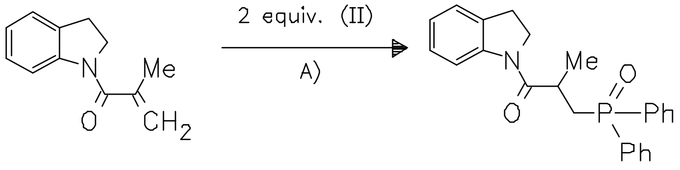


XIV XVI

a R^3, R^4, R^5: —Ph 62%
b R^3: $-CH_2-Ph$; R^4, R^5: —Ph 74%
c R^3: —H ; R^4, R^5: —Ph 0%
d R^3: $-CH_2-N$  ; R^4, R^5: —O—Et 80%
e R^3: —Me ; R^4: —Ph ; R^5: —O—Et 43%



(R)−XVII XVIII* 68% (36% d.e.)



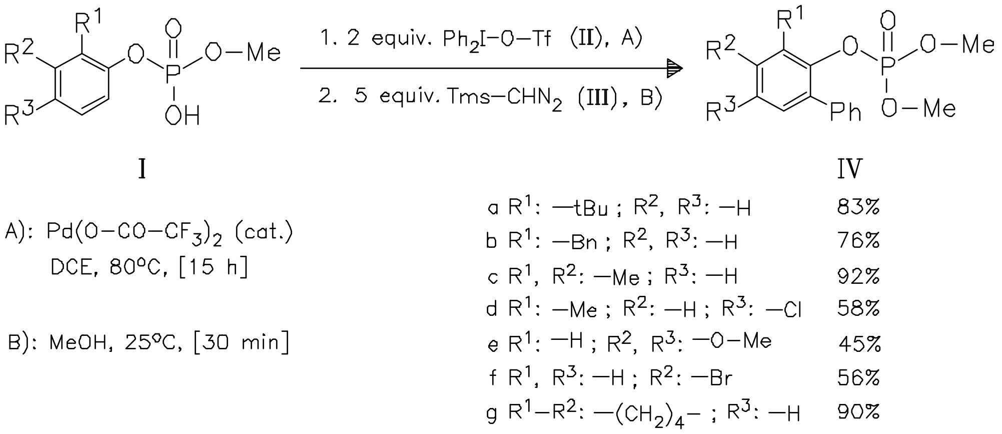
XIX XX 29%

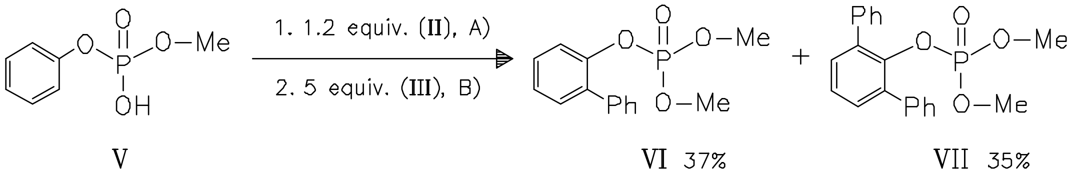
Organo-phosphorus compounds
S 0080

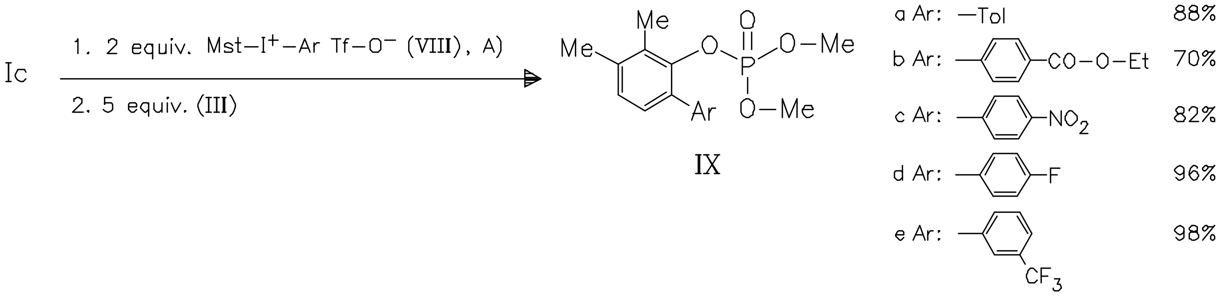
DOI: 10.1002/chin.201335174

35- 174

Pd(II)-Catalyzed ortho-Arylation of Aryl Phosphates and Aryl Hydrogen Phosphates with Diaryliodonium Triflates. — (CHAN, L. Y.; CHEONG, L.; KIM*, S.; Org. Lett. 15 (2013) 9, 2186-2189, http://dx.doi.org/10.1021/ol400732q ; Div. Chem. Biol. Chem., Sch. Phys. Math. Sci., Nanyang Technol. Univ., Singapore 637371, Singapore; Eng.) — M. Duhs





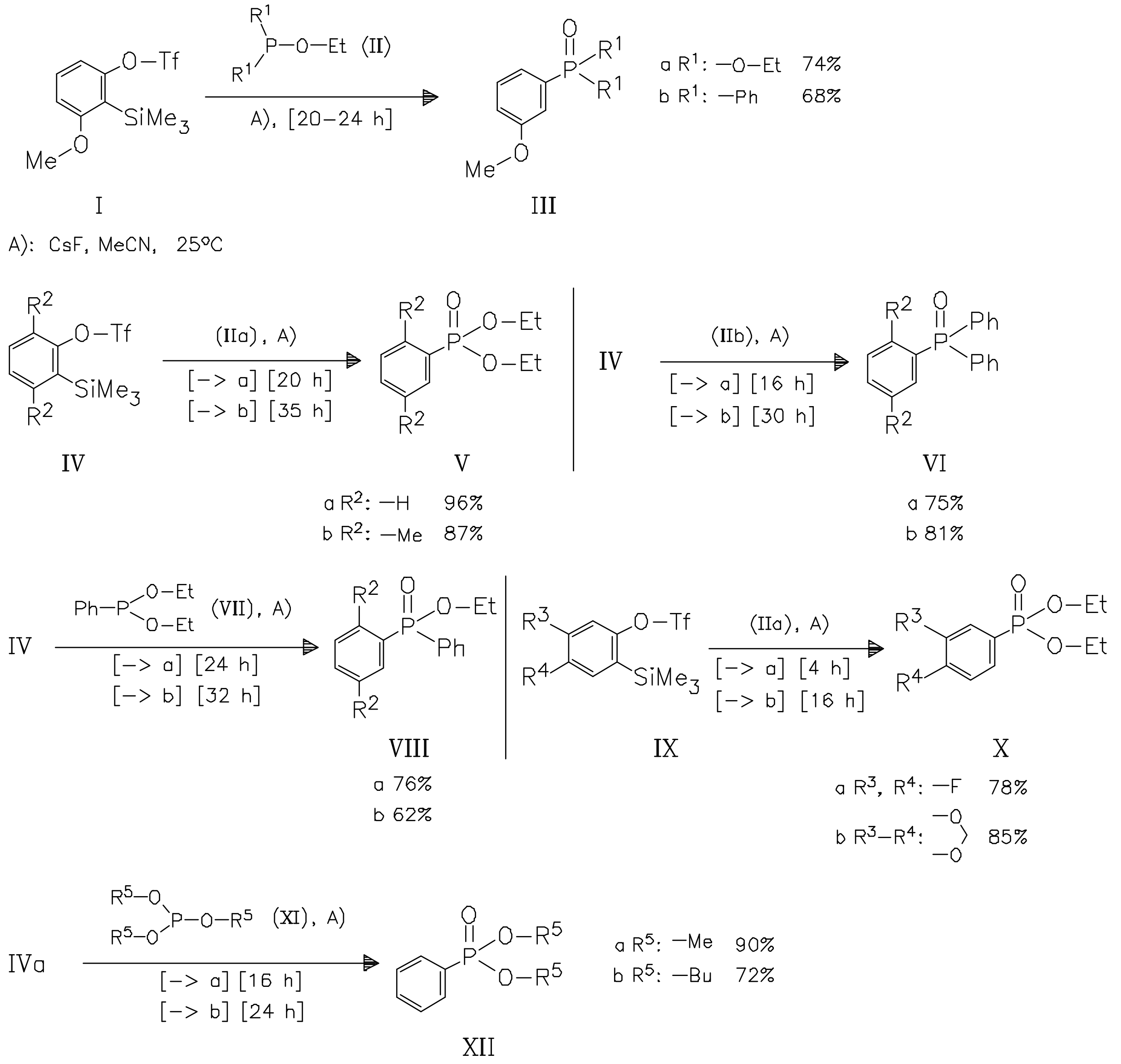


Organo-phosphorus compounds
S 0080

DOI: 10.1002/chin.201335175

35- 175

P-Arylation: Arynes to Aryl-Phosphonates, -Phosphinates, and -Phosphine Oxides. — The reaction proceeds under metal-free conditions and is efficient, regioselective, and general. — (DHOKALE, R. A.; MHASKE*, S. B.; Org. Lett. 15 (2013) 9, 2218-2221, http://dx.doi.org/10.1021/ol400780f ; Div. Org. Chem., Natl. Chem. Lab., Pune 411 008, India; Eng.) — Y. Steudel

