

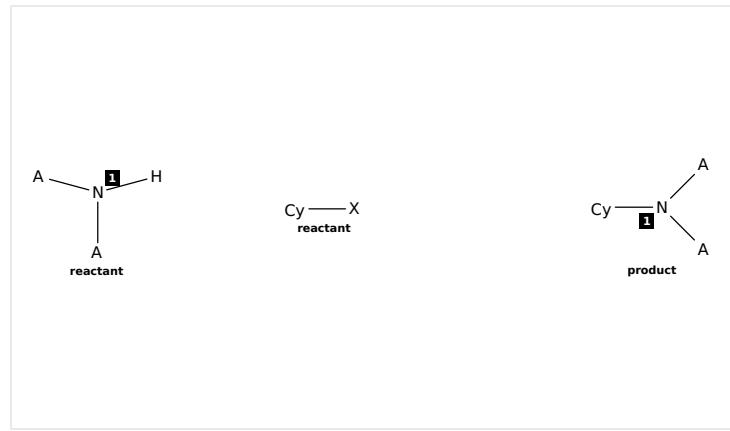
## Initiating Search

August 14, 2025, 11:10 AM

## • Search:

Filtered By:

Yield:	90-100%, 80-89%, 70-79%
Reaction	Mapping Data Available
Mapping:	Palladium diacetate,
Catalyst:	Tris(dibenzylideneacetone)dipalladium, Palladium, tris[ $\mu$ -[(1,2- $\eta$ :4,5- $\eta$ )-(1E,4E)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), Palladium, [7,9-bis[2,6-bis(1-methylethyl)phenyl]-7,9-dihydro-8H-acenaphth[1,2-d]imidazol-8-ylidene]bromo[2-(4,5-dihydro-4,4-dimethyl-2-oxazolyl- $\kappa N^{\beta}$ )-1-naphthalenyl- $\kappa C$ ]-, (SP-4-4)-, Bis(tri-tert-butylphosphine)palladium, Palladium, Palladium, bromo[dicyclohexyl[3-(1,1-dimethylethoxy)-6-methoxy-2',6'-bis(1-methylethyl)[1,1'-biphenyl]-2-yl- $\kappa C^1$ ]phosphine- $\kappa P$ ][4-[[2-(trimethylsilyl)ethoxy]carbonyl]phenyl]-, (SP-4-2)-, Stereoisomer of [(4 S,5 S)-1,3-bis[2,6-bis(1-methylethyl)phenyl]-4,5-diphenyl-2-imidazolidinylidene]chloro[(1,2,3- $\eta$ )-1-phenyl-2-propen-1-yl]palladium
Document Type:	Journal
Publication Year:	2023 to 2024



Structure Match: Substructure

## Search Tasks

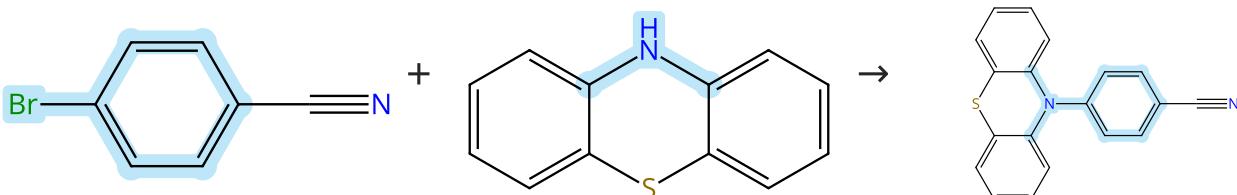
Task	Result Type	View
Exported: Returned Reaction Results + Filters (1,278)	Reactions	<a href="#">View Results</a>



## Reactions (500)

[View in CAS SciFinder](#)

Scheme 1 (1 Reaction)


[Suppliers \(93\)](#)
[Suppliers \(96\)](#)
[Suppliers \(2\)](#)

31-614-CAS-40947254

Steps: 1 Yield: 85%

Photocatalytic functionalization of thin-layer membranes using a monomer truncation strategy

By: Vega-Fernandez, Jorge; et al

Nanoscale Advances (2024), 6(12), 3181-3187.

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; 15 min, rt

1.2 Reagents: Sodium *tert*-butoxide; 48 h, 110 °C

Experimental Protocols

Scheme 2 (1 Reaction)

Steps: 1 Yield: 85%



31-614-CAS-38556048

Steps: 1 Yield: 85%

Preparation of pyridopyrazines through tandem Pd-catalyzed C-N/C-C coupling reactions of Ugi adducts

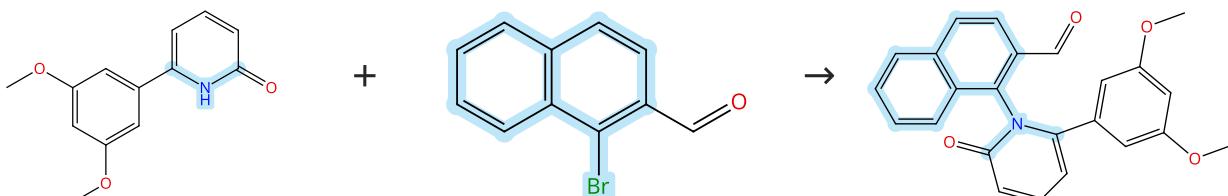
By: Takallou, Ahmad; et al

Organic & Biomolecular Chemistry (2023), 21(48), 9530-9533.

Experimental Protocols

Scheme 3 (1 Reaction)

Steps: 1 Yield: 85%


[Suppliers \(15\)](#)
[Suppliers \(71\)](#)

31-614-CAS-41335334

Steps: 1 Yield: 85%

**1.1 Catalysts:** Palladium, tris[ $\mu$ -[(1,2- $\eta$ ;4,5- $\eta$ )-(1E,4E)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2R)-1-[(1*R*)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene

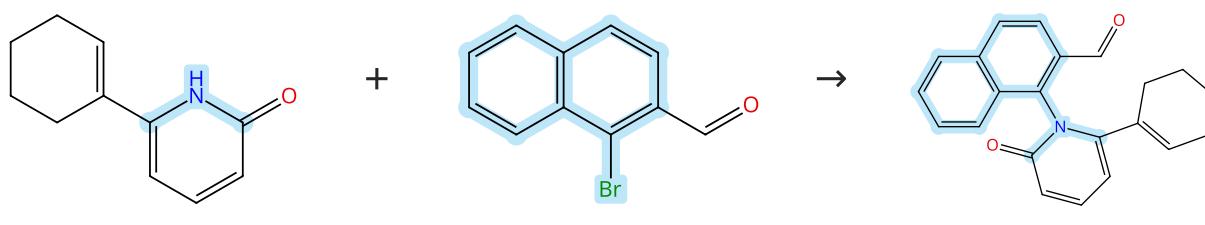
**Solvents:** Toluene; 30 min, rt**1.2 Reagents:** Cesium carbonate; 36 h, 90 °C

Experimental Protocols

**Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination**

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

**Scheme 4 (1 Reaction)**

Suppliers (2)

Suppliers (71)

Steps: 1 Yield: 85%

31-614-CAS-41335332

Steps: 1 Yield: 85%

**1.1 Catalysts:** Palladium, tris[ $\mu$ -[(1,2- $\eta$ ;4,5- $\eta$ )-(1E,4E)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2*R*)-1-[(1*R*)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene

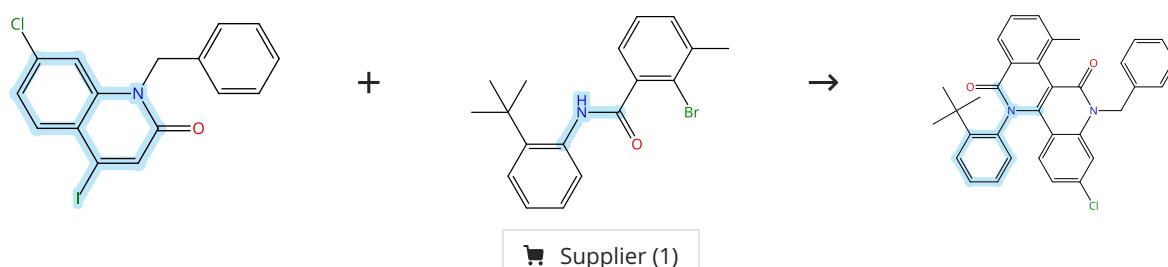
**Solvents:** Toluene; 30 min, rt**1.2 Reagents:** Cesium carbonate; 36 h, 90 °C

Experimental Protocols

**Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination**

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

**Scheme 5 (1 Reaction)**

Supplier (1)

Steps: 1 Yield: 85%

31-614-CAS-39194494

Steps: 1 Yield: 85%

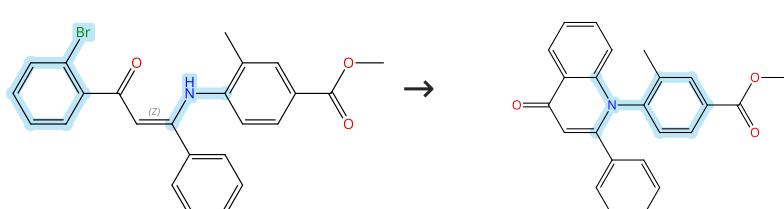
**1.1 Reagents:** Potassium carbonate**Catalysts:** Palladium diacetate, Ethyl (1*S,4R*)-bicyclo[2.2.1]hept-2-ene-2-carboxylate**Solvents:** Tetrahydrofuran; 5 min, rt; 48 h, 80 °C

Experimental Protocols

**Asymmetric Two-Component Alkenyl Catellani Reaction for the Construction of C-N Axial Chirality**

By: Wu, Chenggui; et al

Chinese Journal of Chemistry (2024), 42(7), 699-704.

**Scheme 6 (1 Reaction)**

Double bond geometry shown

Steps: 1 Yield: 85%

31-614-CAS-40129298

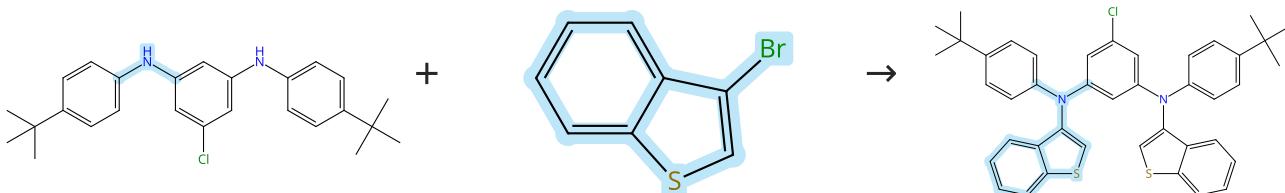
Steps: 1 Yield: 85%

Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers

By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

Experimental Protocols

**Scheme 7 (1 Reaction)**

Suppliers (74)

31-614-CAS-42162970

Steps: 1 Yield: 85%

Constructing highly efficient multiple resonance fluorescence materials by inserting benzothiophene within B/N-skeletons

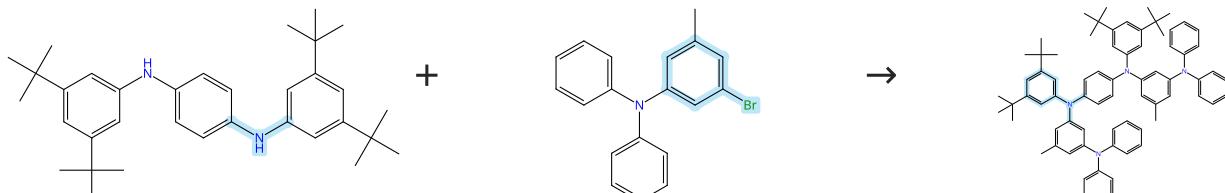
By: Zhao, He; et al

New Journal of Chemistry (2024), 48(36), 16119-16126.

1.1 Reagents: Sodium *tert*-butoxide  
Catalysts: Tri-*tert*-butylphosphine, Tris(dibenzylideneacetone)dipalladium  
Solvents: Toluene; 12 h, 100 °C; 100 °C → rt

1.2 Solvents: Water; rt

Experimental Protocols

**Scheme 8 (1 Reaction)**

Suppliers (19)

31-614-CAS-41860647

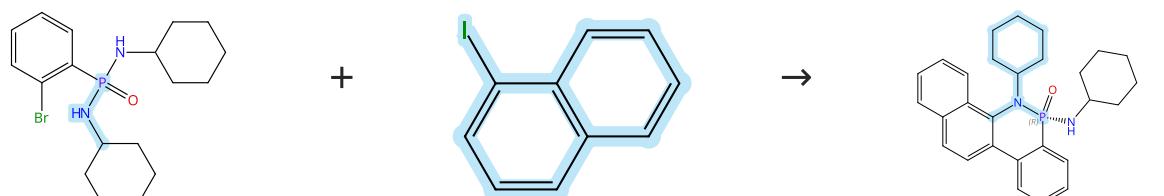
Steps: 1 Yield: 85%

Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

Experimental Protocols

**Scheme 9 (1 Reaction)**

Suppliers (87)

Absolute stereochemistry shown

31-614-CAS-42232675

Steps: 1 Yield: 85%

1.1 Reagents: Potassium carbonate

Catalysts: Palladium diacetate, Tris(2-furyl)phosphine, Bicyclo[2.2.1]hept-2-ene-2-carboxylic acid, methyl ester, (1*R*,4*R*)-

Solvents: Toluene; 12 h, 105 °C

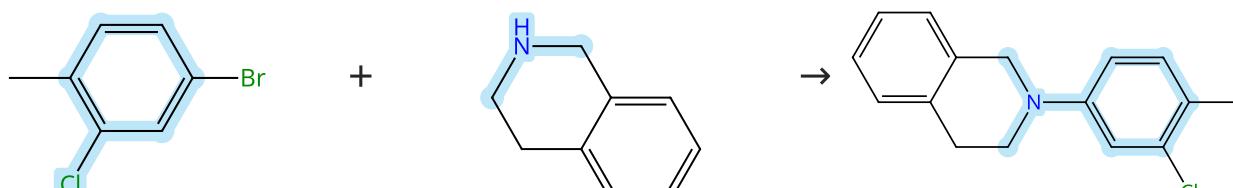
Experimental Protocols

**Solvent-Controlled Enantiodivergent Construction of P(V)-Stereogenic Molecules via Palladium-Catalyzed Annulation of Prochiral N-Aryl Phosphonamides with Aromatic Iodides**

By: Tian, Qingyu; et al

Angewandte Chemie, International Edition (2024), 63(41), e202409366.

Scheme 10 (1 Reaction)



Suppliers (80)

Suppliers (92)

Supplier (1)

31-614-CAS-37741652

Steps: 1 Yield: 85%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 5 min, rt

1.2 3 h, rt → 100 °C; 100 °C → rt

1.3 Reagents: Water; rt

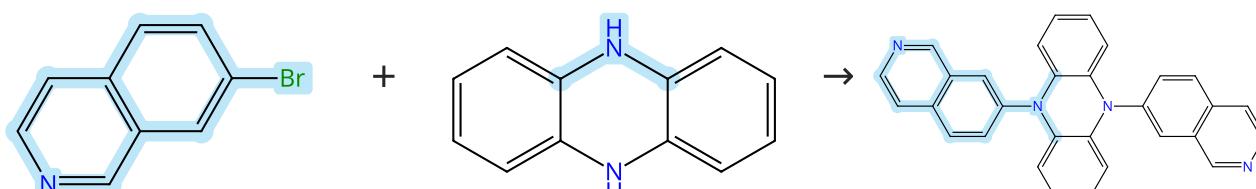
Experimental Protocols

**Electrochemically-Driven Organocatalytic Enantioselective Oxidative Coupling of Tetrahydroisoquinolines and Acrylaldehyde**

By: Zhang, Qi-Ying; et al

Advanced Synthesis &amp; Catalysis (2023), 365(20), 3455-3460.

Scheme 11 (1 Reaction)



Suppliers (85)

Suppliers (62)

31-614-CAS-43885548

Steps: 1 Yield: 85%

1.1 Reagents: Potassium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine

Solvents: Toluene; 18 h, 120 °C

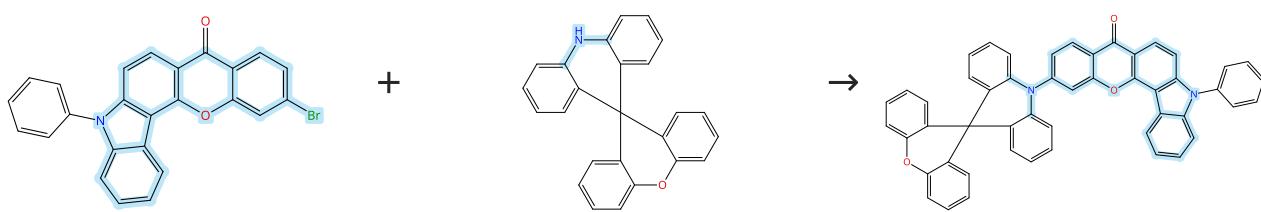
Experimental Protocols

**Redox-Active Dihydrophenazine-Based Macrocycle: Synthesis, Conformation-Adaptive Behavior and Host-Guest Complexation with Tetracyanoquinodimethane**

By: Hong, Qiong-Yan; et al

Chinese Journal of Chemistry (2024), 42(16), 1895-1900.

Scheme 12 (1 Reaction)



Suppliers (9)

31-614-CAS-36259545

Steps: 1 Yield: 85%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate

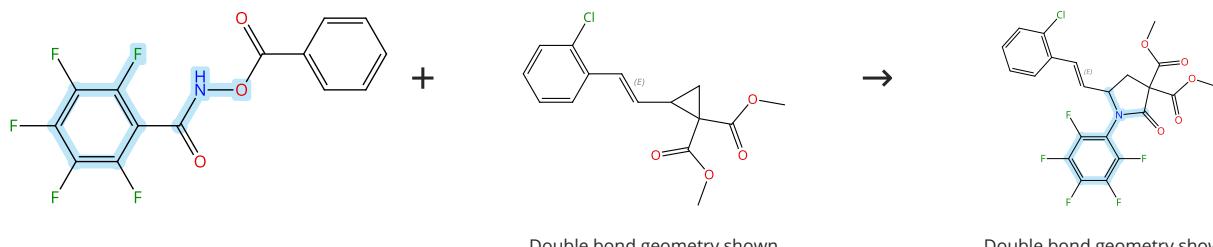
Solvents: Toluene; 12 h, 120 °C

Experimental Protocols

Realizing efficient blue and deep-blue delayed fluorescence materials with record-beating electroluminescence efficiencies of 43.4%

By: Fu, Yan; et al

Nature Communications (2023), 14(1), 2019.

**Scheme 13 (1 Reaction)**

31-614-CAS-36837155

Steps: 1 Yield: 85%

1.1 Reagents: Cesium carbonate

Catalysts: 2,2'-Bipyridine, Tris(dibenzylideneacetone)dipalladium

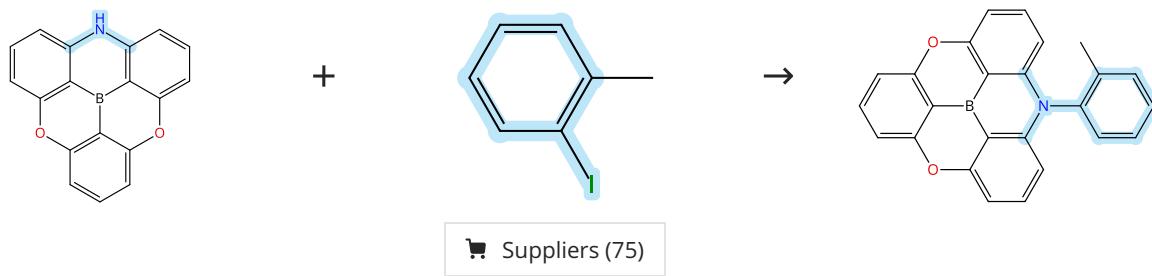
Solvents: Tetrahydrofuran; 24 h, 50 °C

Experimental Protocols

[3+2] Cycloaddition of Vinyl Cyclopropane and Hydroxy Iamines via Isocyanate Intermediate to  $\gamma$ -Lactams

By: Huang, Xiaobing; et al

Chinese Journal of Chemistry (2023), 41(16), 1937-1942.

**Scheme 14 (1 Reaction)**

31-614-CAS-40641324

Steps: 1 Yield: 85%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Palladium, tris[ $\mu$ -[(1,2- $\eta$ :4,5- $\eta$ )-(1*E*,4*E*)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), Tri-*tert*-butylphosphonium tetrafluoroborate

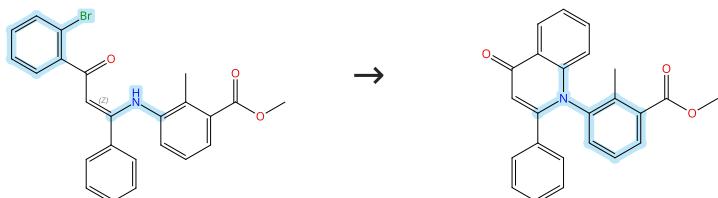
Solvents: Toluene; 24 h, 105 °C

Experimental Protocols

Synthesis of Azadioxa-Planar Triphenylboranes Bridged by Aryl- and Alkylimino Groups and Their Photophysical Properties

By: Kitamoto, Yuichi; et al

Journal of Organic Chemistry (2023), 88(9), 5852-5860.

**Scheme 15 (1 Reaction)**

Double bond geometry shown

Steps: 1 Yield: 85%

31-614-CAS-40129297

Steps: 1 Yield: 85%

**1.1 Reagents:** Potassium carbonate, Sodium hydroxide  
**Catalysts:** Palladium diacetate, (-)-BINAP  
**Solvents:** Toluene, 1,4-Dioxane; 18 h, 40 °C

Experimental Protocols

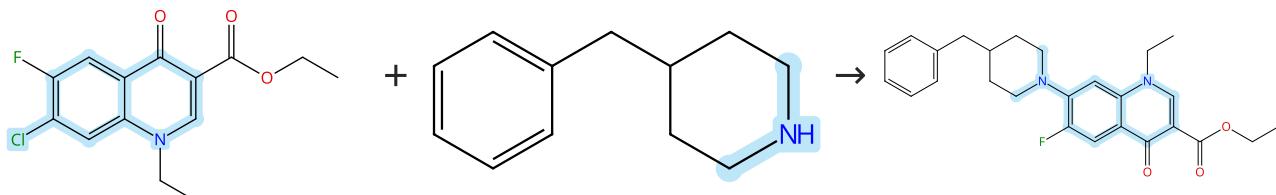
Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers

By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

## Scheme 16 (1 Reaction)

Steps: 1 Yield: 85%



Suppliers (29)

Suppliers (68)

31-614-CAS-36072600

Steps: 1 Yield: 85%

**1.1 Reagents:** Cesium carbonate  
**Catalysts:** Palladium diacetate, BINAP  
**Solvents:** Dimethylformamide; 2 h, rt → 115 °C

Experimental Protocols

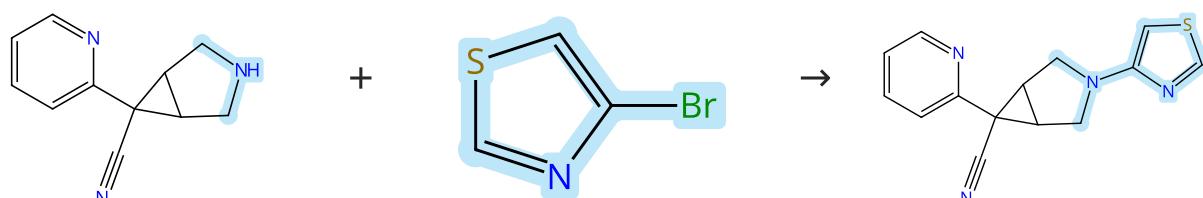
7-N-Substituted-3-oxadiazole Quinolones with Potent Antimalarial Activity Target the Cytochrome bc<sub>1</sub> Complex

By: Nguyen, William; et al

ACS Infectious Diseases (2023), 9(3), 668-691.

## Scheme 17 (1 Reaction)

Steps: 1 Yield: 85%



Suppliers (2)

Suppliers (98)

31-614-CAS-35422567

Steps: 1 Yield: 85%

**1.1 Reagents:** Sodium trimethylsilanolate  
**Catalysts:** Palladium, bromo[dicyclohexyl[3-(1,1-dimethylethoxy)-6-methoxy-2',6'-bis(1-methylethyl)[1,1'-biphenyl]-2-yl-κC<sup>1</sup>]phosphine-κP][4-[[2-(trimethylsilyl)ethoxy]carbonyl]phenyl]-, (SP-4-2)-  
**Solvents:** Tetrahydrofuran; rt → 50 °C; 3 h, 50 °C

Experimental Protocols

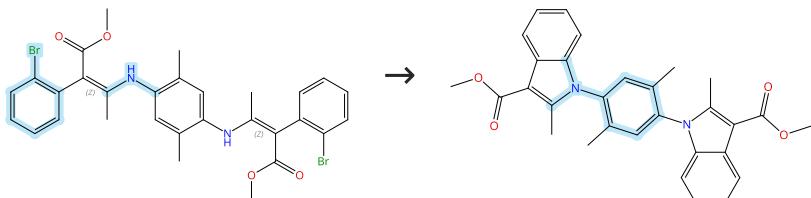
Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteroaryl Halides with Aliphatic Amines

By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

## Scheme 18 (1 Reaction)

Steps: 1 Yield: 85%



Double bond geometry shown

31-614-CAS-40129233

Steps: 1 Yield: 85%

**Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers**

By: Zhang, Peng; et al

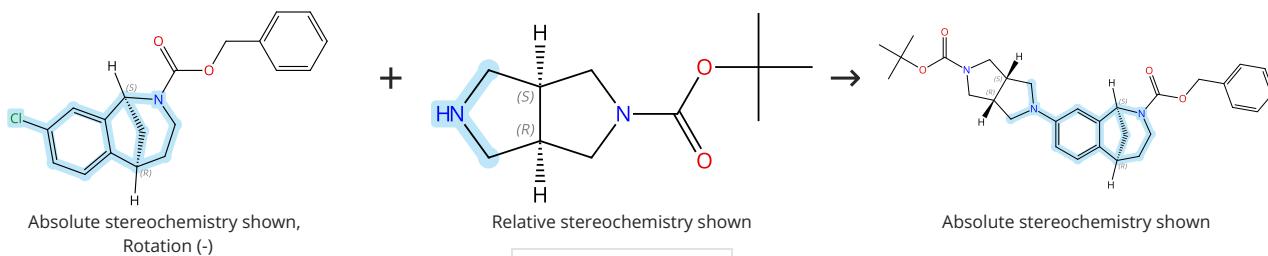
ACS Catalysis (2023), 13(11), 7680-7690.

- 1.1 **Catalysts:** Palladium diacetate, (-)-BINAP  
**Solvents:** Toluene; 20 min, rt
- 1.2 **Reagents:** Cesium carbonate  
**Solvents:** Toluene; 5 min, rt
- 1.3 5 min, rt; 18 h, 60 °C

## Experimental Protocols

**Scheme 19 (1 Reaction)**

Steps: 1 Yield: 85%



Suppliers (76)

31-614-CAS-41349172

Steps: 1 Yield: 85%

**Structure-affinity relationships of stereoisomers of norbenzomorphan-derived  $\sigma_2$ R/TMEM97 modulators**

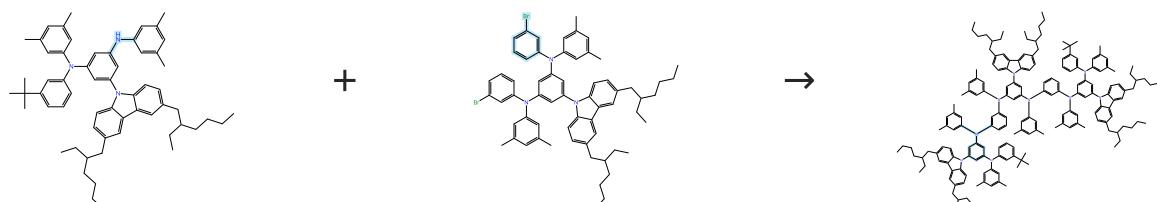
By: Lu, Yan; et al

European Journal of Medicinal Chemistry (2023), 257, 115488.

## Experimental Protocols

**Scheme 20 (1 Reaction)**

Steps: 1 Yield: 85%



31-614-CAS-38006369

Steps: 1 Yield: 85%

**One-Shot Construction of BN-Embedded Heptadecacene Framework Exhibiting Ultra-narrowband Green Thermally Activated Delayed Fluorescence**

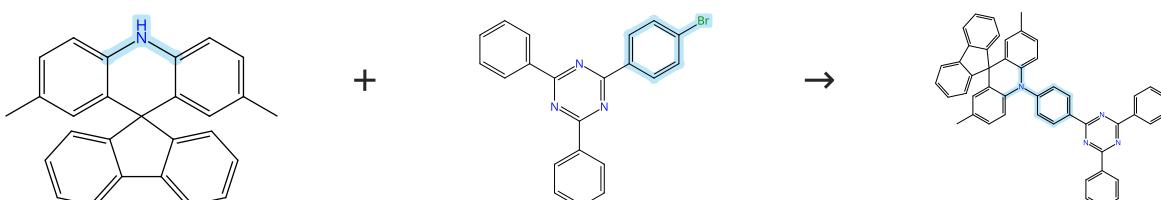
By: Sano, Yusuke; et al

Journal of the American Chemical Society (2023), 145(21), 11504-11511.

## Experimental Protocols

**Scheme 21 (1 Reaction)**

Steps: 1 Yield: 85%



Suppliers (2)

Suppliers (70)

31-614-CAS-36851724

Steps: 1 Yield: 85%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; 12 h, 110 °C

Experimental Protocols

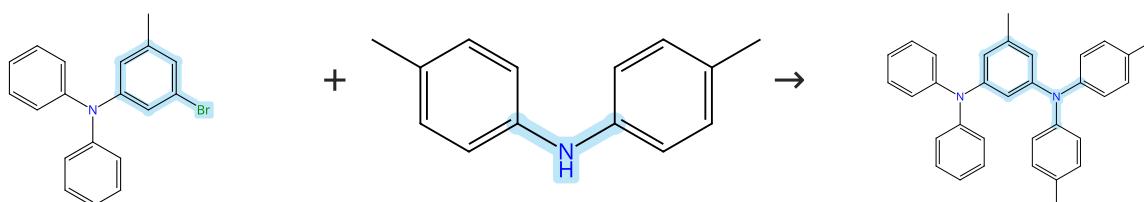
Constructing high-efficiency aggregation-induced delayed fluorescence molecules and OLEDs applying C-H···N hydrogen bond manipulation strategy

By: Ma, Zhiwei; et al

Dyes and Pigments (2023), 215, 111298.

## Scheme 22 (1 Reaction)

Steps: 1 Yield: 85%



Suppliers (19)

Suppliers (80)

31-614-CAS-41860538

Steps: 1 Yield: 85%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; overnight, 110 °C

Experimental Protocols

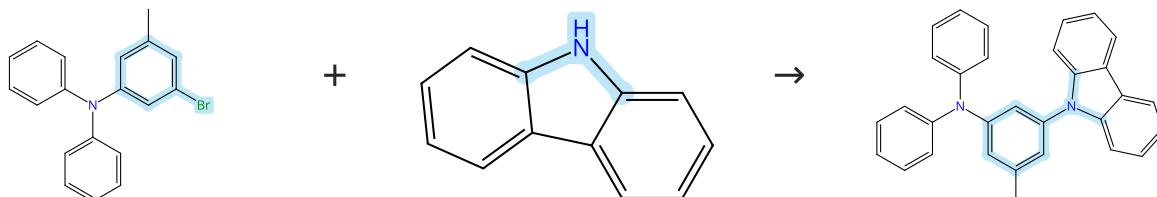
Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

## Scheme 23 (1 Reaction)

Steps: 1 Yield: 85%



Suppliers (19)

Suppliers (109)

31-614-CAS-41860543

Steps: 1 Yield: 85%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; overnight, 110 °C

Experimental Protocols

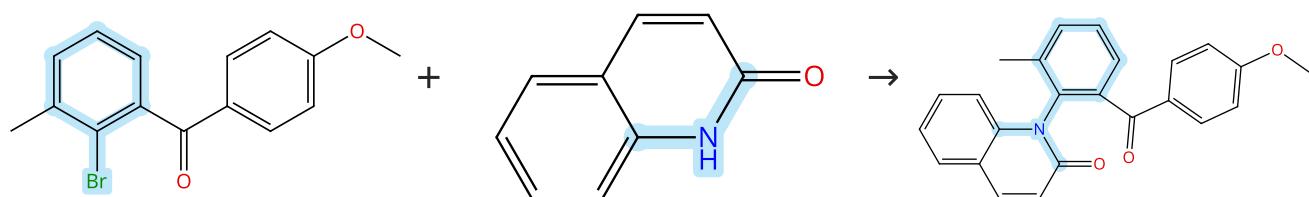
Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

## Scheme 24 (1 Reaction)

Steps: 1 Yield: 85%



Suppliers (4)

Suppliers (83)

31-614-CAS-41335318

Steps: 1 Yield: 85%

**1.1 Catalysts:** Palladium, tris[ $\mu$ -[(1,2- $\eta$ ;4,5- $\eta$ )-(1E,4E)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2*R*)-1-[(1*R*)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene

**Solvents:** *tert*-Butyl methyl ether; 30 min, rt

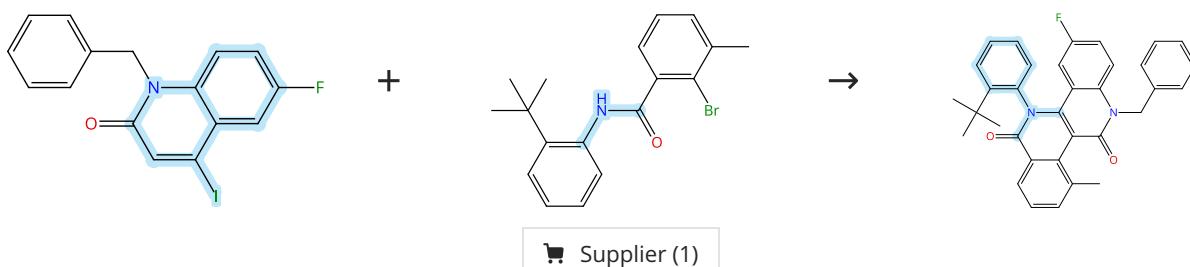
**1.2 Reagents:** Potassium carbonate; 36 h, 100 °C

Experimental Protocols

**Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination**

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

**Scheme 25 (1 Reaction)**

31-614-CAS-39194490

Steps: 1 Yield: 85%

**1.1 Reagents:** Potassium carbonate

**Catalysts:** Palladium diacetate, Ethyl (1*S,4R*)-bicyclo[2.2.1]hept-2-ene-2-carboxylate

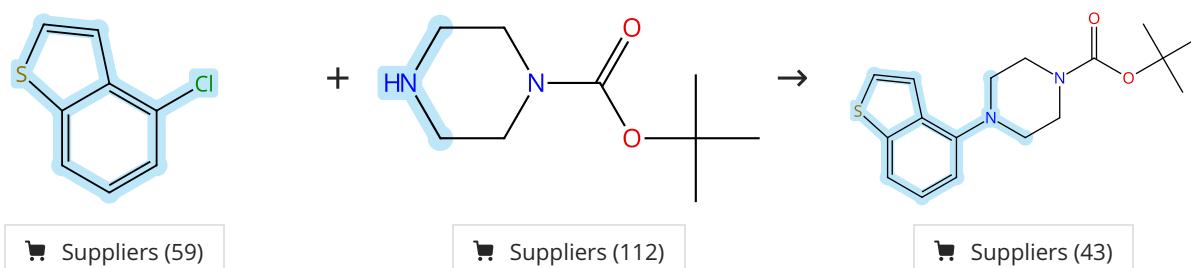
**Solvents:** Tetrahydrofuran; 5 min, rt; 48 h, 80 °C

Experimental Protocols

**Asymmetric Two-Component Alkenyl Catellani Reaction for the Construction of C-N Axial Chirality**

By: Wu, Chenggui; et al

Chinese Journal of Chemistry (2024), 42(7), 699-704.

**Scheme 26 (1 Reaction)**

31-614-CAS-38030294

Steps: 1 Yield: 85%

**1.1 Reagents:** Sodium *tert*-butoxide

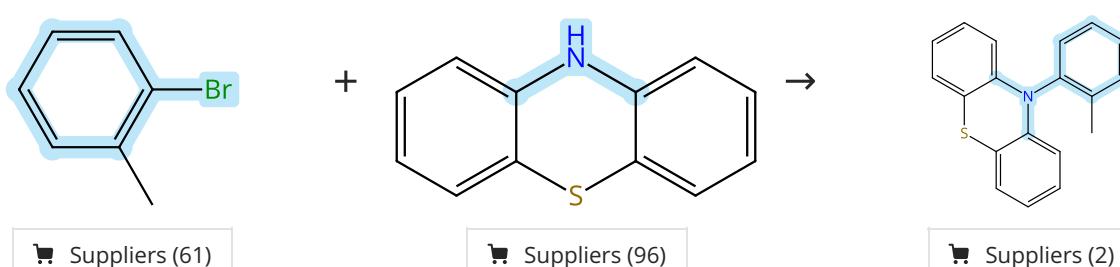
**Catalysts:** Stereoisomer of [(4*S,5S*)-1,3-bis[2,6-bis(1-methylethyl)phenyl]-4,5-diphenyl-2-imidazolidinylidene]chloro[(1,2,3- $\eta$ )-1-phenyl-2-propen-1-yl]palladium; 2 h, 70 °C

Experimental Protocols

**Solvent-Free Buchwald-Hartwig Amination of Heteroaryl Chlorides by N-Heterocyclic Carbene-Palladium Complex (SI Pr)<sup>Ph2Pd(cin)Cl</sup> at Room Temperature**

By: Ouyang, Jia-Sheng; et al

Organic Letters (2023), 25(41), 7491-7496.

**Scheme 27 (1 Reaction)**

31-614-CAS-35203613

Steps: 1 Yield: 85%

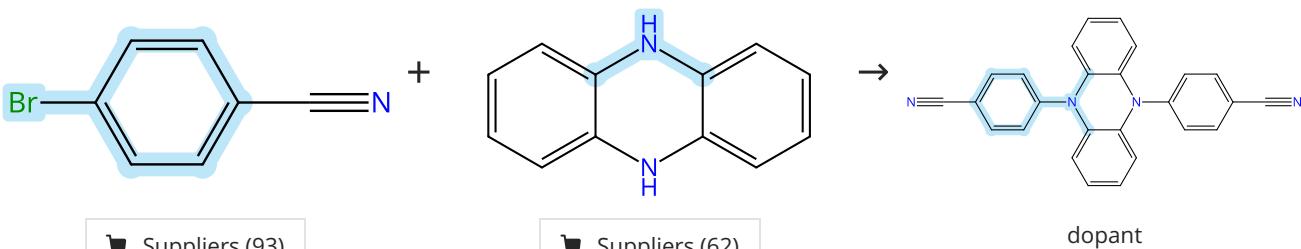
**1.1 Reagents:** Potassium *tert*-butoxide, Tri-*tert*-butylphosphine  
**Catalysts:** Palladium diacetate  
**Solvents:** Toluene; 24 h, 110 °C

Experimental Protocols

**The Effect of Molecular Conformations and Simulated "Self-Doping" in Phenothiazine Derivatives on Room-Temperature Phosphorescence**

By: Gao, Mingxue; et al

Angewandte Chemie, International Edition (2023), 62(5), e202214908.

**Scheme 28 (1 Reaction)**

Suppliers (93)

Suppliers (62)

Steps: 1 Yield: 85%

31-614-CAS-36834258

Steps: 1 Yield: 85%

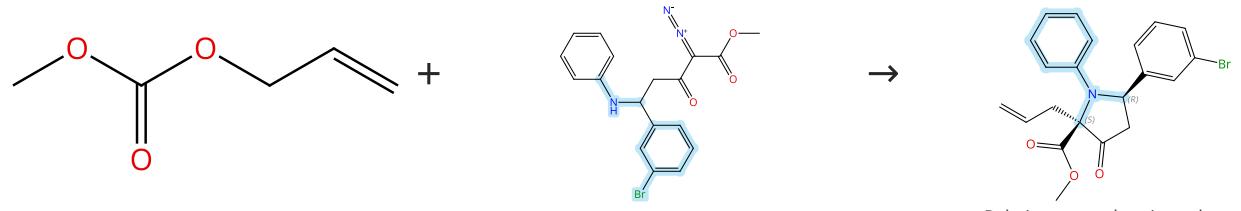
**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, Tri-*tert*-butylphosphine  
**Solvents:** Toluene; 8 h, rt → 115 °C

Experimental Protocols

**Radical Afterglow Emission Harnessed by Doping N, N'-Diaryl-5,10-Dihydrophenazines to Epoxy Resins**

By: Su, Yonghao; et al

Advanced Optical Materials (2023), 11(20), 2300604.

**Scheme 29 (1 Reaction)**

Suppliers (59)

Steps: 1 Yield: 85%

31-614-CAS-43802560

Steps: 1 Yield: 85%

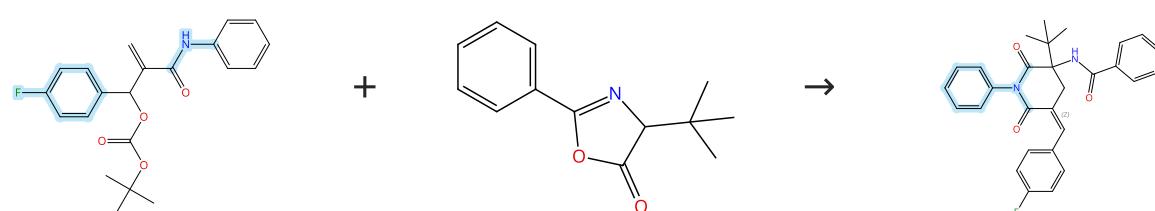
**1.1 Catalysts:** Dirhodium tetraacetate, Tris(dibenzylideneacetone) dipalladium, X-Phos  
**Solvents:** Dichloromethane; 15 min, rt  
**1.2 Solvents:** Dichloromethane; rt; 16 h, rt  
**1.3 Reagents:** Sodium chloride  
**Solvents:** Water

Experimental Protocols

**Rh(II)/Pd(0) Dual Catalysis: Carbenoid N-H Insertion/Allylation Cascade Reaction to Construct Highly Functionalized and Polysubstituted Pyrrolidines**

By: Tang, Maocheng; et al

Molecules (2024), 29(24), 5880.

