Late-Stage C–H Olefination of Arenes

- Dual ligand-based catalyst
- No directing group
- Arene-limited
- Late-stage functionalization

Dual Ligand-Enabled Late-Stage Fujiwara–Moritani Reactions

C. Santiago, H. Chen, A. Mondal, M. van Gemmeren
Nickel-Catalyzed Asymmetric Synthesis of P-Stereogenic Vinyl Phosphines

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Transition-metal complexes

- Direct synthesis of chiral PIII compounds
- Up to >99% ee and >20:1 rr
- Excellent yield and broad applicability

Application of Oxidative Ring Opening/Ring Closing by Reductive Amination Protocol for the Stereocontrolled Synthesis of Functionalized Azaheterocycles

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highly functionalized
N-heterocycles,
azaheterocyclic
amino acid derivatives

functionalized cyclic
or acyclic dialdehydes

oxidative ring olefin
bond cleavage
"dihydroxylation/C–C cleavage" or
"ozonolysis"

ring closing across
reductive amination
with primary amines
(R-NH2)
R = alkyl, fluoroalkyl,
perfluoroalkyl

CO2R1
NHR2

R1 = H, Et, Bn
R2 = Boc, COPh, Cbz

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2

CO2R1
NHR2
Catalytic Hydrogen Isotope Exchange Reactions in Late-Stage Functionalization

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Site-Selective Late-Stage C–H Functionalization via Thianthrenium Salts

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Triazole-Enabled Ruthenium(II) Carboxylate-Catalyzed C–H Arylation with Electron-Deficient Aryl Halides

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X. Hou
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Rhodium-Catalyzed, Phosphorus(III)-Directed Hydroarylation of Internal Alkynes: Facile and Efficient Access to New Phosphine Ligands

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Dual Ligand-Enabled Late-Stage Fujiwara–Moritani Reactions

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Nickel-Catalyzed Reductive Cross-Coupling of Benzylic Sulfonium Salts with Aryl Iodides

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Dirhodium(II)-Catalyzed Synthesis of N-(Arylsulfonyl)hydrazines by N–H Amination of Aliphatic Amines

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Meiji Pharmaceutical University, Japan

Mild, General, and Regioselective Synthesis of 2-Aminopyridines from Pyridine N-Oxides via N-(2-Pyridyl)pyridinium Salts

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Avid Radiopharmaceuticals/Eli Lilly and Company, USA

Synthesis of Aryl Nitriles via Aerobic Oxidative Cleavage of Aryl C=C Bonds with (NH₄)₂CO₃ as the Nitrogen Source

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A Mild and Efficient Synthesis of Pyrazolo[1,5-a]pyridines Mediated by Triphenylphosphine/Diiodine

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Synthesis of 2-Arylbenzothiazoles from Nitrobenzenes, Benzylamines, and Elemental Sulfur via Redox Cyclization

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M. Imoto
M. Takeda
T. Mizuno*
A. Nomoto
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Synthetic Approach toward (–)-Tetrodotoxin via Construction of the Bicyclo[2.2.2]octane Skeleton

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Y. Senoo
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Skeletal Analogues of UCS1025A and B by Cyclization of Maleimides: Synthesis and Biological Activity

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TBDMSCI
TEA or DIPEA
DCM, rt, 16 h

R¹, R² = H, Me, Br, Cl

R¹

OTBDMS

CO₂Me