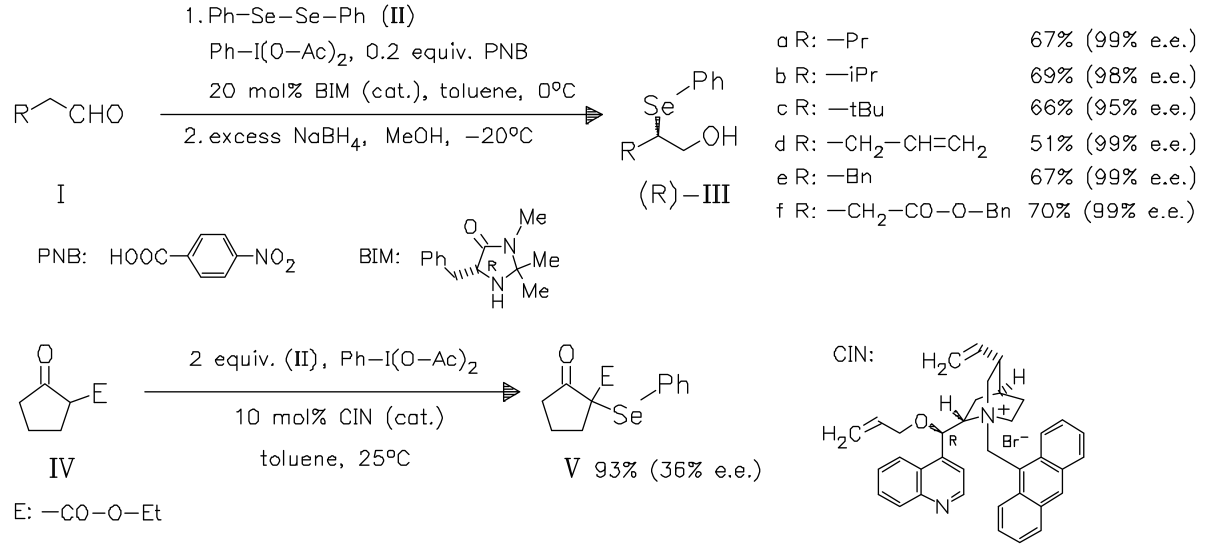


Organo-selenium compounds
S 0130

DOI: 10.1002/chin.201335176

35- 176

Highly Enantioselective Organocatalytic α-Selenylation of Aldehydes Using Hypervalent Iodine Compounds. — The successful α-selenylation methodology is also applicable to β-keto esters like (V). — (KAMLAR, M.; VESELY*, J.; Tetrahedron: Asymmetry 24 (2013) 5-6, 254-259, http://dx.doi.org/10.1016/j.tetasy.2013.02.008 ; Dep. Org. Chem., Charles Univ., CZ-128 43 Prague 2, Czech Republic; Eng.) — H. Haber