**Scheme 30 (1 Reaction)**

Suppliers (4)

Double bond geometry shown

Steps: 1 Yield: 85%

31-614-CAS-35547301

Steps: 1 Yield: 85%

**1.1 Catalysts:** 1,1-Bis(diphenylphosphino)ferrocene, Tris (dibenzylideneacetone)dipalladium  
**Solvents:** Dichloromethane; 24 h, 40 °C

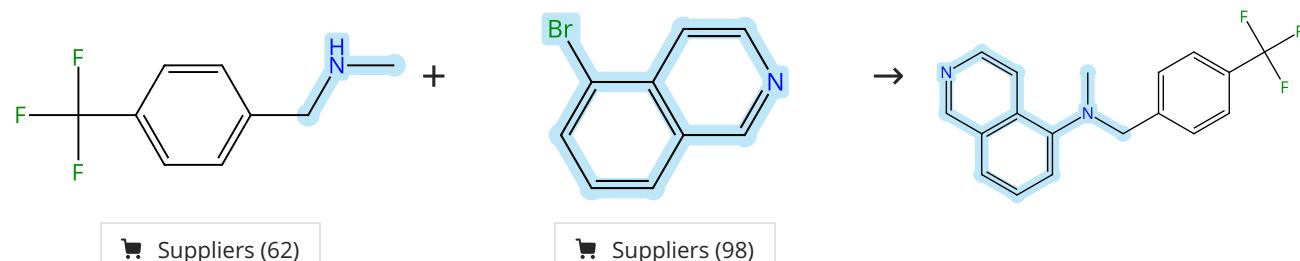
Experimental Protocols

Palladium-catalyzed [4 + 2] cycloaddition of amido-tethered allylic carbonates with oxazol-5-(4H)-ones: synthesis of piperidine-2,6-dione derivatives

By: Wang, Lan; et al

Organic Chemistry Frontiers (2023), 10(3), 813-818.

## Scheme 31 (1 Reaction)



31-614-CAS-43159486

Steps: 1 Yield: 85%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 1,1'-(9,9-Dimethyl-9*H*-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]  
**Solvents:** 1,4-Dioxane; rt → 90 °C; 24 h, 90 °C

Experimental Protocols

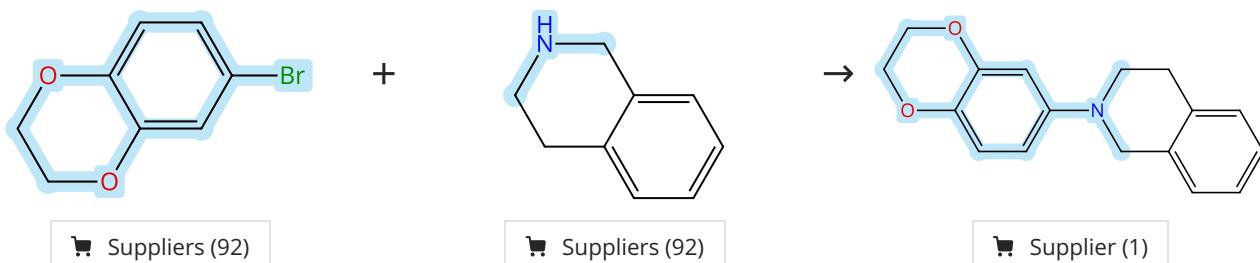
Ruthenium-Catalyzed Carbocycle-Selective Hydrogenation of Fused Heteroarenes

By: Luo, Chenguang; et al

Journal of the American Chemical Society (2024), 146(51), 35043-35056.

## Scheme 32 (1 Reaction)

Steps: 1 Yield: 85%



31-614-CAS-37741634

Steps: 1 Yield: 85%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
**Solvents:** Toluene; 5 min, rt  
**1.2** 3 h, rt → 100 °C; 100 °C → rt  
**1.3 Reagents:** Water; rt

Experimental Protocols

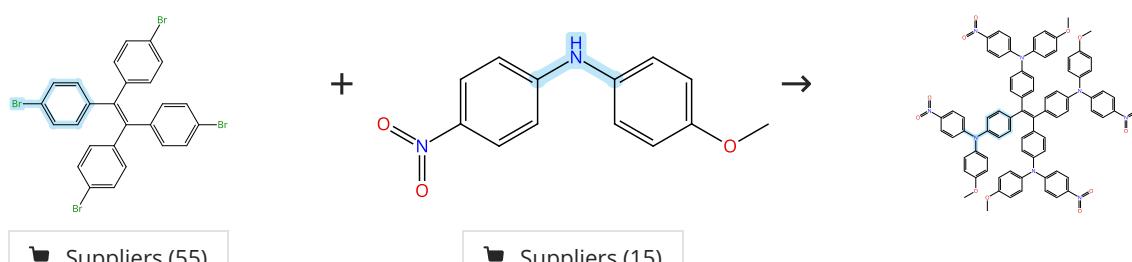
Electrochemically-Driven Organocatalytic Enantioselective Oxidative Coupling of Tetrahydroisoquinolines and Acrylaldehyde

By: Zhang, Qi-Ying; et al

Advanced Synthesis &amp; Catalysis (2023), 365(20), 3455-3460.

## Scheme 33 (1 Reaction)

Steps: 1 Yield: 85%



31-614-CAS-35929948

Steps: 1 Yield: 85%

- 1.1 **Reagents:** Potassium *tert*-butoxide, Tetraphenylporphyrin  
**Catalysts:** Palladium diacetate  
**Solvents:** Toluene; 24 h, reflux

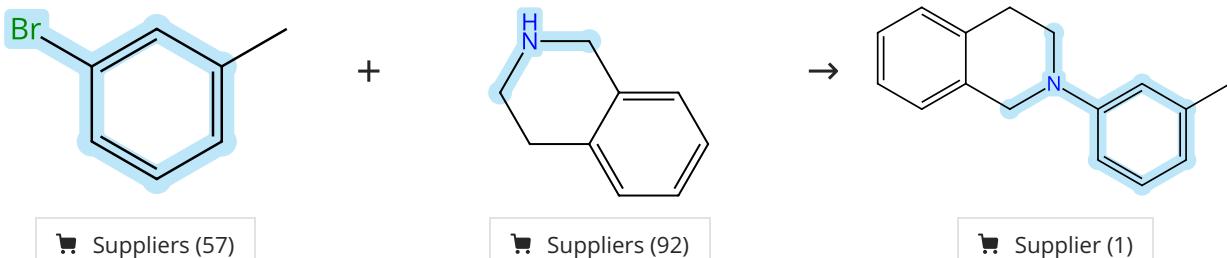
Experimental Protocols

High-performance fluorescent/electroactive (A4+B2)-type hyperbranched polyimide with AIE-enhanced electrofluorochromic behavior

By: Yu, Tiechen; et al

Dyes and Pigments (2023), 214, 111207.

## Scheme 34 (1 Reaction)



31-614-CAS-37741649

Steps: 1 Yield: 85%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
**Solvents:** Toluene; 5 min, rt  
1.2 3 h, rt → 100 °C; 100 °C → rt  
1.3 **Reagents:** Water; rt

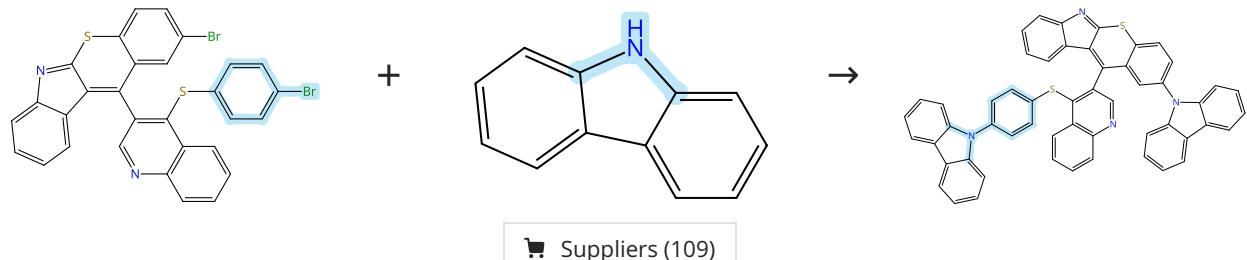
Experimental Protocols

Electrochemically-Driven Organocatalytic Enantioselective Oxidative Coupling of Tetrahydroisoquinolines and Acrylaldehyde

By: Zhang, Qi-Ying; et al

Advanced Synthesis &amp; Catalysis (2023), 365(20), 3455-3460.

## Scheme 35 (1 Reaction)



31-614-CAS-41256257

Steps: 1 Yield: 85%

- 1.1 **Reagents:** Cesium carbonate  
**Catalysts:** Palladium diacetate, Tri-*tert*-butylphosphine  
**Solvents:** Toluene; 30 h, 110 °C

Experimental Protocols

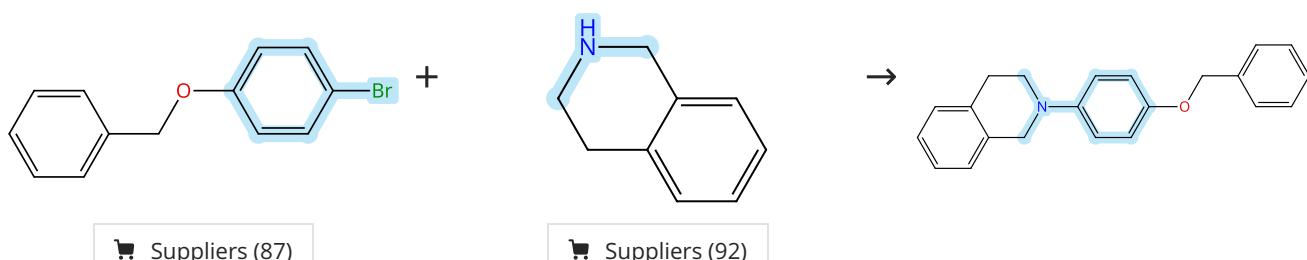
A visible-light-induced cascade cyclization strategy for the synthesis of N,S-containing polycyclic compounds

By: Yang, Shichao; et al

Organic Chemistry Frontiers (2024), 11(18), 5067-5076.

## Scheme 36 (1 Reaction)

Steps: 1 Yield: 85%



31-614-CAS-37741619

Steps: 1 Yield: 85%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 5 min, rt

1.2 3 h, rt → 100 °C; 100 °C → rt

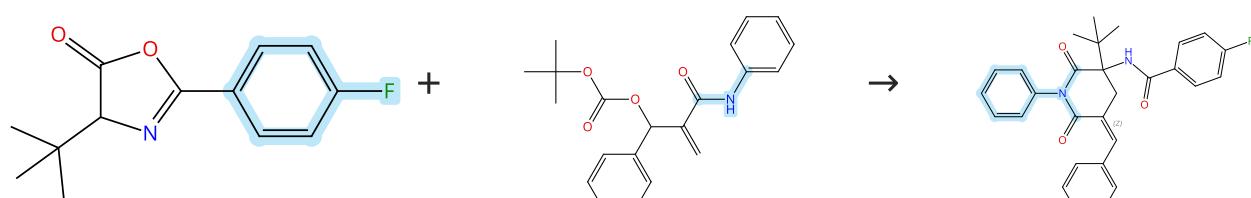
1.3 Reagents: Water; rt

Experimental Protocols

**Electrochemically-Driven Organocatalytic Enantioselective Oxidative Coupling of Tetrahydroisoquinolines and Acrylaldehyde**

By: Zhang, Qi-Ying; et al

Advanced Synthesis &amp; Catalysis (2023), 365(20), 3455-3460.

**Scheme 37 (1 Reaction)**

Double bond geometry shown

31-614-CAS-35547305

Steps: 1 Yield: 85%

1.1 Catalysts: 1,1-Bis(diphenylphosphino)ferrocene, Tris(dibenzylideneacetone)dipalladium

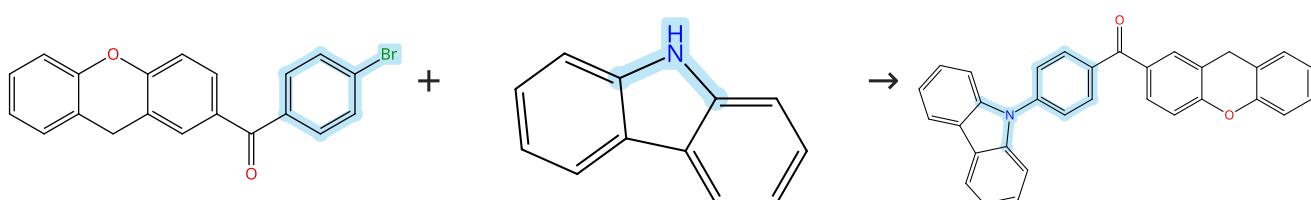
Solvents: Dichloromethane; 24 h, 40 °C

Experimental Protocols

**Palladium-catalyzed [4 + 2] cycloaddition of amido-tethered allylic carbonates with oxazol-5-(4H)-ones: synthesis of piperidine-2,6-dione derivatives**

By: Wang, Lan; et al

Organic Chemistry Frontiers (2023), 10(3), 813-818.

**Scheme 38 (1 Reaction)**

Suppliers (109)

31-614-CAS-35336600

Steps: 1 Yield: 85%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Bis(*tri-tert*-butylphosphine)palladium

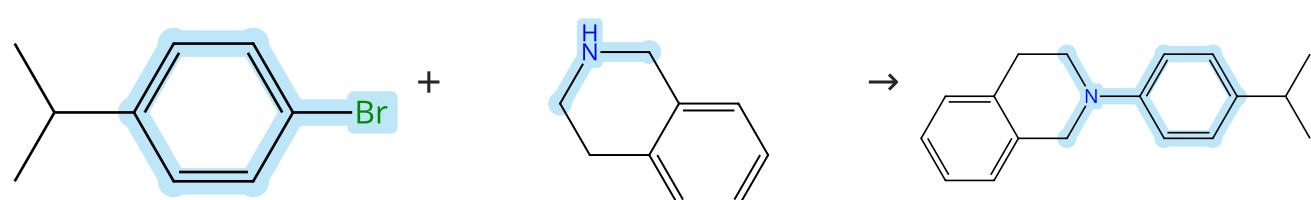
Solvents: Toluene; 24 h, 110 °C

Experimental Protocols

**Aggregation-induced emission and reversible high-contrast mechanofluorochromic behavior of dicyanoethylenes modified by xanthene and carbazole**

By: Feng, Xiucun; et al

Dyes and Pigments (2023), 209(Part\_A), 110901.

**Scheme 39 (1 Reaction)**

Suppliers (76)

Suppliers (92)

Supplier (1)

31-614-CAS-37741646

Steps: 1 Yield: 85%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 5 min, rt

1.2 3 h, rt → 100 °C; 100 °C → rt

1.3 Reagents: Water; rt

Experimental Protocols

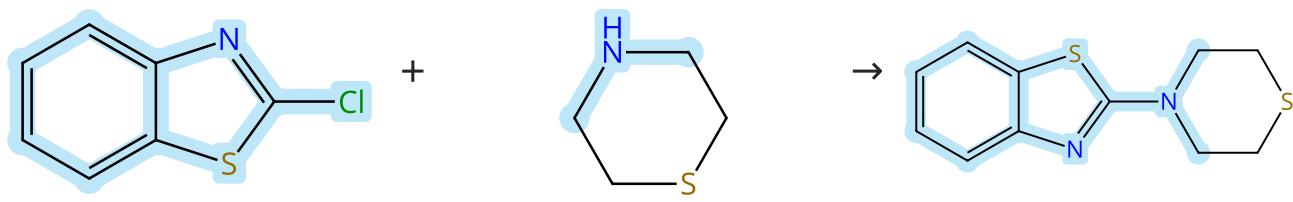
**Electrochemically-Driven Organocatalytic Enantioselective Oxidative Coupling of Tetrahydroisoquinolines and Acrylaldehyde**

By: Zhang, Qi-Ying; et al

Advanced Synthesis &amp; Catalysis (2023), 365(20), 3455-3460.

**Scheme 40 (1 Reaction)**

Steps: 1 Yield: 85%



Suppliers (96)

Suppliers (83)

Suppliers (4)

31-614-CAS-38030233

Steps: 1 Yield: 85%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Stereoisomer of [(4S,5S)-1,3-bis[2,6-bis(1-methyl ethyl)phenyl]-4,5-diphenyl-2-imidazolidinylidene]chloro[(1,2,3-η)-1-phenyl-2-propen-1-yl]palladium; 4 h, 25 °C

Experimental Protocols

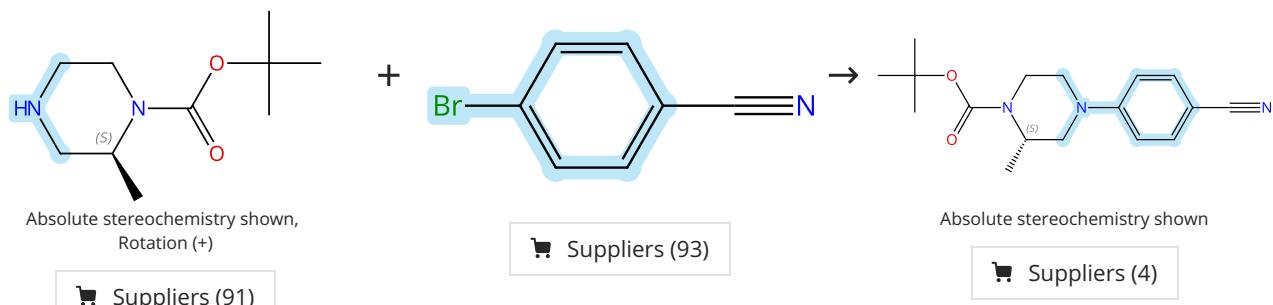
**Solvent-Free Buchwald-Hartwig Amination of Heteroaryl Chlorides by N-Heterocyclic Carbene-Palladium Complex (SI-*i*Pr)<sup>Ph2</sup>Pd(cin)Cl at Room Temperature**

By: Ouyang, Jia-Sheng; et al

Organic Letters (2023), 25(41), 7491-7496.

**Scheme 41 (1 Reaction)**

Steps: 1 Yield: 85%

Absolute stereochemistry shown,  
Rotation (+)

Suppliers (91)

Absolute stereochemistry shown

Suppliers (4)

31-614-CAS-38701032

Steps: 1 Yield: 85%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, BINAP

Solvents: Toluene; 12 h, 80 °C; 80 °C → rt

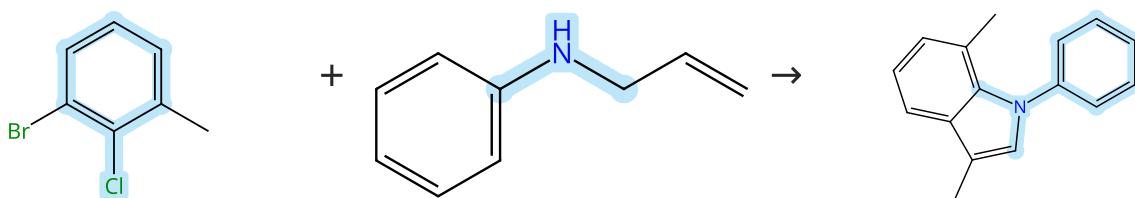
1.2 Reagents: Water; rt

Experimental Protocols

**Discovery of (2*S*)-N-(6-cyano-5-(trifluoromethyl)pyridin-3-yl)-3-(6-(4-cyanophenyl)-3,6-diazabicyclo[3.1.1]heptan-3-yl)-2-hydroxy-2-methylpropanamide as a Highly Potent and Selective Topical Androgen Receptor Antagonist for Androgenetic Alopecia Treatment**

By: Zhang, Wenqiang; et al

Journal of Medicinal Chemistry (2024), 67(1), 322-348.

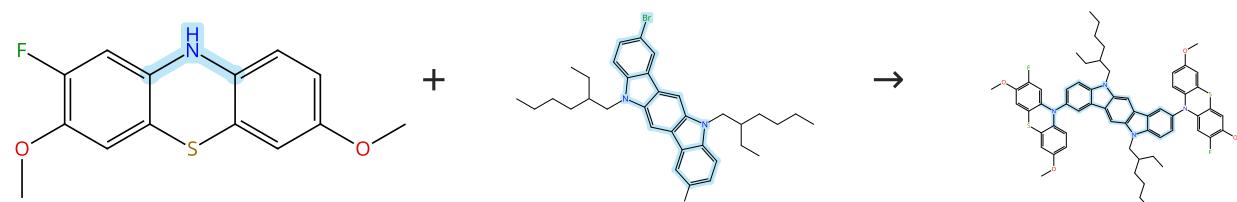
**Scheme 42 (1 Reaction)****Suppliers (68)****Suppliers (63)****31-614-CAS-38969992**

Steps: 1 Yield: 85%

**1.1 Reagents:** Sodium *tert*-butoxide**Catalysts:** Palladium, [7,9-bis[2,6-bis(1-methylethyl)phenyl]-7,9-dihydro-8*H*-acenaphth[1,2-*d*]imidazol-8-ylidene]bromo[2-(4,5-dihydro-4,4-dimethyl-2-oxazolyl-*kN*<sup>3</sup>)-1-naphthalenyl-*kC*]-, (*SP*-4-4)-**Solvents:** 1,4-Dioxane; 24 h, 100 °C**A General Protocol toward Synthesis of 3-Methylindoles Using Acenaphthoimidazolidene-Ligated Oxazoline Palladacycle**

By: Fan, Ruqian; et al

Organic Letters (2024), 26(1), 22-28.

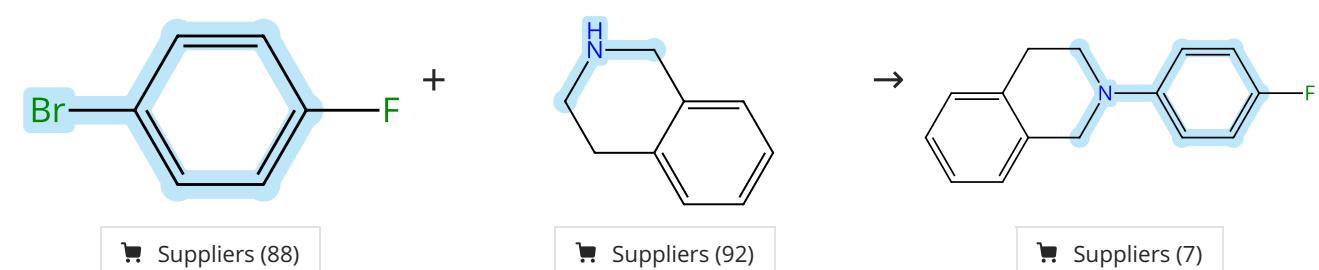
**Experimental Protocols****Scheme 43 (1 Reaction)****31-614-CAS-37845766**

Steps: 1 Yield: 85%

**1.1 Reagents:** Sodium *tert*-butoxide**Catalysts:** Palladium diacetate, Tri-*tert*-butylphosphine**Solvents:** Toluene; 24 h, 100 °C**New Molecular Design, Step-Saving Synthesis, and Applications of Indolocarbazole Core-Based Oligo(hetero)arenes**

By: Lin, Li; et al

Chemistry - An Asian Journal (2023), 18(20), e202300681.

**Experimental Protocols****Scheme 44 (1 Reaction)****Suppliers (88)****Suppliers (92)****Suppliers (7)****31-614-CAS-37741655**

Steps: 1 Yield: 85%

**1.1 Reagents:** Sodium *tert*-butoxide**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl**Solvents:** Toluene; 5 min, rt**1.2** 3 h, rt → 100 °C; 100 °C → rt**1.3 Reagents:** Water; rt**Electrochemically-Driven Organocatalytic Enantioselective Oxidative Coupling of Tetrahydroisoquinolines and Acryaldehyde**

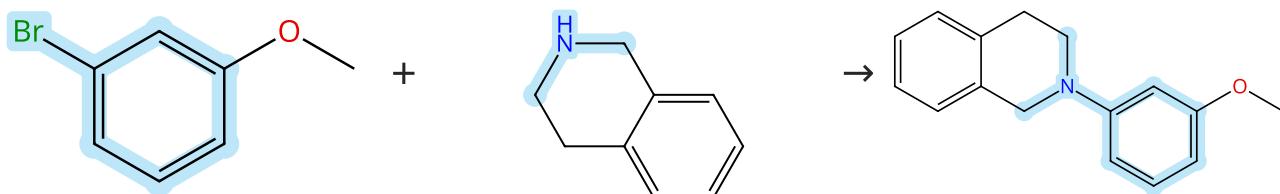
By: Zhang, Qi-Ying; et al

Advanced Synthesis &amp; Catalysis (2023), 365(20), 3455-3460.

**Experimental Protocols**

## Scheme 45 (1 Reaction)

Steps: 1 Yield: 85%



31-614-CAS-37741629

Steps: 1 Yield: 85%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
**Solvents:** Toluene; 5 min, rt  
 1.2 3 h, rt → 100 °C; 100 °C → rt  
 1.3 **Reagents:** Water; rt

**Electrochemically-Driven Organocatalytic Enantioselective Oxidative Coupling of Tetrahydroisoquinolines and Acrylaldehyde**

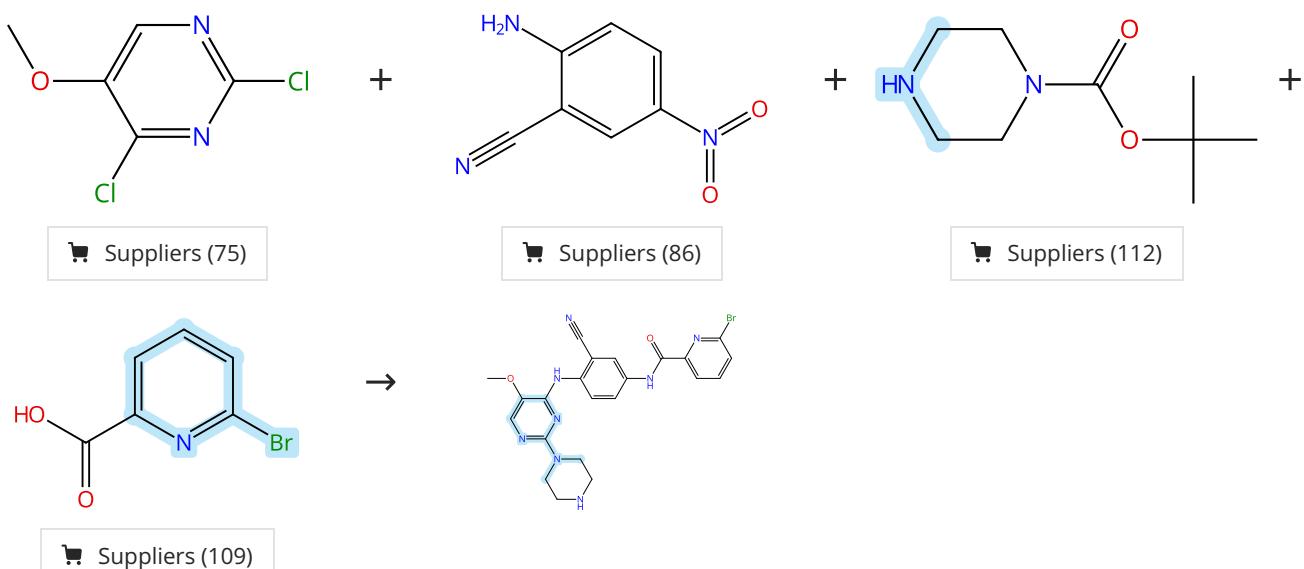
By: Zhang, Qi-Ying; et al

Advanced Synthesis &amp; Catalysis (2023), 365(20), 3455-3460.

## Experimental Protocols

## Scheme 46 (1 Reaction)

Steps: 1 Yield: 85%



31-614-CAS-36602321

Steps: 1 Yield: 85%

- 1.1 **Reagents:** Cesium carbonate  
**Solvents:** Dimethylformamide; 5 h, 80 °C  
 1.2 **Reagents:** Diisopropylethylamine  
**Solvents:** 1-Butanol; 8 h, 120 °C  
 1.3 **Reagents:** Hydrogen  
**Catalysts:** Palladium  
**Solvents:** Methanol; overnight, rt  
 1.4 **Reagents:** 1-Hydroxybenzotriazole, 1-Ethyl-3-(3'-dimethylaminopropyl)carbodiimide hydrochloride  
**Solvents:** Dimethylformamide; 6 h, rt  
 1.5 **Reagents:** Hydrochloric acid  
**Solvents:** Dichloromethane, 1,4-Dioxane; 4 h, rt

**Discovery of Pyrimidinediamine Derivatives as Potent Methuosis Inducers for the Treatment of Triple-Negative Breast Cancer**

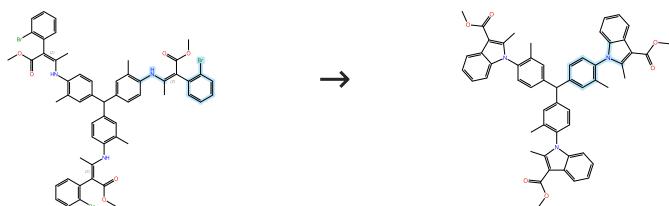
By: He, Jia; et al

Journal of Medicinal Chemistry (2023), 66(11), 7421-7437.

## Experimental Protocols

**Scheme 47 (1 Reaction)**

Steps: 1 Yield: 85%



Double bond geometry shown

31-614-CAS-40129230

Steps: 1 Yield: 85%

1.1 **Catalysts:** Palladium diacetate, (-)-BINAP  
**Solvents:** Toluene; 20 min, rt**Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers**

By: Zhang, Peng; et al

1.2 **Reagents:** Cesium carbonate  
**Solvents:** Toluene; 5 min, rt

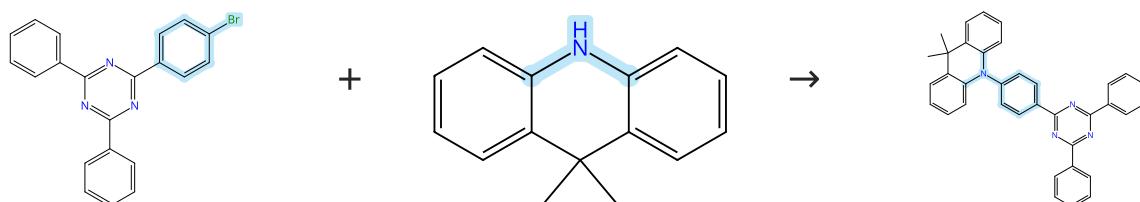
ACS Catalysis (2023), 13(11), 7680-7690.

1.3 5 min, rt; 18 h, 60 °C

Experimental Protocols

**Scheme 48 (1 Reaction)**

Steps: 1 Yield: 85%



Suppliers (70)

Suppliers (68)

Suppliers (34)

31-614-CAS-36071141

Steps: 1 Yield: 85%

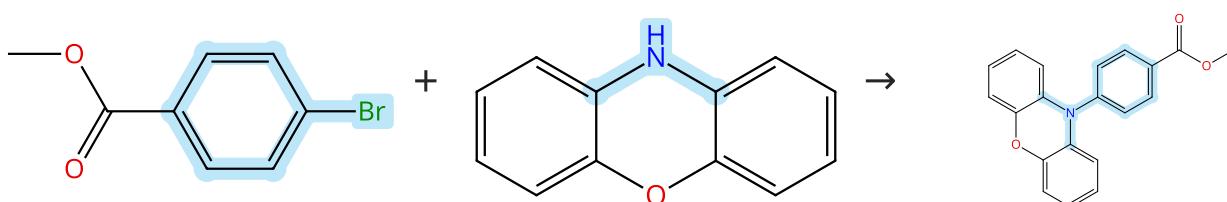
1.1 **Reagents:** Sodium *tert*-butoxide, Tri-*tert*-butylphosphonium tetrafluoroborate  
**Catalysts:** Palladium diacetate  
**Solvents:** Toluene**New Light-Green Thermally Activated Delayed Fluorescence Polymer Based on Dimethylacridine-Triphenyltriazine Light-Emitting Unit and Tetraphenylsilane Moiety as Non-Conjugated Backbone**

By: Hauyon, Rene A.; et al

Polymers (Basel, Switzerland) (2023), 15(1), 67.

**Scheme 49 (1 Reaction)**

Steps: 1 Yield: 85%



Suppliers (97)

Suppliers (96)

Suppliers (4)

31-614-CAS-37287064

Steps: 1 Yield: 85%

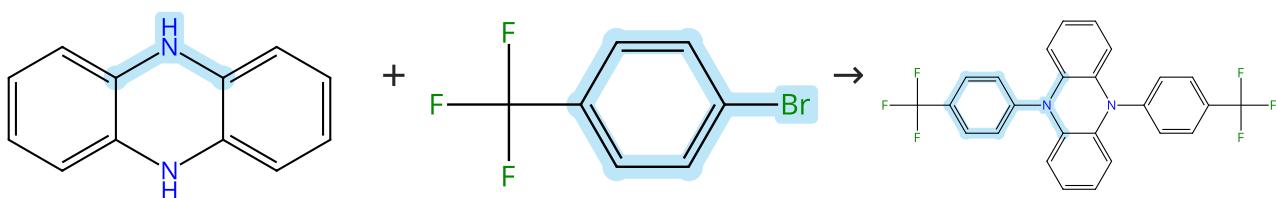
1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate  
**Solvents:** Toluene; 24 h, reflux**Structurally Diversified Calix[3]phenoxazines: Synthesis, Solid-State Conformational Investigation, and Host-Guest Chemistry**

By: Mao, Lijun; et al

Organic Letters (2023), 25(30), 5597-5601.

Scheme 50 (1 Reaction)

Steps: 1 Yield: 85%



Suppliers (62)

Suppliers (79)

31-614-CAS-35436065

Steps: 1 Yield: 85%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; 24 h, rt → 115 °C

Aggregation Effect on Multiperformance Improvement in Aryl-Armed Phenazine-Based Emitters

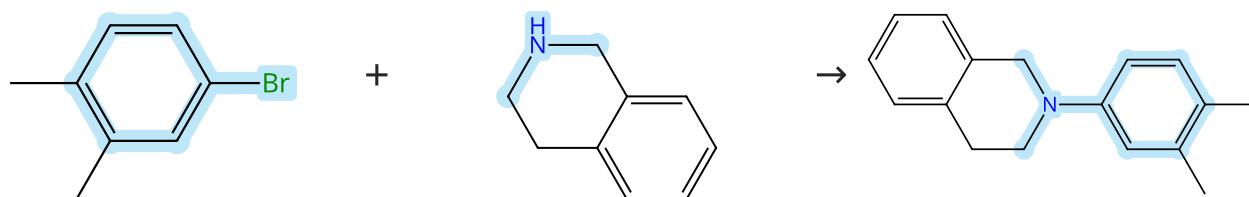
By: Wan, Qing; et al

Journal of the American Chemical Society (2023), 145(3), 1607-1616.

Experimental Protocols

Scheme 51 (1 Reaction)

Steps: 1 Yield: 85%



Suppliers (62)

Suppliers (92)

Suppliers (3)

31-614-CAS-37741653

Steps: 1 Yield: 85%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 5 min, rt

1.2 3 h, rt → 100 °C; 100 °C → rt

1.3 Reagents: Water; rt

Electrochemically-Driven Organocatalytic Enantioselective Oxidative Coupling of Tetrahydroisoquinolines and Acrylaldehyde

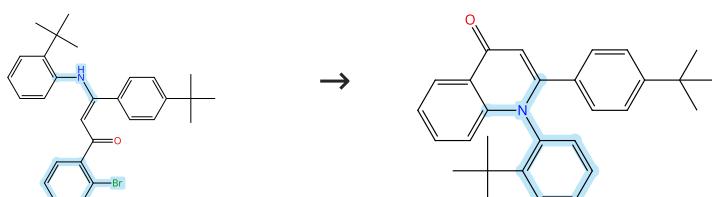
By: Zhang, Qi-Ying; et al

Advanced Synthesis &amp; Catalysis (2023), 365(20), 3455-3460.

Experimental Protocols

Scheme 52 (1 Reaction)

Steps: 1 Yield: 85%



31-614-CAS-36215312

Steps: 1 Yield: 85%

1.1 Reagents: Potassium carbonate

Catalysts: Palladium diacetate, Ferrocene, 1-(diphenylphosphino)-2-[(1*S*)-1-[(diphenylphosphino)propylamino]ethyl]-, (1*S*)-

Solvents: Toluene; 20 h, 80 °C

Synthesis of N-Substituted 4-Quinolones via Palladium-Catalyzed Enantioselective C-N Coupling and Base-Promoted Reactions

By: Pu, Xiaoyun; et al

Advanced Synthesis &amp; Catalysis (2023), 365(8), 1152-1157.

Experimental Protocols

**Scheme 53 (1 Reaction)**

Steps: 1 Yield: 85%



31-614-CAS-38556056

Steps: 1 Yield: 85%

**1.1 Reagents:** Potassium carbonate  
**Catalysts:** Palladium diacetate  
**Solvents:** Dimethylformamide; 12 h, 110 °C

Experimental Protocols

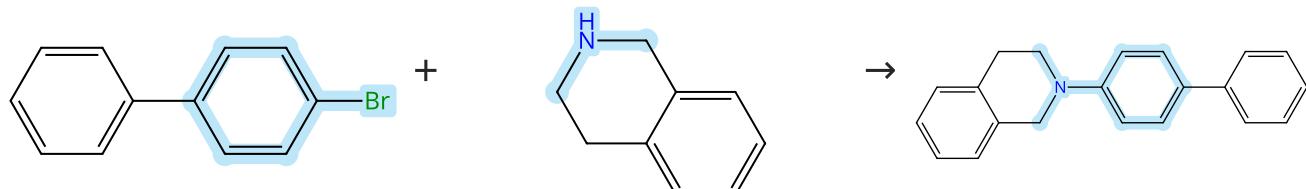
**Preparation of pyridopyrazines through tandem Pd-catalyzed C-N/C-C coupling reactions of Ugi adducts**

By: Takallou, Ahmad; et al

Organic &amp; Biomolecular Chemistry (2023), 21(48), 9530-9533.

**Scheme 54 (1 Reaction)**

Steps: 1 Yield: 85%



Suppliers (83)

Suppliers (92)

Suppliers (5)

31-614-CAS-37741671

Steps: 1 Yield: 85%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
**Solvents:** Toluene; 5 min, rt  
**1.2** 3 h, rt → 100 °C; 100 °C → rt  
**1.3 Reagents:** Water; rt

Experimental Protocols

**Electrochemically-Driven Organocatalytic Enantioselective Oxidative Coupling of Tetrahydroisoquinolines and Acrylaldehyde**

By: Zhang, Qi-Ying; et al

Advanced Synthesis &amp; Catalysis (2023), 365(20), 3455-3460.

**Scheme 55 (1 Reaction)**

Steps: 1 Yield: 85%



Suppliers (80)

Suppliers (92)

Suppliers (2)

31-614-CAS-37741635

Steps: 1 Yield: 85%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
**Solvents:** Toluene; 5 min, rt  
**1.2** 3 h, rt → 100 °C; 100 °C → rt  
**1.3 Reagents:** Water; rt

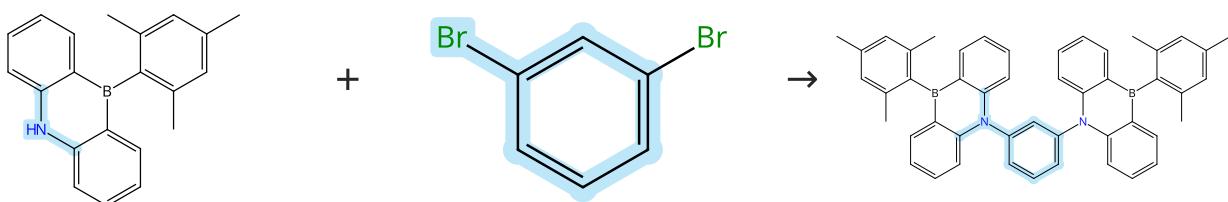
Experimental Protocols

**Electrochemically-Driven Organocatalytic Enantioselective Oxidative Coupling of Tetrahydroisoquinolines and Acrylaldehyde**

By: Zhang, Qi-Ying; et al

Advanced Synthesis &amp; Catalysis (2023), 365(20), 3455-3460.

Scheme 56 (1 Reaction)



Suppliers (79)

31-614-CAS-39320727

Steps: 1 Yield: 84%

1.1 Reagents: Sodium *tert*-butoxide  
Catalysts: Bis(*tri-tert*-butylphosphine)palladium  
Solvents: Toluene; 40 h, rt → reflux; reflux → rt

1.2 Reagents: Water; rt

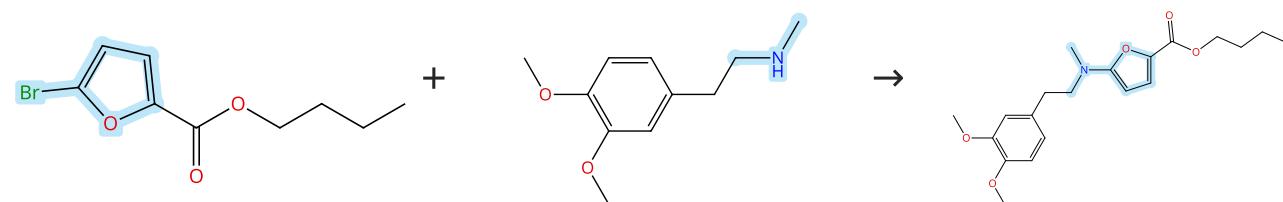
Experimental Protocols

Green-Emitting Extended B<sub>3</sub>N<sub>2</sub>-Doped Polycyclic Aromatic Hydrocarbon with Multiple Resonance Structure

By: Zender, Elena; et al

Organic Letters (2024), 26(4), 939-944.