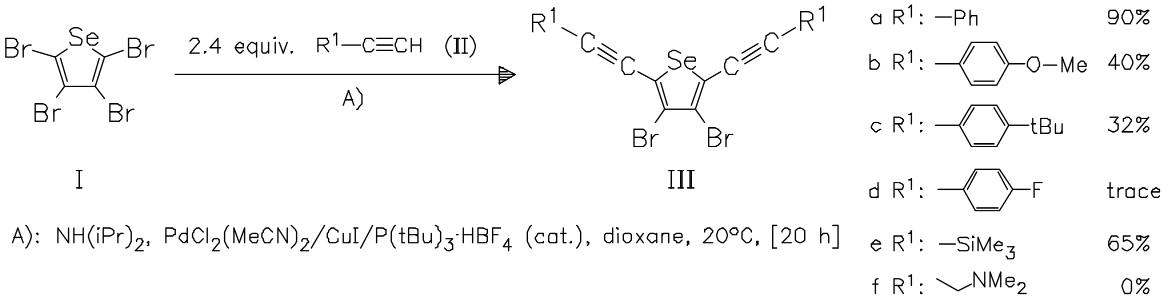


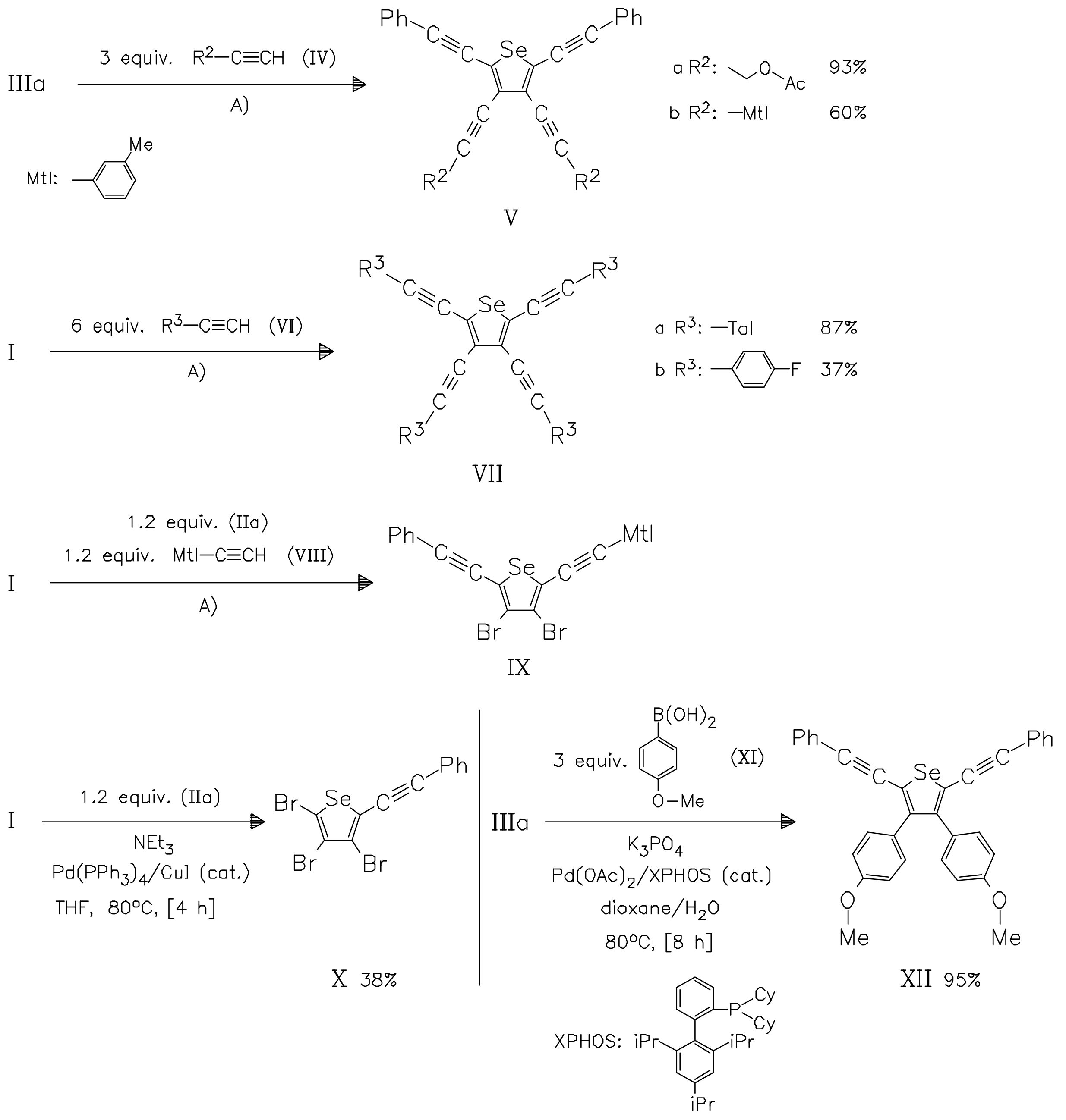
Organo-selenium compounds
S 0130

DOI: 10.1002/chin.201335177

35- 177

Synthesis of Alkynylated Selenophenes by Site-Selective Sonogashira Reactions of Tetrabromoselenophene. — This method can also be combined with Suzuki reactions to give access to other tetrasubstituted selenophenes, e. g. compound (XII). The unsymmetrical disubstituted selenophenes (IX) contain small amounts of the corresponding symmetrical disubstituted products. — (EHLERS, P.; DANG, T. T.; PATONAY, T.; VILLINGER, A.; LANGER*, P.; Eur. J. Org. Chem. 2013, 10, 2000-2007, http://dx.doi.org/10.1002/ejoc.201201440 ; Inst. Chem., Univ. Rostock, D-18059 Rostock, Germany; Eng.) — Roessler




IIIa
3 equiv. R²—C≡CH (IV)
A)
Mtl:
Me
Ph
Se
R²
V
a R²: O Ac 93%
b R²: —Mtl 60%
I
6 equiv. R³—C≡CH (VI)
A)
R³
VII
a R³: —Tol 87%
b R³: F 37%
I
1.2 equiv. (IIa)
1.2 equiv. Mtl—C≡CH (VIII)
A)
Mtl
Br
IX
I
1.2 equiv. (IIa)
NEt₃
Pd(PPh₃)₄/CuI (cat.)
THF, 80°C, [4 h]
X 38%
IIIa
B(OH)₂
3 equiv. (XI)
O—Me
K₃PO₄
Pd(OAc)₂/XPHOS (cat.)
dioxane/H₂O
80°C, [8 h]
XII 95%
XPHOS: iPr iPr
iPr
P Cy Cy

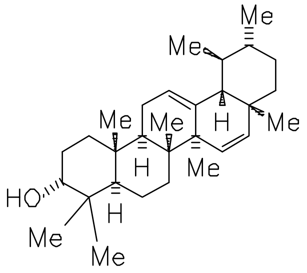
Natural Products

Terpenes
U 0200

DOI: 10.1002/chin.201335178

35- 178

A New Bioactive Ursane-Type Triterpenoid from Croton bonplandianum Bail. — New triterpernoid 3α-hydroxy-urs-12,15-diene (I) is isolated together with three known compounds. Compound (I) shows potent activity against five fungal pathogens. — (GHOSH*, P.; MANDAL, A.; RASUL, M. G.; J. Chem. Sci. (Bangalore, India) 125 (2013) 2, 359-364, http://dx.doi.org/10.1007/s12039-013-0387-9 ; Dep. Chem., Univ. North Bengal, Darjeeling 734 013, India; Eng.) — C. Cyrus



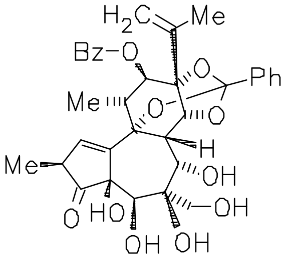
(+)−I*

Terpenes
U 0200

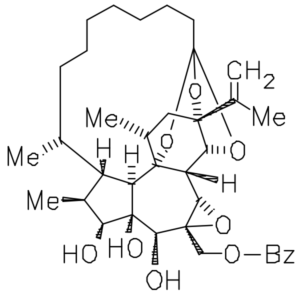
DOI: 10.1002/chin.201335179

35- 179

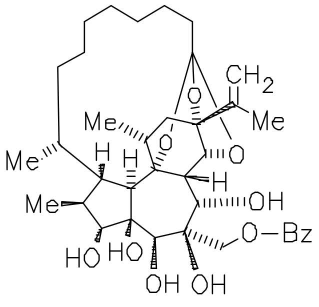
Daphnane-Type Diterpenes with Inhibitory Activities Against Human Cancer Cell Lines from Daphne genkwa. — Four new daphnane-type diterpenes, genkwadanes A-D (I)—(IV), resp., are isolated along with 19 known compounds from the flower buds of Daphne genkwa. All isolated compounds are screened for their cyctotoxicity against ten selected human cancer cell lines. Various of them exhibit significant activity. — (LI, F.; SUN, Q.; HONG, L.; LI, L.; WU, Y.; XIA, M.; IKEJIMA, T.; PENG, Y.; SONG*, S.; Bioorg. Med. Chem. Lett. 23 (2013) 9, 2500-2504, http://dx.doi.org/10.1016/j.bmcl.2013.03.025 ; Dep. Nat. Prod. Chem., Shenyang Pharm. Univ., Shenyang 110016, Peop. Rep. China; Eng.) — H. Toeppel



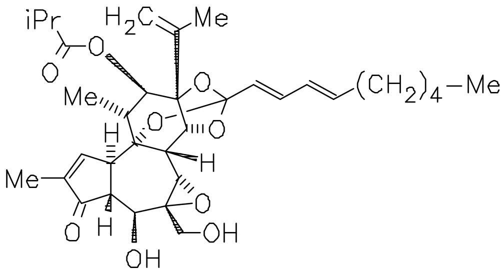
(+)−I



(+)−II



(+)−III



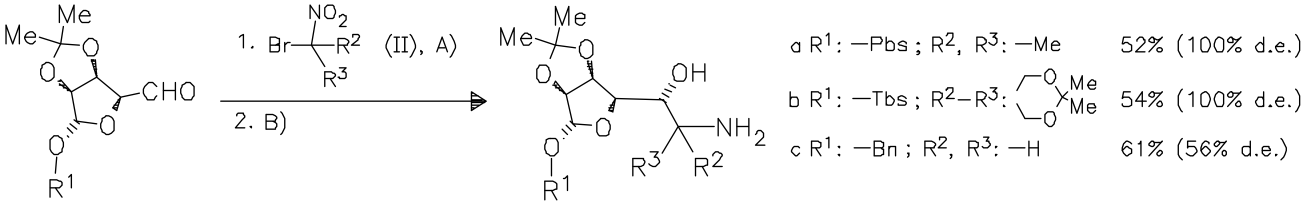
(+)−IV

Carbohydrates
U 0500

DOI: 10.1002/chin.201335180

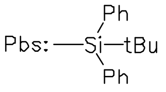
35- 180

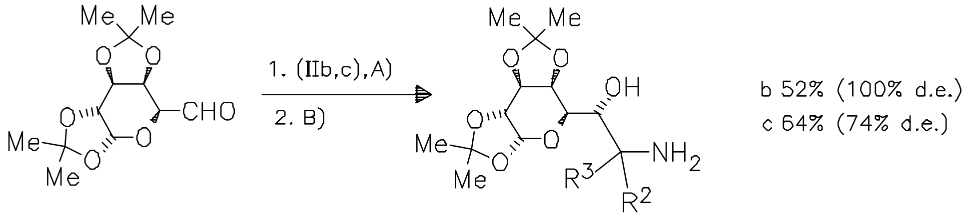
One-Pot Synthesis of Vicinal Aminoalkanols from Sugar Aldehydes. —
A novel indium catalyzed Henry reaction followed by nitro group reduction gives the title compounds in good to excellent stereoselectivities. Furthermore, the novel products (IX) and (XI) can be easily prepared from the sugar aldehydes in two steps. — (SOENGAS, R. G.; SILVA, A. M. S.; Tetrahedron 69 (2013) 16, 3425-3431, http://dx.doi.org/10.1016/j.tet.2013.02.072 ; Dep. Chem., Univ. Aveiro, P-3810 Aveiro, Port.; Eng.) — M. Zastrow