Scheme 57 (1 Reaction)



Suppliers (4)

Suppliers (45)

31-614-CAS-35422531

Steps: 1 Yield: 84%

1.1 Catalysts: Palladium, bromo[dicyclohexyl[3-(1,1-dimethylethoxy)-6-methoxy-2',6'-bis(1-methylethyl)[1,1'-biphenyl]-2-yl-κC<sup>1</sup>]phosphine-κP][4-[2-(trimethylsilyl)ethoxy]carbonylphenyl]-, (*SP*-4-2)-  
Solvents: Tetrahydrofuran; 5 min, rt

1.2 Reagents: Sodium trimethylsilanolate

Solvents: Tetrahydrofuran; 1 h, 70 °C; 2 h, 70 °C

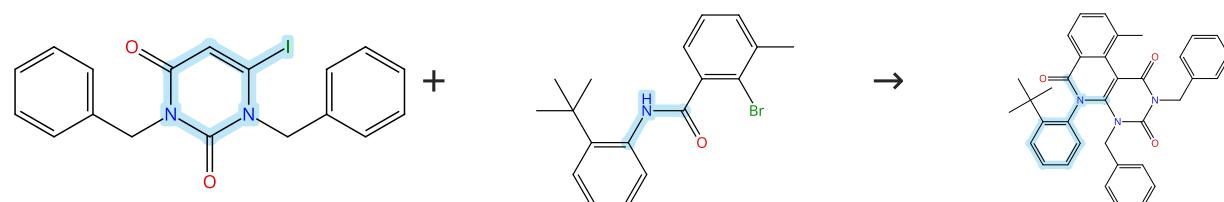
Experimental Protocols

Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteroaryl Halides with Aliphatic Amines

By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

Scheme 58 (1 Reaction)



Supplier (1)

31-614-CAS-39194508

Steps: 1 Yield: 84%

1.1 Reagents: Potassium carbonate  
Catalysts: Palladium diacetate, 2-(*Di-tert*-butylphosphino)biphenyl, Ethyl (1*S*,4*R*)-bicyclo[2.2.1]hept-2-ene-2-carboxylate  
Solvents: Tetrahydrofuran; 5 min, rt; 48 h, 90 °C

Experimental Protocols

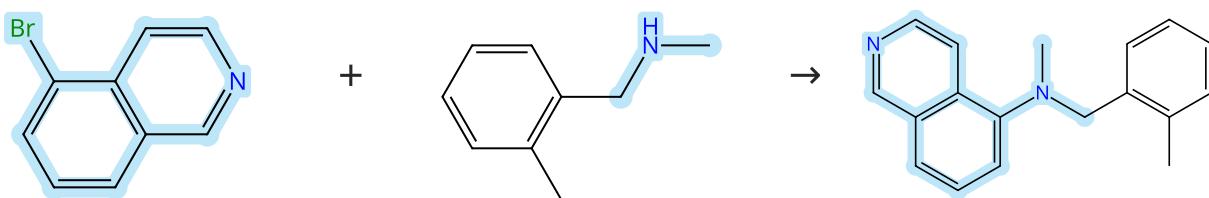
Asymmetric Two-Component Alkenyl Catellani Reaction for the Construction of C-N Axial Chirality

By: Wu, Chenggui; et al

Chinese Journal of Chemistry (2024), 42(7), 699-704.

**Scheme 59 (1 Reaction)**

Steps: 1 Yield: 84%



Suppliers (98)

Suppliers (63)

**31-614-CAS-43159490**

Steps: 1 Yield: 84%

**Ruthenium-Catalyzed Carbocycle-Selective Hydrogenation of Fused Heteroarenes**

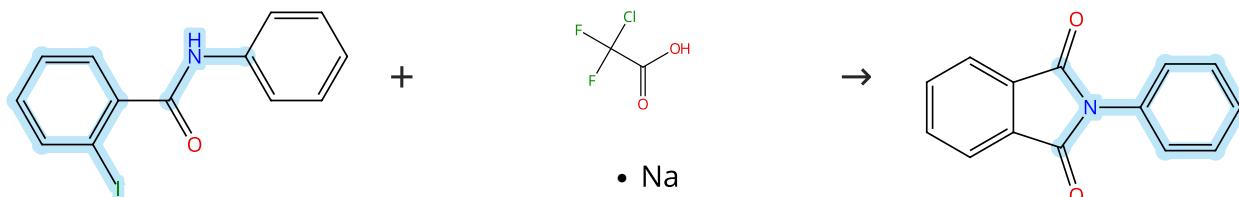
By: Luo, Chenguang; et al

Journal of the American Chemical Society (2024), 146(51), 35043-35056.

## Experimental Protocols

**Scheme 60 (1 Reaction)**

Steps: 1 Yield: 84%



Suppliers (38)

Suppliers (88)

Suppliers (69)

**31-614-CAS-38558257**

Steps: 1 Yield: 84%

**Synthesis of N-substituted phthalimides via Pd-catalyzed [4+1] cycloaddition reaction**

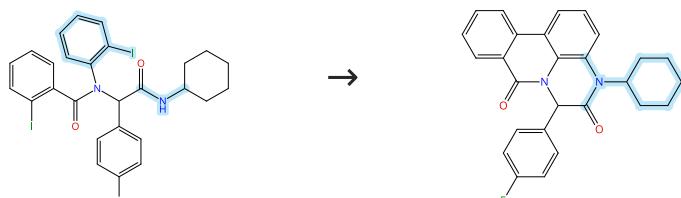
By: Hu, Chengxian; et al

Chemical Communications (Cambridge, United Kingdom) (2023), 59(100), 14839-14842.

## Experimental Protocols

**Scheme 61 (1 Reaction)**

Steps: 1 Yield: 84%

**31-614-CAS-38556053**

Steps: 1 Yield: 84%

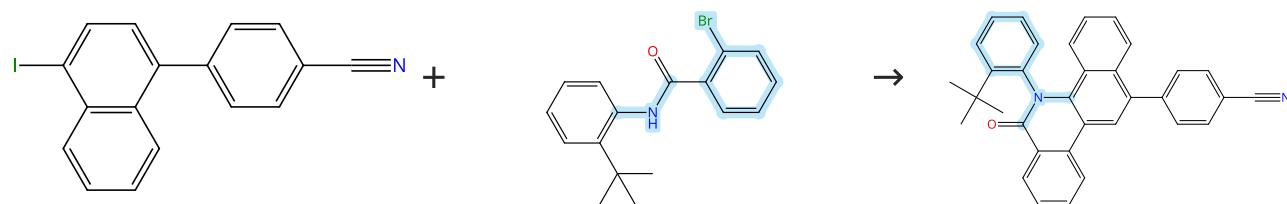
**Preparation of pyridopyrazines through tandem Pd-catalyzed C-N/C-C coupling reactions of Ugi adducts**

By: Takallou, Ahmad; et al

Organic &amp; Biomolecular Chemistry (2023), 21(48), 9530-9533.

## Experimental Protocols

Scheme 62 (1 Reaction)



Suppliers (5)

31-614-CAS-41071026

Steps: 1 Yield: 84%

1.1 Reagents: Norbornene, Silver sulfate

Catalysts: Tris(dibenzylideneacetone)dipalladium, (4S,4'S)-4,4',5,5'-Tetrahydro-4,4'-bis(1-methylethyl)-1,1'-bis[3-(trifluoromethyl)phenyl]-2,2'-bi-1*H*-imidazole  
Solvents: Toluene, Water; 36 h, 80 °C

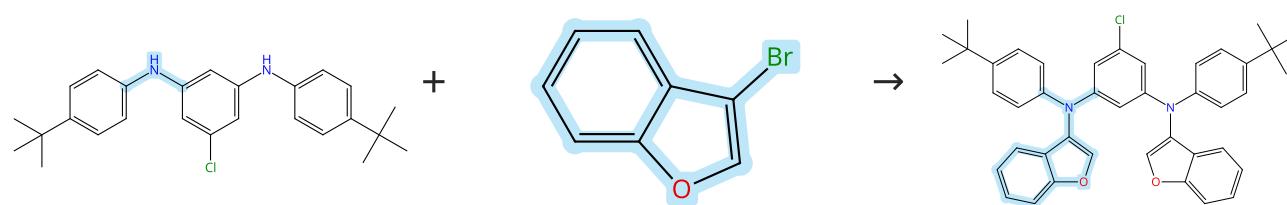
Chiral dinitrogen ligand enabled asymmetric Pd/norbornene cooperative catalysis toward the assembly of C–N axially chiral scaffolds

By: Jin, Liang; et al

Nature Communications (2024), 15(1), 4908.

Experimental Protocols

Scheme 63 (1 Reaction)



Suppliers (66)

31-614-CAS-40799977

Steps: 1 Yield: 84%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tri-*tert*-butylphosphine, Tris(dibenzylideneacetone)  
dipalladium

Solvents: Toluene; 12 h, 100 °C

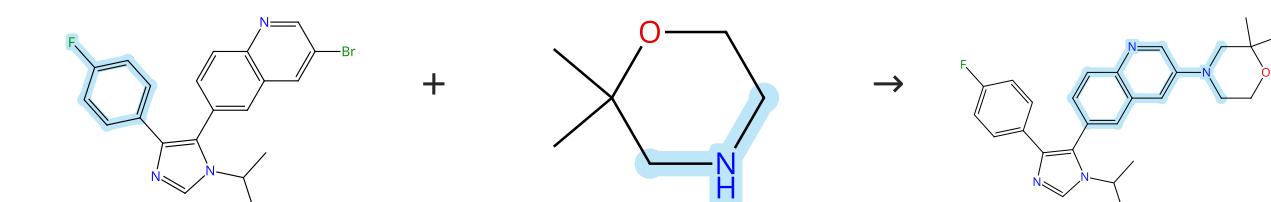
One-shot borylation synthesis of multiple resonance (M R) blue emitters via fusing benzofuran fragments within B/N skeletons

By: Zhao, He; et al

Journal of Materials Chemistry C: Materials for Optical and Electronic Devices (2024), 12(26), 9753-9759.

Experimental Protocols

Scheme 64 (1 Reaction)



Suppliers (77)

31-614-CAS-39722167

Steps: 1 Yield: 84%

Fragment growth-based discovery of novel TNK inhibitors for the treatment of colorectal cancer

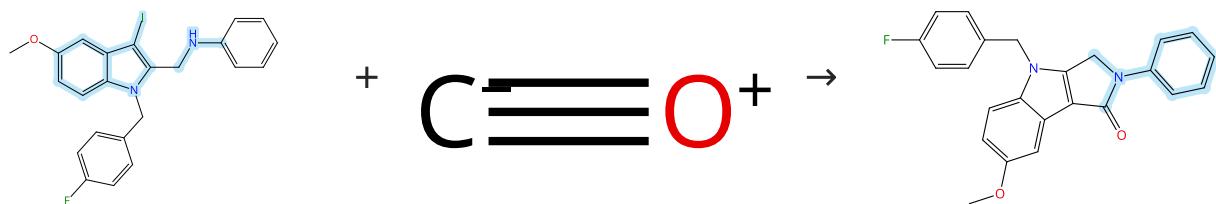
By: Teng, Yixin; et al

European Journal of Medicinal Chemistry (2024), 268, 116240.

Experimental Protocols

Scheme 65 (1 Reaction)

Steps: 1 Yield: 84%



Suppliers (17)

31-614-CAS-37487004

Steps: 1 Yield: 84%

## 1.1 Reagents: Triethylamine

Catalysts: Palladium diacetate, 1,1'-(9,9-Dimethyl-9H-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]

Solvents: Toluene

## 1.2 Reagents: Formic acid, Triethylamine, Methanesulfonyl chloride; 10 min, rt; rt → 100 °C; 18 h, 100 °C

Experimental Protocols

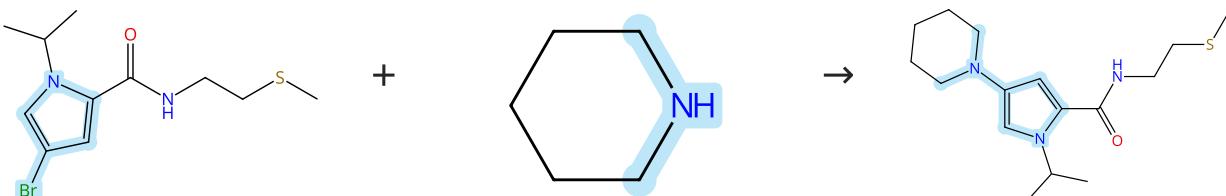
Accessing Dihydropyrrolo[3,4-b]indol-1(2H)-ones via Pd-Catalyzed Intramolecular Aminocarbonylative Ring Closure

By: Alam, Ryan M.; et al

European Journal of Organic Chemistry (2023), 26(34), e202300646.

Scheme 66 (1 Reaction)

Steps: 1 Yield: 84%



Suppliers (26)

Suppliers (50)

31-614-CAS-35422562

Steps: 1 Yield: 84%

## 1.1 Reagents: Sodium trimethylsilanolate

Catalysts: Palladium, bromo[dicyclohexyl[3-(1,1-dimethylethoxy)-6-methoxy-2',6'-bis(1-methylethyl)[1,1'-biphenyl]-2-yl-κC<sup>1'</sup>]phosphine-κP][4-[[2-(trimethylsilyl)ethoxy]carbonyl]phenyl]-, (SP-4-2)-

Solvents: Tetrahydrofuran; rt → 90 °C; 3 h, 90 °C

Experimental Protocols

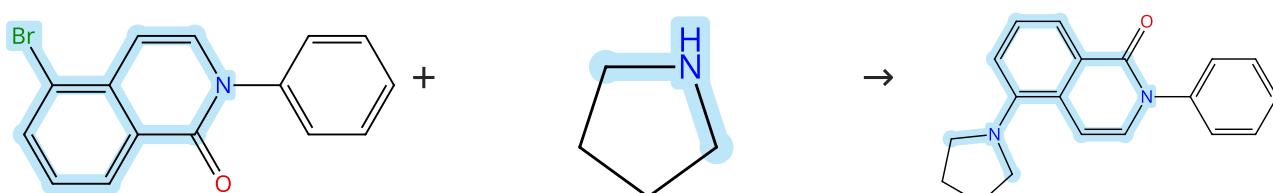
Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteroaryl Halides with Aliphatic Amines

By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

Scheme 67 (1 Reaction)

Steps: 1 Yield: 84%



Suppliers (74)

31-614-CAS-39303618

Steps: 1 Yield: 84%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, BINAP

Solvents: Toluene; 12 h, 100 °C

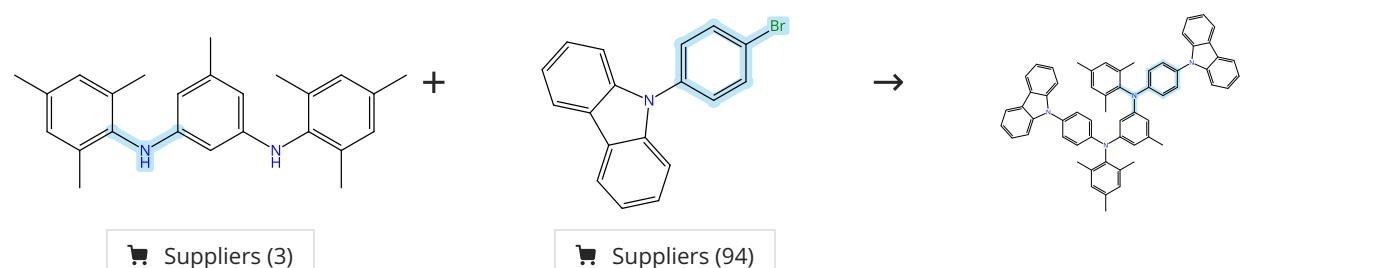
Experimental Protocols

Access to N-Aryl (Iso)quinolones via Aryne-Induced Three-Component Coupling Reaction

By: Yan, Qiang; et al

Organic Letters (2024), 26(9), 1840-1844.

Scheme 68 (1 Reaction)



31-614-CAS-41860571

Steps: 1 Yield: 84%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine  
**Solvents:** Toluene; overnight, 110 °C

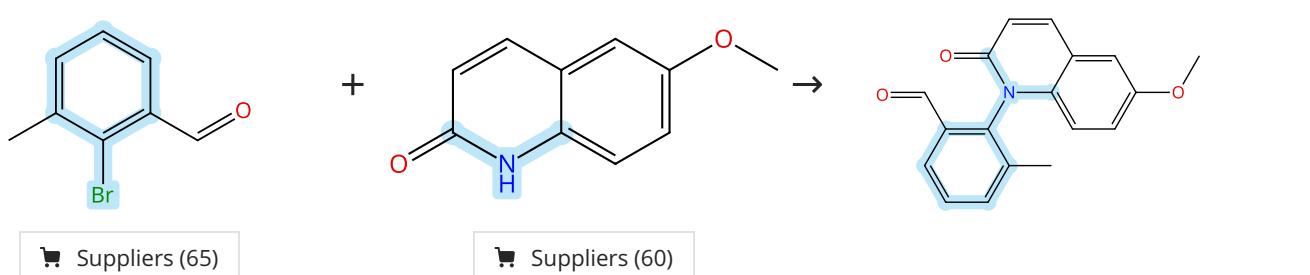
Experimental Protocols

Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

Scheme 69 (1 Reaction)



31-614-CAS-41335291

Steps: 1 Yield: 84%

- 1.1 **Catalysts:** Palladium, tris[ $\mu$ -(1,2- $\eta$ ;4,5- $\eta$ )-(1*E*,4*E*)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2*R*)-1-[(1*R*)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene  
**Solvents:** *tert*-Butyl methyl ether; 30 min, rt  
1.2 **Reagents:** Tripotassium phosphate; 36 h, 90 °C

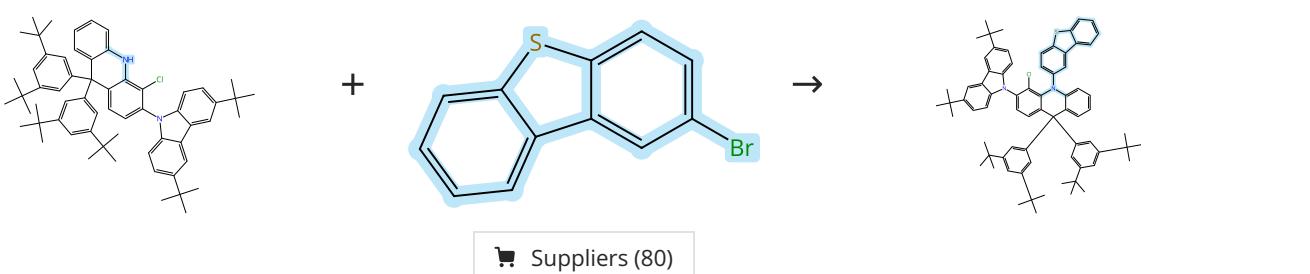
Experimental Protocols

Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

Scheme 70 (1 Reaction)



31-614-CAS-41198196

Steps: 1 Yield: 84%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate  
**Solvents:** Toluene; 12 h, 100 °C

Experimental Protocols

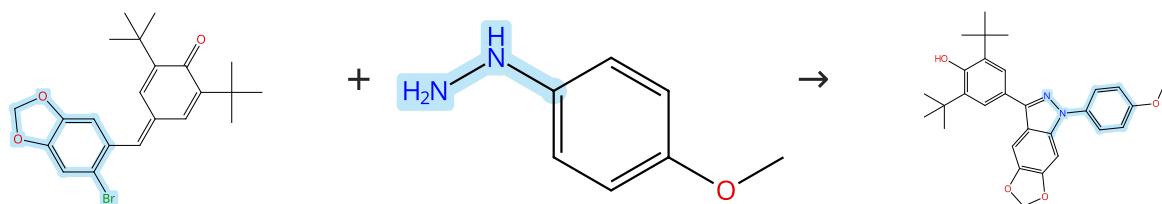
Ten-Dibenzothiophenyl-9,9-diphenylacridane-based multiple resonance emitters for high-efficiency narrowband green OLEDs with CIE  $y > 0.7$  at high doping concentrations

By: Zhong, Rui; et al

Chemical Science (2024), 15(33), 13290-13298.

Scheme 71 (1 Reaction)

Steps: 1 Yield: 84%



Suppliers (46)

31-614-CAS-38947680

Steps: 1 Yield: 84%

1.1 Reagents: Potassium *tert*-butoxide

Catalysts: Palladium diacetate, 1,3-Bis(diphenylphosphino)propane

Solvents: Toluene; 15 h, 110 °C

Experimental Protocols

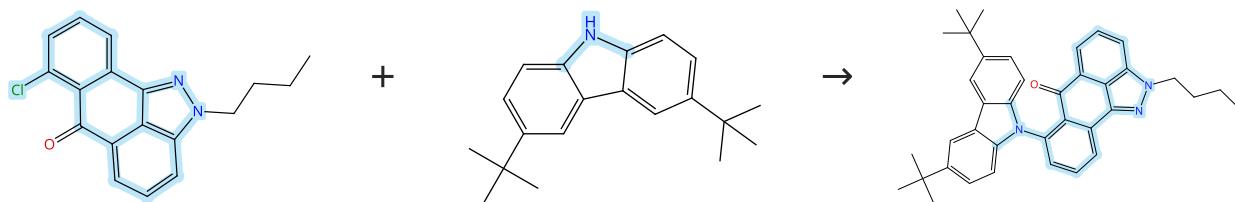
Synthesis and Photophysical Properties of 3-Substituted-1*H*-Indazoles: A Pd-Catalyzed Double C-N Bond Formation Strategy via 1,6-Conjugate Addition

By: Kayastha, Nasib; et al

Journal of Organic Chemistry (2024), 89(1), 402-413.

Scheme 72 (1 Reaction)

Steps: 1 Yield: 84%



Supplier (1)

Suppliers (69)

31-614-CAS-38100959

Steps: 1 Yield: 84%

1.1 Reagents: Cesium carbonate

Catalysts: 1,1-Bis(diphenylphosphino)ferrocene, Tris(dibenzylideneacetone)dipalladium

Solvents: Toluene; 12 h, 100 °C

Experimental Protocols

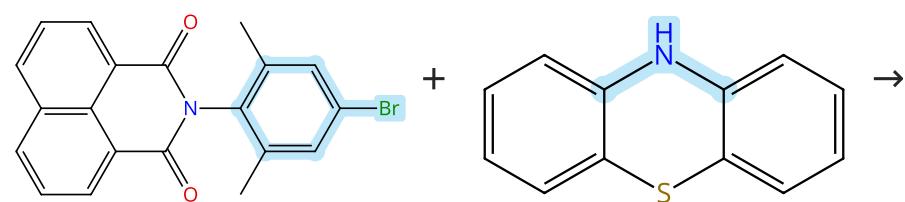
Thermally activated delayed fluorescence and high-contrast mechanochromism of anthrone-based donor-acceptor systems

By: Sudhakar, Pagidi; et al

Frontiers in Chemistry (Lausanne, Switzerland) (2023), 11, 1248267.

Scheme 73 (1 Reaction)

Steps: 1 Yield: 84%



Suppliers (96)

31-614-CAS-40244762

Steps: 1 Yield: 84%

1.1 Reagents: Potassium carbonate

Catalysts: Palladium diacetate, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; 2 h, 150 °C

Experimental Protocols

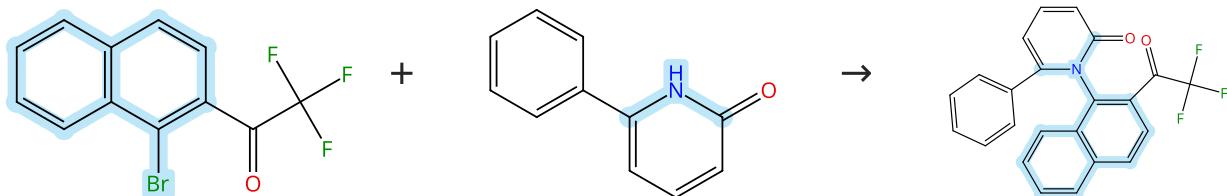
Long-Lived Charge-Separated State in Naphthalimide-Phenothiazine Compact Electron Donor-Acceptor Dyads: Effect of Molecular Conformation Restriction and Solvent Polarity

By: Xiao, Xiao; et al

Journal of Physical Chemistry B (2023), 127(31), 6982-6998.

Scheme 74 (1 Reaction)

Steps: 1 Yield: 84%



Suppliers (65)

31-614-CAS-41335348

Steps: 1 Yield: 84%

- 1.1 **Catalysts:** Palladium, tris[ $\mu$ -[(1,2- $\eta$ :4,5- $\eta$ )-(1E,4E)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2R)-1-[(1R)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene  
**Solvents:** Toluene; 30 min, rt
- 1.2 **Reagents:** Cesium carbonate; 36 h, 90 °C

**Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination**

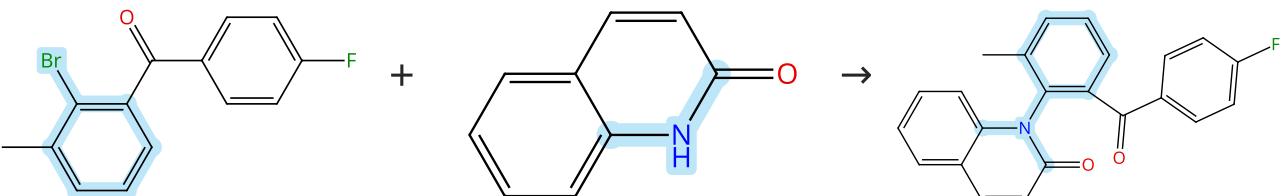
By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

Experimental Protocols

Scheme 75 (1 Reaction)

Steps: 1 Yield: 84%



Supplier (1)

Suppliers (83)

31-614-CAS-41335315

Steps: 1 Yield: 84%

- 1.1 **Catalysts:** Palladium, tris[ $\mu$ -[(1,2- $\eta$ :4,5- $\eta$ )-(1E,4E)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2R)-1-[(1R)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene  
**Solvents:** *tert*-Butyl methyl ether; 30 min, rt
- 1.2 **Reagents:** Potassium carbonate; 36 h, 100 °C

**Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination**

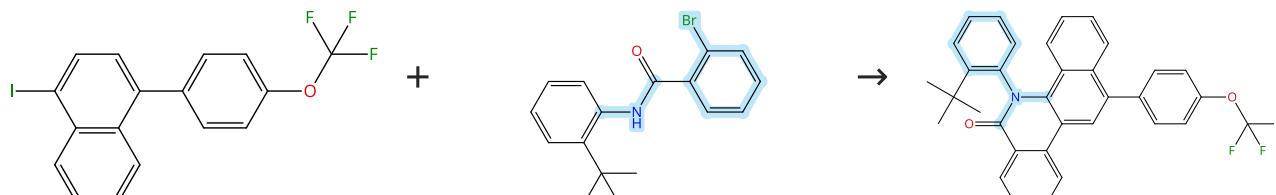
By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

Experimental Protocols

Scheme 76 (1 Reaction)

Steps: 1 Yield: 84%



Suppliers (5)

31-614-CAS-41071020

Steps: 1 Yield: 84%

1.1 Reagents: Norbornene, Silver sulfate

Catalysts: Tris(dibenzylideneacetone)dipalladium, (4S,4'S)-4,4',5,5'-Tetrahydro-4,4'-bis(1-methylethyl)-1,1'-bis[3-(trifluoromethyl)phenyl]-2,2'-bi-1*H*-imidazole

Solvents: Toluene, Water; 36 h, 80 °C

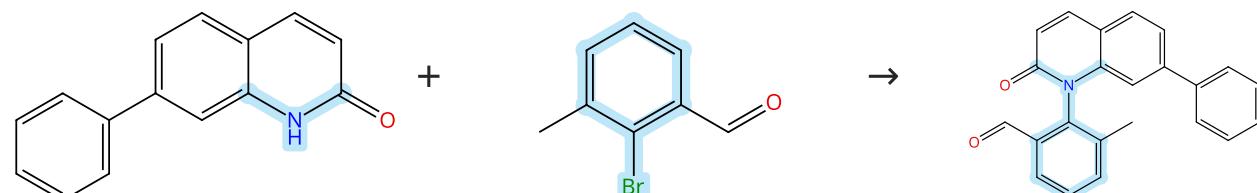
Experimental Protocols

Chiral dinitrogen ligand enabled asymmetric Pd/norbornene cooperative catalysis toward the assembly of C–N axially chiral scaffolds

By: Jin, Liang; et al

Nature Communications (2024), 15(1), 4908.

## Scheme 77 (1 Reaction)



Steps: 1 Yield: 84%

31-614-CAS-41335298

Steps: 1 Yield: 84%

1.1 Catalysts: Palladium, tris[ $\mu$ -[(1,2- $\eta$ :4,5- $\eta$ )-(1*E,4E*)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2*R*)-1-[(1*R*)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferroceneSolvents: *tert*-Butyl methyl ether; 30 min, rt

1.2 Reagents: Tripotassium phosphate; 36 h, 90 °C

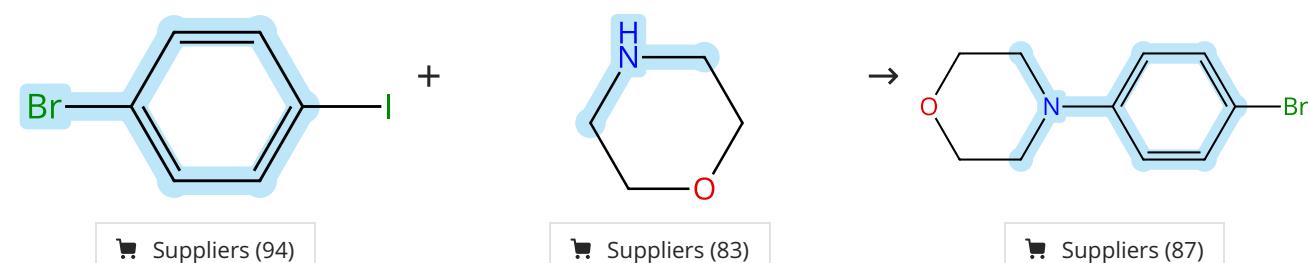
Experimental Protocols

Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C–N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

## Scheme 78 (1 Reaction)



Steps: 1 Yield: 84%

31-614-CAS-36426428

Steps: 1 Yield: 84%

1.1 Reagents: Potassium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium

Solvents: Toluene; 24 h, 110 °C

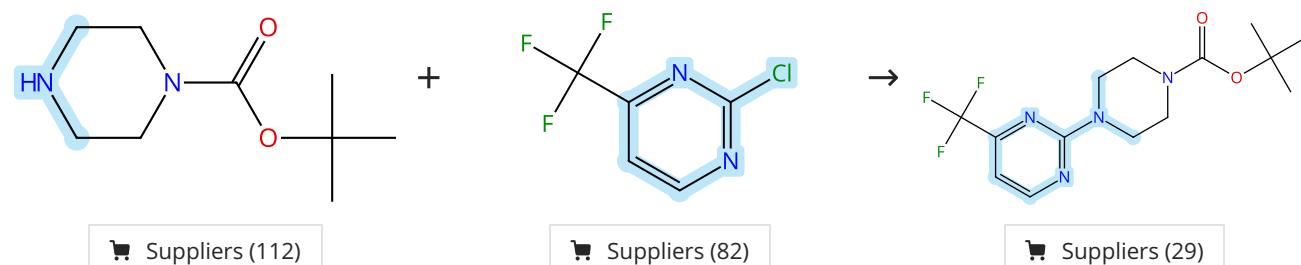
Experimental Protocols

Modulating room temperature phosphorescence through intermolecular halogen bonding

By: Jiang, Dongyan; et al

Journal of Materials Chemistry C: Materials for Optical and Electronic Devices (2023), 11(12), 4203-4209.

## Scheme 79 (1 Reaction)



Steps: 1 Yield: 84%

31-614-CAS-36748999

Steps: 1 Yield: 84%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine

Solvents: 1,4-Dioxane; overnight, heated

Experimental Protocols

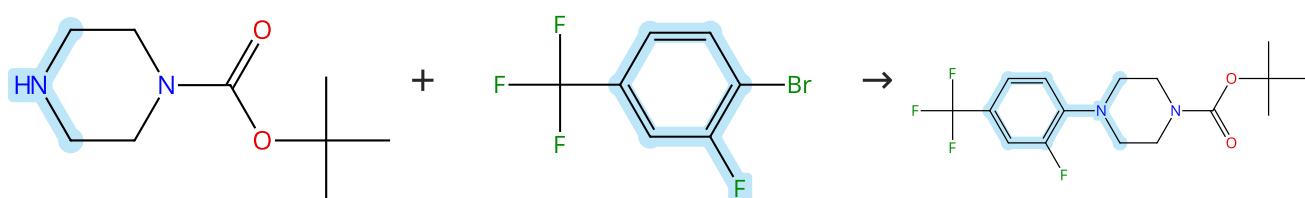
Structure-Activity relationships of replacements for the triazolopyridazine of Anti-Cryptosporidium lead SLU-2633

By: Oboh, Edmund; et al

Bioorganic &amp; Medicinal Chemistry (2023), 86, 117295.

Scheme 80 (1 Reaction)

Steps: 1 Yield: 84%



Suppliers (112)

Suppliers (72)

Suppliers (5)

31-614-CAS-39721097

Steps: 1 Yield: 84%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Palladium diacetate, BINAP

Solvents: Toluene; 10 h, 95 °C

Experimental Protocols

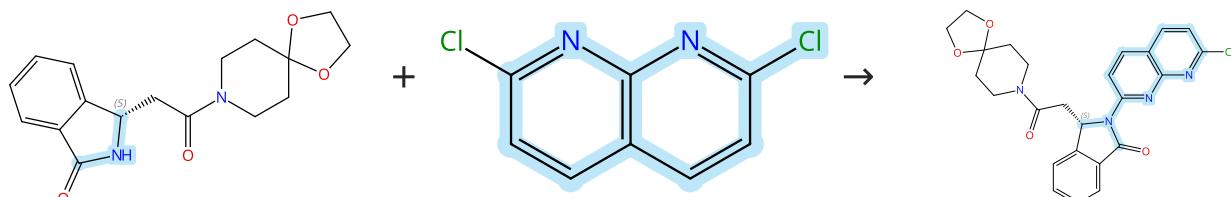
Discovery of a novel class of reversible monoacylglycerol lipase inhibitors for potential treatment of depression

By: Hao, Qingjing; et al

European Journal of Medicinal Chemistry (2024), 268, 116285.

Scheme 81 (1 Reaction)

Steps: 1 Yield: 84%

Absolute stereochemistry shown,  
Rotation (-)

Suppliers (61)

Absolute stereochemistry shown

Suppliers (5)

31-614-CAS-39394643

Steps: 1 Yield: 84%

Cobalt-Catalyzed Enantioselective C-H Carbonylation towards Chiral Isoindolinones

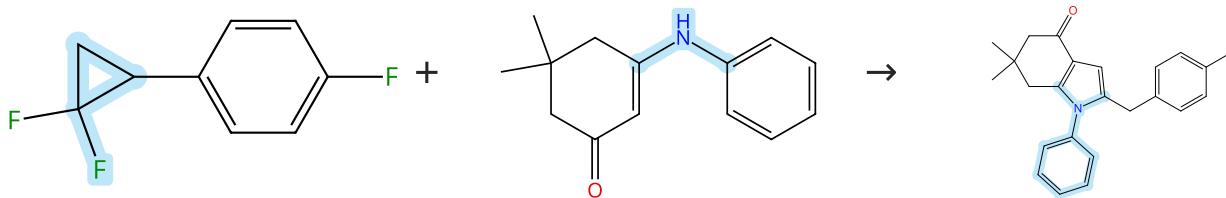
By: Teng, Ming-Ya; et al

Angewandte Chemie, International Edition (2024), 63(10), e202318803.

Experimental Protocols

Scheme 82 (1 Reaction)

Steps: 1 Yield: 84%



Suppliers (9)

Suppliers (37)

31-614-CAS-39213708

Steps: 1 Yield: 84%

1.1 Reagents: Monosodium phosphate

Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos  
Solvents: Tetrahydrofuran; 12 h, 65 °C; 65 °C → rt

1.2 Reagents: Cesium carbonate

Solvents: Ethanol; 12 h, 80 °C

Experimental Protocols

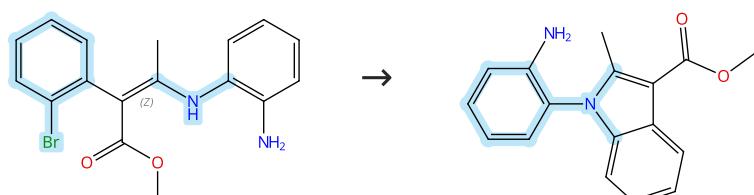
Ligand-controlled regioselective cascade C-C/C-F cleavage/annulation of gem-DFCPs: a divergent synthesis of pyrroles

By: Wu, Tian-Shu; et al

Organic Chemistry Frontiers (2024), 11(4), 1057-1061.

## Scheme 83 (1 Reaction)

Steps: 1 Yield: 84%



Double bond geometry shown

31-614-CAS-40129207

Steps: 1 Yield: 84%

Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers

By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

1.1 Catalysts: Palladium diacetate, 1,1'-(*(1S)*-[1,1'-Binaphthalene]-2,2'-diyl)bis[1,1-bis(3,5-dimethylphenyl)phosphine]

Solvents: Toluene; 20 min, 25 °C

1.2 Reagents: Cesium carbonate

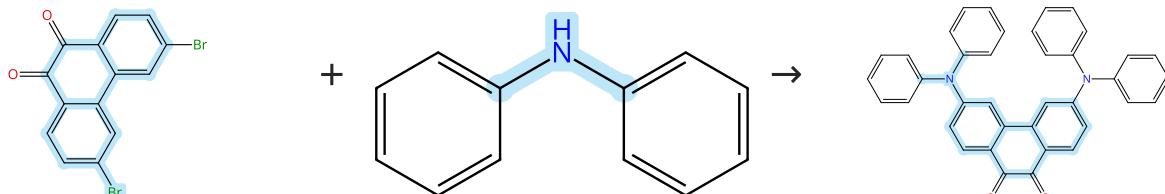
Solvents: Toluene; 5 min, 25 °C

1.3 5 min, 25 °C; 18 h, 25 °C

Experimental Protocols

## Scheme 84 (1 Reaction)

Steps: 1 Yield: 84%



Suppliers (67)

Suppliers (98)

31-614-CAS-40866793

Steps: 1 Yield: 84%

Red phenanthrenequinone dyes with high thermal and photo-stability for LCD color filters

By: Li, Sunfan; et al

Dyes and Pigments (2024), 224, 112023.

1.1 Reagents: Sodium *tert*-butoxide

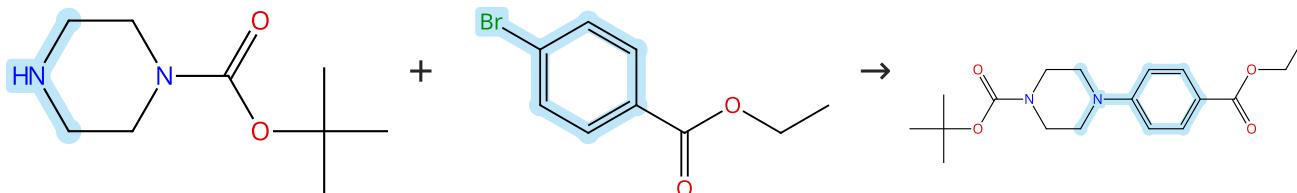
Catalysts: Palladium diacetate

Solvents: 1,4-Dioxane; 24 h, 105 °C

Experimental Protocols

## Scheme 85 (1 Reaction)

Steps: 1 Yield: 84%



Suppliers (112)

Suppliers (85)

Suppliers (47)

31-614-CAS-35265712

Steps: 1 Yield: 84%

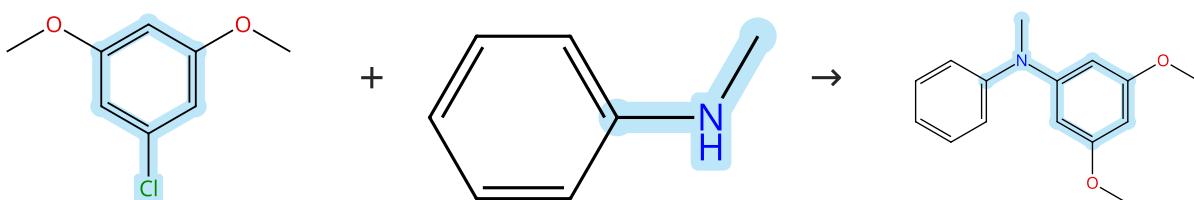
- 1.1 **Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
**Solvents:** Toluene; 10 min, rt → 50 °C
- 1.2 **Reagents:** Sodium *tert*-butoxide; 110 °C; 3 h, 110 °C

Experimental Protocols

In the Quest for Potent and Selective Malic Enzyme 3 Inhibitors for the Treatment of Pancreatic Ductal Adenocarcinoma

By: Sheth, Gaurav; et al

ACS Medicinal Chemistry Letters (2023), 14(1), 41-50.

**Scheme 86 (1 Reaction)**

Suppliers (72)

Suppliers (69)

Steps: 1 Yield: 84%

31-614-CAS-42014399

Steps: 1 Yield: 84%

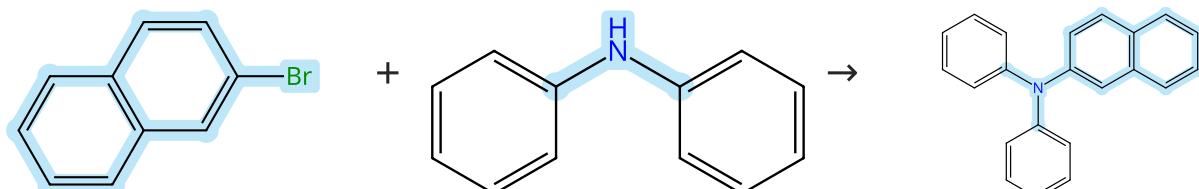
- 1.1 **Catalysts:** Palladium diacetate, 1*H*-Indole, 3-(dicyclohexylphosphino)-1-methyl-2-(2,3,4-trimethoxyphenyl)-  
**Solvents:** Dichloromethane; rt
- 1.2 **Reagents:** Sodium *tert*-butoxide  
**Solvents:** Toluene, Hexane; rt; 24 h, 110 °C; 110 °C → rt
- 1.3 **Solvents:** Water; rt

Experimental Protocols

Application of indole-based monophosphine in ppm level Pd-catalyzed C-N bond formation

By: Li, Cheuk Long; et al

Journal of Organometallic Chemistry (2024), 1011, 123124.

**Scheme 87 (2 Reactions)**

Suppliers (88)

Suppliers (98)

Suppliers (49)

Steps: 1 Yield: 84%

31-614-CAS-38638300

Steps: 1 Yield: 84%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tri-*tert*-butylphosphine, Tris(dibenzylideneacetone)dipalladium  
**Solvents:** Toluene; overnight, reflux

Experimental Protocols

Naphthyl Substituted Impurities Induce Efficient Room Temperature Phosphorescence

By: Qiao, Weiguo; et al

Angewandte Chemie, International Edition (2023), 62(50), e202315911.

31-614-CAS-35114295

Steps: 1 Yield: 84%

- 1.1 **Reagents:** Potassium *tert*-butoxide, Tri-*tert*-butylphosphine  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium  
**Solvents:** Toluene; 15 min, rt
- 1.2 **Reagents:** Tri-*tert*-butylphosphine  
**Solvents:** Toluene; 18 h, 110 °C

Experimental Protocols

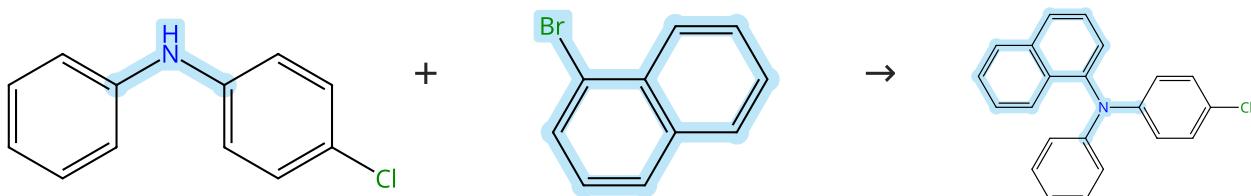
A general arene C-H functionalization strategy via electron donor-acceptor complex photoactivation

By: Dewanji, Abhishek; et al

Nature Chemistry (2023), 15(1), 43-52.

Scheme 88 (1 Reaction)

Steps: 1 Yield: 84%



Suppliers (49)

Suppliers (88)

Suppliers (14)

31-614-CAS-35114297

Steps: 1 Yield: 84%

- 1.1 **Reagents:** Potassium *tert*-butoxide, Tri-*tert*-butylphosphine  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium  
**Solvents:** Toluene; 15 min, rt
- 1.2 **Reagents:** Tri-*tert*-butylphosphine  
**Solvents:** Toluene; 18 h, 110 °C

**A general arene C-H functionalization strategy via electron donor-acceptor complex photoactivation**

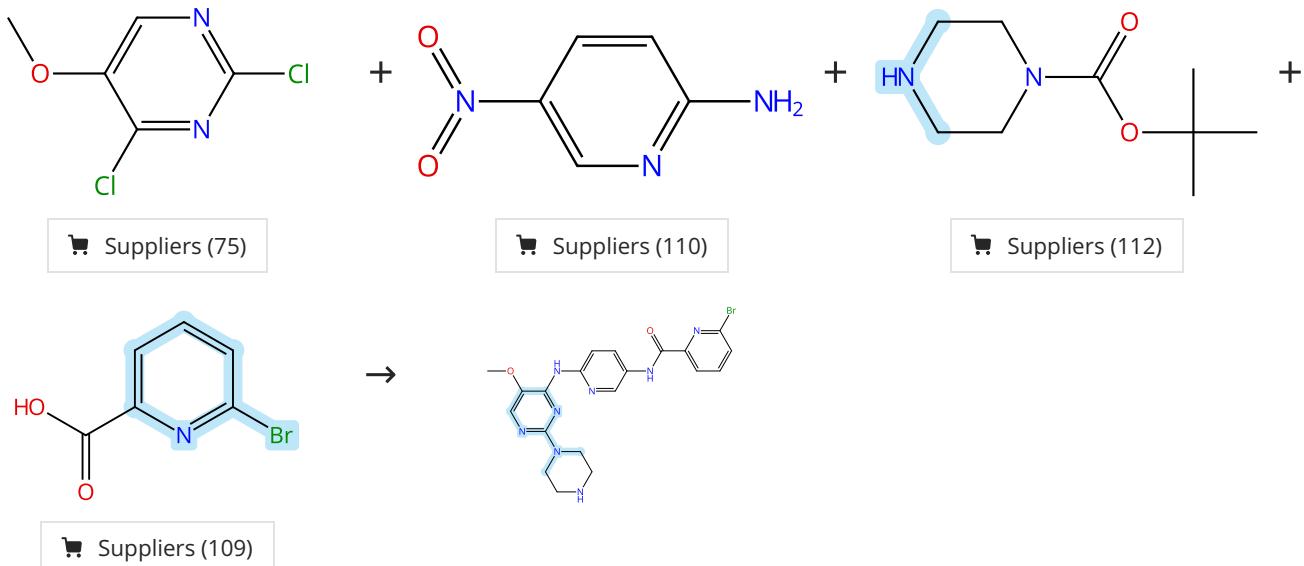
By: Dewanji, Abhishek; et al

Nature Chemistry (2023), 15(1), 43-52.

Experimental Protocols

Scheme 89 (1 Reaction)

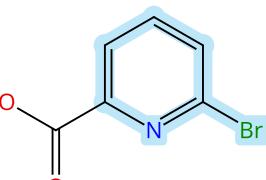
Steps: 1 Yield: 84%



Suppliers (75)

Suppliers (110)

Suppliers (112)



Suppliers (109)

31-614-CAS-36602327

Steps: 1 Yield: 84%

- 1.1 **Reagents:** Cesium carbonate  
**Solvents:** Dimethylformamide; 5 h, 80 °C
- 1.2 **Reagents:** Diisopropylethylamine  
**Solvents:** 1-Butanol; 8 h, 120 °C
- 1.3 **Reagents:** Hydrogen  
**Catalysts:** Palladium  
**Solvents:** Methanol; overnight, rt
- 1.4 **Reagents:** 1-Hydroxybenzotriazole, 1-Ethyl-3-(3'-dimethylamino)propyl carbodiimide hydrochloride  
**Solvents:** Dimethylformamide; 6 h, rt
- 1.5 **Reagents:** Hydrochloric acid  
**Solvents:** Dichloromethane, 1,4-Dioxane; 4 h, rt

**Discovery of Pyrimidinediamine Derivatives as Potent Methuosis Inducers for the Treatment of Triple-Negative Breast Cancer**

By: He, Jia; et al

Journal of Medicinal Chemistry (2023), 66(11), 7421-7437.

Experimental Protocols

Scheme 90 (1 Reaction)



Suppliers (71)

31-614-CAS-41335329

Steps: 1 Yield: 83%

- 1.1 **Catalysts:** Palladium, tris[ $\mu$ -[(1,2- $\eta$ ;4,5- $\eta$ )-(1E,4E)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2R)-1-[(1R)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene  
**Solvents:** Toluene; 30 min, rt
- 1.2 **Reagents:** Cesium carbonate; 36 h, 90 °C

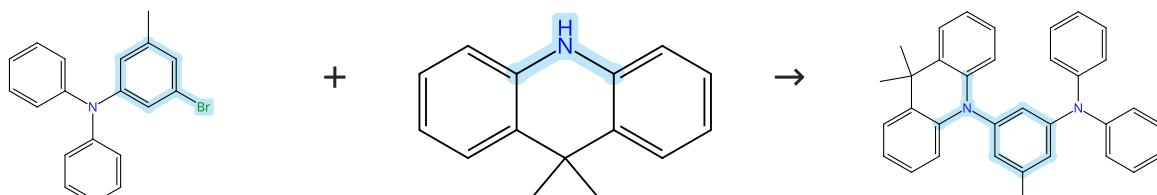
Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

Experimental Protocols

Scheme 91 (1 Reaction)



Suppliers (19)

Suppliers (68)

31-614-CAS-41860552

Steps: 1 Yield: 83%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate  
**Solvents:** Toluene; overnight, 110 °C

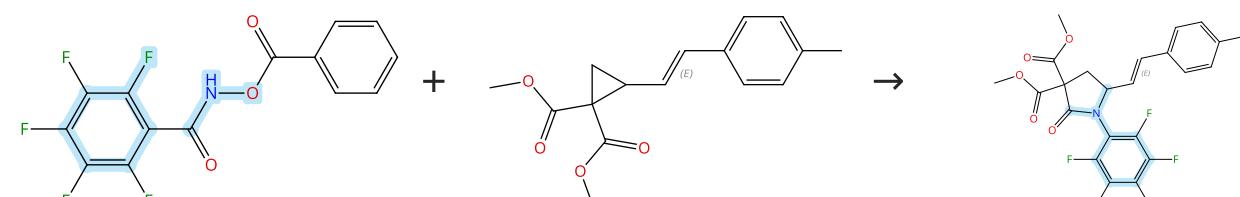
Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

Experimental Protocols

Scheme 92 (1 Reaction)



31-614-CAS-36837161

Steps: 1 Yield: 83%

- 1.1 **Reagents:** Cesium carbonate  
**Catalysts:** 2,2'-Bipyridine, Tris(dibenzylideneacetone)dipalladium  
**Solvents:** Tetrahydrofuran; 24 h, 50 °C

[3+2] Cycloaddition of Vinyl Cyclopropane and Hydroxylamines via Isocynate Intermediate to  $\gamma$ -Lactams

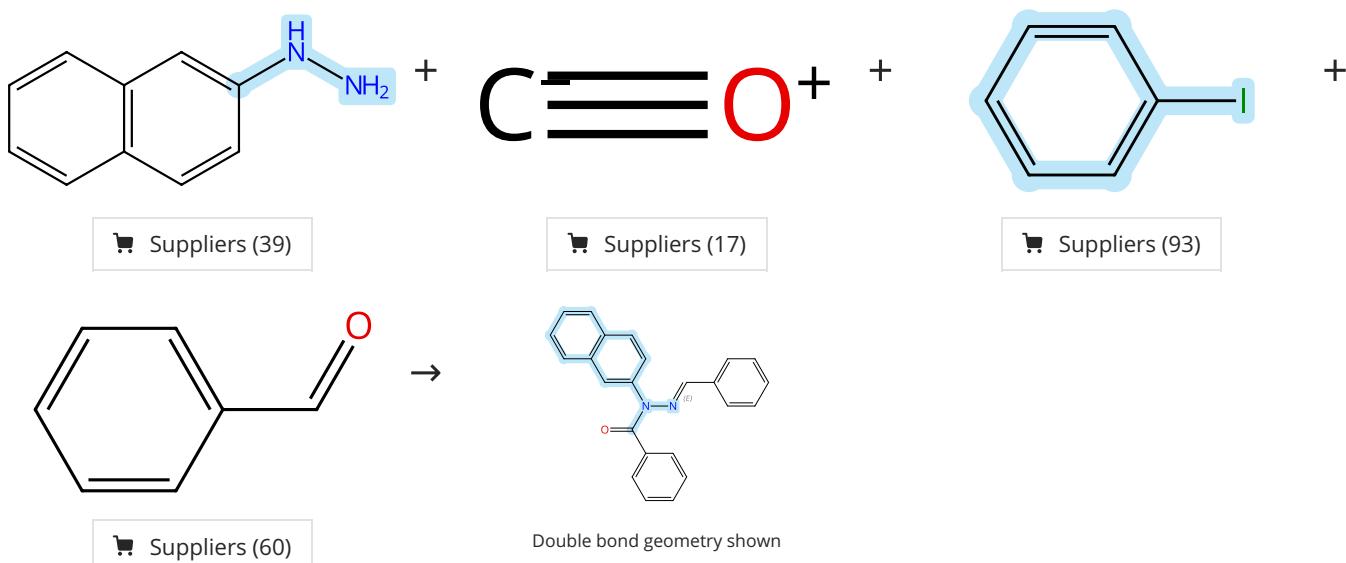
By: Huang, Xiaobing; et al

Chinese Journal of Chemistry (2023), 41(16), 1937-1942.

Experimental Protocols

Scheme 93 (1 Reaction)

Steps: 1 Yield: 83%



31-614-CAS-40733499

Steps: 1 Yield: 83%

- 1.1 **Reagents:** Sodium hydroxide  
**Catalysts:** Bis(*tri-tert*-butylphosphine)palladium  
**Solvents:** Anisole; 12 h, 4 MPa, 120 °C

**Palladium-Catalyzed Multicomponent Carbonylation of Halides to Acylhydrazones**

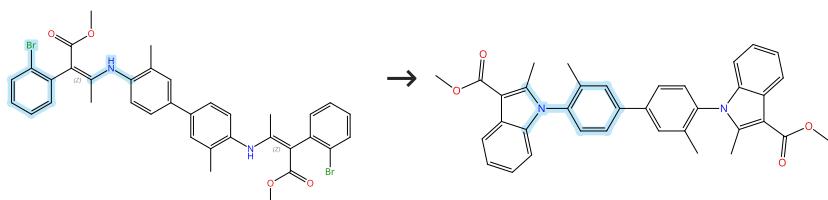
By: Liang, Qianqian; et al

Journal of Organic Chemistry (2024), 89(12), 8537-8545.

Experimental Protocols

Scheme 94 (1 Reaction)

Steps: 1 Yield: 83%



31-614-CAS-40129232

Steps: 1 Yield: 83%

**Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers**

By: Zhang, Peng; et al

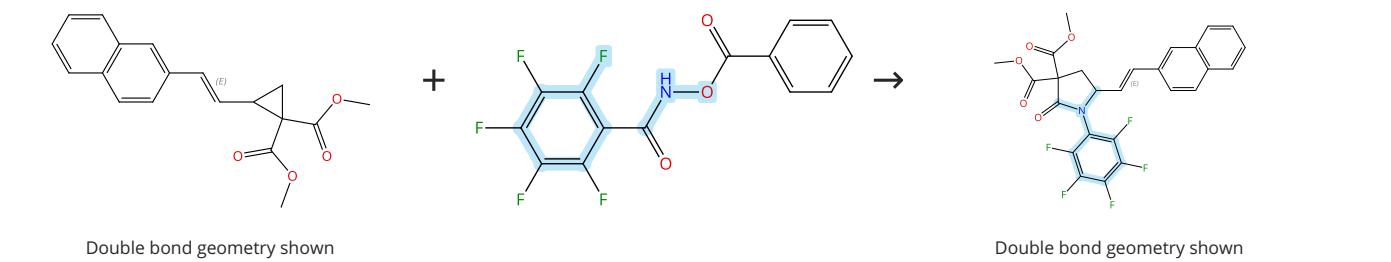
ACS Catalysis (2023), 13(11), 7680-7690.

- 1.1 **Catalysts:** Palladium diacetate, (-)-BINAP  
**Solvents:** Toluene; 20 min, rt
- 1.2 **Reagents:** Cesium carbonate  
**Solvents:** Toluene; 5 min, rt
- 1.3 5 min, rt; 18 h, 60 °C

Experimental Protocols

Scheme 95 (1 Reaction)

Steps: 1 Yield: 83%



31-614-CAS-36837172

Steps: 1 Yield: 83%

**1.1 Reagents:** Cesium carbonate  
**Catalysts:** 2,2'-Bipyridine, Tris(dibenzylideneacetone)dipalladium  
**Solvents:** Tetrahydrofuran; 24 h, 50 °C

Experimental Protocols

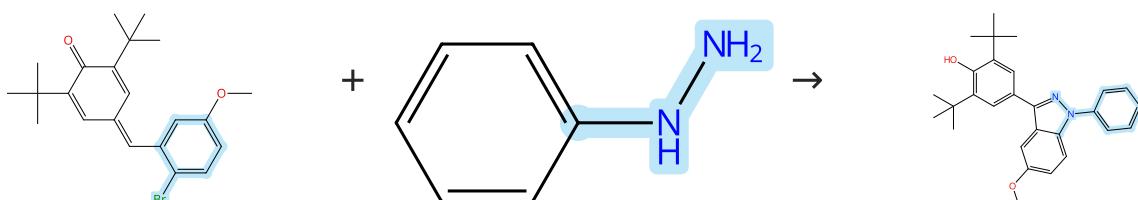
[3+2] Cycloaddition of Vinyl Cyclopropane and Hydroxylamines via Isocyanate Intermediate to  $\gamma$ -Lactams

By: Huang, Xiaobing; et al

Chinese Journal of Chemistry (2023), 41(16), 1937-1942.

Scheme 96 (1 Reaction)

Steps: 1 Yield: 83%



Suppliers (63)

31-614-CAS-38947673

Steps: 1 Yield: 83%

**1.1 Reagents:** Potassium *tert*-butoxide  
**Catalysts:** Palladium diacetate, 1,3-Bis(diphenylphosphino)propane  
**Solvents:** Toluene; 15 h, 110 °C

Experimental Protocols

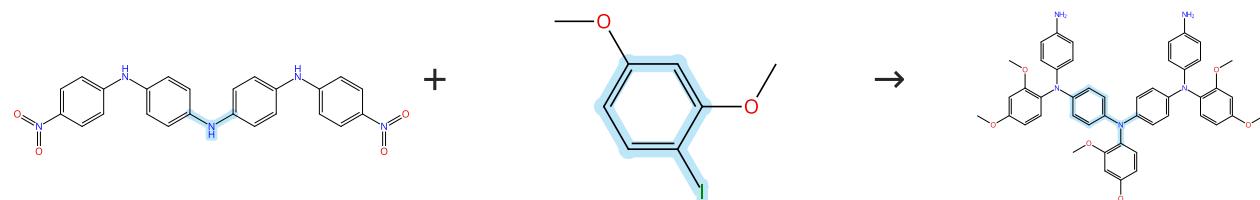
Synthesis and Photophysical Properties of 3-Substituted-1H-Indazoles: A Pd-Catalyzed Double C-N Bond Formation Strategy via 1,6-Conjugate Addition

By: Kayastha, Nasib; et al

Journal of Organic Chemistry (2024), 89(1), 402-413.

Scheme 97 (1 Reaction)

Steps: 1 Yield: 83%



Suppliers (75)

31-614-CAS-41527439

Steps: 1 Yield: 83%

**1.1 Reagents:** Hydrogen  
**Catalysts:** Palladium  
**Solvents:** Dimethylformamide; 48 h, rt

Experimental Protocols

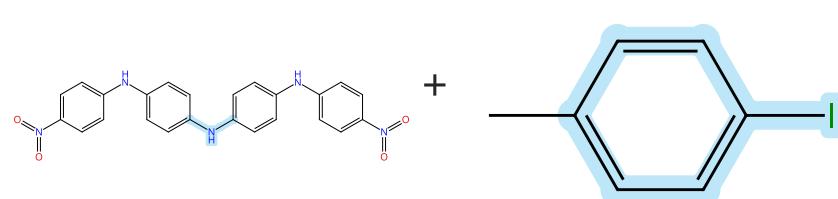
Substituents and Resonance Effects on the Electrochemical Stability of Polyelectrochromic Triarylamine-Based Polymers

By: Chern, Yaw-Terng; et al

ACS Applied Polymer Materials (2024), 6(9), 5256-5267.

Scheme 98 (1 Reaction)

Steps: 1 Yield: 83%



Suppliers (82)

31-614-CAS-41527443

Steps: 1 Yield: 83%

1.1 Reagents: Hydrogen

Catalysts: Palladium

Solvents: Dimethylformamide; 48 h, rt

Experimental Protocols

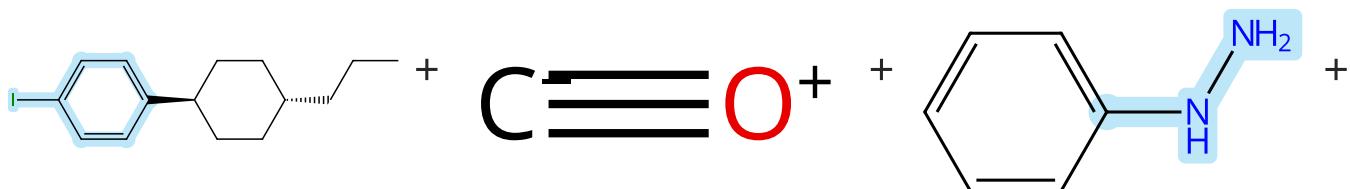
Substituents and Resonance Effects on the Electrochemical Stability of Polyelectrochromic Triarylamine-Based Polymers

By: Chern, Yaw-Terng; et al

ACS Applied Polymer Materials (2024), 6(9), 5256-5267.

## Scheme 99 (1 Reaction)

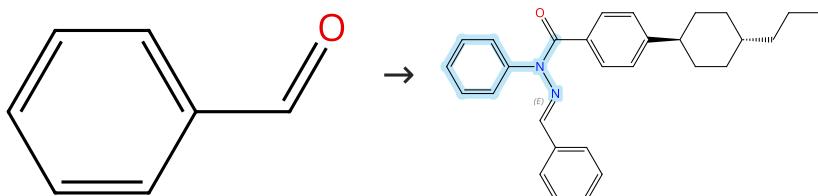
Steps: 1 Yield: 83%



Suppliers (48)

Suppliers (17)

Suppliers (63)



Suppliers (60)

31-614-CAS-40733481

Steps: 1 Yield: 83%

1.1 Reagents: Sodium hydroxide

Catalysts: Bis(*tri-tert*-butylphosphine)palladium

Solvents: Anisole; 12 h, 4 MPa, 120 °C

Experimental Protocols

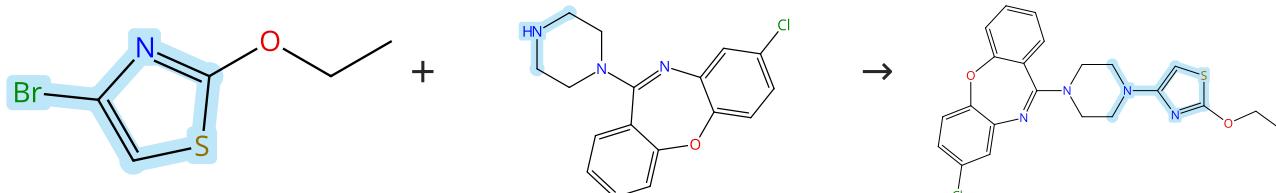
Palladium-Catalyzed Multicomponent Carbonylation of Halides to Acylhydrazones

By: Liang, Qianqian; et al

Journal of Organic Chemistry (2024), 89(12), 8537-8545.

## Scheme 100 (1 Reaction)

Steps: 1 Yield: 83%



Suppliers (66)

Suppliers (2)

31-614-CAS-35422506

Steps: 1 Yield: 83%

1.1 Reagents: Sodium trimethylsilanolate  
Solvents: Tetrahydrofuran; 5 min, rt1.2 Catalysts: Palladium, bromo[*d*cyclohexyl[3-(1,1-dimethylethoxy)-6-methoxy-2',6'-bis(1-methylethyl)[1,1'-biphenyl]-2-yl- $\kappa C^1$ ]phosphine- $\kappa P$ [4-[[2-(trimethylsilyl)ethoxy]carbonylphenyl]-, (*SP*-4-2)-  
Solvents: Tetrahydrofuran; 3 h, 50 °C

Experimental Protocols

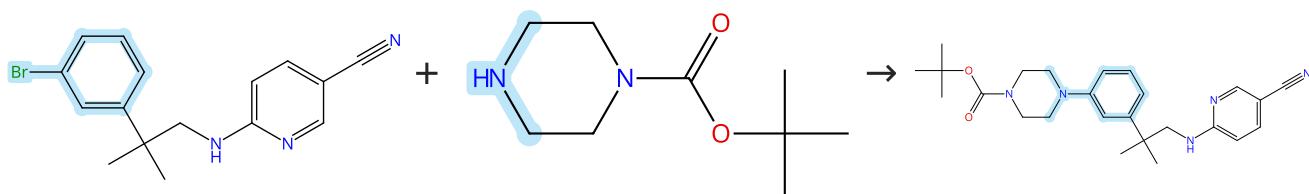
Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteroaryl Halides with Aliphatic Amines

By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

**Scheme 101 (1 Reaction)**

Steps: 1 Yield: 83%



31-614-CAS-36826154

Steps: 1 Yield: 83%

- 1.1 **Reagents:** Cesium carbonate  
**Catalysts:** Palladium diacetate, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine  
**Solvents:** 1,4-Dioxane; 4 h, rt → 130 °C

Experimental Protocols

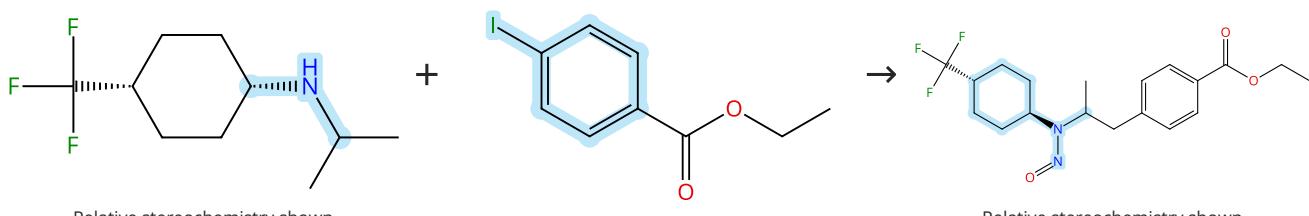
Evaluating the druggability of TrmD, a potential antibacterial target, through design and microbiological profiling of a series of potent TrmD inhibitors

By: Wilkinson, Andrew J.; et al

Bioorganic &amp; Medicinal Chemistry Letters (2023), 90, 129331.

**Scheme 102 (1 Reaction)**

Steps: 1 Yield: 83%



31-614-CAS-42625419

Steps: 1 Yield: 83%

- 1.1 **Reagents:** Isoamyl nitrite; 12 h, 60 °C  
 1.2 **Reagents:** Silver tetrafluoroborate  
**Catalysts:** Palladium diacetate, Glycine, *N*-[(1,6-dihydro-5-nitro-6-oxo-2-pyridinyl)carbonyl]-, methyl ester  
**Solvents:** 1,1,1,3,3-Hexafluoro-2-propanol; 24 h, 100 °C

Experimental Protocols

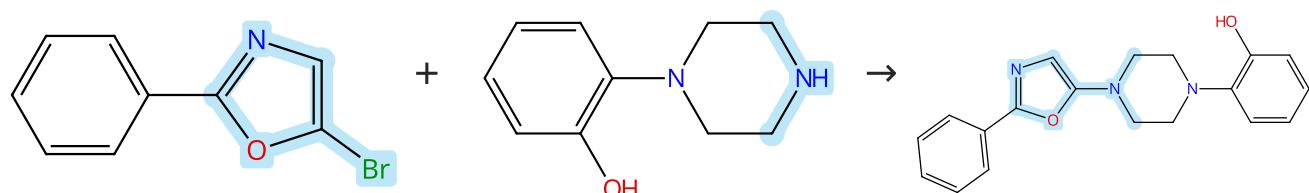
Efficient Construction of  $\beta$ -Arylethylamines via Selective C(sp<sup>3</sup>)-H Arylation of Aliphatic Amines

By: Tu, Hua; et al

ACS Catalysis (2024), 14(23), 17535-17546.

**Scheme 103 (1 Reaction)**

Steps: 1 Yield: 83%



31-614-CAS-35422511

Steps: 1 Yield: 83%

- 1.1 **Reagents:** Sodium trimethylsilanolate  
**Solvents:** Tetrahydrofuran; 5 min, rt  
 1.2 **Catalysts:** Palladium, bromo[dicyclohexyl[3-(1,1-dimethylethoxy)-6-methoxy-2',6'-bis(1-methylethyl)[1,1'-biphenyl]-2-yl- $\kappa C^1$ ]phosphine- $\kappa P$ [4-[[2-(trimethylsilyl)ethoxy]carbonyl]phenyl]-, (*SP*-4-2)-  
**Solvents:** Tetrahydrofuran; 3 h, 70 °C

Experimental Protocols

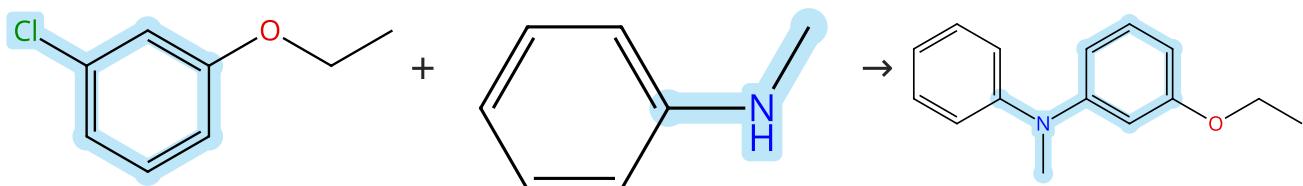
Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteroaryl Halides with Aliphatic Amines

By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

## Scheme 104 (1 Reaction)

Steps: 1 Yield: 83%



Suppliers (37)

Suppliers (69)

31-614-CAS-42014406

Steps: 1 Yield: 83%

- 1.1 **Catalysts:** Phenylboronic acid, Palladium diacetate, 1*H*-Indole,  
3-(dicyclohexylphosphino)-1-methyl-2-(2,3,4-trimethoxyphenyl)-  
Solvants: Dichloromethane; rt
- 1.2 **Reagents:** Sodium *tert*-butoxide  
Solvants: Toluene; rt; 24 h, 135 °C; 135 °C → rt
- 1.3 **Solvants:** Water; rt

Application of indole-based monophosphine in ppm level Pd-catalyzed C-N bond formation

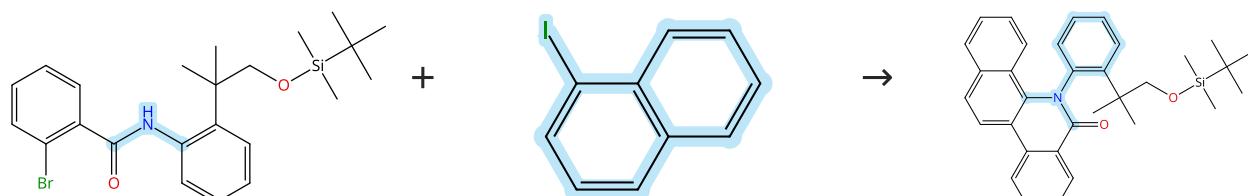
By: Li, Cheuk Long; et al

Journal of Organometallic Chemistry (2024), 1011, 123124.

Experimental Protocols

## Scheme 105 (1 Reaction)

Steps: 1 Yield: 83%



Suppliers (87)

31-614-CAS-41071051

Steps: 1 Yield: 83%

- 1.1 **Reagents:** Norbornene, Silver sulfate  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, (4*S*,4'*S*)-4,4',5,5'-Tetrahydro-4,4'-bis(1-methylethyl)-1,1'-bis[3-(trifluoromethyl)phenyl]-2,2'-bi-1*H*-imidazole  
**Solvants:** Toluene, Water; 36 h, 80 °C

Chiral dinitrogen ligand enabled asymmetric Pd/norbornene cooperative catalysis toward the assembly of C-N axially chiral scaffolds

By: Jin, Liang; et al

Nature Communications (2024), 15(1), 4908.

Experimental Protocols

## Scheme 106 (1 Reaction)

Steps: 1 Yield: 83%



Supplier (1)

Suppliers (71)

31-614-CAS-42623285

Steps: 1 Yield: 83%

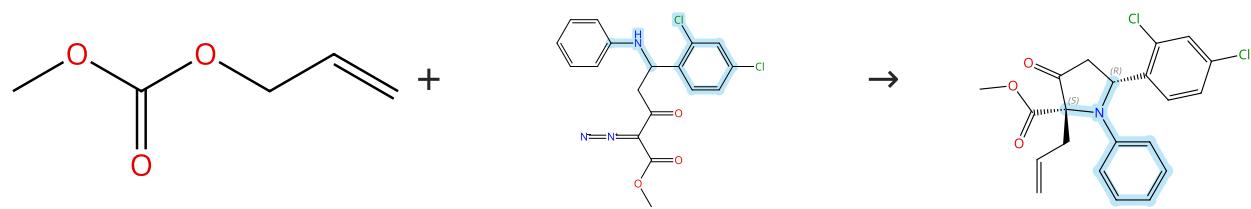
Photostability of Phenoxazine Derivatives

By: Goll, Felix D.; et al

ChemPhysChem (2024), 25(21), e202400506.

Experimental Protocols

Scheme 107 (1 Reaction)



Suppliers (59)

31-614-CAS-43802576

Steps: 1 Yield: 83%

1.1 **Catalysts:** Dirhodium tetraacetate, Tris(dibenzylideneacetone)dipalladium, X-Phos

**Solvents:** Dichloromethane; 15 min, rt

1.2 **Solvents:** Dichloromethane; rt; 16 h, rt

1.3 **Reagents:** Sodium chloride

**Solvents:** Water

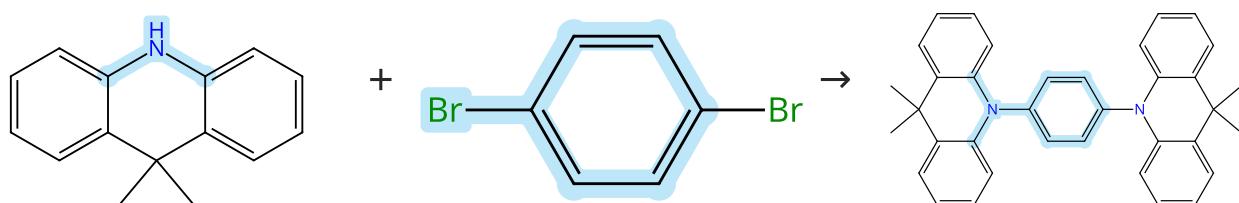
Experimental Protocols

Rh(II)/Pd(0) Dual Catalysis: Carbenoid N-H Insertion/Allylation Cascade Reaction to Construct Highly Functionalized and Polysubstituted Pyrrolidines

By: Tang, Maocheng; et al

Molecules (2024), 29(24), 5880.

Scheme 108 (1 Reaction)



Suppliers (68)

Suppliers (97)

31-614-CAS-43376630

Steps: 1 Yield: 83%

1.1 **Reagents:** Sodium *tert*-butoxide

**Catalysts:** Tris(dibenzylideneacetone)dipalladium, X-Phos

**Solvents:** Toluene; 10 - 30 min, 150 °C

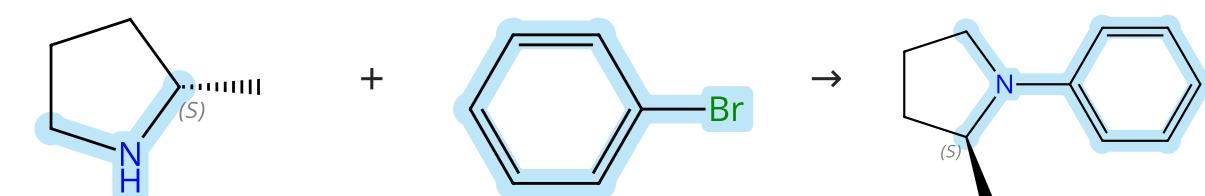
Experimental Protocols

Microwave-Assisted Buchwald-Hartwig Double Amination: A Rapid and Promising Approach for the Synthesis of TADF Compounds

By: Mohd Jamel, Nor Shafiq; et al

ACS Omega (2024), 9(51), 50446-50457.

Scheme 109 (1 Reaction)



Absolute stereochemistry shown,  
Rotation (+)

Suppliers (66)

31-614-CAS-42934081

Steps: 1 Yield: 83%

1.1 **Catalysts:** Tris(dibenzylideneacetone)dipalladium, BINAP

**Solvents:** Toluene; 1 h

1.2 **Reagents:** Sodium *tert*-butoxide; 15 h, 100 °C

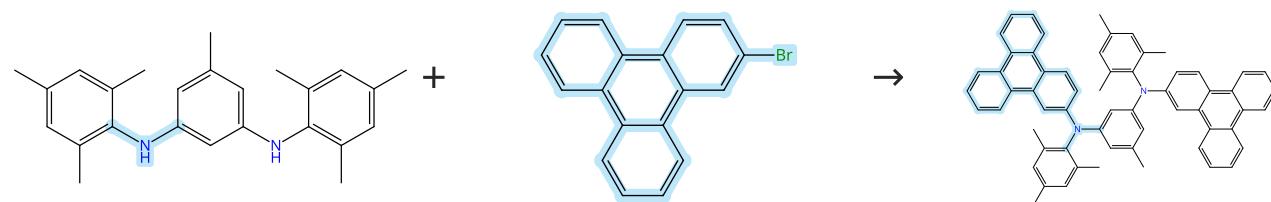
Experimental Protocols

Copper(I)-Catalyzed  $\alpha,\beta$ -Dehydrogenative [2 + 3] Heteroannulation of Saturated Amines with Diazirin dinone via Hydrogen Atom Transfer

By: Du, Zihang; et al

ACS Catalysis (2024), 14(23), 18107-18115.

Scheme 110 (1 Reaction)



Suppliers (3)

Suppliers (75)

31-614-CAS-41860586

Steps: 1 Yield: 83%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine

Solvents: Toluene; overnight, 110 °C

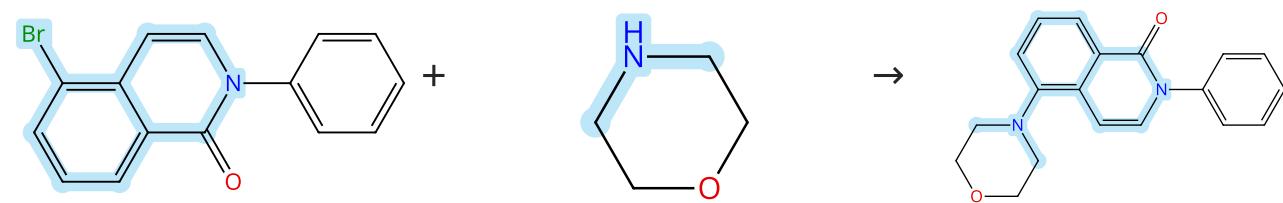
Experimental Protocols

Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

Scheme 111 (1 Reaction)



Suppliers (83)

31-614-CAS-36490584

Steps: 1 Yield: 83%

1.1 Reagents: Potassium *tert*-butoxide, BINAP

Catalysts: Tris(dibenzylideneacetone)dipalladium

Solvents: Toluene; 16 h, 110 °C

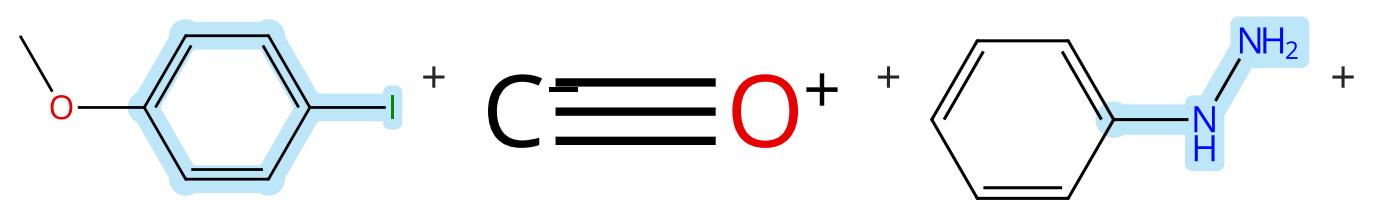
Experimental Protocols

Empowering boronic acids as hydroxyl synthons for aryne induced three-component coupling reactions

By: Fan, Rong; et al

Chemical Science (2023), 14(16), 4278-4287.

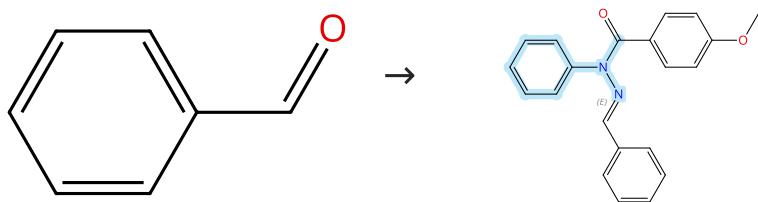
Scheme 112 (1 Reaction)



Suppliers (89)

Suppliers (17)

Suppliers (63)



Suppliers (60)

31-614-CAS-40733491

Steps: 1 Yield: 83%

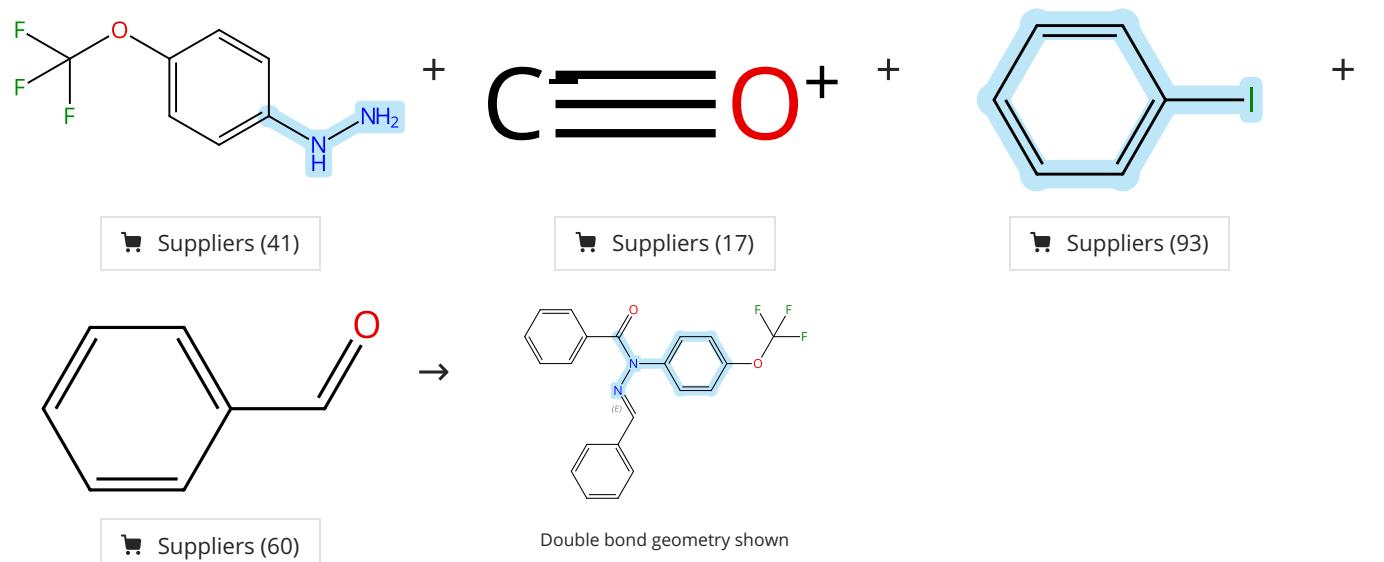
**Palladium-Catalyzed Multicomponent Carbonylation of Halides to Acylhydrazones**

By: Liang, Qianqian; et al

Journal of Organic Chemistry (2024), 89(12), 8537-8545.

1.1 Reagents: Sodium hydroxide  
Catalysts: Bis(*tri-tert*-butylphosphine)palladium  
Solvents: Anisole; 12 h, 4 MPa, 120 °C  
Experimental Protocols

Scheme 113 (1 Reaction)



31-614-CAS-40733497

Steps: 1 Yield: 83%

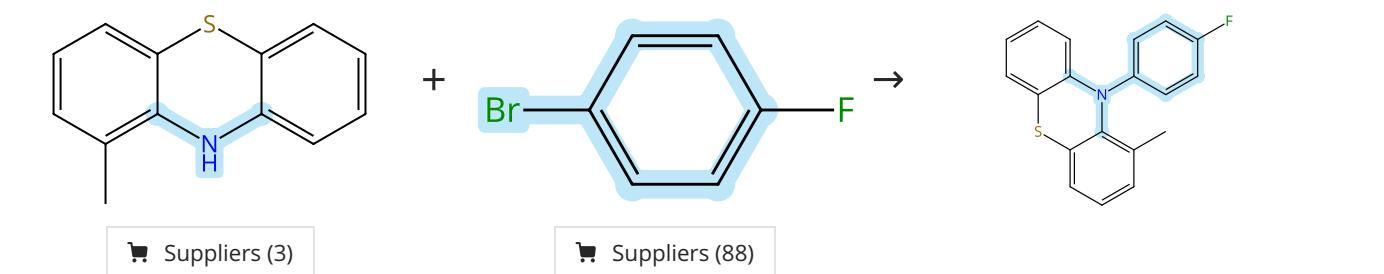
**Palladium-Catalyzed Multicomponent Carbonylation of Halides to Acylhydrazones**

By: Liang, Qianqian; et al

Journal of Organic Chemistry (2024), 89(12), 8537-8545.