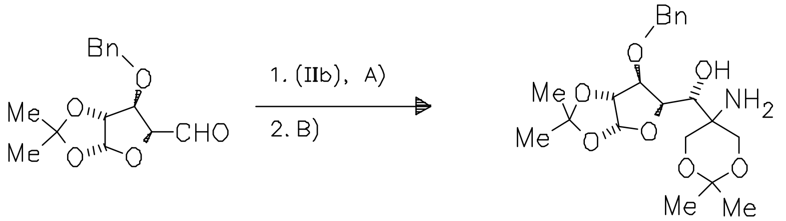
I* III*

A): ultrasound, Zn, In (cat.), THF
B): iPrOH, 1N aq. HCl, Zn, 25°C, [14 h]

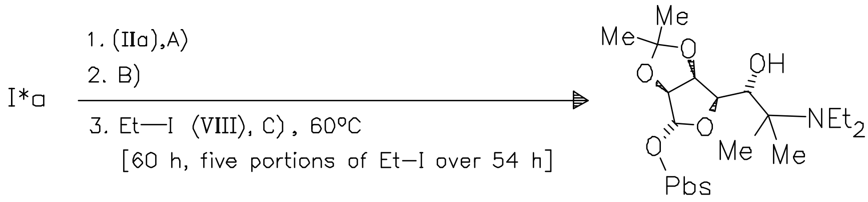




IV* (−)−V*

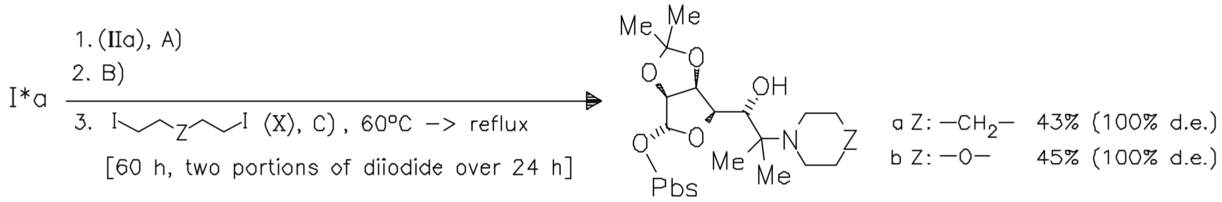


VI* VII* 51% (52% d.e.)



C): K_2CO_3, MeCN

(+)−IX* 39% (100% d.e.)



a Z: $-CH_2-$ 43% (100% d.e.)
b Z: —O— 45% (100% d.e.)

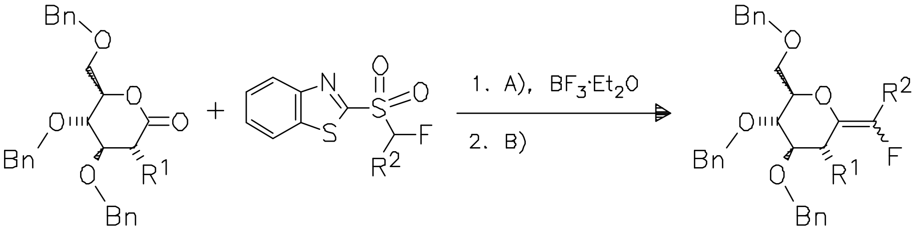
(+)−XI*

Carbohydrates
U 0500

DOI: 10.1002/chin.201335181

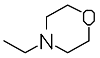
35- 181

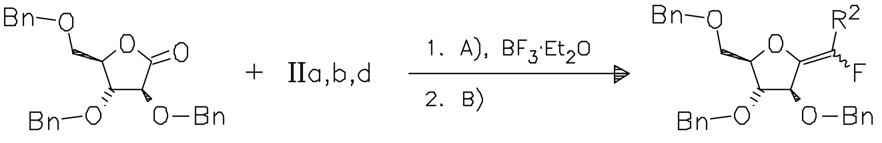
Synthesis of Fluorinated exo-Glycals Through Modified Julia Olefination. — Both the protecting groups as well as the presence of $BF_3 \cdot Et_2O$ influence yield and E/Z selectivity of the reaction. — (HABIB, S.; LARNAUD, F.; PFUND, E.; LEQUEUX, T.; FENET, B.; GOEKJIAN, P. G.; GUEYRARD*, D.; Eur. J. Org. Chem. 2013, 10, 1872-1875, http://dx.doi.org/10.1002/ejoc.201201719 ; ICBMS, CNRS, Univ. Claude Bernard Lyon, F-69622 Villeurbanne, Fr.; Eng.) — Roessler



I* II III*

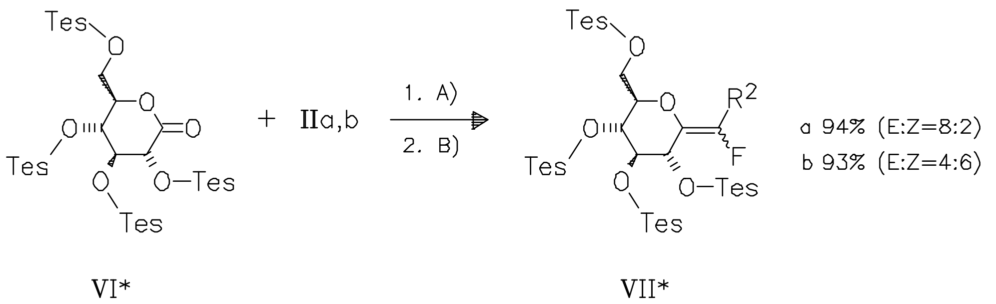
A): $LiN(Tms)_2$, THF, −78°C
B): DBU, THF, 25°C

a R^1: —O—Bn ; R^2: —H 85% (E:Z=6:4)
b R^1: —O—Bn ; R^2: —Me 85% (E:Z=4:6)
c R^1: —O—Bn ; R^2: $-(CH_2)_{11}-Me$ 53% (E:Z=3:7)
d R^1: —O—Bn ; R^2:  54% (E:Z=2:8)
e R^1, R^2: —H 82% (E:Z=3:7)
f R^1: —H ; R^2: —Me 58% (E:Z=7:3)



a 77% (E:Z=7:3)
b 70% (E:Z=3:7)
d 61% (E:Z=2:8)

IV* V*

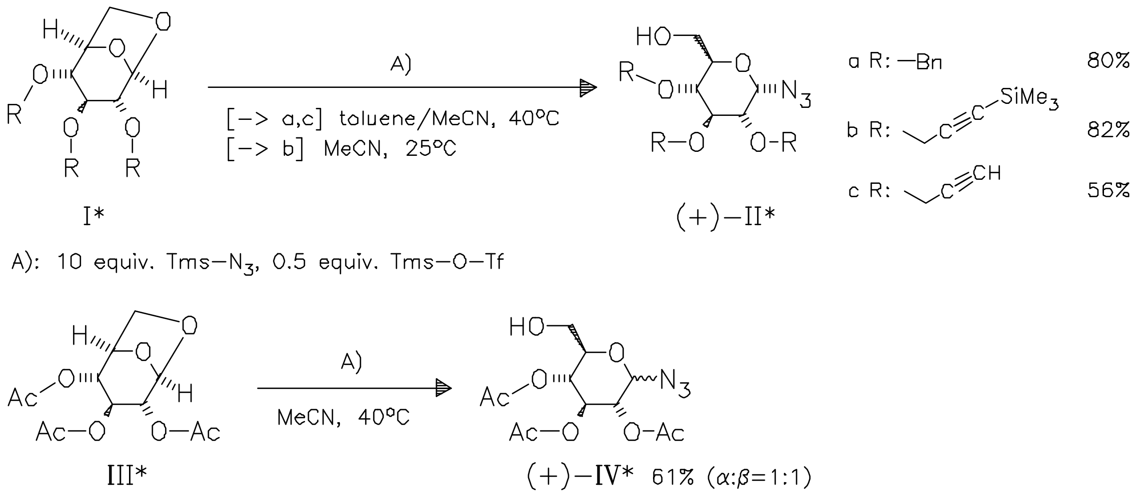


Carbohydrates
U 0500

DOI: 10.1002/chin.201335182

35- 182

Stereoselective Synthesis of α-Glycosyl Azides by TMSOTf-Mediated Ring Opening of 1,6-Anhydro Sugars. — (LEPAGE, M. L.; BODLENNER, A.; COMPAIN*, P.; Eur. J. Org. Chem. 2013, 10, 1963-1972, http://dx.doi.org/10.1002/ejoc.201201580 ; Lab. Synth. Org., CNRS, Ec. Eur. Chim., Polym. Mater., Univ. Strasbourg, F-67087 Strasbourg, Fr.; Eng.) — Roessler