1.1 Reagents: Sodium hydroxide  
Catalysts: Bis(*tri-tert*-butylphosphine)palladium  
Solvents: Anisole; 12 h, 4 MPa, 120 °C  
Experimental Protocols

Scheme 114 (1 Reaction)



31-614-CAS-35203605

Steps: 1 Yield: 83%

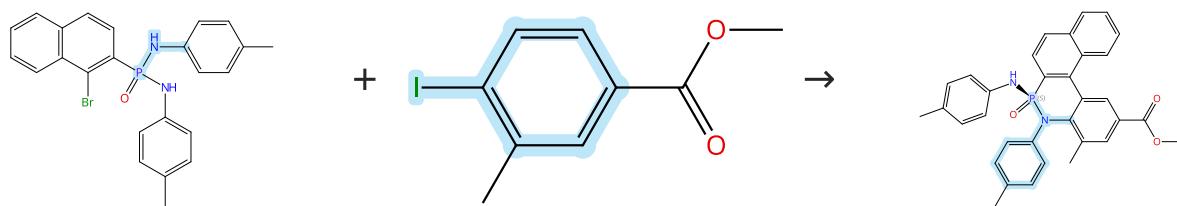
**The Effect of Molecular Conformations and Simulated "Self-Doping" in Phenothiazine Derivatives on Room-Temperature Phosphorescence**

By: Gao, Mingxue; et al

Angewandte Chemie, International Edition (2023), 62(5), e202214908.

1.1 Reagents: Potassium *tert*-butoxide, Tri-*tert*-butylphosphine  
Catalysts: Palladium diacetate  
Solvents: Toluene; 24 h, 110 °C  
Experimental Protocols

Scheme 115 (1 Reaction)



Suppliers (83)

Steps: 1 Yield: 83%

Absolute stereochemistry shown

31-614-CAS-42232666

Steps: 1 Yield: 83%

1.1 Reagents: Potassium carbonate

Catalysts: Palladium diacetate, Tris(2-furyl)phosphine, Bicyclo[2.2.1]hept-2-ene-2-carboxylic acid, methyl ester, (1*R*,4*R*)-

Solvents: Acetonitrile; 12 h, 100 °C

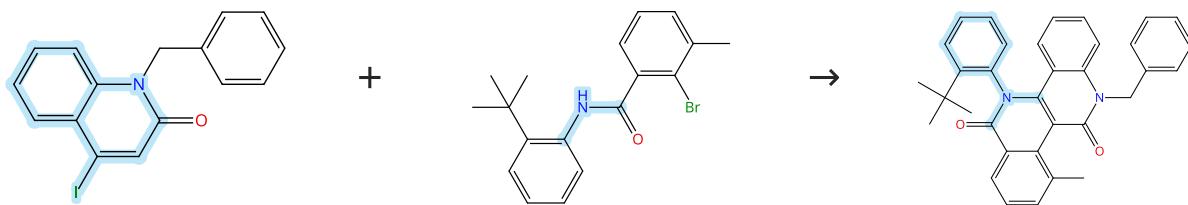
Experimental Protocols

Solvent-Controlled Enantiodivergent Construction of P(V)-Stereogenic Molecules via Palladium-Catalyzed Annulation of Prochiral N-Aryl Phosphonamides with Aromatic Iodides

By: Tian, Qingyu; et al

Angewandte Chemie, International Edition (2024), 63(41), e202409366.

Scheme 116 (1 Reaction)



Supplier (1)

Steps: 1 Yield: 83%

31-614-CAS-39194485

Steps: 1 Yield: 83%

1.1 Reagents: Potassium carbonate

Catalysts: Palladium diacetate, Ethyl (1*S*,4*R*)-bicyclo[2.2.1]hept-2-ene-2-carboxylate

Solvents: Tetrahydrofuran; 5 min, rt; 48 h, 80 °C

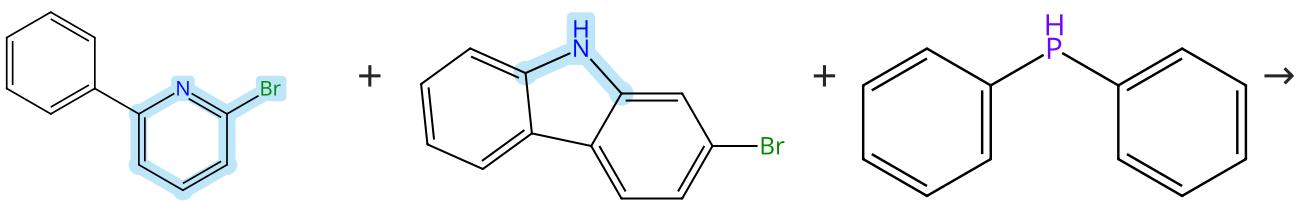
Experimental Protocols

Asymmetric Two-Component Alkenyl Catellani Reaction for the Construction of C-N Axial Chirality

By: Wu, Chenggui; et al

Chinese Journal of Chemistry (2024), 42(7), 699-704.

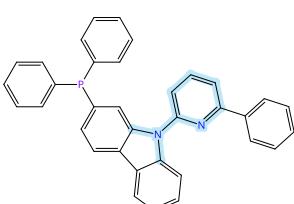
Scheme 117 (1 Reaction)



Suppliers (78)

Suppliers (83)

Suppliers (38)



31-614-CAS-36618137

Steps: 1 Yield: 83%

- 1.1 **Reagents:** 1-Methylimidazole, Lithium *tert*-butoxide, Cuprous iodide  
**Solvents:** Toluene; 24 h, rt → 130 °C; 130 °C → rt
- 1.2 **Reagents:** Cesium carbonate  
**Catalysts:** Palladium diacetate, 1,1'-Bis(diisopropylphosphino) ferrocene  
**Solvents:** 1,4-Dioxane; 1 h, rt
- 1.3 30 h, rt → 130 °C

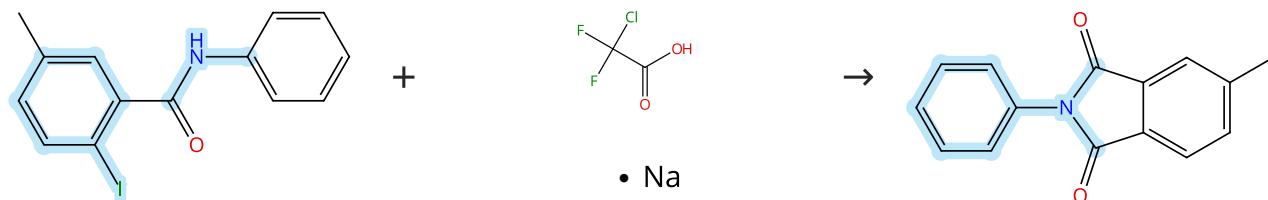
## Experimental Protocols

Palladium-Catalyzed Thiocarbonylation of Aryl Iodides using C O<sub>2</sub>

By: Wang, Huan; et al

Journal of Organic Chemistry (2023), 88(13), 8835-8842.

Scheme 118 (1 Reaction)



Suppliers (88)

Suppliers (3)

31-614-CAS-38558297

Steps: 1 Yield: 83%

- 1.1 **Reagents:** Potassium carbonate  
**Catalysts:** Palladium diacetate, Bis[2-(diphenylphosphino) phenyl] ether  
**Solvents:** Dimethylformamide; 5 h, 95 °C

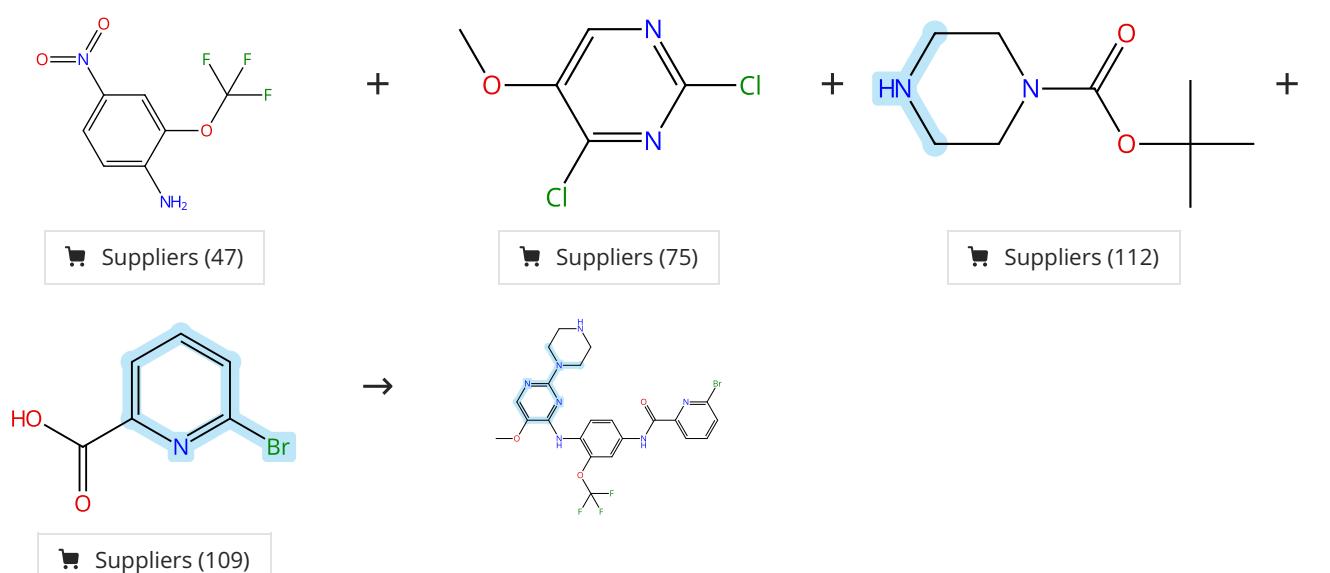
## Experimental Protocols

Synthesis of N-substituted phthalimides via Pd-catalyzed [4+1] cycloaddition reaction

By: Hu, Chengxian; et al

Chemical Communications (Cambridge, United Kingdom) (2023), 59(100), 14839-14842.

Scheme 119 (1 Reaction)



31-614-CAS-36602308

Steps: 1 Yield: 83%

- 1.1 **Reagents:** Cesium carbonate  
**Solvents:** Dimethylformamide; 5 h, 80 °C
- 1.2 **Reagents:** Diisopropylethylamine  
**Solvents:** 1-Butanol; 8 h, 120 °C
- 1.3 **Reagents:** Hydrogen  
**Catalysts:** Palladium  
**Solvents:** Methanol; overnight, rt
- 1.4 **Reagents:** 1-Hydroxybenzotriazole, 1-Ethyl-3-(3'-dimethylamino)propylcarbodiimide hydrochloride  
**Solvents:** Dimethylformamide; 6 h, rt
- 1.5 **Reagents:** Hydrochloric acid  
**Solvents:** Dichloromethane, 1,4-Dioxane; 4 h, rt

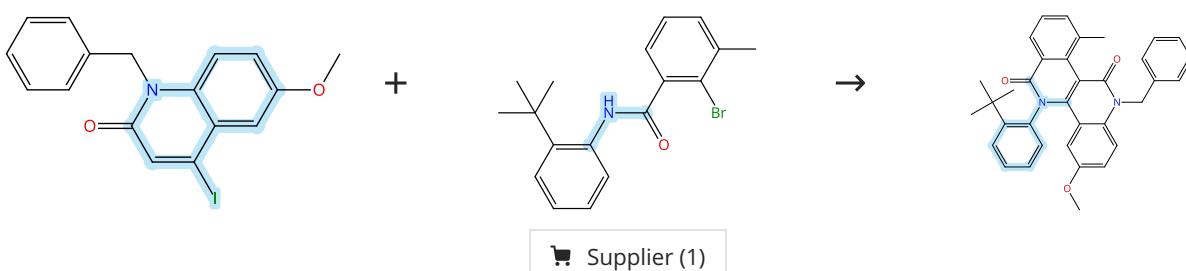
## Experimental Protocols

**Discovery of Pyrimidinediamine Derivatives as Potent Methuosis Inducers for the Treatment of Triple-Negative Breast Cancer**

By: He, Jia; et al

Journal of Medicinal Chemistry (2023), 66(11), 7421-7437.

Scheme 120 (1 Reaction)



31-614-CAS-39194484

Steps: 1 Yield: 83%

- 1.1 **Reagents:** Potassium carbonate  
**Catalysts:** Palladium diacetate, Ethyl (1*S*,4*R*)-bicyclo[2.2.1]hept-2-ene-2-carboxylate  
**Solvents:** Tetrahydrofuran; 5 min, rt; 48 h, 80 °C

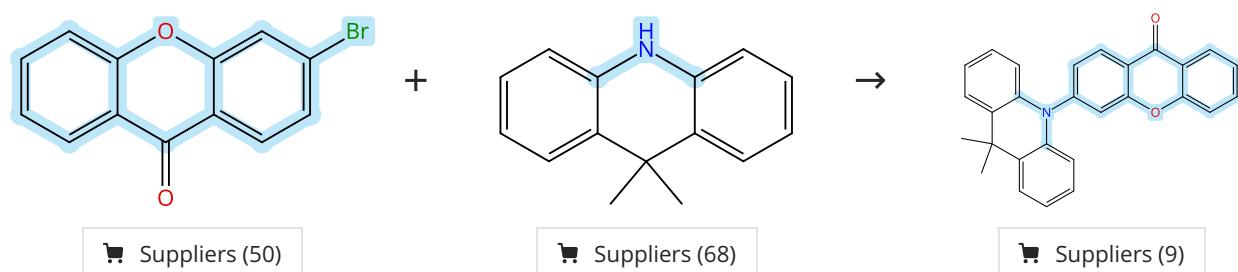
## Experimental Protocols

**Asymmetric Two-Component Alkenyl Catellani Reaction for the Construction of C-N Axial Chirality**

By: Wu, Chenggui; et al

Chinese Journal of Chemistry (2024), 42(7), 699-704.

Scheme 121 (2 Reactions)



31-614-CAS-42754370

Steps: 1 Yield: 83%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tri-*tert*-butylphosphine, Tris(dibenzylideneacetone)dipalladium  
**Solvents:** Toluene; 24 h, 110 °C

## Experimental Protocols

**Molecular Planar Rigidity Promoted Aggregation-Induced Delayed Electrochemiluminescence of Organic Dots for Nucleic Acid Assay**

By: Jia, Yi-Lei; et al

Analytical Chemistry (Washington, DC, United States) (2024), 96(45), 18214-18220.

31-614-CAS-38356183

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Palladium diacetate, Phosphine, tricyclohexyl-, tetrafluoroborate(1-) (1:1)

Solvents: Toluene; 14 h, 120 °C

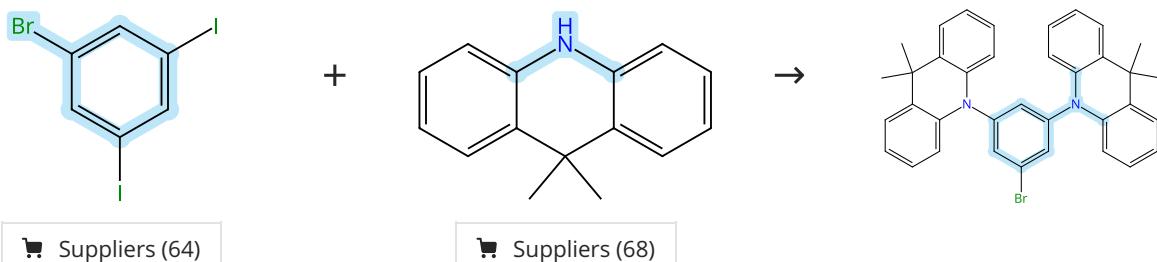
Experimental Protocols

Large area inkjet-printed OLED fabrication with solution-processed TADF ink

By: Kant, Chandra; et al

Nature Communications (2023), 14(1), 7220.

Scheme 122 (1 Reaction)



31-614-CAS-41255513

Steps: 1 Yield: 83%

1.1 Catalysts: Tris(dibenzylideneacetone)dipalladium, 1,1'-(9,9-Dimethyl-9*H*-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]

Solvents: Toluene; 0.5 h, rt

1.2 Reagents: Sodium *tert*-butoxide

Solvents: Toluene; 24 h, 80 °C

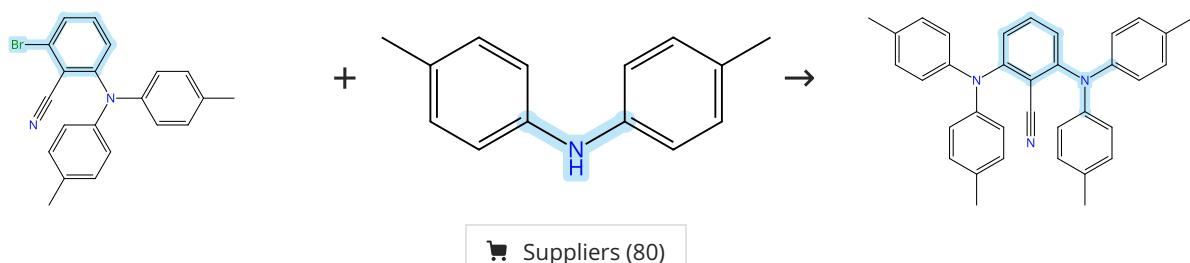
Experimental Protocols

Photophysical and redox properties of new donor-acceptor-donor (DAD) compounds containing benzothiadiazole (A) and dimethyldihydroacridine (D) units: a combined experimental and theoretical study

By: Polesiak, Emilia; et al

Physical Chemistry Chemical Physics (2024), 26(30), 20690-20700.

Scheme 123 (1 Reaction)



31-614-CAS-36262504

Steps: 1 Yield: 83%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 12 h, rt → 110 °C

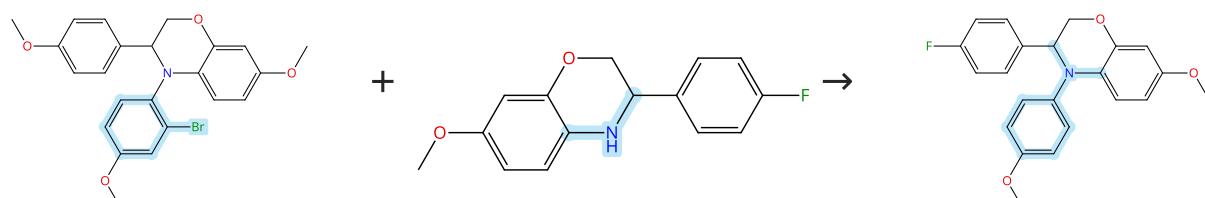
Experimental Protocols

An Oligomer Approach for Blue Thermally Activated Delayed Fluorescent Emitters Based on Twisted Donor-Acceptor Units

By: Duda, Eimantas; et al

Chemistry of Materials (2023), 35(5), 2027-2037.

Scheme 124 (1 Reaction)



31-614-CAS-39408117

Steps: 1 Yield: 83%

Rational Design, Synthesis, and Anti-Proliferative Evaluation of Novel 4-Aryl-3,4-Dihydro-2H-1,4-Benzoxazines

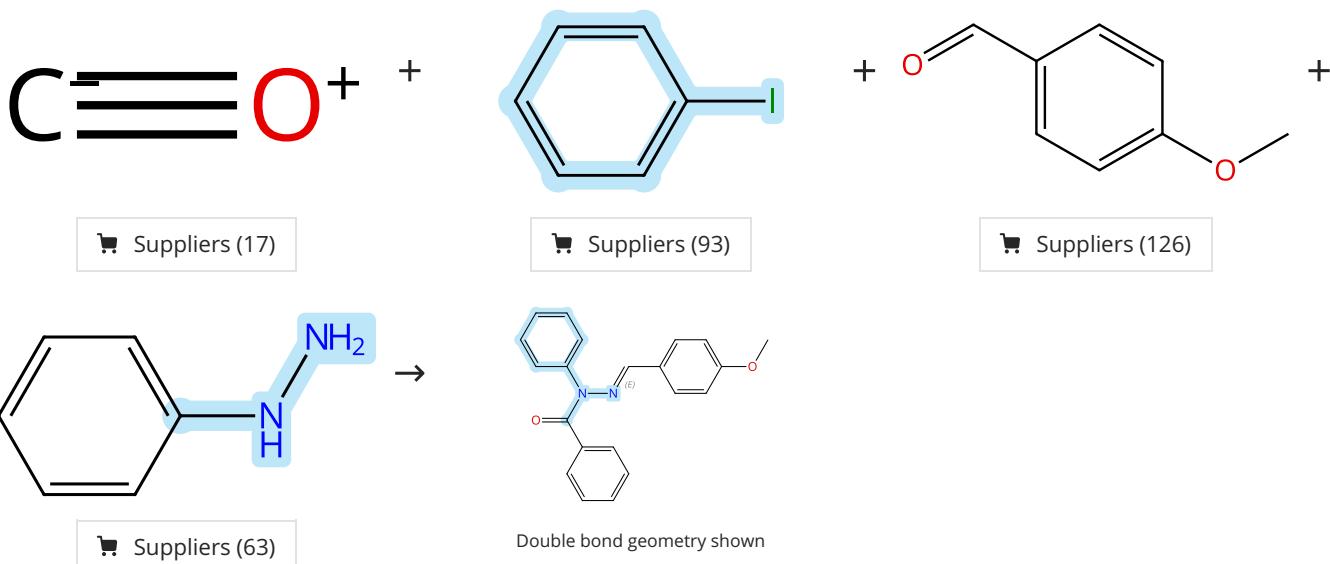
By: Fu, Xiaoming; et al

Molecules (2024), 29(1), 166.

- 1.1 Reagents: Cesium carbonate  
Solvents: *tert*-Butanol, Toluene; 10 min, rt
- 1.2 Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos; 16 h, 100 °C
- Experimental Protocols

## Scheme 125 (1 Reaction)

Steps: 1 Yield: 83%



31-614-CAS-40733441

Steps: 1 Yield: 83%

Palladium-Catalyzed Multicomponent Carbonylation of Halides to Acylhydrazones

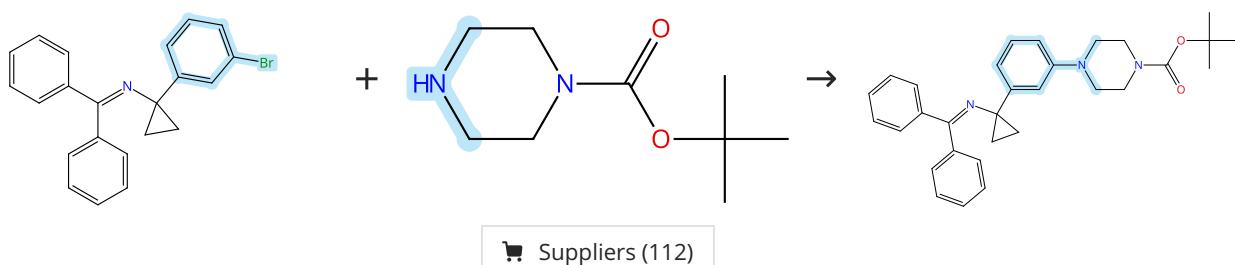
By: Liang, Qianqian; et al

Journal of Organic Chemistry (2024), 89(12), 8537-8545.

- 1.1 Reagents: Sodium hydroxide  
Catalysts: Bis(*tri-tert*-butylphosphine)palladium  
Solvents: Anisole; 12 h, 4 MPa, 120 °C
- Experimental Protocols

## Scheme 126 (1 Reaction)

Steps: 1 Yield: 83%



31-614-CAS-36826134

Steps: 1 Yield: 83%

Evaluating the druggability of TrmD, a potential antibacterial target, through design and microbiological profiling of a series of potent TrmD inhibitors

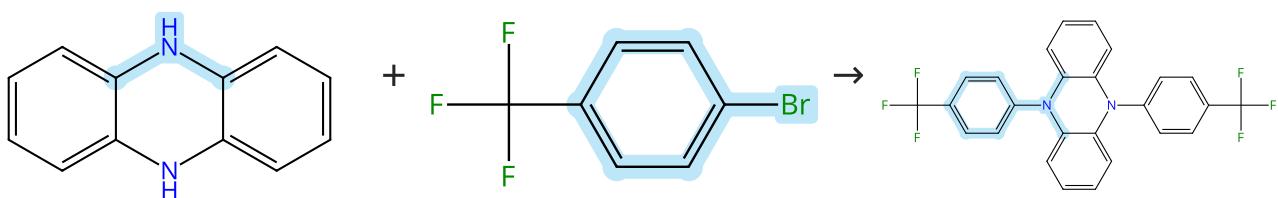
By: Wilkinson, Andrew J.; et al

Bioorganic &amp; Medicinal Chemistry Letters (2023), 90, 129331.

- 1.1 Reagents: Cesium carbonate  
Catalysts: Palladium diacetate, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine  
Solvents: 1,4-Dioxane; 90 min, 130 °C
- Experimental Protocols

Scheme 127 (1 Reaction)

Steps: 1 Yield: 83%



Suppliers (62)

Suppliers (79)

dopant

31-614-CAS-36834256

Steps: 1 Yield: 83%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Palladium diacetate, Tri-*tert*-butylphosphine

Solvents: Toluene; 8 h, rt → 115 °C

Experimental Protocols

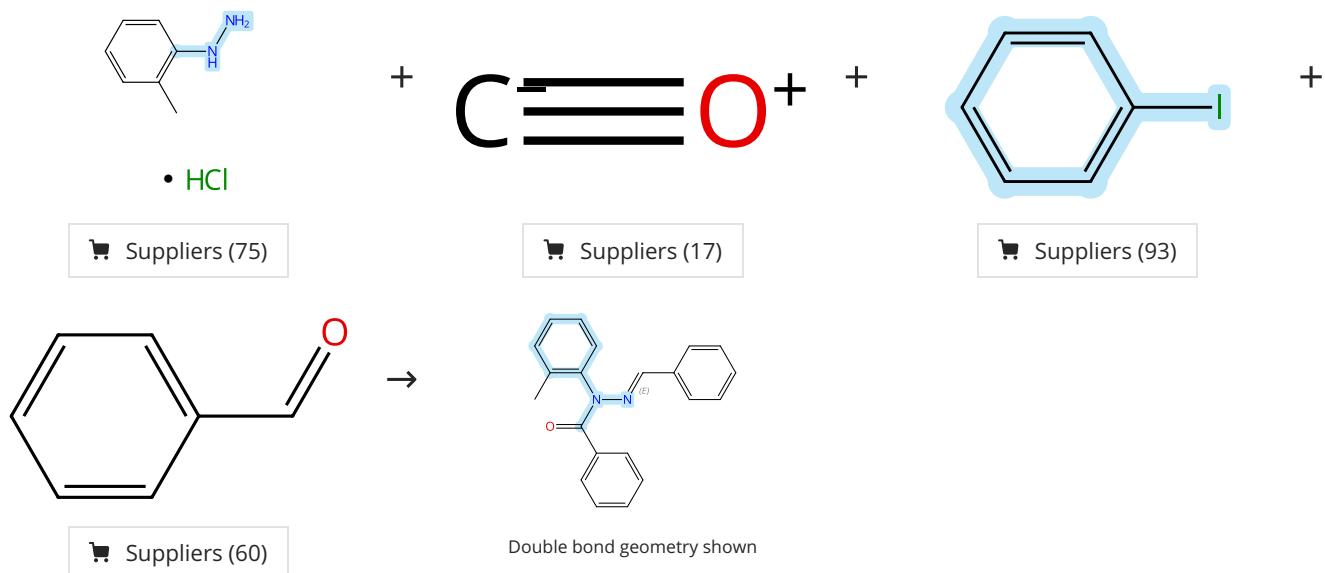
Radical Afterglow Emission Harnessed by Doping N,N'-Diaryl-5,10-Dihydrophenazines to Epoxy Resins

By: Su, Yonghao; et al

Advanced Optical Materials (2023), 11(20), 2300604.

Scheme 128 (1 Reaction)

Steps: 1 Yield: 83%



Suppliers (75)

Suppliers (17)

Suppliers (93)

Suppliers (60)

Double bond geometry shown

31-614-CAS-40733483

Steps: 1 Yield: 83%

Palladium-Catalyzed Multicomponent Carbonylation of Halides to Acylhydrazones

1.1 Reagents: Sodium hydroxide

Catalysts: Bis(tri-*tert*-butylphosphine)palladium

Solvents: Anisole; 12 h, 4 MPa, 120 °C

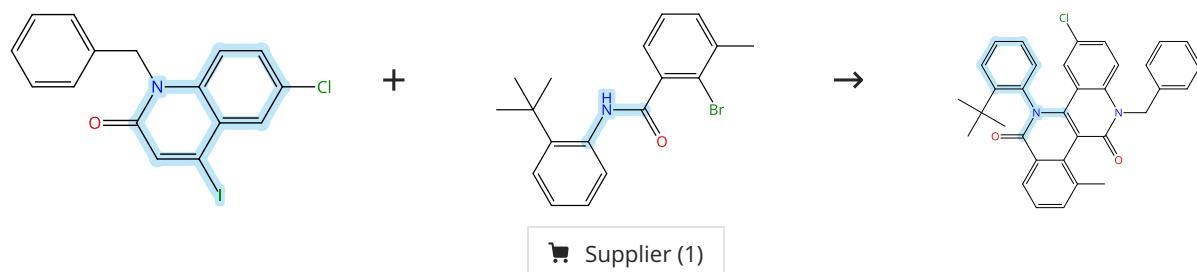
Experimental Protocols

By: Liang, Qianqian; et al

Journal of Organic Chemistry (2024), 89(12), 8537-8545.

Scheme 129 (1 Reaction)

Steps: 1 Yield: 83%



Supplier (1)

31-614-CAS-39194487

Steps: 1 Yield: 83%

1.1 Reagents: Potassium carbonate

Catalysts: Palladium diacetate, Ethyl (1*S,4R*)-bicyclo[2.2.1]hept-2-ene-2-carboxylate

Solvents: Tetrahydrofuran; 5 min, rt; 48 h, 80 °C

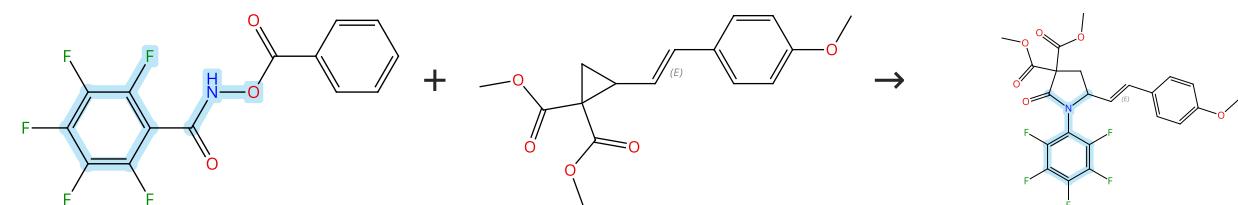
Experimental Protocols

**Asymmetric Two-Component Alkenyl Catellani Reaction for the Construction of C-N Axial Chirality**

By: Wu, Chenggui; et al

Chinese Journal of Chemistry (2024), 42(7), 699-704.

Scheme 130 (1 Reaction)



Steps: 1 Yield: 83%

31-614-CAS-36837166

Steps: 1 Yield: 83%

1.1 Reagents: Cesium carbonate

Catalysts: 2,2'-Bipyridine, Tris(dibenzylideneacetone)dipalladium

Solvents: Tetrahydrofuran; 24 h, 50 °C

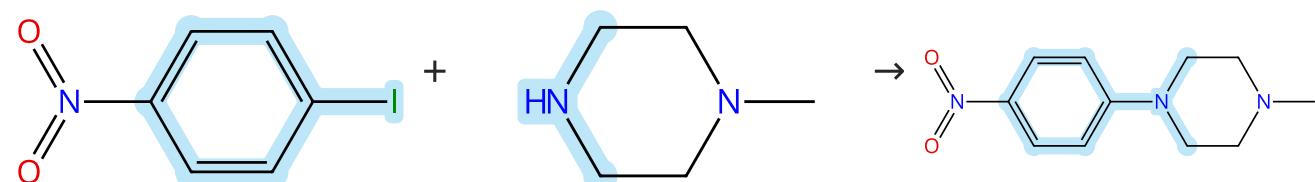
Experimental Protocols

**[3+2] Cycloaddition of Vinyl Cyclopropane and Hydroxy Iamines via Isocyanate Intermediate to γ-Lactams**

By: Huang, Xiaobing; et al

Chinese Journal of Chemistry (2023), 41(16), 1937-1942.

Scheme 131 (1 Reaction)



Steps: 1 Yield: 83%

Suppliers (68)

Suppliers (101)

Suppliers (69)

31-614-CAS-40551312

Steps: 1 Yield: 83%

1.1 Reagents: Cesium carbonate

Catalysts: Tris(dibenzylideneacetone)dipalladium, (+)-BINAP

Solvents: Tetrahydrofuran; 3 h, 98 °C

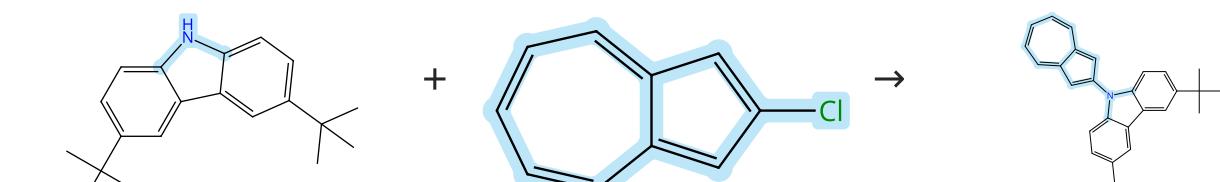
Experimental Protocols

**Explorations of Agonist Selectivity for the α9\* nAChR with Novel Substituted Carbamoyl/Amido/Heteroaryl Dialkylpiperazinium Salts and Their Therapeutic Implications in Pain and Inflammation**

By: Andleeb, Hina; et al

Journal of Medicinal Chemistry (2024), 67(11), 8642-8666.

Scheme 132 (1 Reaction)



Steps: 1 Yield: 83%

Suppliers (69)

Suppliers (7)

31-614-CAS-37287949

Steps: 1 Yield: 83%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C

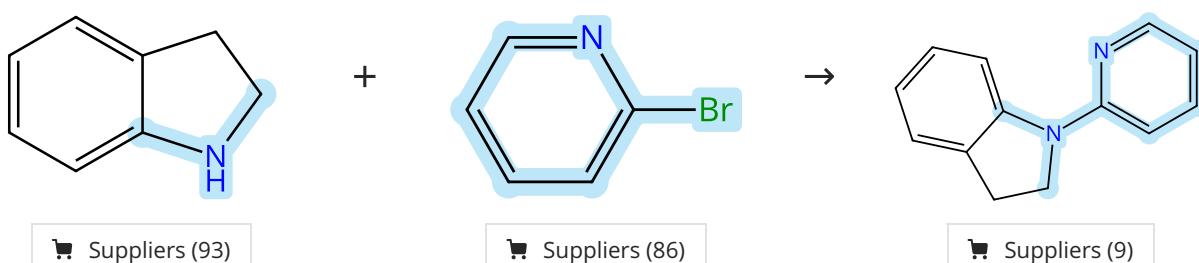
Experimental Protocols

Extension of Non-alternant Nanographenes Containing Nitrogen-Doped Stone-Thrower-Wales Defects

By: Wang, Chang; et al

Angewandte Chemie, International Edition (2023), 62(35), e202306890.

Scheme 133 (1 Reaction)



31-614-CAS-39567731

Steps: 1 Yield: 83%

1.1 Reagents: Potassium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, 1*H*-Imidazolium, 1,3-bis[2,4,6-tris(diphenylmethyl)phenyl]-, chloride (1:1)

Solvents: Toluene; overnight, 100 °C

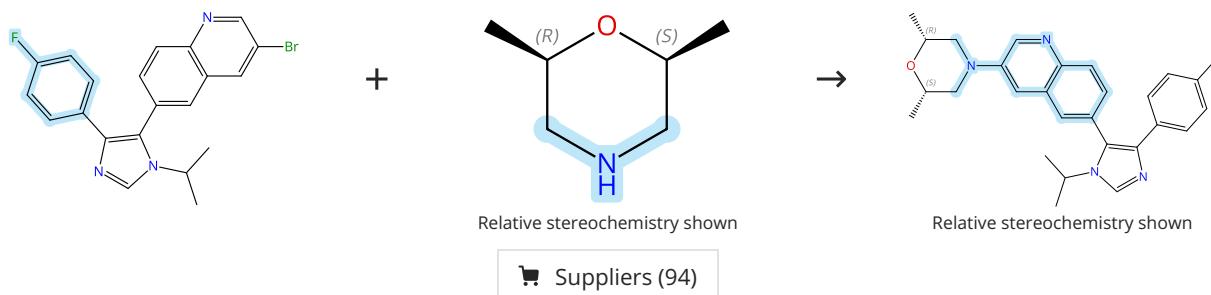
Experimental Protocols

Copper-catalyzed direct  $\alpha$ -peroxidation of nitrogen heterocycles

By: Gerard, Phideline; et al

ARKIVOC (Gainesville, FL, United States) (2024), (5), 202312154.

Scheme 134 (1 Reaction)



31-614-CAS-39722168

Steps: 1 Yield: 83%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, 2'-(Dicyclohexylphosphino)-*N,N*-dimethyl[1,1'-biphenyl]-2-amine

Solvents: Toluene; 18 h, 100 °C

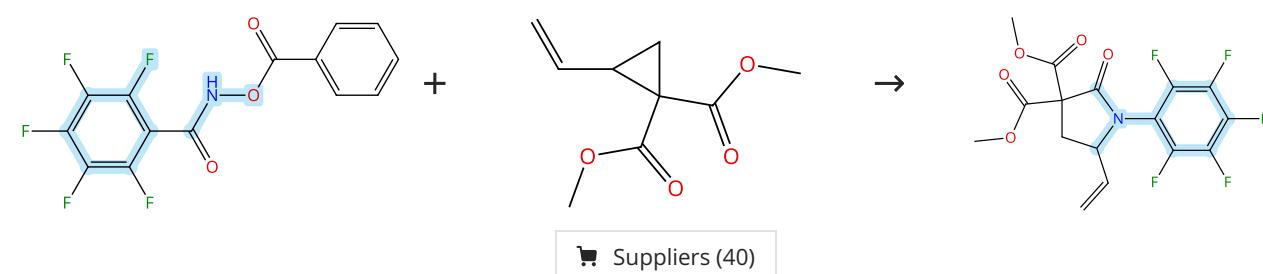
Experimental Protocols

Fragment growth-based discovery of novel TNK inhibitors for the treatment of colorectal cancer

By: Teng, Yixin; et al

European Journal of Medicinal Chemistry (2024), 268, 116240.

Scheme 135 (1 Reaction)



31-614-CAS-36837174

Steps: 1 Yield: 83%

**1.1 Reagents:** Cesium carbonate  
**Catalysts:** 2,2'-Bipyridine, Tris(dibenzylideneacetone)dipalladium  
**Solvents:** Tetrahydrofuran; 24 h, 50 °C

Experimental Protocols

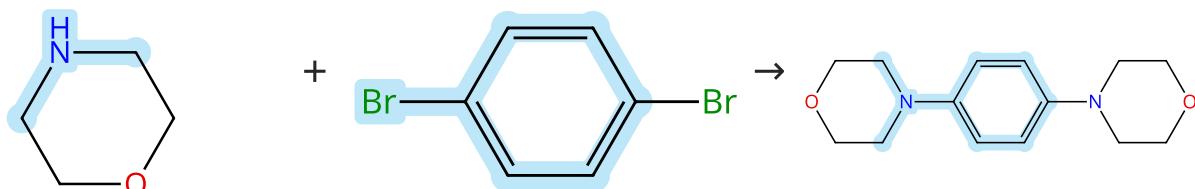
[3+2] Cycloaddition of Vinyl Cyclopropane and Hydroxylamines via Isocyanate Intermediate to  $\gamma$ -Lactams

By: Huang, Xiaobing; et al

Chinese Journal of Chemistry (2023), 41(16), 1937-1942.

Scheme 136 (1 Reaction)

Steps: 1 Yield: 83%



Suppliers (83)

Suppliers (97)

Suppliers (10)

31-614-CAS-35941035

Steps: 1 Yield: 83%

**1.1 Reagents:** Potassium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate  
**Solvents:** Toluene; 24 h, 110 °C

Experimental Protocols

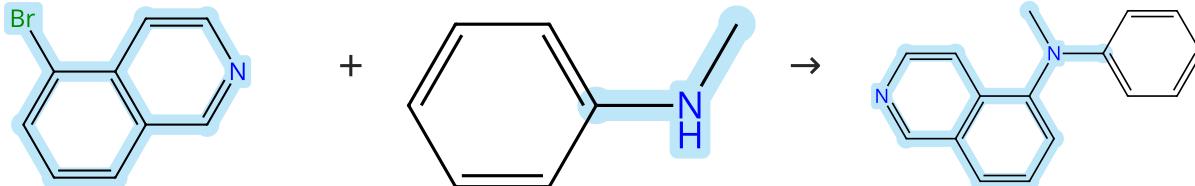
Utilizing morpholine for purely organic room temperature phosphors

By: Jiang, Dongyan; et al

Science China: Chemistry (2023), 66(4), 1132-1138.

Scheme 137 (1 Reaction)

Steps: 1 Yield: 83%



Suppliers (98)

Suppliers (69)

Supplier (1)

31-614-CAS-43159488

Steps: 1 Yield: 83%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 1,1'-(9,9-Dimethyl-9-H-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]  
**Solvents:** 1,4-Dioxane; rt  $\rightarrow$  90 °C; 24 h, 90 °C

Experimental Protocols

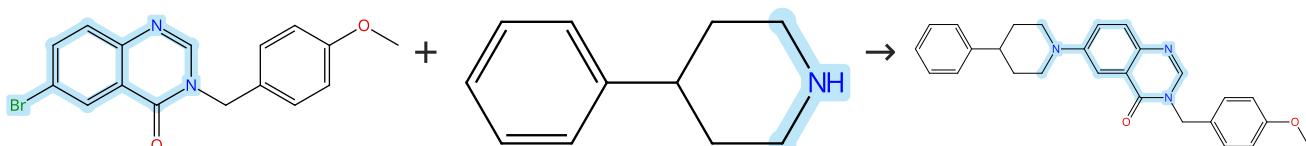
Ruthenium-Catalyzed Carbocycle-Selective Hydrogenation of Fused Heteroarenes

By: Luo, Chenguang; et al

Journal of the American Chemical Society (2024), 146(51), 35043-35056.

Scheme 138 (1 Reaction)

Steps: 1 Yield: 83%



Suppliers (95)

31-614-CAS-38625317

Steps: 1 Yield: 83%

1.1 Reagents: Cesium carbonate

Catalysts: Tris(dibenzylideneacetone)dipalladium, 1,1'-(9,9-Dimethyl-9H-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]

Solvents: 1,4-Dioxane; 60 h, rt → 90 °C

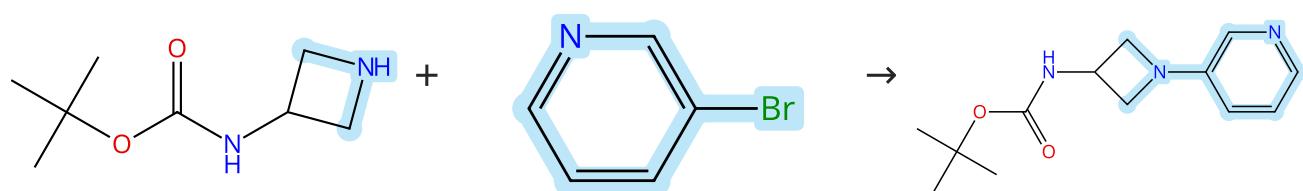
Experimental Protocols

Fragment-Based Screening Identifies New Quinazolinone-Based Inositol Hexakisphosphate Kinase (IP6K) Inhibitors

By: Heitmann, Tyler; et al

ACS Medicinal Chemistry Letters (2023), 14(12), 1760-1766.

## Scheme 139 (1 Reaction)



Suppliers (70)

Suppliers (89)

Suppliers (9)

31-614-CAS-41131798

Steps: 1 Yield: 83%

1.1 Reagents: Cesium carbonate, BINAP

Catalysts: Tris(dibenzylideneacetone)dipalladium

Solvents: Toluene; 4 h, 90 °C

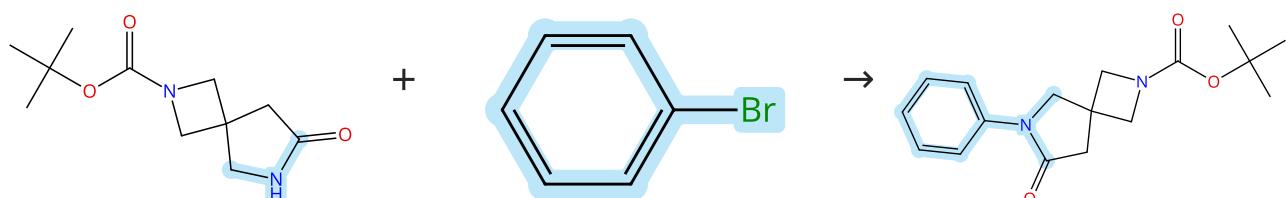
Experimental Protocols

Design and Synthesis of Clinical Candidate PF-06852231 (CVL-231): A Brain Penetrant, Selective, Positive Allosteric Modulator of the M<sub>4</sub> Muscarinic Acetylcholine Receptor

By: Butler, Christopher R.; et al

Journal of Medicinal Chemistry (2024), 67(13), 10831-10847.

## Scheme 140 (1 Reaction)



Suppliers (65)

Suppliers (71)

31-614-CAS-36209192

Steps: 1 Yield: 83%

1.1 Reagents: Cesium carbonate

Catalysts: Tris(dibenzylideneacetone)dipalladium, 1,1'-(9,9-

Dimethyl-9H-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]

Solvents: 1,4-Dioxane; overnight, rt → 100 °C

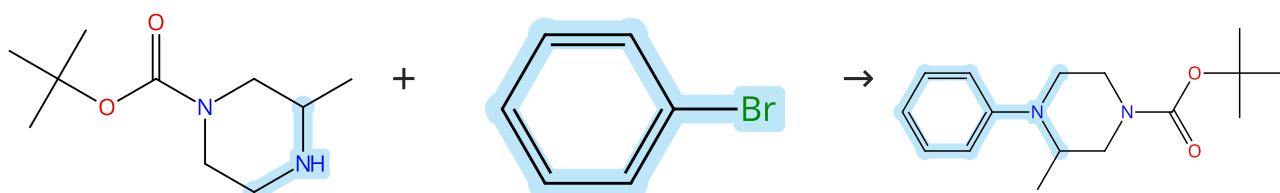
Experimental Protocols

2,6-diazaspiro[3.4]octan-7-one derivatives as potent sigma-1 receptor antagonists that enhanced the antinociceptive effect of morphine and rescued morphine tolerance

By: Fu, Kequan; et al

European Journal of Medicinal Chemistry (2023), 249, 115178.

## Scheme 141 (1 Reaction)



Suppliers (79)

Suppliers (71)

31-614-CAS-41670067

Steps: 1 Yield: 83%

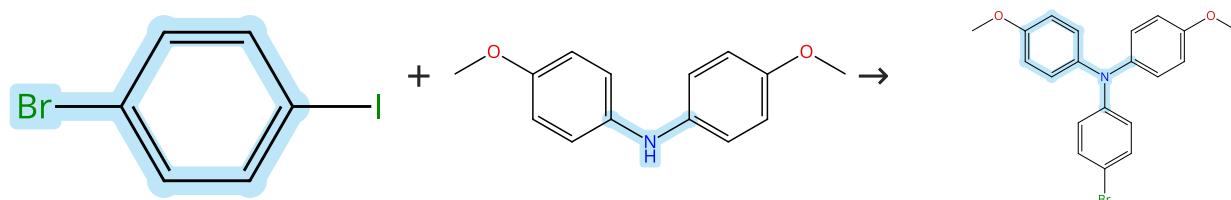
**1.1 Reagents:** Sodium *tert*-butoxide, Tri-*tert*-butylphosphine  
**Catalysts:** Palladium diacetate  
**Solvents:** Toluene; overnight, 110 °C

Experimental Protocols

Design, synthesis and biological evaluation of naphthyl amide derivatives as reversible monoacylglycerol lipase (MAGL) inhibitors

By: Yu, Quanwei; et al

Bioorganic &amp; Medicinal Chemistry (2024), 111, 117844.

**Scheme 142 (2 Reactions)**

Suppliers (94)

Suppliers (70)

Suppliers (61)

31-614-CAS-39979361

Steps: 1 Yield: 82%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, X-Phos  
**Solvents:** Toluene; 15 h, 110 °C

Experimental Protocols

A Rational Design of Electrochemically and Photophysically Tunable Triarylamine Luminophores by Consecutive (Pseudo-)Four-Component Syntheses

By: Kohlbecher, Regina; et al

Chemistry - A European Journal (2024), 30(17), e202304119.

31-614-CAS-36063454

Steps: 1 Yield: 76%

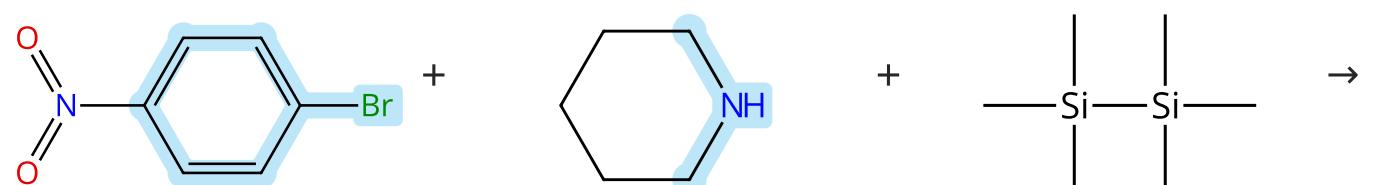
**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, 1,1-Bis(diphenylphosphino)ferrocene  
**Solvents:** Toluene; 24 h, 110 °C

Experimental Protocols

Enabling Peculiar Photophysics and Mechanochromic Luminescence by Introducing Bromine in Push-Pull Pyridine Derivatives

By: Sheokand, Manju; et al

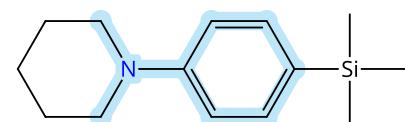
Journal of Physical Chemistry C (2023), 127(8), 4176-4187.

**Scheme 143 (1 Reaction)**

Suppliers (76)

Suppliers (50)

Suppliers (52)



Suppliers (3)

31-614-CAS-35471934

Steps: 1 Yield: 82%

1.1 Reagents: Cesium carbonate

Catalysts: Palladium diacetate, Dicyclohexyl[3,6-dimethoxy-2',4',6'-tris(1-methylethyl)[1,1'-biphenyl]-2-yl]phosphine

Solvents: (Trifluoromethyl)benzene; 24 h, 100 °C

1.2 Reagents: Cesium carbonate

Catalysts: Palladium diacetate, Dicyclohexyl[3,6-dimethoxy-2',4',6'-tris(1-methylethyl)[1,1'-biphenyl]-2-yl]phosphine

Solvents: (Trifluoromethyl)benzene; 24 h, 150 °C

Experimental Protocols

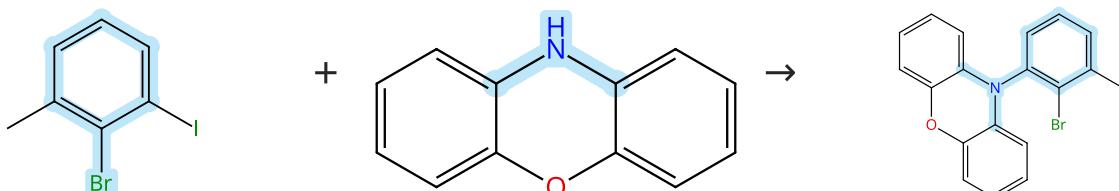
Palladium-catalyzed C-Si bond formation via denitrative cross-coupling of nitroarenes with hexamethyldisilane

By: Yao, Jiaxin; et al

Organic Chemistry Frontiers (2023), 10(2), 524-530.

## Scheme 144 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (61)

Suppliers (96)

31-614-CAS-41966289

Steps: 1 Yield: 82%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Palladium diacetate, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; 24 h, 100 °C

Experimental Protocols

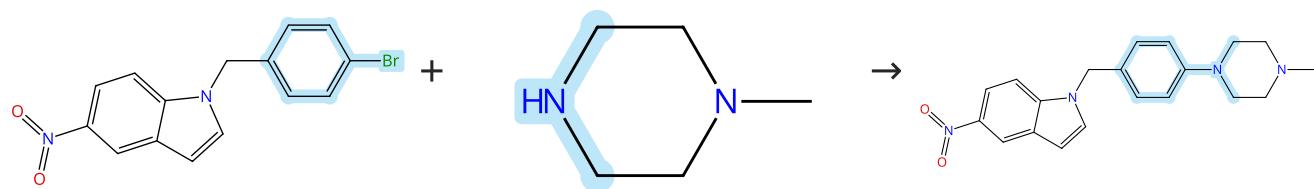
Bis-Ortho-Donor-Modification of Boracyclic π-Electron Systems beyond Steric Protection to Produce Thermally Activated Delayed Fluorescence Materials

By: Narita, Hiroki; et al

Angewandte Chemie, International Edition (2024), 63(30), e202405412.

## Scheme 145 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (4)

Suppliers (101)

31-614-CAS-36736946

Steps: 1 Yield: 82%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos

Solvents: Toluene; 6 h, 100 °C

Experimental Protocols

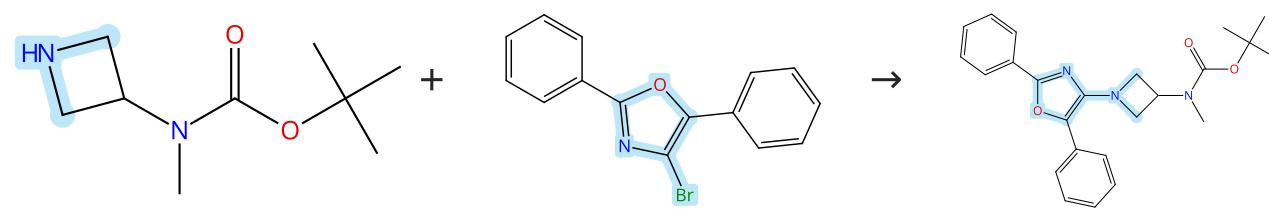
Design, Synthesis and Biological Evaluation of 7-Substituted-1,3-diaminopyrrol[3,2-f]quinazolines as Potential Antibacterial Agents

By: Yuan, Duo; et al

ChemMedChem (2023), 18(12), e202300078.

## Scheme 146 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (63)

Suppliers (4)

31-614-CAS-35422513

Steps: 1 Yield: 82%

1.1 Reagents: Sodium trimethylsilanolate  
Solvents: Tetrahydrofuran; 5 min, rt1.2 Catalysts: Palladium, bromo[dicyclohexyl[3-(1,1-dimethylethoxy)-6-methoxy-2',6'-bis(1-methylethyl)[1,1'-biphenyl]-2-yl- $\kappa C^1$ ]phosphine- $\kappa P$ ][4-[2-(trimethylsilyl)ethoxy]carbonyl phenyl]-, (*SP*-4-2)-

Solvents: Tetrahydrofuran; 3 h, 50 °C

**Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteroaryl Halides with Aliphatic Amines**

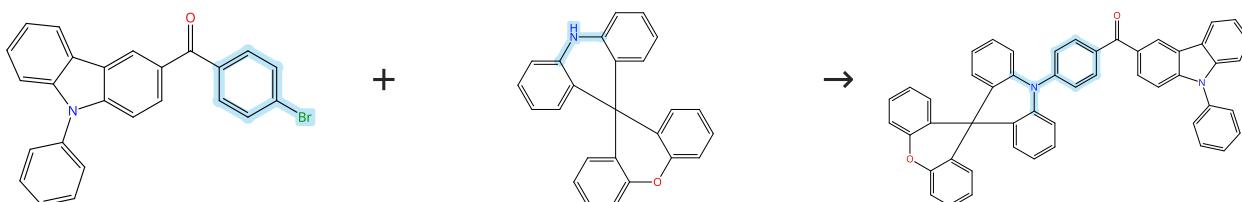
By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

Experimental Protocols

**Scheme 147 (1 Reaction)**

Steps: 1 Yield: 82%



Suppliers (9)

31-614-CAS-36259540

Steps: 1 Yield: 82%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; 12 h, 120 °C

**Realizing efficient blue and deep-blue delayed fluorescence materials with record-beating electroluminescence efficiencies of 43.4%**

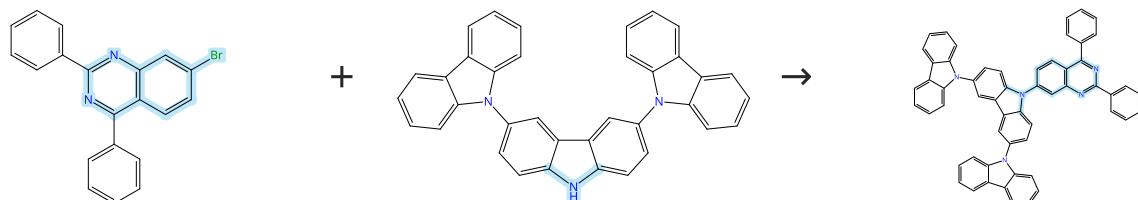
By: Fu, Yan; et al

Nature Communications (2023), 14(1), 2019.

Experimental Protocols

**Scheme 148 (1 Reaction)**

Steps: 1 Yield: 82%



Supplier (1)

Suppliers (50)

31-614-CAS-36924728

Steps: 1 Yield: 82%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos

Solvents: Toluene; 15 h, reflux

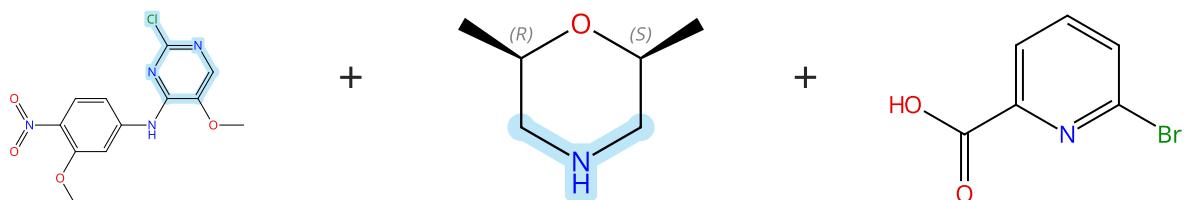
**Ortho-Lithiation driven one-pot synthesis of quinazolines via [2 + 2 + 2] cascade annulation of halofluorobenzenes with nitriles**

By: Hsueh, Jen-Chun; et al

Organic &amp; Biomolecular Chemistry (2023), 21(25), 5297-5304.

Experimental Protocols

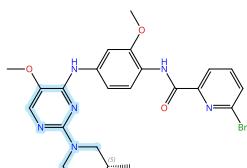
Scheme 149 (1 Reaction)



Suppliers (94)

Steps: 1 Yield: 82%

Suppliers (109)



Relative stereochemistry shown

31-614-CAS-36602332

Steps: 1 Yield: 82%

- 1.1 **Reagents:** Diisopropylethylamine  
**Solvents:** 1-Butanol; 8 h, 120 °C
- 1.2 **Reagents:** Hydrogen  
**Catalysts:** Palladium  
**Solvents:** Methanol; overnight, rt
- 1.3 **Reagents:** 1-Hydroxybenzotriazole, 1-Ethyl-3-(3'-dimethylamino)propyl carbodiimide hydrochloride  
**Solvents:** Dimethylformamide; 6 h, rt

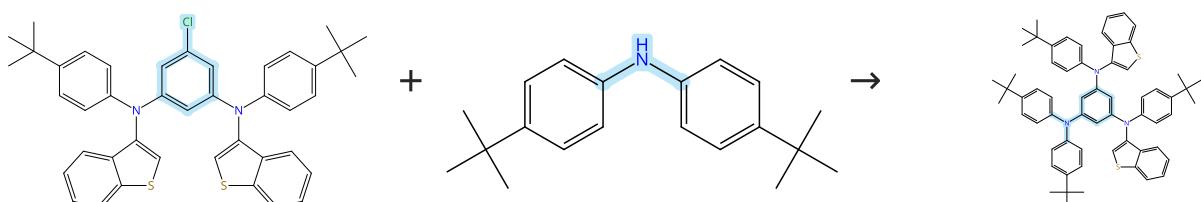
Experimental Protocols

**Discovery of Pyrimidinediamine Derivatives as Potent Methuosis Inducers for the Treatment of Triple-Negative Breast Cancer**

By: He, Jia; et al

Journal of Medicinal Chemistry (2023), 66(11), 7421-7437.

Scheme 150 (1 Reaction)



31-614-CAS-42162972

Steps: 1 Yield: 82%

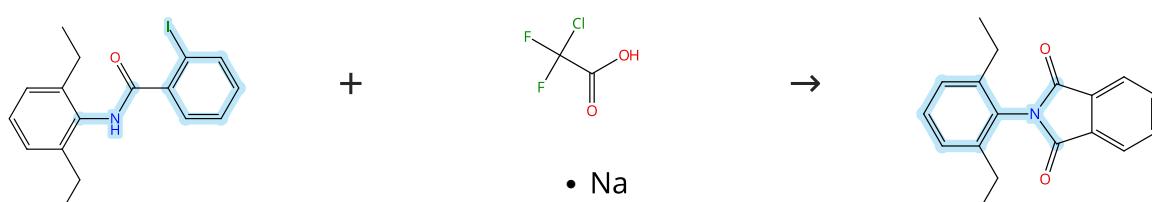
**Constructing highly efficient multiple resonance fluorescence materials by inserting benzothiophene within B/N-skeletons**

By: Zhao, He; et al

New Journal of Chemistry (2024), 48(36), 16119-16126.

Experimental Protocols

Scheme 151 (1 Reaction)



31-614-CAS-38558277

Steps: 1 Yield: 82%

**1.1 Reagents:** Potassium carbonate  
**Catalysts:** Palladium diacetate, Bis[2-(diphenylphosphino)phenyl] ether  
**Solvents:** Dimethylformamide; 5 h, 95 °C

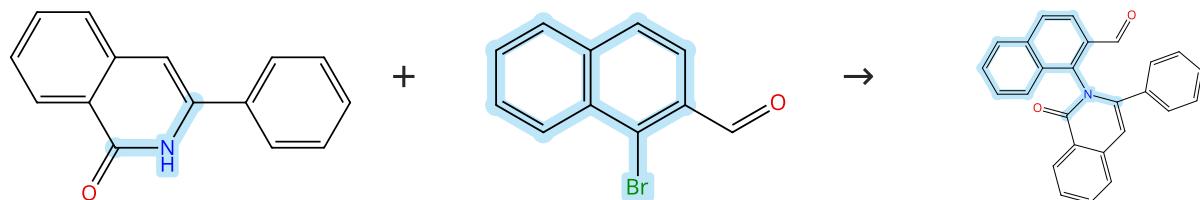
Experimental Protocols

**Synthesis of N-substituted phthalimides via Pd-catalyzed [4+1] cycloaddition reaction**

By: Hu, Chengxian; et al

Chemical Communications (Cambridge, United Kingdom) (2023), 59(100), 14839-14842.

Scheme 152 (1 Reaction)



Suppliers (18)

Suppliers (71)

31-614-CAS-41335336

Steps: 1 Yield: 82%

**1.1 Catalysts:** Palladium, tris[ $\mu$ -[(1,2- $\eta$ :4,5- $\eta$ )-(1E,4E)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2R)-1-[(1R)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene  
**Solvents:** Toluene; 30 min, rt

**1.2 Reagents:** Cesium carbonate; 36 h, 90 °C

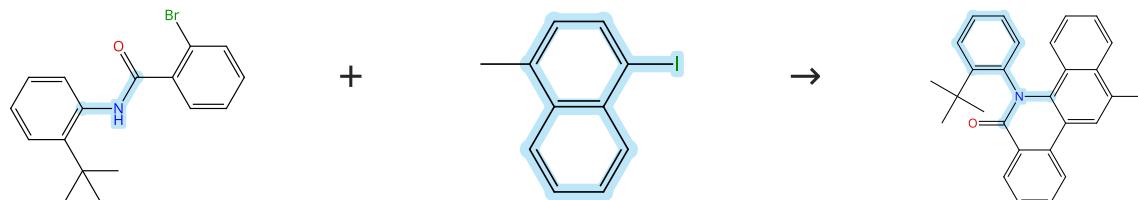
Experimental Protocols

**Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination**

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

Scheme 153 (1 Reaction)



Suppliers (5)

Suppliers (22)

31-614-CAS-41071011

Steps: 1 Yield: 82%

**1.1 Reagents:** Norbornene, Silver sulfate  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, (4S,4'S)-4,4',5,5'-Tetrahydro-4,4'-bis(1-methylethyl)-1,1'-bis[3-(trifluoromethyl)phenyl]-2,2'-bi-1H-imidazole  
**Solvents:** Toluene, Water; 36 h, 80 °C

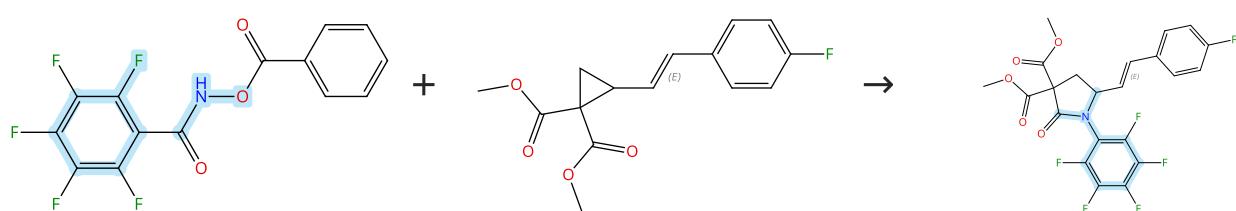
Experimental Protocols

**Chiral dinitrogen ligand enabled asymmetric Pd/norbornene cooperative catalysis toward the assembly of C-N axially chiral scaffolds**

By: Jin, Liang; et al

Nature Communications (2024), 15(1), 4908.

Scheme 154 (1 Reaction)



Double bond geometry shown

Double bond geometry shown

31-614-CAS-36837160

Steps: 1 Yield: 82%

**1.1 Reagents:** Cesium carbonate  
**Catalysts:** 2,2'-Bipyridine, Tris(dibenzylideneacetone)dipalladium  
**Solvents:** Tetrahydrofuran; 24 h, 50 °C

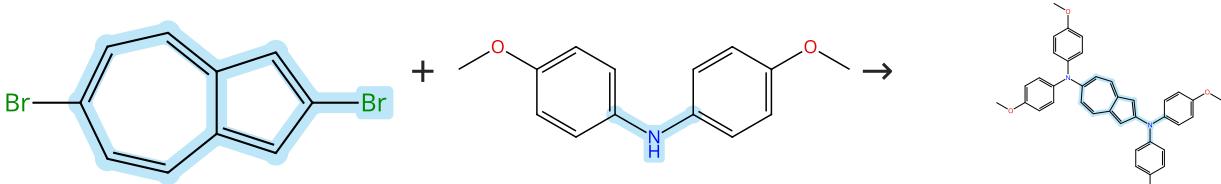
Experimental Protocols

[3+2] Cycloaddition of Vinyl Cyclopropane and Hydroxylamines via Isocyanate Intermediate to  $\gamma$ -Lactams

By: Huang, Xiaobing; et al

Chinese Journal of Chemistry (2023), 41(16), 1937-1942.

Scheme 155 (1 Reaction)



Suppliers (3)

Suppliers (70)

Steps: 1 Yield: 82%

31-614-CAS-37345824

Steps: 1 Yield: 82%

**1.1 Reagents:** Potassium *tert*-butoxide  
**Catalysts:** Palladium diacetate, Tri-*tert*-butylphosphonium tetrafluoroborate  
**Solvents:** Toluene; 2 - 3 h, reflux

Experimental Protocols

Intense absorption of azulene realized by molecular orbital inversion

By: Tsuchiya, Takahiro; et al

Chemical Communications (Cambridge, United Kingdom) (2023), 59(71), 10604-10607.

Scheme 156 (1 Reaction)



Suppliers (4)

Suppliers (50)

Steps: 1 Yield: 82%

31-614-CAS-36736943

Steps: 1 Yield: 82%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, X-Phos  
**Solvents:** Toluene; 6 h, 100 °C

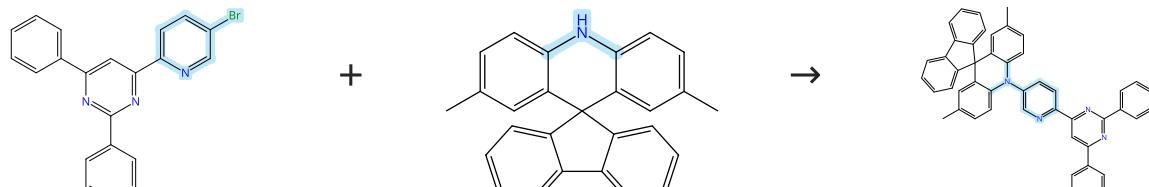
Experimental Protocols

Design, Synthesis and Biological Evaluation of 7-Substituted-1,3-diaminopyrrol[3,2-f]quinazolines as Potential Antibacterial Agents

By: Yuan, Duo; et al

ChemMedChem (2023), 18(12), e202300078.

Scheme 157 (1 Reaction)



Suppliers (2)

Steps: 1 Yield: 82%

31-614-CAS-36851722

Steps: 1 Yield: 82%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; 12 h, 110 °C

Experimental Protocols

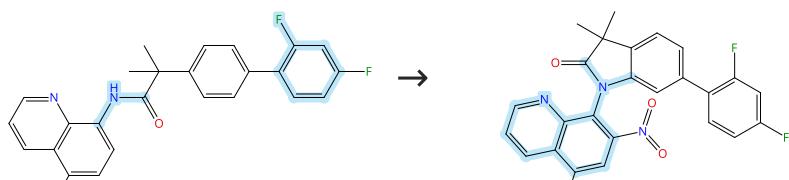
Constructing high-efficiency aggregation-induced delayed fluorescence molecules and OLEDs applying C-H···N hydrogen bond manipulation strategy

By: Ma, Zhiwei; et al

Dyes and Pigments (2023), 215, 111298.

**Scheme 158 (1 Reaction)**

Steps: 1 Yield: 82%



31-614-CAS-34978846

Steps: 1 Yield: 82%

1.1 Reagents: Aluminum nitrate nonahydrate

Catalysts: Palladium diacetate

Solvents: Acetonitrile; 24 h, 100 °C

Experimental Protocols

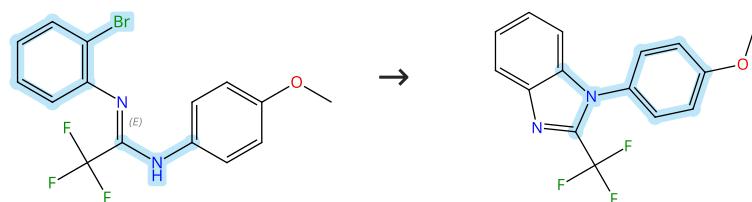
Palladium-catalyzed intramolecular C-H amination using aluminum nitrate as the oxidant

By: Jia, Kai; et al

Organic Chemistry Frontiers (2023), 10(1), 109-114.

**Scheme 159 (1 Reaction)**

Steps: 1 Yield: 82%



Double bond geometry shown

31-614-CAS-36075548

Steps: 1 Yield: 82%

1.1 Reagents: Cesium carbonate

Catalysts: Palladium diacetate, BINAP

Solvents: Toluene; 18 h, 100 °C

Experimental Protocols

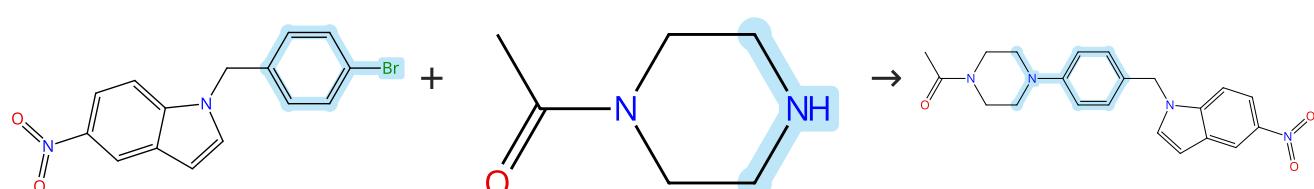
Tandem Reaction of Azide with Isonitrile and T  $\text{MSC}_n\text{F}_m(\text{H})$ : Access to N-Functionalized C-Fluoroalkyl Amidine

By: Chang, Wenxu; et al

Organic Letters (2023), 25(9), 1392-1396.

**Scheme 160 (1 Reaction)**

Steps: 1 Yield: 82%



Suppliers (4)

Suppliers (98)

31-614-CAS-36736944

Steps: 1 Yield: 82%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos

Solvents: Toluene; 6 h, 100 °C

Experimental Protocols

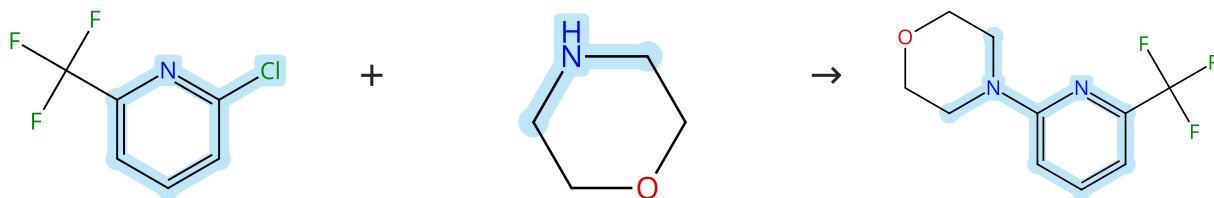
Design, Synthesis and Biological Evaluation of 7-Substituted-1,3-diaminopyrrol[3,2-f]quinazolines as Potential Antibacterial Agents

By: Yuan, Duo; et al

ChemMedChem (2023), 18(12), e202300078.

Scheme 161 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (94)

Suppliers (83)

Suppliers (40)

31-614-CAS-35486392

Steps: 1 Yield: 82%

Reductive Cleavage of C(sp<sup>2</sup>)-CF<sub>3</sub> bonds in Trifluoromethylpyridines1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Palladium diacetate, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine

Solvents: Morpholine; 12 h, 110 °C

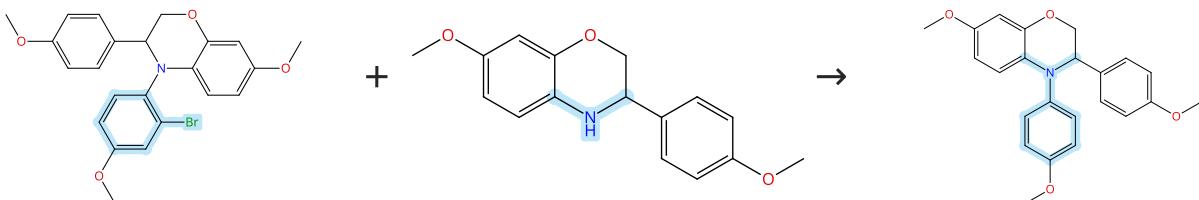
By: St. Onge, Piers; et al

Organic Letters (2023), 25(6), 1030-1034.

Experimental Protocols

Scheme 162 (1 Reaction)

Steps: 1 Yield: 82%



31-614-CAS-39408114

Steps: 1 Yield: 82%

Rational Design, Synthesis, and Anti-Proliferative Evaluation of Novel 4-Aryl-3,4-Dihydro-2H-1,4-Benzoxazines

1.1 Reagents: Cesium carbonate

Solvents: *tert*-Butanol, Toluene; 10 min, rt

1.2 Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos; 16 h, 100 °C

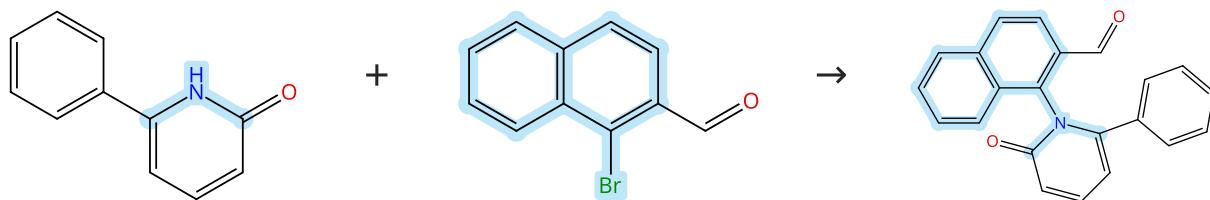
By: Fu, Xiaoming; et al

Molecules (2024), 29(1), 166.

Experimental Protocols

Scheme 163 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (65)

Suppliers (71)

31-614-CAS-41335328

Steps: 1 Yield: 82%

Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination

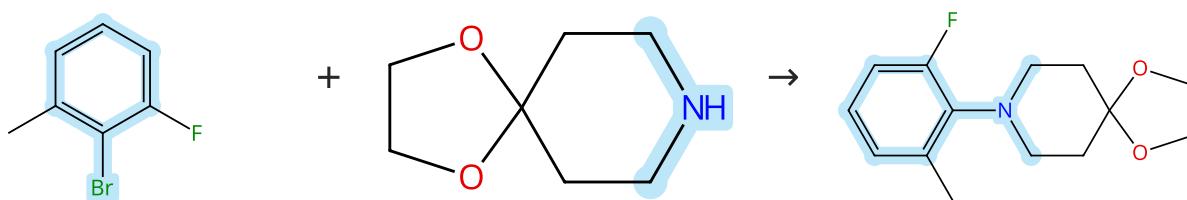
By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

Experimental Protocols

**Scheme 164 (1 Reaction)**

Steps: 1 Yield: 82%



Suppliers (70)

Suppliers (62)

31-614-CAS-39924823

Steps: 1 Yield: 82%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, BINAP

Solvents: Toluene; 100 °C

Experimental Protocols

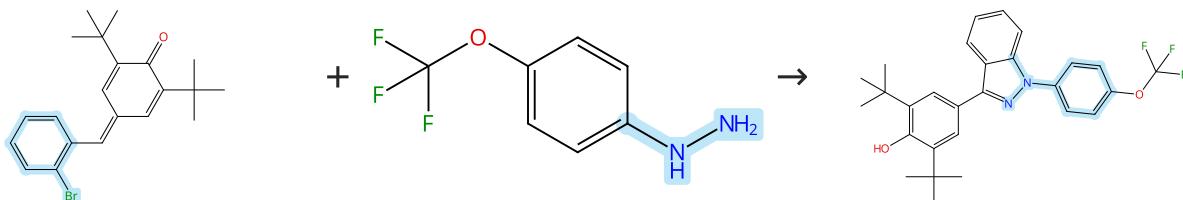
**Discovery and Characterization of a New Class of C5aR1 Antagonists Showing In Vivo Activity**

By: Hubler, Francis; et al

Journal of Medicinal Chemistry (2024), 67(5), 4100-4119.

**Scheme 165 (1 Reaction)**

Steps: 1 Yield: 82%



Supplier (1)

Suppliers (41)

31-614-CAS-38947664

Steps: 1 Yield: 82%

1.1 Reagents: Potassium *tert*-butoxide

Catalysts: Palladium diacetate, 1,3-Bis(diphenylphosphino)

propane

Solvents: Toluene; 15 h, 110 °C

Experimental Protocols

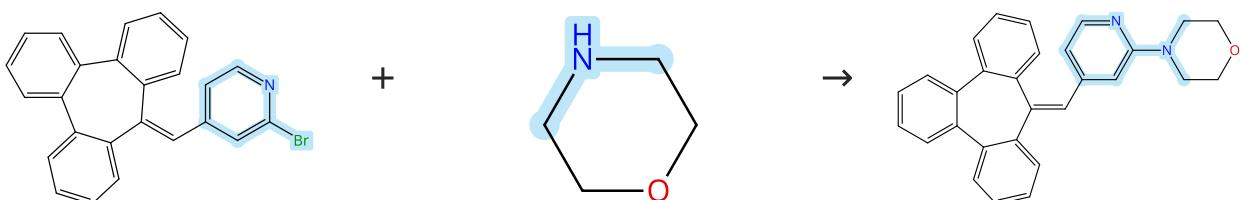
**Synthesis and Photophysical Properties of 3-Substituted-1*H*-Indazoles: A Pd-Catalyzed Double C-N Bond Formation Strategy via 1,6-Conjugate Addition**

By: Kayastha, Nasib; et al

Journal of Organic Chemistry (2024), 89(1), 402-413.

**Scheme 166 (1 Reaction)**

Steps: 1 Yield: 82%



Supplier (83)

31-614-CAS-40196678

Steps: 1 Yield: 82%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, 1,1'-(9,9-Dimethyl-9*H*-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]

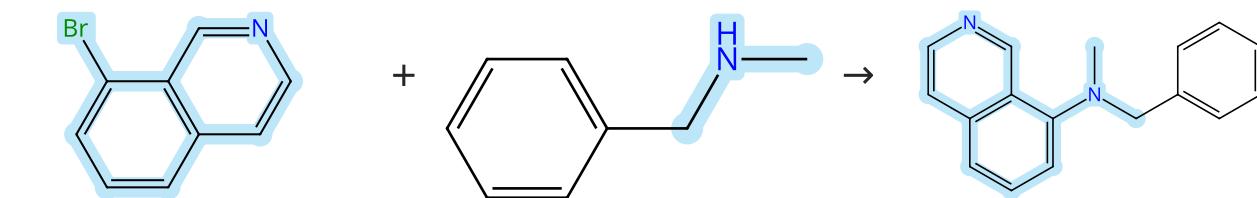
Solvents: Toluene; 12 h, rt → 100 °C

**Palladium-catalyzed asymmetric carbene coupling en route to inherently chiral heptagon-containing polyarenes**

By: Zhang, Huan; et al

Nature Communications (2024), 15(1), 3353.

Scheme 167 (1 Reaction)



Suppliers (96)

Suppliers (81)

31-614-CAS-43159526

Steps: 1 Yield: 82%

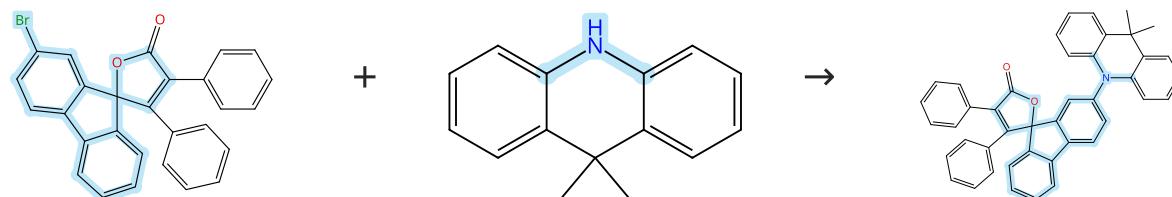
**Ruthenium-Catalyzed Carbocycle-Selective Hydrogenation of Fused Heteroarenes**

By: Luo, Chenguang; et al

Journal of the American Chemical Society (2024), 146(51), 35043-35056.

Experimental Protocols

Scheme 168 (1 Reaction)



Suppliers (68)

31-614-CAS-35063621

Steps: 1 Yield: 82%

**Direct synthesis of fluorene-based spirolactones through a B<sub>F</sub><sub>3</sub>-promoted spiroannulation of  $\alpha$ -keto acids and o-alkynyl biaryls**

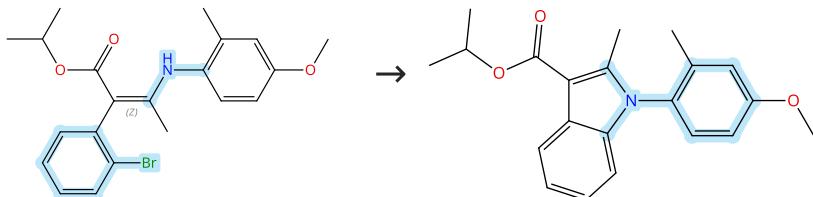
By: Song, Qingting; et al

Organic Chemistry Frontiers (2023), 10(2), 363-368.