A): 10 equiv. Tms—N_3, 0.5 equiv. Tms—O—Tf

Carbohydrates
U 0500

DOI: 10.1002/chin.201335183

35- 183

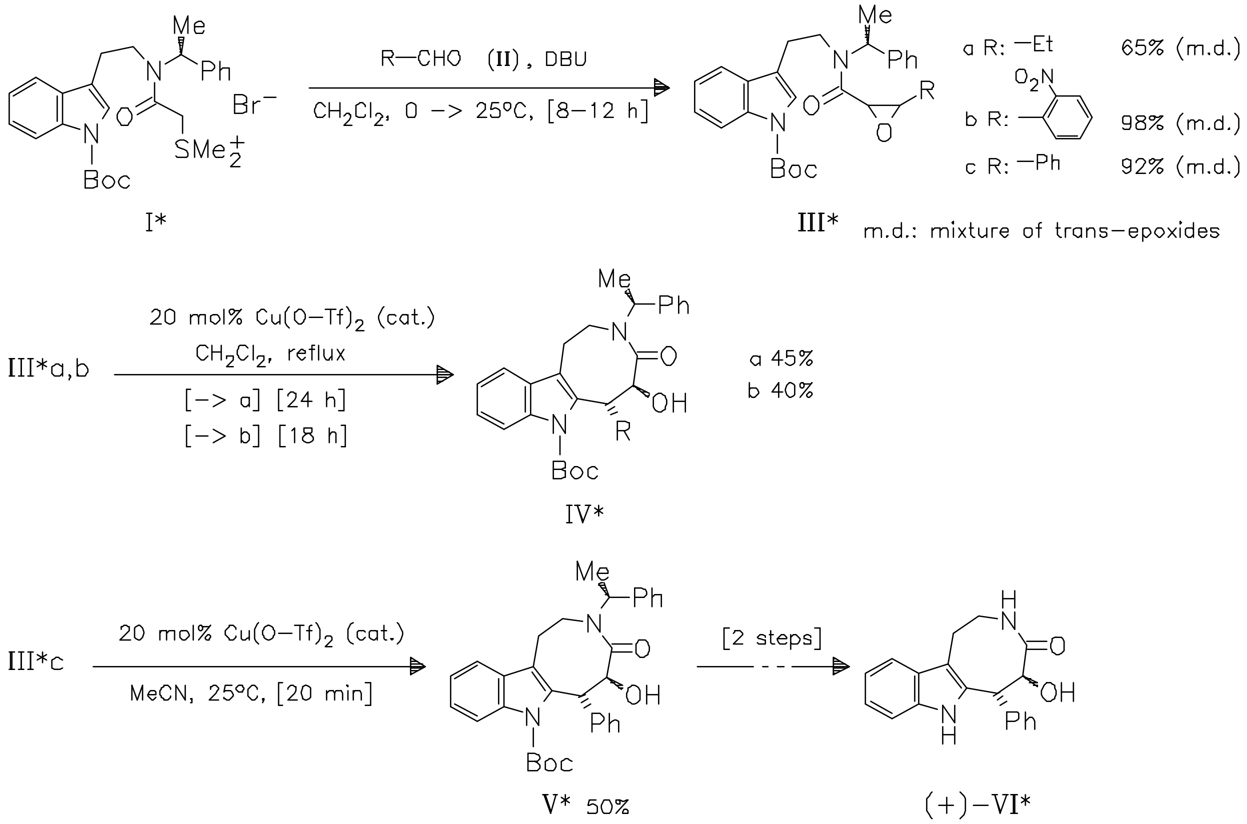
Stannylene-Mediated Regioselective 6-O-Glycosylation of Unprotected Phenyl 1-Thioglycopyranosides. — The procedure is described to prepare various 1→6-linked disaccharide thioglycosides and consequently oligosaccharides. — (MAGGI, A.; MADSEN*, R.; Eur. J. Org. Chem. 2013, 13, 2683-2691, http://dx.doi.org/10.1002/ejoc.201300026 ; Dep. Chem., Tech. Univ. Den., DK-2800 Lyngby, Den.; Eng.) — Y. Steudel

Alkaloids
U 0600

DOI: 10.1002/chin.201335184

35- 184

Synthesis of Indoloazocine Derivatives from a Chiral Indole Amide Stabilized Sulfur Ylide. — The reaction of sulfur ylide (I) with aldehydes is optimized to afford diastereomeric trans-epoxides (III) selectively. Ring opening—cyclization of these products is investigated to yield the desired indoloazocines as separable mixtures. Product (V) is further transformed into (+)-norbalasubramide (VI). — (JUAREZ-CALDERON, M.; APARICIO, D. M.; GNECCO, D.; JUAREZ, J. R.; OREA, L.; MENDOZA, A.; SARTILLO-PISCIL, F.; DEL OLMO, E.; TERAN*, J. L.; Tetrahedron Lett. 54 (2013) 21, 2729-2732, http://dx.doi.org/10.1016/j.tetlet.2013.03.068 ; Cent. Invest., Fac. Cienc. Quim., Univ. Auton. Puebla, 72570 Puebla, Mex.; Eng.) — Mais

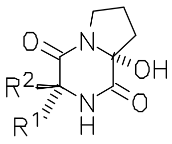


Other natural products
U 0800

DOI: 10.1002/chin.201335185

35- 185

New Diketopiperazine Derivatives from Culture Broth of Staphylococcus sp. Isolated from Corallina officinalis Lineaus. — The two new diketopiperazine derivatives staphyloamides A (Ia) and B (Ib) are isolated from the culture broth of Staphylococcus sp. (No.P-100826-4-6) from Corallina officinalis Lineaus along with eight known compounds. — (KHEDR, A. I. M.; KOUNO, I.; TANAKA, T.; YAMADA*, K.; Heterocycles 87 (2013) 5, 1029-1037, http://dx.doi.org/10.3987/COM-13-12691 ; Garden Med. Plants, Grad. Sch. Biomed. Sci., Nagasaki Univ., Nagasaki 852, Japan; Eng.) — M. Bohle



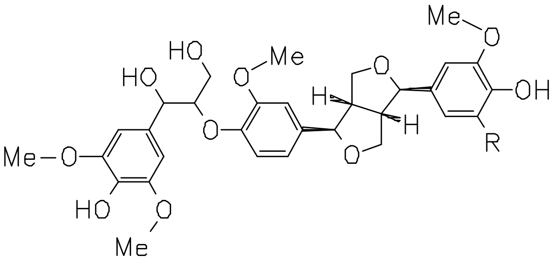
a R^1: —sBu ; R^2: —H
b R^1: —H ; R^2: —iPr

I*

Other natural products
U 0800 DOI: 10.1002/chin.201335186

35- 186

Two New Furofuran Lignans from Kandelia obovata. — The two new furofuran lignans kandelisesquilignan A (Ia) and B (Ib) are isolated from the aerial part of Kandelia obovata. Both compounds show significant anti-oxidant activity by the DPPH method. — (NAN, H.; LIN*, H.; QIAN, Z.; YIN, H.; Heterocycles 87 (2013) 5, 1093-1098, http://dx.doi.org/10.3987/COM-13-12688 ; Dep. Anesthesiol., Wenzhou Med. Coll., Wenzhou 325003, Peop. Rep. China; Eng.) — M. Bohle



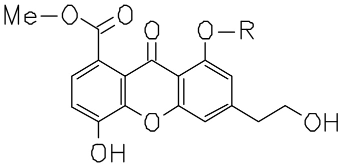
a R: —H
b R: —O—Me

(−)−I*

Other bioactive products
U 1300 DOI: 10.1002/chin.201335187

35- 187

New Xanthones from Garcinia bracteata and Their Cytotoxicities. — Two new xanthones, bracthone A (Ia) and B (Ib), are isolated from the stems of Garcinia bracteata together with four known xanthones. (Ia) and (Ib) show high cytotoxicities against PC3 cell. — (HU, Q.; NIU, D.; LI, X.; QIN, Y.; YANG, Z.; ZHAO, G.; YANG, Z.; GAO*, X.; CHEN, Z.; Heterocycles 87 (2013) 5, 1127-1132, http://dx.doi.org/10.3987/COM-13-12713 ; Key Lab. Ethnic Med. Resour. Chem., Yunnan Univ. Natl., Kunming, Yunnan 650031, Peop. Rep. China; Eng.) — M. Bohle



a R: —H
b R: —Me

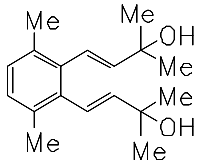
I

Other bioactive products
U 1300

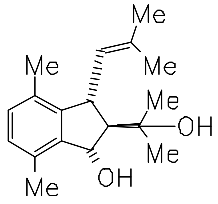
DOI: 10.1002/chin.201335188

35- 188

Caulerprenylols A and B, Two Rare Antifungal Prenylated para-Xylenes from the Green Alga Caulerpa racemosa. — Title compounds [(I) and (II)] exhibit a broad spectrum of antifungal activity against C. glabrata, T. rubrum, and C. neoformans, but no growth inhibition activity against the tumor cells HL60 and A549. — (MAO*, S.-C.; et al.; Bioorg. Med. Chem. Lett. 23 (2013) 9, 2491-2494, http://dx.doi.org/10.1016/j.bmcl.2013.03.038 ; Sch. Pharm., Nanchang Univ., Nanchang 330006, Peop. Rep. China; Eng.) — R. Langenstrassen



I



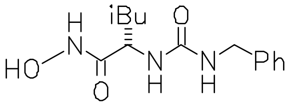
II

Other bioactive products
U 1300

DOI: 10.1002/chin.201335189

35- 189

Discovery of a Synthetic Aminopeptidase N Inhibitor LB-4b as a Potential Anticancer Agent. — The title compound (I) is synthesized starting from benzyl amine and evaluated for its antiinvasion and antiangiogenesis effects. It shows more significant block effect to cancer cell invasion and angiogenesis than bestatin. — (SU, L.; JIA, Y.; WANG, X.; ZHANG, L.; FANG, H.; XU*, W.; Bioorg. Med. Chem. Lett. 23 (2013) 9, 2512-2517, http://dx.doi.org/10.1016/j.bmcl.2013.03.021 ; Dep. Med. Chem., Sch. Pharm. Sci., Shandong Univ., Jinan, Shandong 250012, Peop. Rep. China; Eng.) — R. Langenstrassen



(S)-(−)-I

Other Subjects

Nanotechnology
V 1505
DOI: 10.1002/chin.201335190

35- 190

Fast, High Yield, and High Solid Loading Synthesis of Metal Selenide Nanocrystals. — The synthesis of metal selenide nanocrystals based on the injection of selenium powder in a hot mixture containing the metal cation precursor complexed by a carboxylic acid is demonstrated by the formation of CdSe and ZnSe nanocrystals. For a standard CdSe synthesis, Cd carboxylate is prepared by dissolving CdO in octadecene (ODE) and myristic acid (270 °C) before injecting a heterogeneous Se-ODE mixture (270 °C injection temp., 260 °C growth temp.) and stopping the reaction within 5 s to 10 min by quenching in a water bath plus injection of toluene. Further purification stages involve treatment with iPrOH and MeOH followed by re-dispersion in toluene and the exchange of surface carboxylic acid by surplus oleic acid. ZnSe nanocrystals are obtained in a similar manner using $Zn_5(CO_3)_2(OH)_6$ dissolved in oleic acid and ODE as the Zn precursor solution (260 °C, 16 min). In both cases, the synthesis can reach reaction yields of 80-85% within 5 minutes. In the case of CdSe nanocrystals, the synthesis leads to state-of-the-art nanocrystals with low size dispersion even without protective atmosphere. Importantly, the size of the nanocrystals at close to full yield can be changed by varying the carboxylic acid chain length, whereas the solid loading of the synthesis, i.e. the amount of nanocrystals formed over the reaction volume can be the 10-fold of typical literature syntheses. The potential of this reaction for large scale production of metal selenide nanocrystals is discussed. — (FLAMEE, S.; CIRILLO, M.; ABE, S.; DE NOLF, K.; GOMES, R.; AUBERT, T.; HENS*, Z.; Chem. Mater. 25 (2013) 12, 2476-2483, http://dx.doi.org/10.1021/cm400799e ; Cent. Nano- Biophoton., Univ. Gent, B-9000 Gent, Belg.; Eng.) — J. Schramke

Reviews

Inorganic chemistry
Z 0100
DOI: 10.1002/chin.201335191

35- 191

Doped Quantum Dots for Chemo/Biosensing and Bioimaging — [321 refs.]. — (WU, P.; YAN*, X.-P.; Chem. Soc. Rev. 42 (2013) 12, 5489-5521, http://dx.doi.org/10.1039/c3cs60017c ; State Key Lab. Med. Chem. Biol., Nankai Univ., Tianjin 300071, Peop. Rep. China; Eng.) — Schramke

Inorganic chemistry
Z 0100
DOI: 10.1002/chin.201335192

35- 192

Ultrathin Nanostructures: Smaller Size with New Phenomena — [148 refs.]. — (HU, S.; WANG*, X.; Chem. Soc. Rev. 42 (2013) 12, 5577-5594, http://dx.doi.org/10.1039/c3cs00006k ; Dep. Chem., Tsinghua Univ., Beijing 100084, Peop. Rep. China; Eng.) — Schramke

Inorganic chemistry
Z 0100
DOI: 10.1002/chin.201335193

35- 193

Fluorescence Microscopy Studies of Porous Silica Materials — [99 refs.]. — (RUEHLE, B.; DAVIES, M.; BEIN, T.; BRAEUCHLE*, C.; Z. Naturforsch., B: Chem. Sci. 68b (2013) 5-6, 423-444, http://dx.doi.org/10.5560/ZNB.2013-3068 ; Fachbereich Chem., Ludwig-Maximilians-Univ., D-81377 Muenchen, Germany; Eng.) — Schramke

Inorganic chemistry
Z 0100
DOI: 10.1002/chin.201335194

35- 194

Hydrothermal Synthetic Strategies of Inorganic Semiconducing Nanostructures — [372 refs.]. — (SHI, W.; SONG, S.; ZHANG*, H.; Chem. Soc. Rev. 42 (2013) 13, 5714-5743, http://dx.doi.org/10.1039/c3cs60012b ; State Key Lab. Rare Earth Resour. Util., Changchun Inst. Appl. Chem., Chin. Acad. Sci., Changchun 130022, Peop. Rep. China; Eng.) — Schramke

Inorganic chemistry
Z 0100
DOI: 10.1002/chin.201335195

35- 195

Investigation of Solid/Vapor Interfaces Using Ambient Pressure X-Ray Photoelectron Spectroscopy. — [261 refs.]. — (STARR, D. E.; LIU, Z.; HAEVECKER, M.; KNOP-GERICKE, A.; BLUHM*, H.; Chem. Soc. Rev. 42 (2013) 13, 5833-5857, http://dx.doi.org/10.1039/c3cs60057b ; Chem. Sci. Div., Lawrence Berkeley Natl. Lab., Univ. Calif., Berkeley, CA 94720, USA; Eng.) — Schramke