Experimental Protocols

Scheme 169 (1 Reaction)

Steps: 1 Yield: 82%



Double bond geometry shown

31-614-CAS-40129219

Steps: 1 Yield: 82%

**Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers**

By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

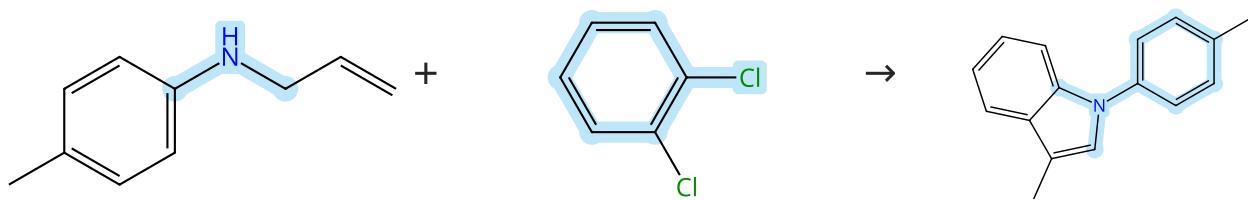
1.1 **Catalysts:** Palladium diacetate, (-)-BINAP  
**Solvents:** Toluene; 20 min, rt1.2 **Reagents:** Cesium carbonate  
**Solvents:** Toluene; 5 min, rt

1.3 5 min, rt; 18 h, 60 °C

Experimental Protocols

Scheme 170 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (12)

Suppliers (123)

Suppliers (9)

31-614-CAS-38969947

Steps: 1 Yield: 82%

## 1.1 Reagents:

Sodium *tert*-butoxide  
Catalysts: Palladium, [7,9-bis[2,6-bis(1-methylethyl)phenyl]-7,9-dihydro-8*H*-acenaphth[1,2-*d*]imidazol-8-ylidene]bromo[2-(4,5-dihydro-4,4-dimethyl-2-oxazolyl-*kN*<sup>3</sup>)-1-naphthalenyl-*kC*]-, (*SP*-4-4)-

Solvents: 1,4-Dioxane; 24 h, 100 °C

## A General Protocol toward Synthesis of 3-Methylindoles Using Acenaphthoimidazolidene-Ligated Oxazoline Palladacycle

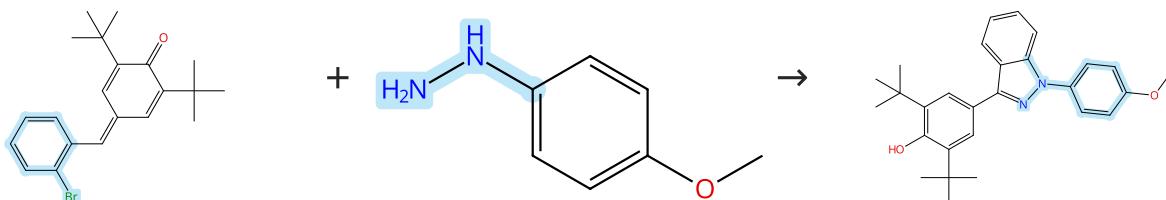
By: Fan, Ruqian; et al

Organic Letters (2024), 26(1), 22-28.

## Experimental Protocols

Scheme 171 (1 Reaction)

Steps: 1 Yield: 82%



Supplier (1)

Suppliers (46)

31-614-CAS-38947670

Steps: 1 Yield: 82%

## 1.1 Reagents:

Potassium *tert*-butoxide  
Catalysts: Palladium diacetate, 1,3-Bis(diphenylphosphino)propane

Solvents: Toluene; 15 h, 110 °C

Synthesis and Photophysical Properties of 3-Substituted-1*H*-Indazoles: A Pd-Catalyzed Double C-N Bond Formation Strategy via 1,6-Conjugate Addition

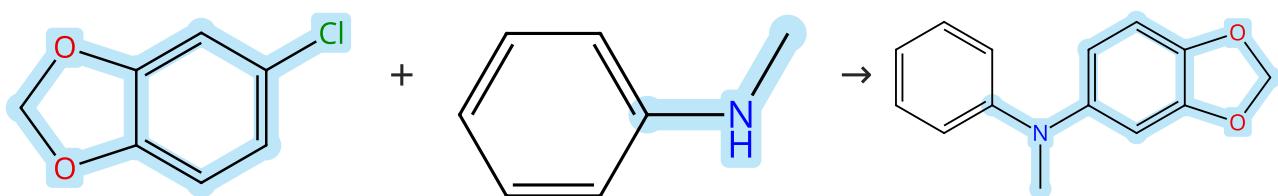
By: Kayastha, Nasib; et al

Journal of Organic Chemistry (2024), 89(1), 402-413.

## Experimental Protocols

Scheme 172 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (52)

Suppliers (69)

Supplier (1)

31-614-CAS-42014407

Steps: 1 Yield: 82%

1.1 **Catalysts:** Phenylboronic acid, Palladium diacetate, 1*H*-Indole, 3-(dicyclohexylphosphino)-1-methyl-2-(2,3,4-trimethoxyphenyl)-

**Solvents:** Dichloromethane; rt

1.2 **Reagents:** Sodium *tert*-butoxide

**Solvents:** Toluene, Hexane; rt; 24 h, 110 °C; 110 °C → rt

1.3 **Solvents:** Water; rt

Experimental Protocols

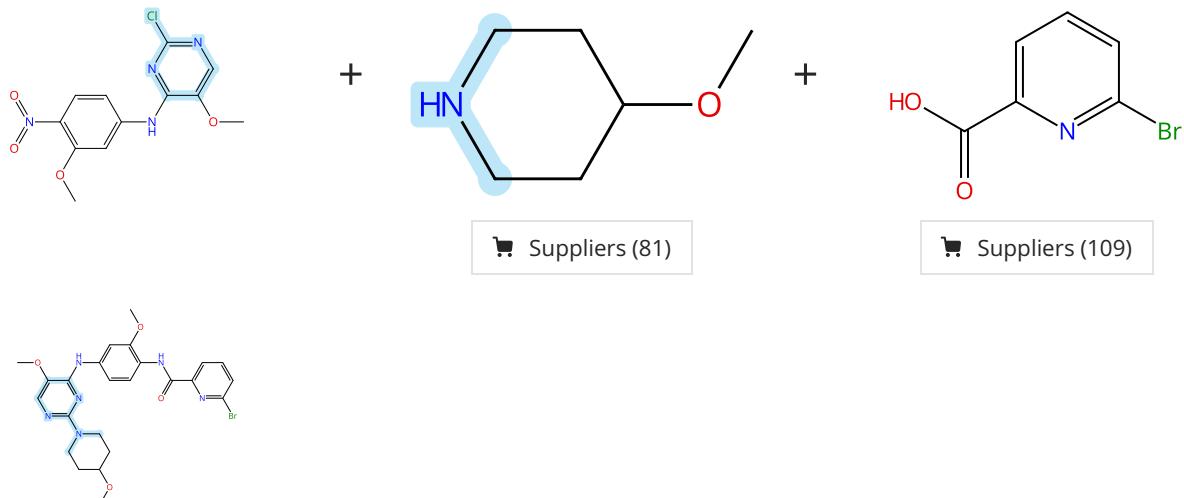
Application of indole-based monophosphine in ppm level Pd-catalyzed C-N bond formation

By: Li, Cheuk Long; et al

Journal of Organometallic Chemistry (2024), 1011, 123124.

Scheme 173 (1 Reaction)

Steps: 1 Yield: 82%



31-614-CAS-36602333

Steps: 1 Yield: 82%

1.1 **Reagents:** Diisopropylethylamine  
**Solvents:** 1-Butanol; 8 h, 120 °C

1.2 **Reagents:** Hydrogen

**Catalysts:** Palladium

**Solvents:** Methanol; overnight, rt

1.3 **Reagents:** 1-Hydroxybenzotriazole, 1-Ethyl-3-(3'-dimethylaminopropyl)carbodiimide hydrochloride  
**Solvents:** Dimethylformamide; 6 h, rt

Experimental Protocols

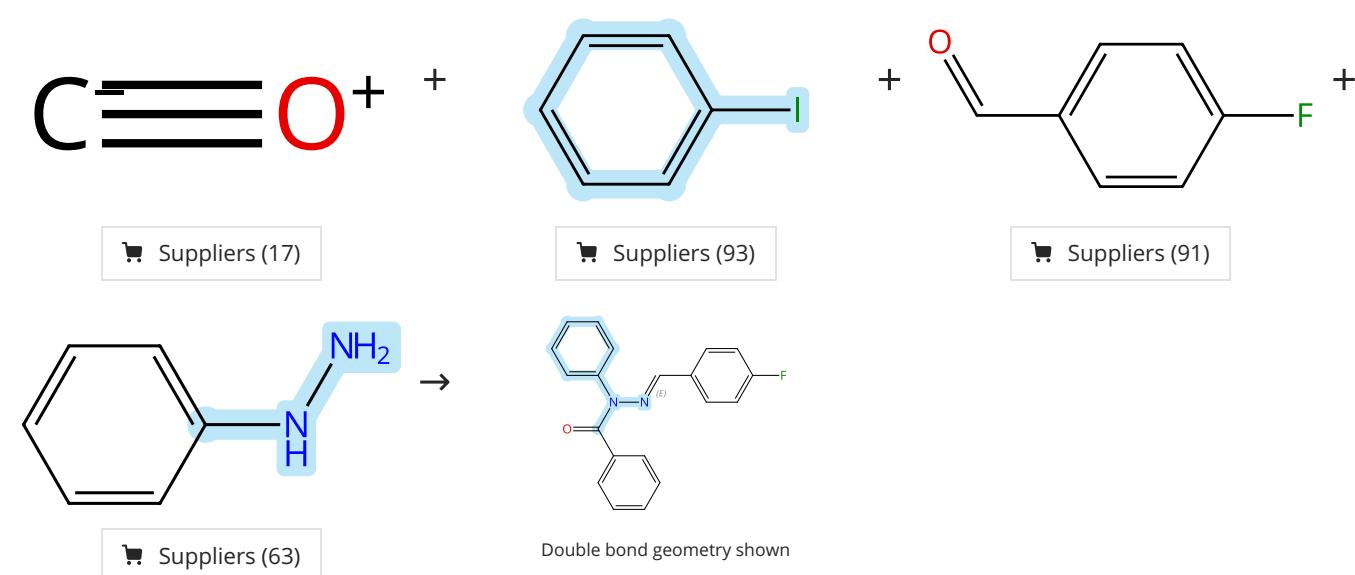
Discovery of Pyrimidinediamine Derivatives as Potent Methuosis Inducers for the Treatment of Triple-Negative Breast Cancer

By: He, Jia; et al

Journal of Medicinal Chemistry (2023), 66(11), 7421-7437.

Scheme 174 (1 Reaction)

Steps: 1 Yield: 82%



31-614-CAS-40733447

Steps: 1 Yield: 82%

**Palladium-Catalyzed Multicomponent Carbonylation of Halides to Acylhydrazones**

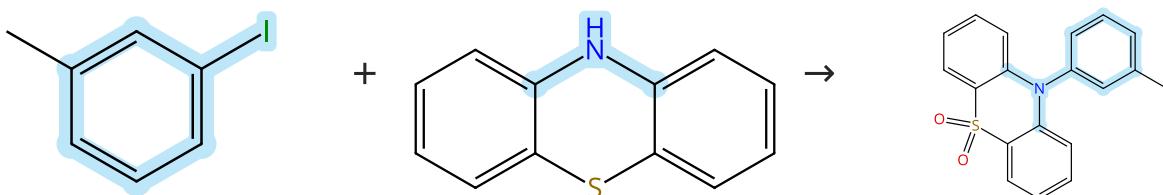
By: Liang, Qianqian; et al

Journal of Organic Chemistry (2024), 89(12), 8537-8545.

1.1 Reagents: Sodium hydroxide  
Catalysts: Bis(*tri-tert*-butylphosphine)palladium  
Solvents: Anisole; 12 h, 4 MPa, 120 °C

Experimental Protocols

Scheme 175 (1 Reaction)



Suppliers (74)

Suppliers (96)

Supplier (1)

31-614-CAS-40645167

Steps: 1 Yield: 82%

**Modulating the crystal packing to achieve efficient ultralong organic phosphorescence by simple methylation engineering**

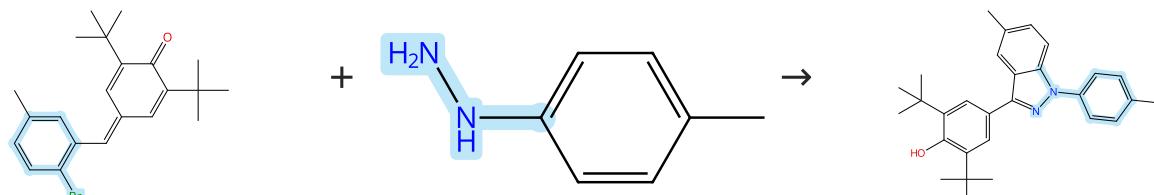
By: Mao, Huiting; et al

Journal of Materials Chemistry C: Materials for Optical and Electronic Devices (2024), 12(23), 8545-8550.

1.1 Reagents: Potassium *tert*-butoxide  
Catalysts: Palladium diacetate, Tri-*tert*-butylphosphine  
Solvents: Toluene; 12 h, 110 °C1.2 Reagents: Hydrogen peroxide  
Solvents: Acetic acid, Dichloromethane; 24 h, 60 °C

Experimental Protocols

Scheme 176 (1 Reaction)



Suppliers (55)

31-614-CAS-38947675

Steps: 1 Yield: 82%

**Synthesis and Photophysical Properties of 3-Substituted-1*H*-Indazoles: A Pd-Catalyzed Double C-N Bond Formation Strategy via 1,6-Conjugate Addition**

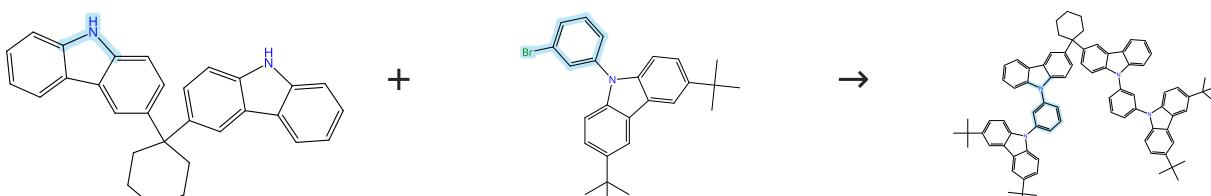
By: Kayastha, Nasib; et al

Journal of Organic Chemistry (2024), 89(1), 402-413.

1.1 Reagents: Potassium *tert*-butoxide  
Catalysts: Palladium diacetate, 1,3-Bis(diphenylphosphino)propane  
Solvents: Toluene; 15 h, 110 °C

Experimental Protocols

Scheme 177 (1 Reaction)



Suppliers (28)

31-614-CAS-41059994

Steps: 1 Yield: 82%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; 7 h, 120 °C

Experimental Protocols

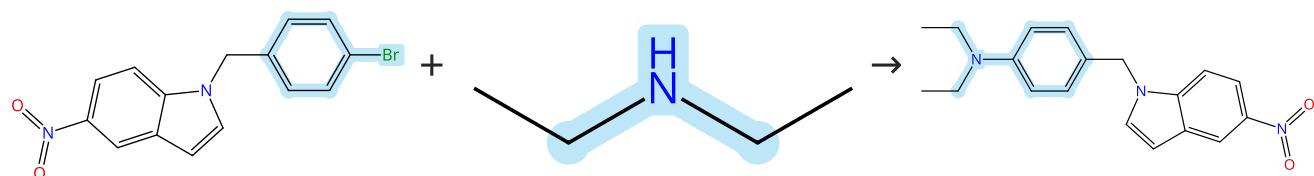
Effect of intramolecular energy transfer in a dual-functional molecular dyad on the performance of solution-processed TA DF OLEDs

By: Kwon, Na Yeon; et al

Chemical Science (2024), 15(31), 12361-12368.

## Scheme 178 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (4)

Suppliers (67)

31-614-CAS-36736938

Steps: 1 Yield: 82%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos

Solvents: Toluene; 6 h, 100 °C

Experimental Protocols

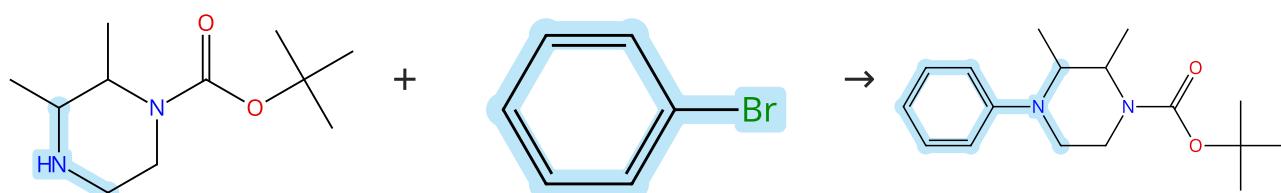
Design, Synthesis and Biological Evaluation of 7-Substituted-1,3-diaminopyrrol[3,2-f]quinazolines as Potential Antibacterial Agents

By: Yuan, Duo; et al

ChemMedChem (2023), 18(12), e202300078.

## Scheme 179 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (49)

Suppliers (71)

31-614-CAS-41670084

Steps: 1 Yield: 82%

1.1 Reagents: Sodium *tert*-butoxide, Tri-*tert*-butylphosphine

Catalysts: Palladium diacetate

Solvents: Toluene; overnight, 110 °C

Experimental Protocols

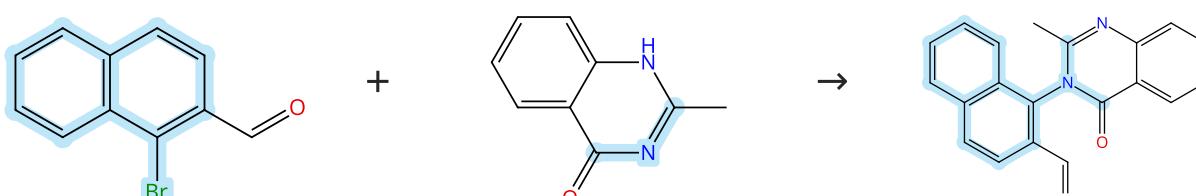
Design, synthesis and biological evaluation of naphthal amide derivatives as reversible monoacylglycerol lipase (MAGL) inhibitors

By: Yu, Quanwei; et al

Bioorganic &amp; Medicinal Chemistry (2024), 111, 117844.

## Scheme 180 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (71)

Suppliers (92)

31-614-CAS-41335341

Steps: 1 Yield: 82%

**1.1 Catalysts:** Palladium, tris[ $\mu$ -[(1,2- $\eta$ ;4,5- $\eta$ )-(1E,4E)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2*R*)-1-[(1*R*)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene  
**Solvents:** Toluene; 30 min, rt

**1.2 Reagents:** Cesium carbonate; 36 h, 90 °C

Experimental Protocols

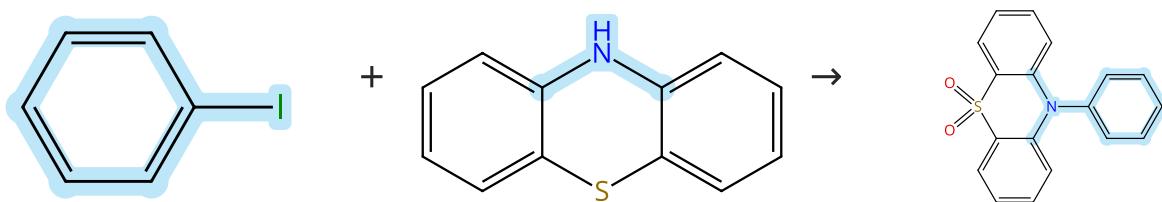
**Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination**

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

Scheme 181 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (93)

Suppliers (96)

Suppliers (13)

31-614-CAS-40645168

Steps: 1 Yield: 82%

**1.1 Reagents:** Potassium *tert*-butoxide  
**Catalysts:** Palladium diacetate, Tri-*tert*-butylphosphine  
**Solvents:** Toluene; 12 h, 110 °C

**1.2 Reagents:** Hydrogen peroxide  
**Solvents:** Acetic acid, Dichloromethane; 24 h, 60 °C

Experimental Protocols

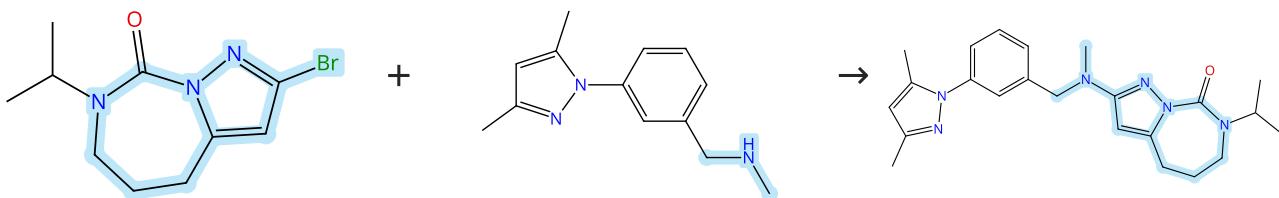
**Modulating the crystal packing to achieve efficient ultralong organic phosphorescence by simple methylation engineering**

By: Mao, Huiting; et al

Journal of Materials Chemistry C: Materials for Optical and Electronic Devices (2024), 12(23), 8545-8550.

Scheme 182 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (35)

31-614-CAS-35422533

Steps: 1 Yield: 82%

**1.1 Reagents:** Sodium trimethylsilanolate  
**Solvents:** Tetrahydrofuran; 5 min, rt

**1.2 Catalysts:** Palladium, bromo[dicyclohexyl[3-(1,1-dimethylethoxy)-6-methoxy-2',6'-bis(1-methylethyl)[1,1'-biphenyl]-2-yl- $\kappa C^1$ ]phosphine- $\kappa P$ ][4-[[2-(trimethylsilyl)ethoxy]carbonyl]phenyl]-, (*SP*-4-2)-  
**Solvents:** Tetrahydrofuran; 3 h, 90 °C

Experimental Protocols

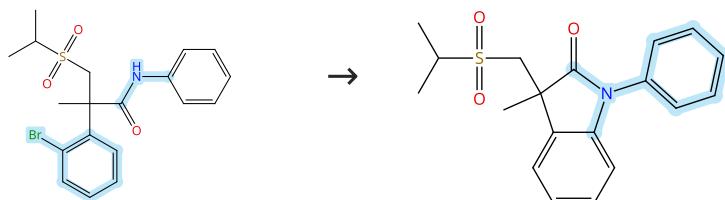
**Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteroaryl Halides with Aliphatic Amines**

By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

Scheme 183 (1 Reaction)

Steps: 1 Yield: 82%



31-614-CAS-40345440

Steps: 1 Yield: 82%

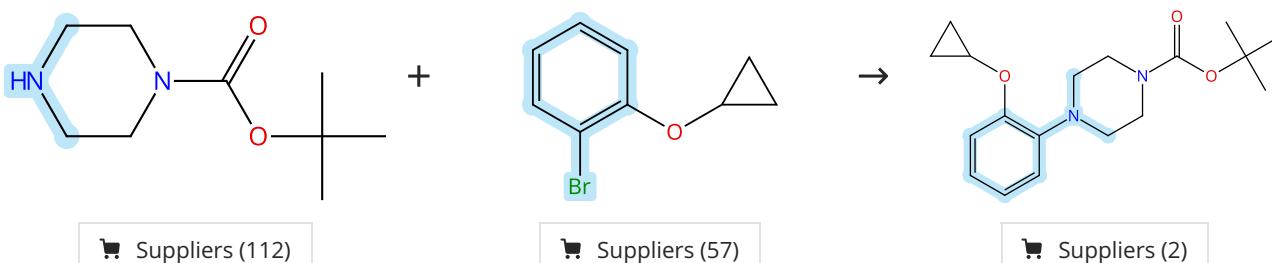
**1.1 Reagents:** Cesium carbonate  
**Catalysts:** Palladium diacetate, BINAP  
**Solvents:** Toluene; 12 h, 100 °C

Experimental Protocols

A radical Smiles rearrangement difunctionalization of activated alkenes via desulfonylation and insertion of sulfur dioxide relay strategy

By: Tian, Si-Wei; et al

Green Chemistry (2024), 26(11), 6774-6778.

**Scheme 184 (1 Reaction)**

31-614-CAS-35394425

Steps: 1 Yield: 82%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, BINAP  
**Solvents:** Toluene; 4 h, 100 °C

Experimental Protocols

Persistent challenges in the development of an mGlu<sub>7</sub> PAM in vivo tool compound: The discovery of VU6046980

By: Kalbfleisch, Jacob J.; et al

Bioorganic &amp; Medicinal Chemistry Letters (2023), 80, 129106.

**Scheme 185 (1 Reaction)**

31-614-CAS-41860656

Steps: 1 Yield: 82%

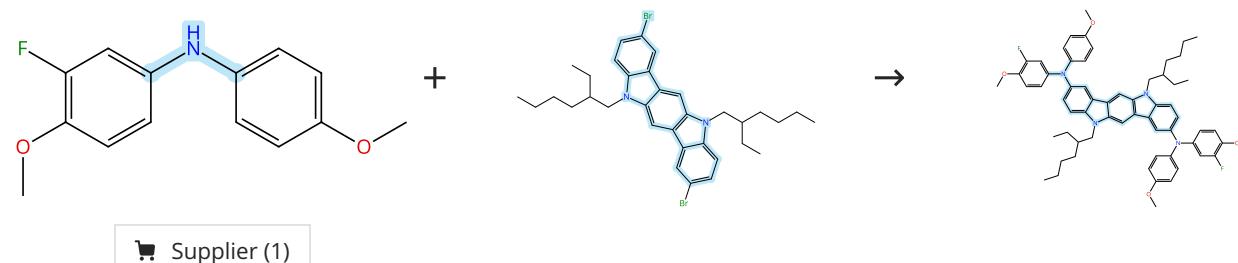
**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate  
**Solvents:** Toluene; overnight, 110 °C

Experimental Protocols

Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

**Scheme 186 (1 Reaction)**

31-614-CAS-37845765

Steps: 1 Yield: 82%

New Molecular Design, Step-Saving Synthesis, and Applications of Indolocarbazole Core-Based Oligo(hetero)arenes

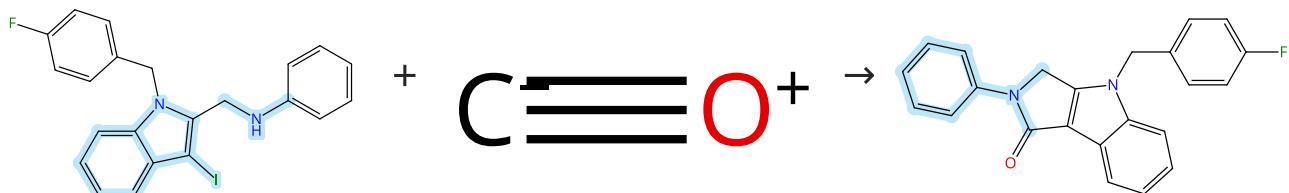
By: Lin, Li; et al

Chemistry - An Asian Journal (2023), 18(20), e202300681.

Experimental Protocols

## Scheme 187 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (17)

31-614-CAS-37486997

Steps: 1 Yield: 82%

Accessing Dihydropyrrolo[3,4-b]indol-1(2H)-ones via Pd-Catalyzed Intramolecular Aminocarbonylative Ring Closure

By: Alam, Ryan M.; et al

European Journal of Organic Chemistry (2023), 26(34), e202300646.

1.1 Reagents: Triethylamine

Catalysts: Palladium diacetate, 1,1'-(9,9-Dimethyl-9H-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]

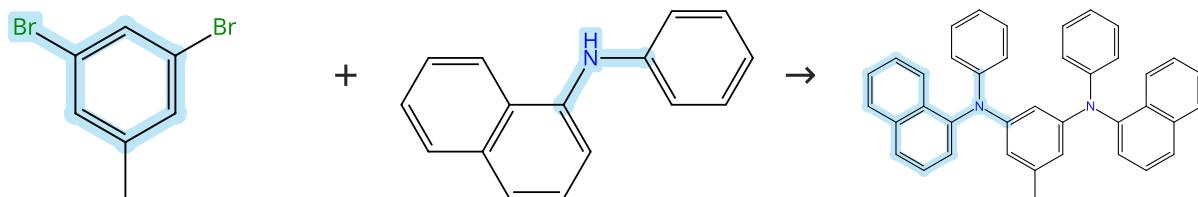
Solvents: Toluene

1.2 Reagents: Formic acid, Triethylamine, Methanesulfonyl chloride; 10 min, rt; rt → 100 °C; 18 h, 100 °C

Experimental Protocols

## Scheme 188 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (81)

Suppliers (80)

31-614-CAS-41860559

Steps: 1 Yield: 82%

Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

1.1 Reagents: Sodium *tert*-butoxide

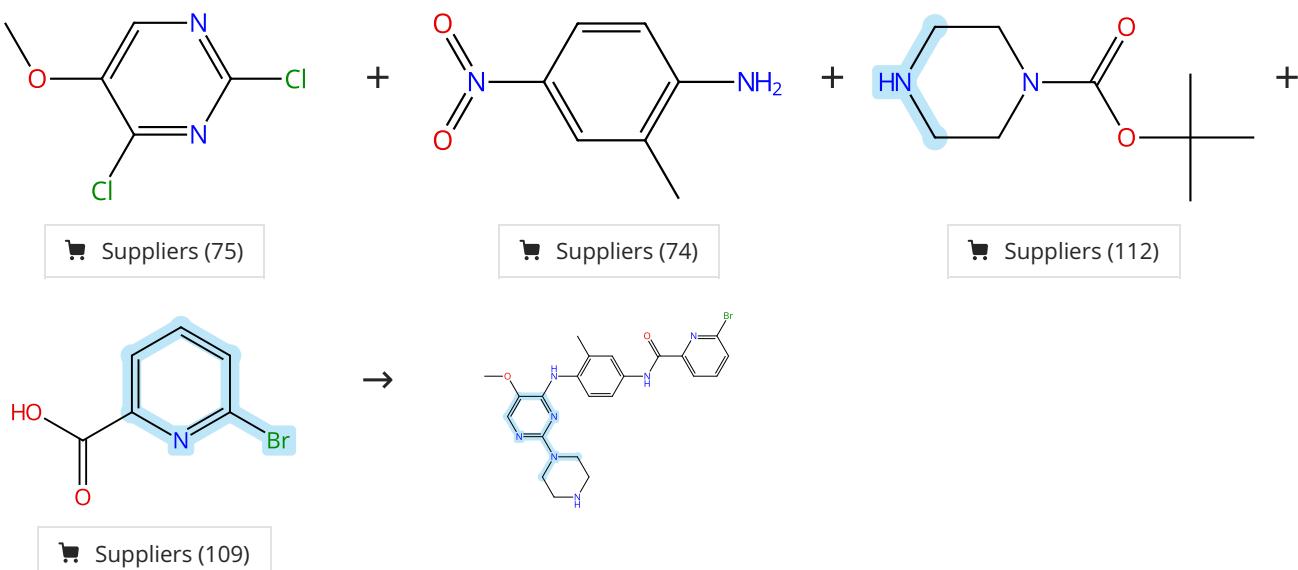
Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos

Solvents: Toluene; overnight, 80 °C

Experimental Protocols

Scheme 189 (1 Reaction)

Steps: 1 Yield: 82%



31-614-CAS-36602313

Steps: 1 Yield: 82%

- 1.1 **Reagents:** Cesium carbonate  
**Solvents:** Dimethylformamide; 5 h, 80 °C
- 1.2 **Reagents:** Diisopropylethylamine  
**Solvents:** 1-Butanol; 8 h, 120 °C
- 1.3 **Reagents:** Hydrogen  
**Catalysts:** Palladium  
**Solvents:** Methanol; overnight, rt
- 1.4 **Reagents:** 1-Hydroxybenzotriazole, 1-Ethyl-3-(3'-dimethylamino)propyl carbodiimide hydrochloride  
**Solvents:** Dimethylformamide; 6 h, rt
- 1.5 **Reagents:** Hydrochloric acid  
**Solvents:** Dichloromethane, 1,4-Dioxane; 4 h, rt

## Experimental Protocols

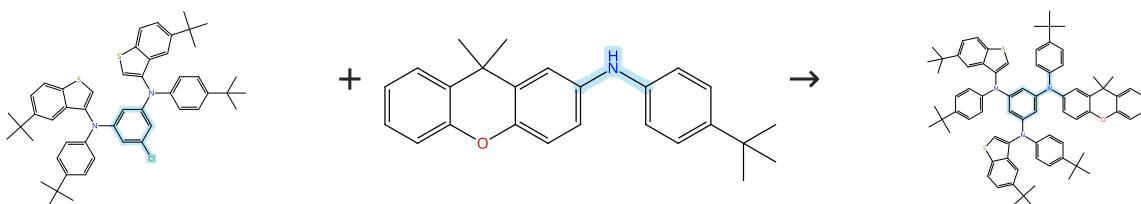
**Discovery of Pyrimidinediamine Derivatives as Potent Methuosis Inducers for the Treatment of Triple-Negative Breast Cancer**

By: He, Jia; et al

Journal of Medicinal Chemistry (2023), 66(11), 7421-7437.

Scheme 190 (1 Reaction)

Steps: 1 Yield: 82%



31-614-CAS-42162967

Steps: 1 Yield: 82%

**Constructing highly efficient multiple resonance fluorescence materials by inserting benzothiophene within B/N-skeletons**

By: Zhao, He; et al

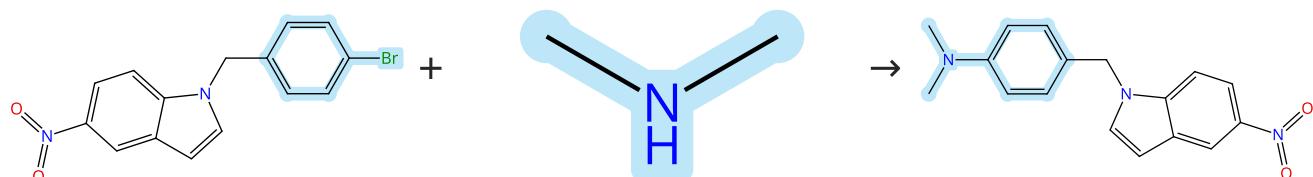
New Journal of Chemistry (2024), 48(36), 16119-16126.

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, X-Phos  
**Solvents:** Xylene; overnight, 160 °C; 160 °C → rt
- 1.2 **Solvents:** Water; rt

## Experimental Protocols

## Scheme 191 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (4)

Suppliers (110)

31-614-CAS-36736945

Steps: 1 Yield: 82%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos

Solvents: Toluene; 6 h, 100 °C

Experimental Protocols

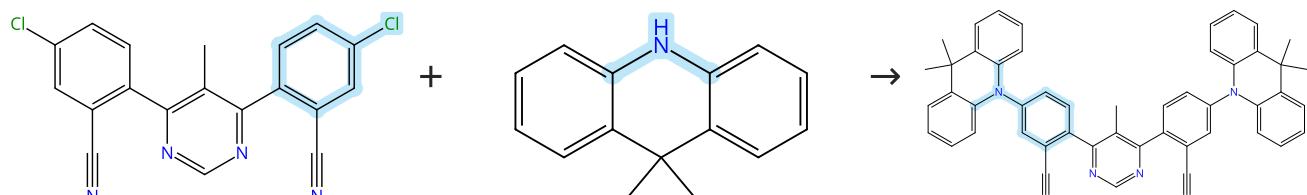
Design, Synthesis and Biological Evaluation of 7-Substituted-1,3-diaminopyrrol[3,2-f]quinazolines as Potential Antibacterial Agents

By: Yuan, Duo; et al

ChemMedChem (2023), 18(12), e202300078.

## Scheme 192 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (68)

31-614-CAS-41168853

Steps: 1 Yield: 82%

1.1 Reagents: Sodium *tert*-butoxide

Solvents: Xylene; 1 h, rt

1.2 Catalysts: Palladium diacetate, Tri-*tert*-butylphosphine; 6 h, reflux

Experimental Protocols

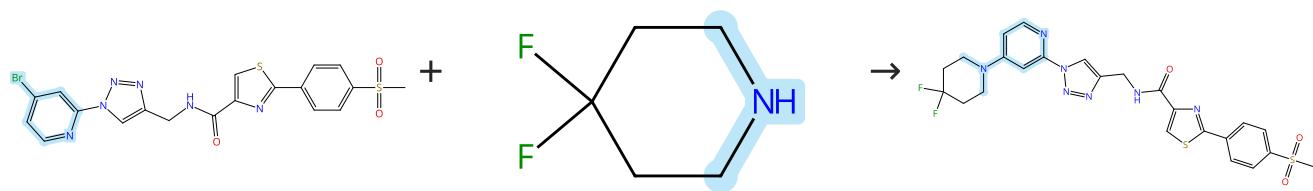
Study of photophysical properties in bronsted acids for nitrogen atoms with different hybrid ( $\text{sp}$ ,  $\text{sp}^2$ ,  $\text{sp}^3$ ) orbitals

By: Wang, Zhou; et al

Journal of the Iranian Chemical Society (2024), 21(7), 2039-2051.

## Scheme 193 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (6)

Suppliers (73)

31-614-CAS-42560328

Steps: 1 Yield: 82%

1.1 Reagents: Tripotassium phosphate

Catalysts: Palladium diacetate, 2'-(Dicyclohexylphosphino)-*N*,*N*-dimethyl[1,1'-biphenyl]-2-amine

Solvents: Toluene, Water; overnight, 85 °C

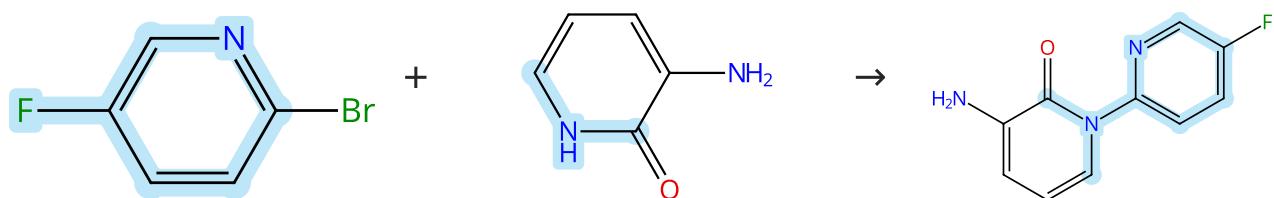
Experimental Protocols

Discovery of a Potent, Orally Active, and Long-Lasting P2X Receptor Antagonist as a Preclinical Candidate for Delaying the Progression of Chronic Kidney Disease

By: Zhang, Ruijia; et al

Journal of Medicinal Chemistry (2024), 67(19), 17472-17496.

Scheme 194 (1 Reaction)



Suppliers (86)

Suppliers (96)

31-614-CAS-37016332

Steps: 1 Yield: 82%

Discovery of a Potent and Selective Tyrosine Kinase 2 Inhibitor: TAK-279

1.1 Reagents: Sodium carbonate

Catalysts: Tris(dibenzylideneacetone)dipalladium, 1,1'-(9,9'-Dimethyl-9H-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]

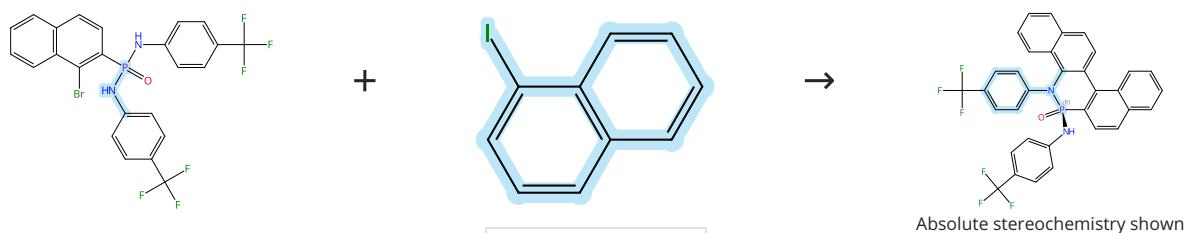
Solvents: 1,4-Dioxane; 4 h, 100 °C

By: Leit, Silvana; et al

Journal of Medicinal Chemistry (2023), 66(15), 10495-10518.

Experimental Protocols

Scheme 195 (1 Reaction)



Suppliers (87)

31-614-CAS-42232631

Steps: 1 Yield: 82%

Solvent-Controlled Enantiodivergent Construction of P(V)-Stereogenic Molecules via Palladium-Catalyzed Annulation of Prochiral N-Aryl Phosphonamides with Aromatic Iodides

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Palladium diacetate, Tris(2-furyl)phosphine, Bicyclo[2.2.1]hept-2-ene-2-carboxylic acid, methyl ester, (1*R*,4*R*)-

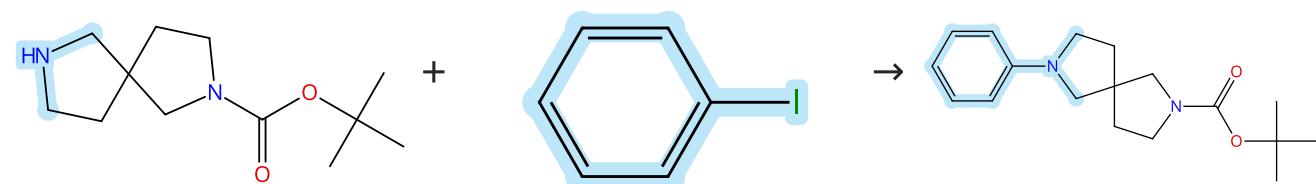
Solvents: Toluene; 12 h, 100 °C

By: Tian, Qingyu; et al

Angewandte Chemie, International Edition (2024), 63(41), e202409366.

Experimental Protocols

Scheme 196 (1 Reaction)



Suppliers (79)

Suppliers (93)

31-614-CAS-37375290

Steps: 1 Yield: 82%

Discovery of AD258 as a Sigma Receptor Ligand with Potent Antialloodynic Activity

By: Dichiara, Maria; et al

Journal of Medicinal Chemistry (2023), 66(16), 11447-11463.

1.1 Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene

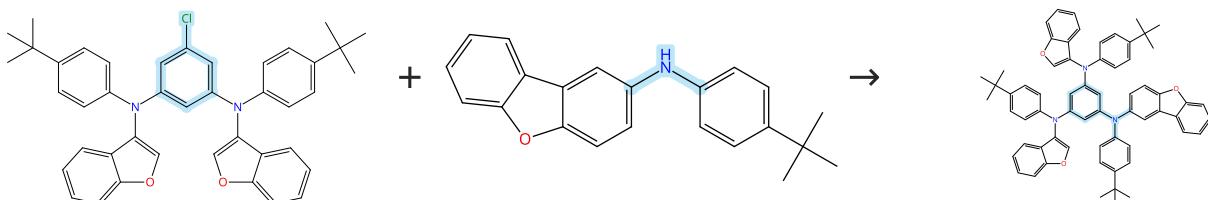
1.2 Reagents: Sodium *tert*-butoxide; 100 °C

1.3 Solvents: Water; rt

Experimental Protocols

**Scheme 197 (1 Reaction)**

Steps: 1 Yield: 82%



31-614-CAS-40799980

Steps: 1 Yield: 82%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Palladium diacetate, [Dicyclohexyl[2',4',6'-tris(1-methylethyl)[1,1'-biphenyl]-2-yl]phosphine][1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamido- $\kappa$ N]gold

Solvents: Xylene; 12 h, 160 °C

## Experimental Protocols

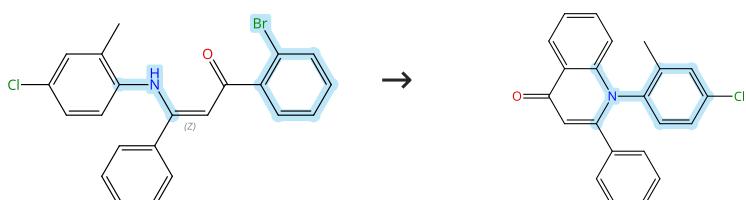
One-shot borylation synthesis of multiple resonance (M R) blue emitters via fusing benzofuran fragments within B/N skeletons

By: Zhao, He; et al

Journal of Materials Chemistry C: Materials for Optical and Electronic Devices (2024), 12(26), 9753-9759.