Inorganic chemistry
Z 0100
DOI: 10.1002/chin.201335196

35- 196

Radiation-Induced Synthesis of Oxide Compounds — [124 refs.]. — (CUBA, V.; BARTA, J.; JARY, V.; NIKL, M.; Radiat. Synth. Mater. Compd. 2013, 81-100 ; Inst. Phys., Czech Tech. Univ., CZ-160 00 Prague 6, Czech Republic; Eng.) — Schramke

Inorganic chemistry
Z 0100
DOI: 10.1002/chin.201335197

35- 197

Magnetic Nanoporous Materials — [99 refs.]. — (GIRI, S.; Nanoporous Mater.: Types, Prop. Uses 2010, 233-242 ; Dep. Solid State Phys., Indian Assoc. Cultiv. Sci., Kolkata 700 032, India; Eng.) — Schramke

Inorganic chemistry
Z 0100
DOI: 10.1002/chin.201335198

35- 198

The Prediction of Solid Solubility of Alloys: Developments and Applications of Hume-Rothery's Rules — [167 refs.]. — (ZHANG, Y. M.; EVANS, J. R. G.; YANG, S.; J. Cryst. Phys. Chem. 1 (2010) 2, 81-97 ; Ningbo Inst. Mater. Technol. Eng., Chin. Acad. Sci., Ningbo 315201, Peop. Rep. China; Eng.) — Schramke

Inorganic chemistry
Z 0100 DOI: 10.1002/chin.201335199

35- 199

Synthesis and Characterization of Fe-Imogolite as an Oxidation Catalyst — [45 refs.]. — (OOKAWA, M.; Clay Miner. Nat.: Their Charact., Modif. Appl. 2012, 239-258 ; Dep. Chem. Biochem., Numazu Coll. Technol., Numazu, Shizuoka 410, Japan; Eng.) — Schramke

Coordination chemistry
Z 0150 DOI: 10.1002/chin.201335200

35- 200

Coordination Chemistry of Supramolecular Rhodanine Azodye Sulphadrugs — [49 refs.]. — (EL-SONBATI, A. Z.; DIAB, M. A.; EL-BINDARY, A. A.; MORGAN, S. M.; Inorg. Chim. Acta 404 (2013) 175-187, http://dx.doi.org/10.1016/j.ica.2013.04.001 ; Chem. Dep., Fac. Sci., Mansoura Univ., Damietta, Egypt; Eng.) — Lindner

Coordination chemistry
Z 0150 DOI: 10.1002/chin.201335201

35- 201

High Coordination Compounds of Dioxouranium(VI) Derived from Schiff Bases of 4-Aminoantipyrine — [78 refs.]. — (AGARWAL, R. K.; PRASAD, S.; CHAND, V.; Int. J. Chem. (Mumbai, India) 1 (2012) 4, 576-597 ; Dep. Chem., Lajpat Rai Coll., Ghaziabad 201 005, India; Eng.) — Lindner

Coordination chemistry
Z 0150 DOI: 10.1002/chin.201335202

35- 202

Metal-Based Molecular Chains: Design by Coordination Chemistry — [96 refs.]. — (AROMI, G.; Comments Inorg. Chem. 32 (2011) 4, 163-194, http://dx.doi.org/10.1080/02603594.2011.642086 ; Dep. Quim. Inorg., Univ. Barcelona, E-08028 Barcelona, Spain; Eng.) — Lindner

Coordination chemistry
Z 0150 DOI: 10.1002/chin.201335203

35- 203

Coordination Polymers of Sulfur—Donor Ligands — [102 refs.]. — (MENSFORTH, E. J.; HILL, M. R.; BATTEN, S. R.; Inorg. Chim. Acta 403 (2013) 9-24, http://dx.doi.org/10.1016/j.ica.2013.02.019 ; Sch. Chem., Monash Univ., Clayton, Victoria 3800, Australia; Eng.) — Lindner

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335204

35- 204

How to Lose a Bond in Two Ways — The Diradical/Zwitterion Dichotomy in Cycloaromatization Reactions — [96 refs.]. — (PETERSON, P. W.; MOHAMED, R. K.; ALABUGIN*, I. V.; Eur. J. Org. Chem. 2013, 13, 2505-2527, http://dx.doi.org/10.1002/ejoc.201201656 ; Dep. Chem. Biochem., Fla. State Univ., Tallahassee, FL 32306, USA; Eng.) — Y. Steudel

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335205

35- 205

Advances in the Bestmann—Ohira Reagent-Assisted Regioselective Synthesis of Substituted Pyrazoles, Triazoles, and Oxazoles — [40 refs.]. — (MOHAPATRA*, S.; BHANJA, C.; JENA, S.; CHAKROBORTY, S.; NAYAK, S.; Synth. Commun. 43 (2013) 15, 1993-2007, http://dx.doi.org/10.1080/00397911.2012.711883 ; Dep. Chem., Ravenshaw Coll., Cuttack 753 003, India; Eng.) — S. Adam

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335206

35- 206

Glycopeptide Dendrimers as Pseudomonas aeruginosa Biofilm Inhibitors — [60 refs.]. — (REYMOND*, J.-L.; BERGMANN, M.; DARBE, T.; Chem. Soc. Rev. 42 (2013) 11, 4814-4822, http://dx.doi.org/10.1039/c3cs35504g ; Dep. Chem. Biochem., Univ. Bern, CH-3012 Bern, Switz.; Eng.) — Lindner

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335207

35- 207

How Do Multivalent Glycodendrimers Benefit from Sulfur Chemistry? — [118 refs.]. — (GINGRAS*, M.; CHABRE, Y. M.; ROY, M.; ROY, R.; Chem. Soc. Rev. 42 (2013) 11, 4823-4841, http://dx.doi.org/10.1039/c3cs60090d ; Cent. Interdisc. Nanosci., CNRS, Aix-Marseille Univ., Luminy, F-13288 Marseille, Fr.; Eng.) — Lindner

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335208

35- 208

Tailoring Nanohybrids and Nanocomposites for Catalytic Applications — [> 220 refs.]. — (DE CLIPPEL, F.; DUSSELIER, M.; VAN DE VYVER, S.; PENG, L.; JACOBS, P. A.; SELS*, B. F.; Green Chem. 15 (2013) 6, 1398-1430, http://dx.doi.org/10.1039/c3gc37141g ; Cent. Surf. Chem. Catal., Kathol. Univ. Leuven, B-3001 Leuven, Belg.; Eng.) — Koehler

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335209

35- 209

Sustainable Routes to Polyurethane Precursors — [> 200 refs.]. — (KREYE, O.; MUTLU, H.; MEIER*, M. A. R.; Green Chem. 15 (2013) 6, 1431-1455, http://dx.doi.org/10.1039/c3gc40440d ; Inst. Org. Chem., Karlsruhe Inst. Technol., D-76131 Karlsruhe, Germany; Eng.) — Koehler

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335210

35- 210

Recent Advances in the Study of Enzyme Promiscuity in the Tautomerase Superfamily — [about 50 refs.]. — (BAAS, B.-J.; ZANDVOORT, E.; GEERTSEMA, E. M.; POELARENDS*, G. J.; ChemBioChem 14 (2013) 8, 917-926, http://dx.doi.org/10.1002/cbic.201300098 ; Res. Inst. Pharm., Groningen Univ., NL-9713 AV Groningen, Neth.; Eng.) — Lindner

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335211

35- 211 **Flexizyme-Mediated Genetic Reprogramming as a Tool for Noncanonical Peptide Synthesis and Drug Discovery.** — [38 refs.]. — (PASSIOURA, T.; SUGA*, H.; Chem. - Eur. J. 19 (2013) 21, 6530-6536, http://dx.doi.org/10.1002/chem.201300247 ; Dep. Chem., Grad. Sch. Sci., Univ. Tokyo, Bunkyo, Tokyo 113, Japan; Eng.) — C. Gebhardt

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335212

35- 212 **Ten Years of Research in Chicago** — [in the field of catalysis; 64 refs.]. — (YAMAMOTO, H.; Tetrahedron 69 (2013) 23, 4503-4515, http://dx.doi.org/10.1016/j.tet.2013.03.049 ; Univ. Chicago, Chicago, IL 60637, USA; Eng.) — Lindner

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335213

35- 213 **4-(2-R-Aryl)-1,2,3-chalcogenadiazoles in the Synthesis of Fused Heterocycles** — [82 refs.]. — (PETROV*, M. L.; ANDROSOV, D. A.; Russ. J. Org. Chem. 49 (2013) 4, 479-501, http://dx.doi.org/10.1134/S1070428013040015 ; St. Petersburg State Inst. Technol., St. Petersburg 190013, Russia; Eng.) — Koehler

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335214

35- 214 **A Drug Mystery of Heterocycles: Various Molecules for One Target or One Compound for Multiple Targets?** — [design, development, and biological evaluation of a multitarget series of tetrahydroindolo[2,3-c]quinolinones based on the "old" drug ambocarb; 109 refs.]. — (SHCHERKAKOVA, I.; Chem. Heterocycl. Compd. (N. Y., NY, U. S.) 49 (2013) 1, 2-18, http://dx.doi.org/10.1007/s10593-013-1229-x ; ActtoPharma LLC, Sandy, UT 84070, USA; Eng.) — Koehler

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335215

35- 215 **Catalysis of Organic Reactions by Carbenes and Carbene Complexes** — [70 refs.]. — (KOROTKIKH*, N. I.; SABEROV, V. S.; GLINYANAYA, N. V.; MARICHEV, K. A.; KISELYOV, A. V.; KNISHEVITSKY, A. V.; RAYENKO, G. F.; SHVAIKA, O. P.; Chem. Heterocycl. Compd. (N. Y., NY, U. S.) 49 (2013) 1, 19-38, http://dx.doi.org/10.1007/s10593-013-1230-4 ; Litvinenko Inst. Phys. Org. Coal Chem., Natl. Acad. Sci. Ukr., Donetsk 83114, Ukraine; Eng.) — Koehler

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335216

35- 216 **Methods of Sultam Synthesis** — [97 refs.]. — (RASSADIN, V. A.; GROSHEVA, D. S.; TOMASHEVSKII, A. A.; SOKOLOV*, V. V.; Chem. Heterocycl. Compd. (N. Y., NY, U. S.) 49 (2013) 1, 39-65, http://dx.doi.org/10.1007/s10593-013-1231-3 ; St. Petersburg State Univ., St. Petersburg 198504, Russia; Eng.) — Koehler

Organic chemistry
Z 0200
DOI: 10.1002/chin.201335217

35- 217

1,2,4,5-Tetrazines and Azolo[1,2,4,5]tetrazines: Synthesis and Reactions with Nucleophiles — [literature data published predominantly from 1995 until 2012; 133 refs.]. — (TOLSHCHINA*, S. G.; RUSINOV, G. L.; CHARUSHIN, V. N.; Chem. Heterocycl. Compd. (N. Y., NY, U. S.) 49 (2013) 1, 66-91, http://dx.doi.org/10.1007/s10593-013-1232-2 ; Postovskii Inst. Org. Synth., Ural Branch, Russ. Acad. Sci., Ekaterinburg 620041, Russia; Eng.) — Koehler

Organic chemistry
Z 0200
DOI: 10.1002/chin.201335218

35- 218

Pericyclic [4 + 2] and [3 + 2] Cycloaddition Reactions of Nitroarenes in Heterocyclic Synthesis — [93 refs.]. — (SHEVELEV*, S. A.; STAROSOTNIKOV, A. M.; Chem. Heterocycl. Compd. (N. Y., NY, U. S.) 49 (2013) 1, 92-115, http://dx.doi.org/10.1007/s10593-013-1233-1 ; Zelinsky Inst. Org. Chem., Russ. Acad. Sci., Moscow 119991, Russia; Eng.) — Koehler

Organic chemistry
Z 0200
DOI: 10.1002/chin.201335219

35- 219

Cyclizations of Enediynes under the Action of Electrophiles — [48 refs.]. — (GULEVSKAYA*, A. V.; LAZAREVICH, R. Y.; Chem. Heterocycl. Compd. (N. Y., NY, U. S.) 49 (2013) 1, 116-139, http://dx.doi.org/10.1007/s10593-013-1234-0 ; South. Fed. Univ., Rostov-on-Don 344090, Russia; Eng.) — Koehler

Organic chemistry
Z 0200
DOI: 10.1002/chin.201335220

35- 220

Heterocyclization of 1- and 2-Alkynyl-9,10-anthraquinones: New Synthetic and Mechanistic Aspects — [new data (2005—2012) on the peculiarities and common characteristics of cascade reactions of 1- and 2-alkynyl-9,10-anthraquinones with polyfunctional reagents (guanidine, urea, thiourea) and intramolecular heterocyclizations of ortho-amino derivatives of 1- and 2-alkynyl-9,10-anthraquinones; 32 refs.]. — (VASILEVSKIY*, S. F.; BARANOV, D. S.; Chem. Heterocycl. Compd. (N. Y., NY, U. S.) 49 (2013) 1, 140-151, http://dx.doi.org/10.1007/s10593-013-1235-z ; Inst. Chem. Kinet. Combust., Sib. Branch Russ. Acad. Sci., Novosibirsk 630090, Russia; Eng.) — Koehler

Organic chemistry
Z 0200
DOI: 10.1002/chin.201335221

35- 221

[1,7]-Electrocyclization Reactions in the Synthesis of Azepine Derivatives — [136 refs.]. — (NEDOLYA*, N. A.; TROFIMOV, B. A.; Chem. Heterocycl. Compd. (N. Y., NY, U. S.) 49 (2013) 1, 152-176, http://dx.doi.org/10.1007/s10593-013-1236-y ; A. E. Favorsky Inst. Chem., Sib. Branch, Russ. Acad. Sci., Irkutsk 664033, Russia; Eng.) — Koehler

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335222

35- 222

Structure of NH-Benzazoles (1H-Benzimidazoles, 1H- and 2H-Indazoles, 1H- and 2H-Benzotriazoles) — [143 refs.]. — (ELGUERO*, J.; et al.; Chem. Heterocycl. Compd. (N. Y., NY, U. S.) 49 (2013) 1, 177-202, http://dx.doi.org/10.1007/s10593-013-1237-x ; Inst. Quim. Med., CSIC, E-28006 Madrid, Spain; Eng.) — Koehler

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335223

35- 223

Cycloadditions and Condensations as Essential Tools in Spiropyrazoline Synthesis — [> 220 refs.]. — (DADIBOYENA, S.; Eur. J. Med. Chem. 63 (2013) 347-377, http://dx.doi.org/10.1016/j.ejmech.2013.01.059 ; Torrey Pines Inst. Mol. Stud., Port St. Lucie, FL 34987, USA; Eng.) — Koehler

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335224

35- 224

Recent Developments in the Synthesis of Quinoxaline Derivatives by Green Synthetic Approaches — [59 refs.]. — (NAGESWAR*, Y. V. D.; REDDY, K. H. V.; RAMESH, K.; MURTHY, S. N.; Org. Prep. Proced. Int. 45 (2013) 1, 1-27, http://dx.doi.org/10.1080/00304948.2013.743419 ; Div. Org. Chem.-1, Indian Inst. Chem. Technol., Hyderabad 500 607, India; Eng.) — Koehler

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335225

35- 225

Synthesis of Oxa-, Aza- and Thia-Bowls and Cages — [147 refs.]. — (GHARPURE*, S. J.; PORWAL, S. K.; Org. Prep. Proced. Int. 45 (2013) 2, 81-153, http://dx.doi.org/10.1080/00304948.2013.764782 ; Dep. Chem., Indian Inst. Technol., Mumbai 400 076, India; Eng.) — Koehler

Organic chemistry
Z 0200 DOI: 10.1002/chin.201335226

35- 226

Reactions in Solid-State Inclusion Compounds — [115 refs.]. — (HARRIS, K. D. M.; PALMER, B. A.; EDWARDS-GAU, G. R.; Supramol. Chem.: Mol. Nanomater. 4 (2012) 1589-1612 ; Dep. Chem., Cardiff Univ., Cardiff CF1 3TB, UK; Eng.) — Lindner

Organic chemistry
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