**Scheme 198 (1 Reaction)**

Steps: 1 Yield: 82%



Double bond geometry shown

31-614-CAS-40129291

Steps: 1 Yield: 82%

## 1.1 Reagents: Potassium carbonate, Sodium hydroxide

Catalysts: Palladium diacetate, (-)-BINAP

Solvents: Toluene, 1,4-Dioxane; 18 h, 40 °C

## Experimental Protocols

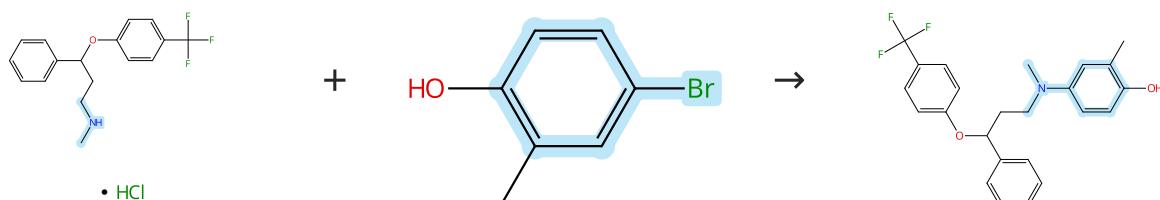
Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers

By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

**Scheme 199 (1 Reaction)**

Steps: 1 Yield: 82%



Suppliers (126)

Suppliers (80)

31-614-CAS-40984024

Steps: 1 Yield: 82%

## 1.1 Reagents: Lithium bis(trimethylsilyl)amide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2'-(Dicyclohexylphosphino)-N,N-dimethyl[1,1'-biphenyl]-2-amine

Solvents: Tetrahydrofuran; rt  $\rightarrow$  65 °C; 4 h, 65 °C; 65 °C  $\rightarrow$  rt

## 1.2 Reagents: Hydrochloric acid

Solvents: Water; 5 min, rt

## 1.3 Reagents: Sodium bicarbonate

Solvents: Water; neutralized

## Experimental Protocols

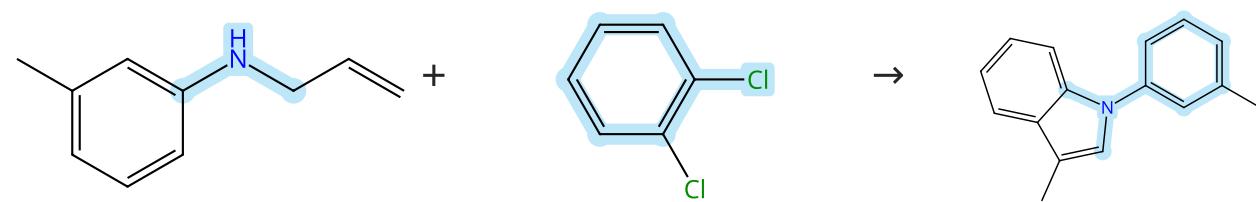
Amination of Phenols and Halophenols via Pyridinium-Iridium Dual Photocatalysis

By: Carson, Matthew C.; et al

ACS Catalysis (2024), 14(16), 12173-12180.

Scheme 200 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (4)

Suppliers (123)

31-614-CAS-38969946

Steps: 1 Yield: 82%

## 1.1 Reagents:

Sodium *tert*-butoxide  
Catalysts: Palladium, [7,9-bis[2,6-bis(1-methylethyl)phenyl]-7,9-dihydro-8*H*-acenaphth[1,2-*d*]imidazol-8-ylidene]bromo[2-(4,5-dihydro-4,4-dimethyl-2-oxazolyl-*kN*<sup>B</sup>)-1-naphthalenyl-*kC*]-, (*SP*-4-4)-

Solvents: 1,4-Dioxane; 24 h, 100 °C

## A General Protocol toward Synthesis of 3-Methylindoles Using Acenaphthoimidazolidene-Ligated Oxazoline Palladacycle

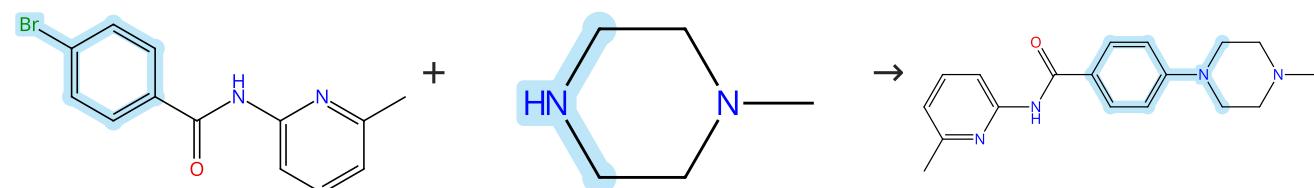
By: Fan, Ruqian; et al

Organic Letters (2024), 26(1), 22-28.

## Experimental Protocols

Scheme 201 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (23)

Suppliers (101)

31-614-CAS-40551302

Steps: 1 Yield: 82%

## 1.1 Reagents:

Cesium carbonate  
Catalysts: Tris(dibenzylideneacetone)dipalladium, (+)-BINAP  
Solvents: Toluene, 1,4-Dioxane; 8 h, 90 °C

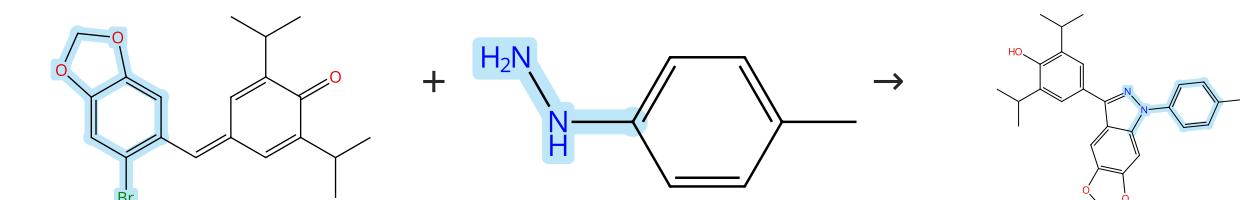
## Explorations of Agonist Selectivity for the α9\* nAChR with Novel Substituted Carbamoyl/Amido/Heteroaryl Dialkylpiperazinium Salts and Their Therapeutic Implications in Pain and Inflammation

By: Andleeb, Hina; et al

Journal of Medicinal Chemistry (2024), 67(11), 8642-8666.

Scheme 202 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (55)

31-614-CAS-38947691

Steps: 1 Yield: 82%

## 1.1 Reagents:

Potassium *tert*-butoxide  
Catalysts: Palladium diacetate, 1,3-Bis(diphenylphosphino)propane  
Solvents: Toluene; 15 h, 110 °CSynthesis and Photophysical Properties of 3-Substituted-1*H*-Indazoles: A Pd-Catalyzed Double C-N Bond Formation Strategy via 1,6-Conjugate Addition

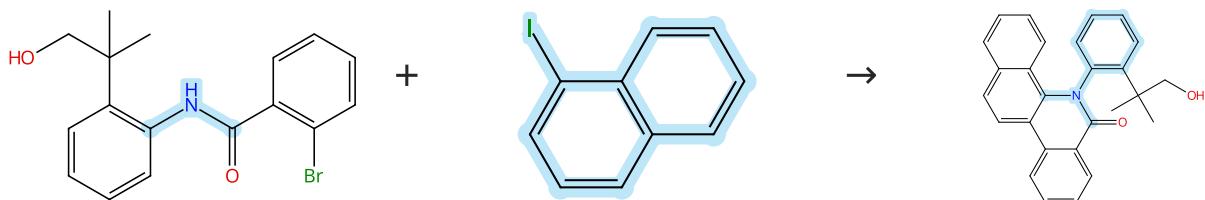
By: Kayastha, Nasib; et al

Journal of Organic Chemistry (2024), 89(1), 402-413.

## Experimental Protocols

Scheme 203 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (87)

31-614-CAS-41071050

Steps: 1 Yield: 82%

1.1 Reagents: Norbornene, Silver sulfate

Catalysts: Tris(dibenzylideneacetone)dipalladium, (4S,4'S)-4,4',5,5'-Tetrahydro-4,4'-bis(1-methylethyl)-1,1'-bis[3-(trifluoromethyl)phenyl]-2,2'-bi-1*H*-imidazole

Solvents: Toluene, Water; 36 h, 80 °C

Chiral dinitrogen ligand enabled asymmetric Pd/norbornene cooperative catalysis toward the assembly of C–N axially chiral scaffolds

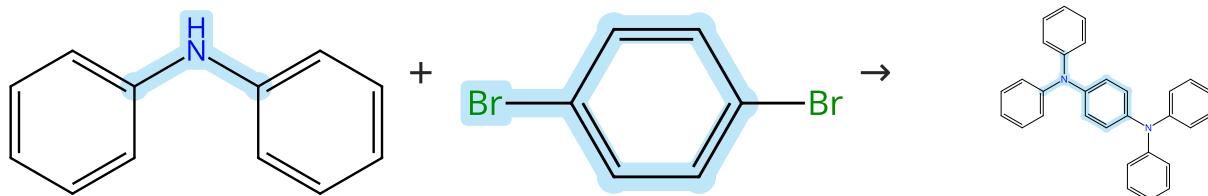
By: Jin, Liang; et al

Nature Communications (2024), 15(1), 4908.

Experimental Protocols

Scheme 204 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (98)

Suppliers (97)

Suppliers (49)

31-614-CAS-35443994

Steps: 1 Yield: 82%

1.1 Reagents: Lithium bis(trimethylsilyl)amide

Catalysts: Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine

Solvents: 1,4-Dioxane; 24 h, 100 °C

One-Electron Injection-triggered Radical Reaction of Alkyl Benzoates Promoted by 1,4-Bis(diphenylamino)benzene Photocatalysis

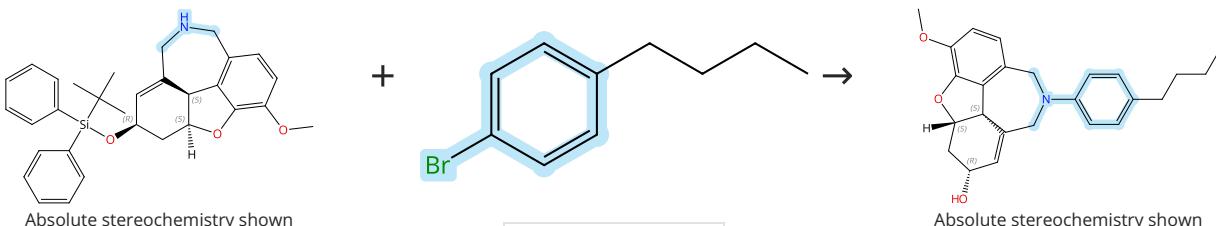
By: Koike, Takashi; et al

ChemCatChem (2023), 15(3), e202201311.

Experimental Protocols

Scheme 205 (1 Reaction)

Steps: 1 Yield: 82%



Suppliers (78)

Absolute stereochemistry shown

31-614-CAS-36363946

Steps: 1 Yield: 82%

1.1 **Catalysts:** Palladium diacetate, BINAP**Solvents:** Toluene; 4 h, rt1.2 **Reagents:** Potassium *tert*-butoxide**Solvents:** Toluene; 24 h, 110 °C1.3 **Reagents:** Water1.4 **Reagents:** Hydrochloric acid**Solvents:** Methanol, Water; rt; overnight, 35 °C1.5 **Reagents:** Ammonium hydroxide**Solvents:** Water; pH 10

Experimental Protocols

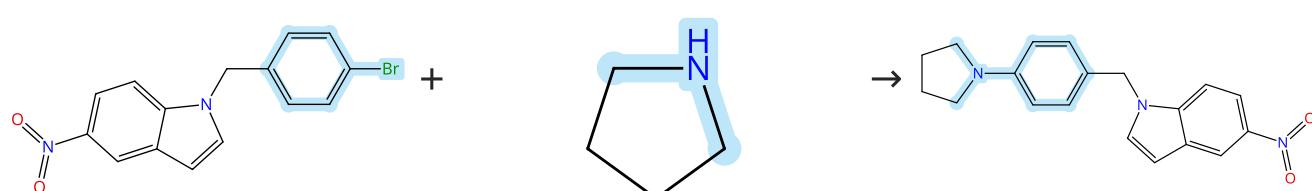
**Palladium-Catalyzed Synthesis, Acetylcholinesterase Inhibition, and Neuroprotective Activities of N-Aryl Galantamine Analogues**

By: Zhang, Yang; et al

Journal of Natural Products (2023), 86(4), 939-946.

**Scheme 206 (1 Reaction)**

Steps: 1 Yield: 82%



Suppliers (4)

Suppliers (74)

31-614-CAS-36736941

Steps: 1 Yield: 82%

1.1 **Reagents:** Sodium *tert*-butoxide**Catalysts:** Tris(dibenzylideneacetone)dipalladium, X-Phos**Solvents:** Toluene; 6 h, 100 °C

Experimental Protocols

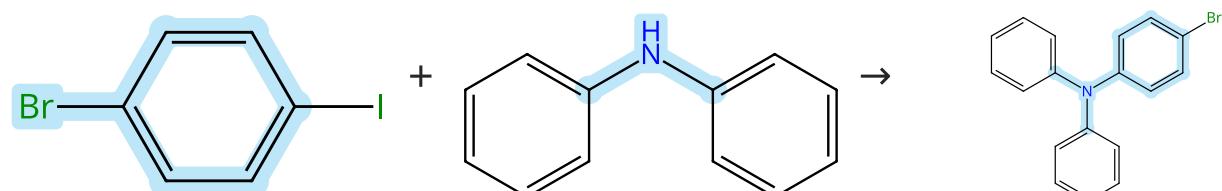
**Design, Synthesis and Biological Evaluation of 7-Substituted-1,3-diaminopyrrol[3,2-f]quinazolines as Potential Antibacterial Agents**

By: Yuan, Duo; et al

ChemMedChem (2023), 18(12), e202300078.

**Scheme 207 (1 Reaction)**

Steps: 1 Yield: 82%



Suppliers (94)

Suppliers (98)

Suppliers (85)

31-614-CAS-39979351

Steps: 1 Yield: 82%

1.1 **Reagents:** Sodium *tert*-butoxide**Catalysts:** Palladium diacetate, X-Phos**Solvents:** Toluene; 15 h, 110 °C

Experimental Protocols

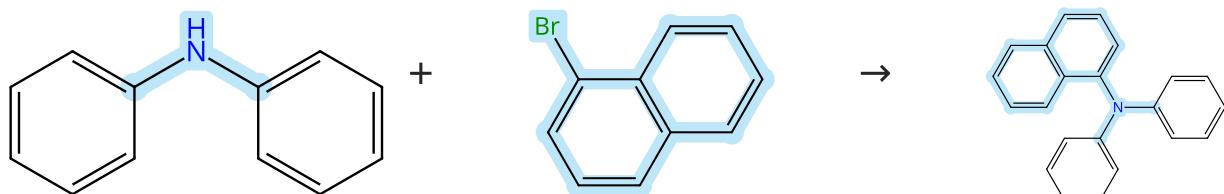
**A Rational Design of Electrochemically and Photophysically Tunable Triarylamine Luminophores by Consecutive (Pseudo-)Four-Component Syntheses**

By: Kohlbecher, Regina; et al

Chemistry - A European Journal (2024), 30(17), e202304119.

## Scheme 208 (1 Reaction)

Steps: 1 Yield: 81%



Suppliers (98)

Suppliers (88)

Suppliers (8)

31-614-CAS-38638307

Steps: 1 Yield: 81%

1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tri-*tert*-butylphosphine, Tris(dibenzylideneacetone)dipalladium  
**Solvents:** Toluene; overnight, reflux

**Naphthyl Substituted Impurities Induce Efficient Room Temperature Phosphorescence**

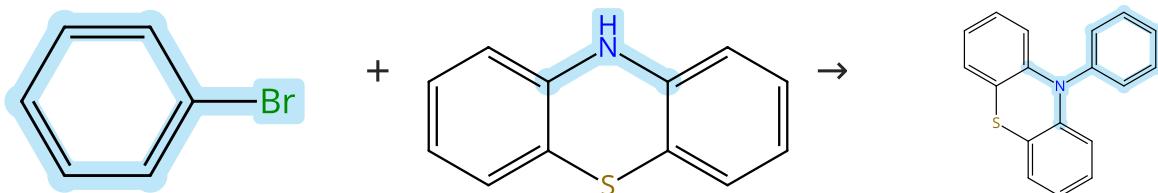
By: Qiao, Weiguo; et al

Angewandte Chemie, International Edition (2023), 62(50), e202315911.

Experimental Protocols

## Scheme 209 (1 Reaction)

Steps: 1 Yield: 81%



Suppliers (71)

Suppliers (96)

Suppliers (61)

31-614-CAS-41275835

Steps: 1 Yield: 81%

1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate  
**Solvents:** Toluene; 20 h, 90 °C

**Building a photocatalyst library of MR-TADF compounds with tunable excited-state redox potentials**

By: Hammerling, Lea; et al

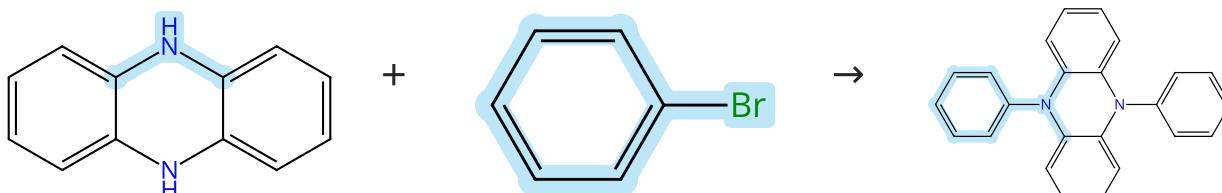
Chem Catalysis (2024), 4(8), 101061.

1.2 **Reagents:** Water

Experimental Protocols

## Scheme 210 (1 Reaction)

Steps: 1 Yield: 81%



Suppliers (62)

Suppliers (71)

Suppliers (14)

31-614-CAS-35436063

Steps: 1 Yield: 81%

1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate  
**Solvents:** Toluene; 24 h, rt → 115 °C

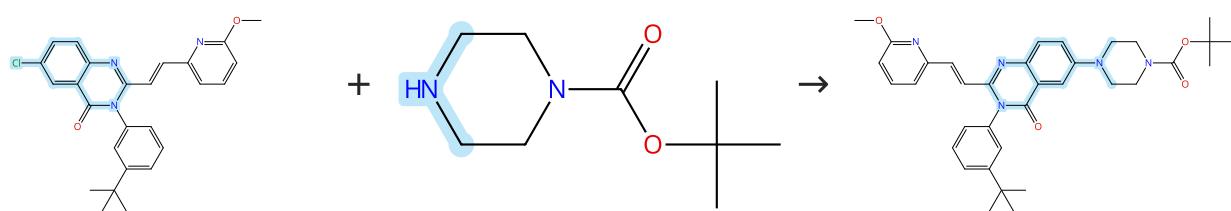
**Aggregation Effect on Multiperformance Improvement in Aryl-Armed Phenazine-Based Emitters**

By: Wan, Qing; et al

Journal of the American Chemical Society (2023), 145(3), 1607-1616.

Experimental Protocols

Scheme 211 (1 Reaction)



Suppliers (112)

31-614-CAS-37363432

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C; cooled

## 1.2 Reagents: Sodium chloride

Solvents: Water; cooled

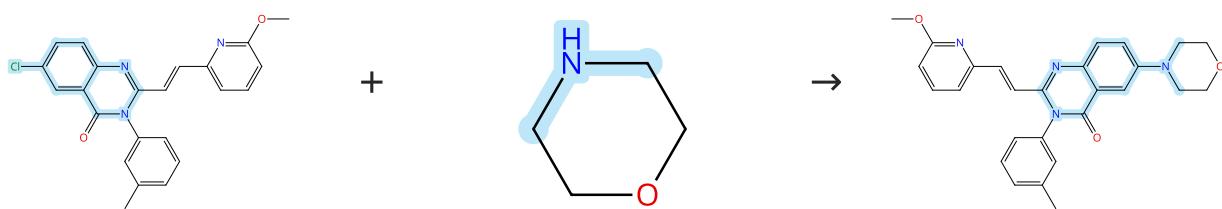
Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

Experimental Protocols

Scheme 212 (1 Reaction)



Suppliers (83)

31-614-CAS-37363435

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C; cooled

## 1.2 Reagents: Sodium chloride

Solvents: Water; cooled

Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus

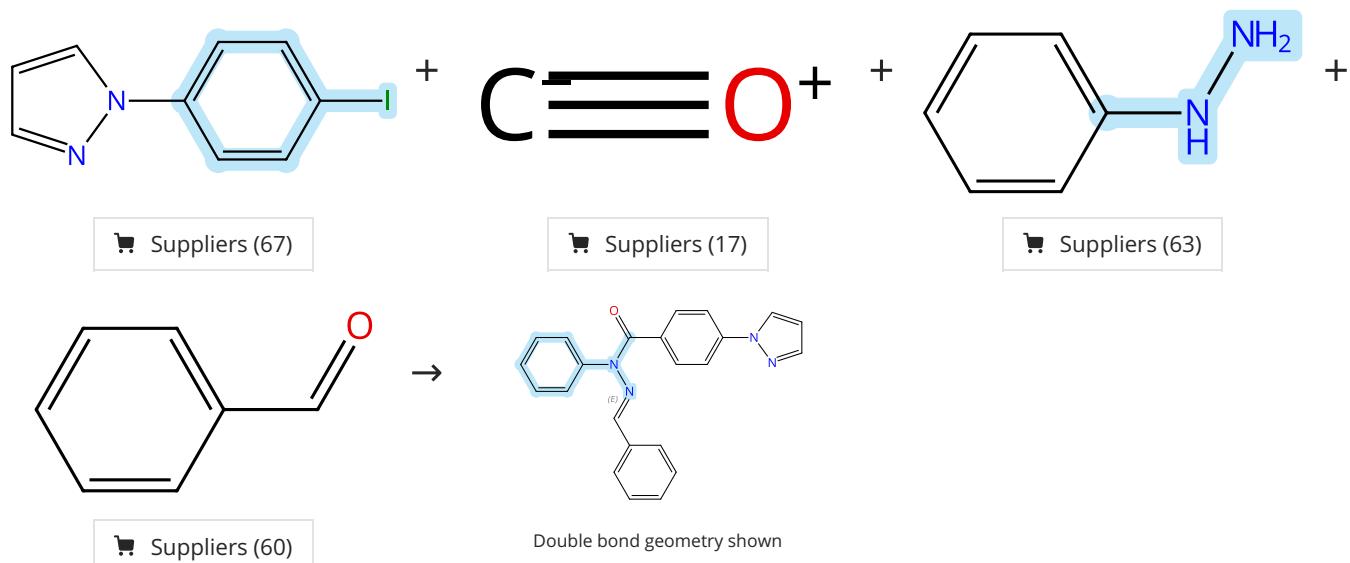
By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

Experimental Protocols

Scheme 213 (1 Reaction)

Steps: 1 Yield: 81%



31-614-CAS-40733485

Steps: 1 Yield: 81%

1.1 Reagents: Sodium hydroxide  
 Catalysts: Bis(*tri-tert*-butylphosphine)palladium  
 Solvents: Anisole; 12 h, 4 MPa, 120 °C

**Palladium-Catalyzed Multicomponent Carbonylation of Halides to Acylhydrazones**

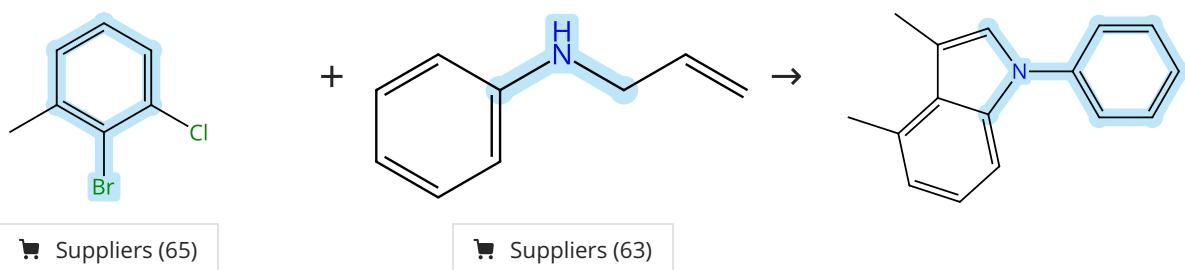
By: Liang, Qianqian; et al

Journal of Organic Chemistry (2024), 89(12), 8537-8545.

Experimental Protocols

Scheme 214 (1 Reaction)

Steps: 1 Yield: 81%



31-614-CAS-38969991

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide  
 Catalysts: Palladium, [7,9-bis[2,6-bis(1-methylethyl)phenyl]-7,9-dihydro-8*H*-acenaphth[1,2-*d*]imidazol-8-ylidene]bromo[2-(4,5-dihydro-4,4-dimethyl-2-oxazolyl-*kN*<sup>3</sup>)-1-naphthalenyl-*kC*], (*SP*-4-4)  
 Solvents: 1,4-Dioxane; 24 h, 100 °C

**A General Protocol toward Synthesis of 3-Methylindoles Using Acenaphthoimidazolidene-Ligated Oxazoline Palladacycle**

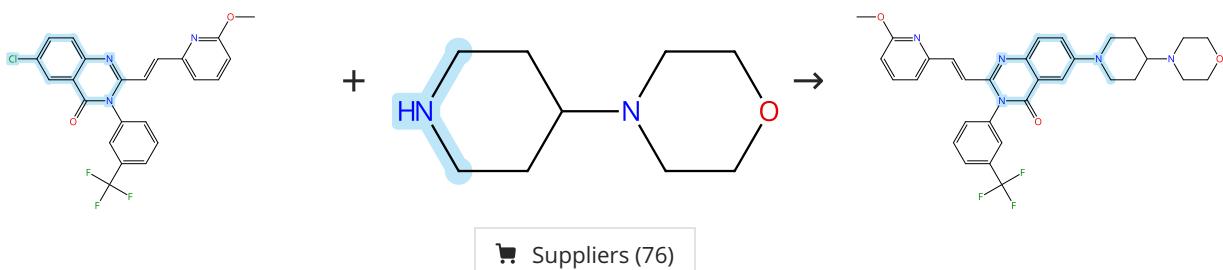
By: Fan, Ruojian; et al

Organic Letters (2024), 26(1), 22-28.

Experimental Protocols

Scheme 215 (1 Reaction)

Steps: 1 Yield: 81%



31-614-CAS-37363444

Steps: 1 Yield: 81%

1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
**Solvents:** Toluene; 24 h, 110 °C; cooled

1.2 **Reagents:** Sodium chloride  
**Solvents:** Water; cooled

Experimental Protocols

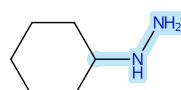
**Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus**

By: Ashraf-Uz-Zaman, Md; et al

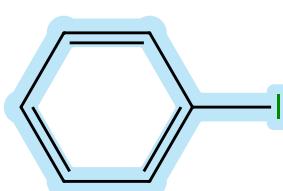
Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

Scheme 216 (1 Reaction)

Steps: 1 Yield: 81%



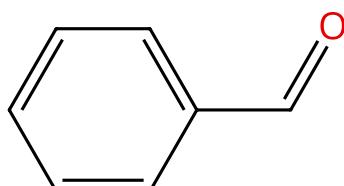
• HCl



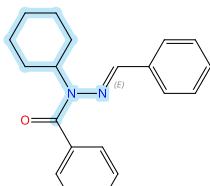
Suppliers (74)

Suppliers (17)

Suppliers (93)



→



Suppliers (60)

Double bond geometry shown

31-614-CAS-40733500

Steps: 1 Yield: 81%

1.1 **Reagents:** Sodium hydroxide  
**Catalysts:** Bis(*tri-tert*-butylphosphine)palladium  
**Solvents:** Anisole; 12 h, 4 MPa, 120 °C

Experimental Protocols

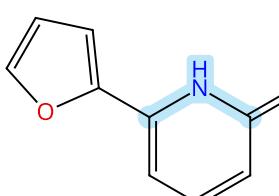
**Palladium-Catalyzed Multicomponent Carbonylation of Halides to Acylhydrazones**

By: Liang, Qianqian; et al

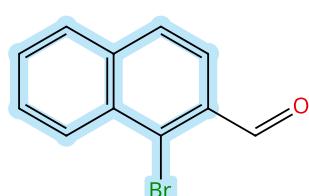
Journal of Organic Chemistry (2024), 89(12), 8537-8545.

Scheme 217 (1 Reaction)

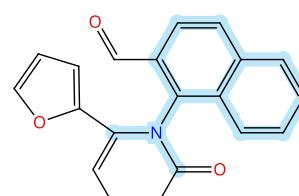
Steps: 1 Yield: 81%



+



→



Suppliers (24)

Suppliers (71)

31-614-CAS-41335340

Steps: 1 Yield: 81%

1.1 **Catalysts:** Palladium, tris[ $\mu$ -[(1,2- $\eta$ :4,5- $\eta$ )-(1*E*,4*E*)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2*R*)-1-[(1*R*)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene  
**Solvents:** Toluene; 30 min, rt

1.2 **Reagents:** Cesium carbonate; 36 h, 90 °C

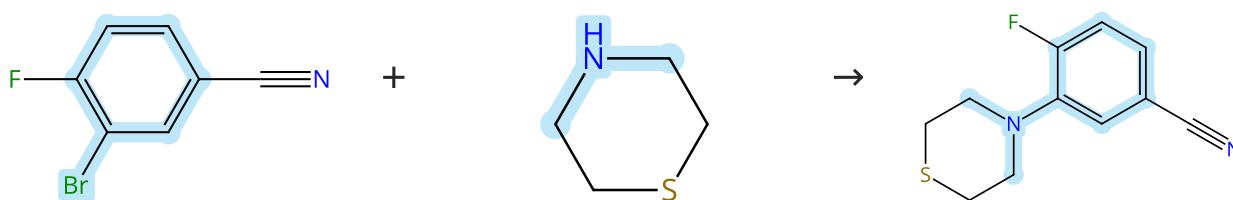
Experimental Protocols

**Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination**

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

Scheme 218 (1 Reaction)



Suppliers (85)

Suppliers (83)

31-614-CAS-39012748

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide  
 Catalysts: Palladium diacetate, BINAP  
 Solvents: Toluene; 10 h, 80 °C

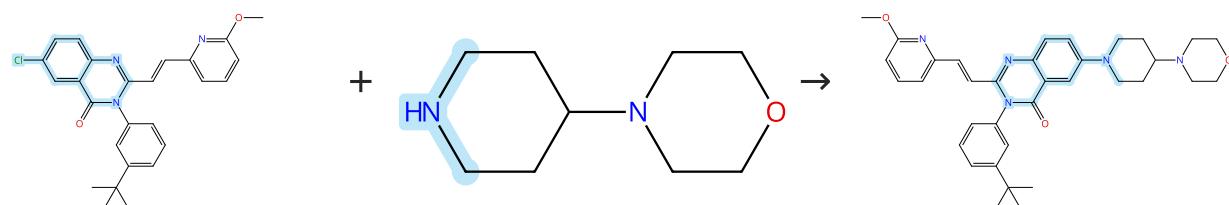
Experimental Protocols

**Discovery of CZS-241: A Potent, Selective, and Orally Available Polo-Like Kinase 4 Inhibitor for the Treatment of Chronic Myeloid Leukemia**

By: Sun, Yin; et al

Journal of Medicinal Chemistry (2023), 66(4), 2396-2421.

Scheme 219 (1 Reaction)



Suppliers (76)

31-614-CAS-37363426

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide  
 Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
 Solvents: Toluene; 24 h, 110 °C; cooled  
 1.2 Reagents: Sodium chloride  
 Solvents: Water; cooled

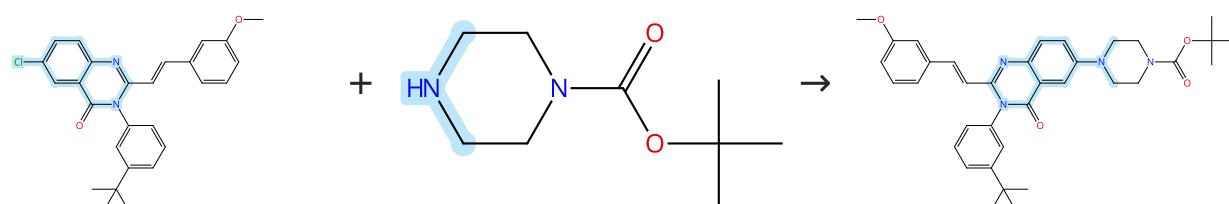
Experimental Protocols

**Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus**

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

Scheme 220 (1 Reaction)



Suppliers (112)

31-614-CAS-37363428

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide  
 Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
 Solvents: Toluene; 24 h, 110 °C; cooled  
 1.2 Reagents: Sodium chloride  
 Solvents: Water; cooled

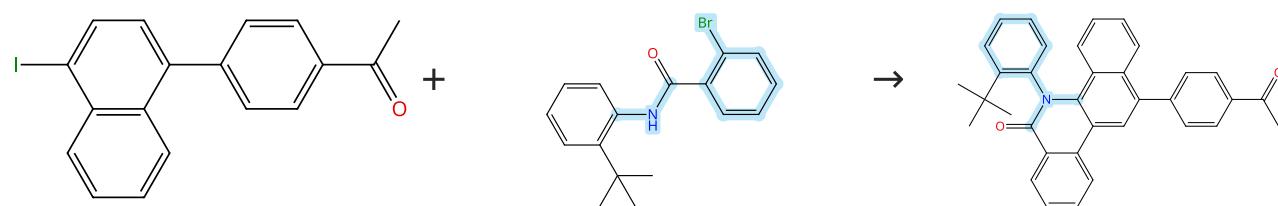
Experimental Protocols

**Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus**

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

Scheme 221 (1 Reaction)



Suppliers (5)

31-614-CAS-41071022

Steps: 1 Yield: 81%

1.1 Reagents: Norbornene, Silver sulfate

Catalysts: Tris(dibenzylideneacetone)dipalladium, (4,5,4'*S*)-4,4',5,5'-Tetrahydro-4,4'-bis(1-methylethyl)-1,1'-bis[3-(trifluoromethyl)phenyl]-2,2'-bi-1*H*-imidazole  
Solvents: Toluene, Water; 36 h, 80 °C

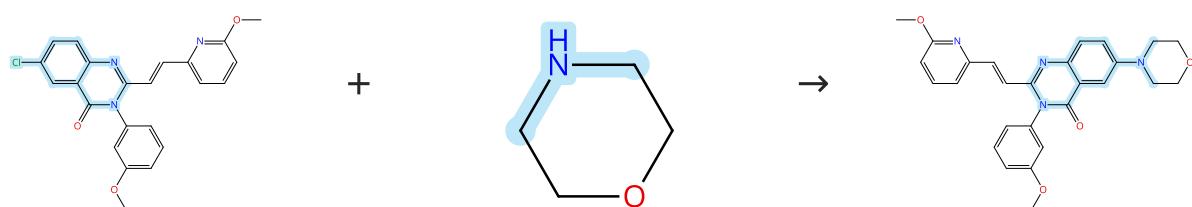
Chiral dinitrogen ligand enabled asymmetric Pd/norbornene cooperative catalysis toward the assembly of C-N axially chiral scaffolds

By: Jin, Liang; et al

Nature Communications (2024), 15(1), 4908.

Experimental Protocols

Scheme 222 (1 Reaction)



Suppliers (83)

31-614-CAS-37363443

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
Solvents: Toluene; 24 h, 110 °C; cooled

Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus

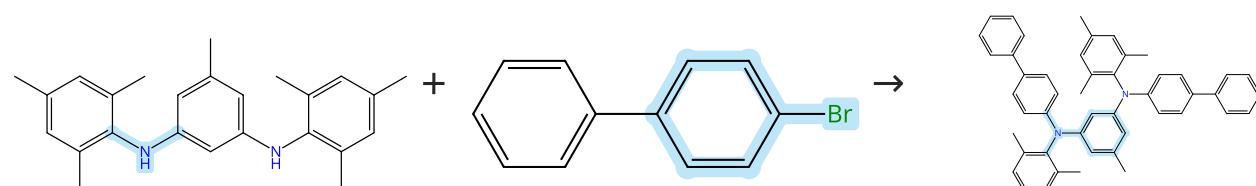
By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

1.2 Reagents: Sodium chloride  
Solvents: Water; cooled

Experimental Protocols

Scheme 223 (1 Reaction)



Suppliers (3)

Suppliers (83)

31-614-CAS-41860560

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine  
Solvents: Toluene; overnight, 110 °C

Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

Experimental Protocols

**Scheme 224 (1 Reaction)**

Suppliers (50)

Steps: 1 Yield: 81%

31-614-CAS-37363433

Steps: 1 Yield: 81%

Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C; cooled

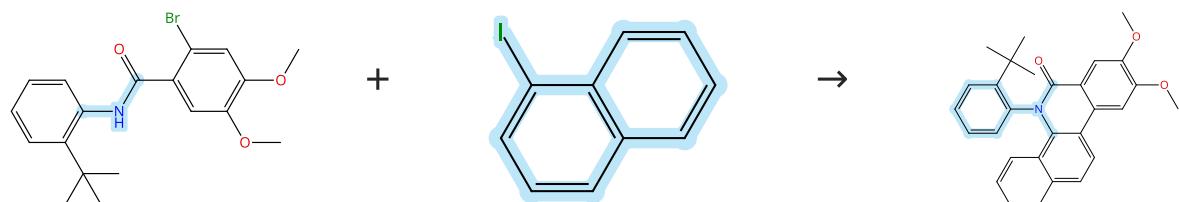
1.2 Reagents: Sodium chloride

Solvents: Water; cooled

Experimental Protocols

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

**Scheme 225 (1 Reaction)**

Suppliers (87)

Steps: 1 Yield: 81%

31-614-CAS-41071041

Steps: 1 Yield: 81%

Chiral dinitrogen ligand enabled asymmetric Pd/norbornene cooperative catalysis toward the assembly of C-N axially chiral scaffolds

1.1 Reagents: Norbornene, Silver sulfate

Catalysts: Tris(dibenzylideneacetone)dipalladium, (4S,4'S)-4,4',5,5'-Tetrahydro-4,4'-bis(1-methylethyl)-1,1'-bis[3-(trifluoromethyl)phenyl]-2,2'-bi-1*H*-imidazole

Solvents: Toluene, Water; 36 h, 80 °C

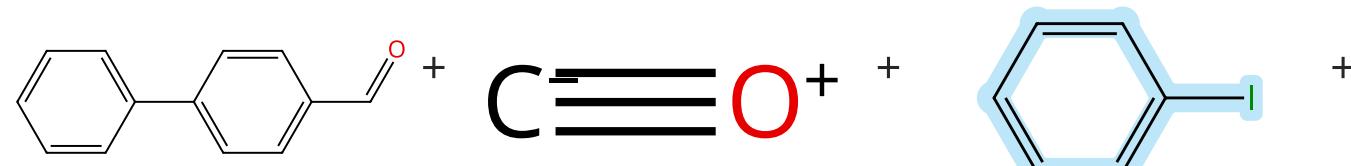
By: Jin, Liang; et al

Nature Communications (2024), 15(1), 4908.

Experimental Protocols

**Scheme 226 (1 Reaction)**

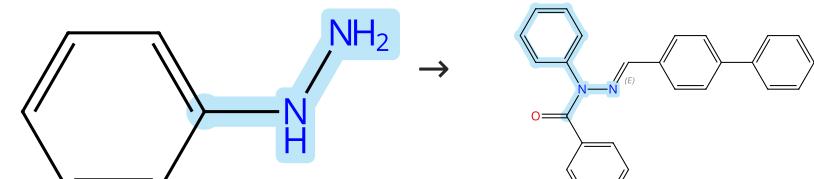
Steps: 1 Yield: 81%



Suppliers (99)

Suppliers (17)

Suppliers (93)



Suppliers (63)

31-614-CAS-40733445

Steps: 1 Yield: 81%

**1.1 Reagents:** Sodium hydroxide  
**Catalysts:** Bis(*tri-tert*-butylphosphine)palladium  
**Solvents:** Anisole; 12 h, 4 MPa, 120 °C

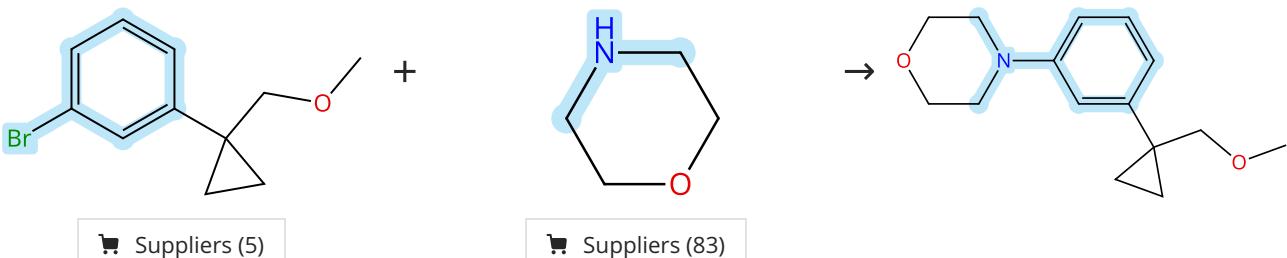
Experimental Protocols

Palladium-Catalyzed Multicomponent Carbonylation of Halides to Acylhydrazones

By: Liang, Qianqian; et al

Journal of Organic Chemistry (2024), 89(12), 8537-8545.

## Scheme 227 (1 Reaction)



31-614-CAS-37588164

Steps: 1 Yield: 81%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 1,1'-(9,9-Dimethyl-9*H*-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]  
**Solvents:** Toluene; 12 h, 110 °C

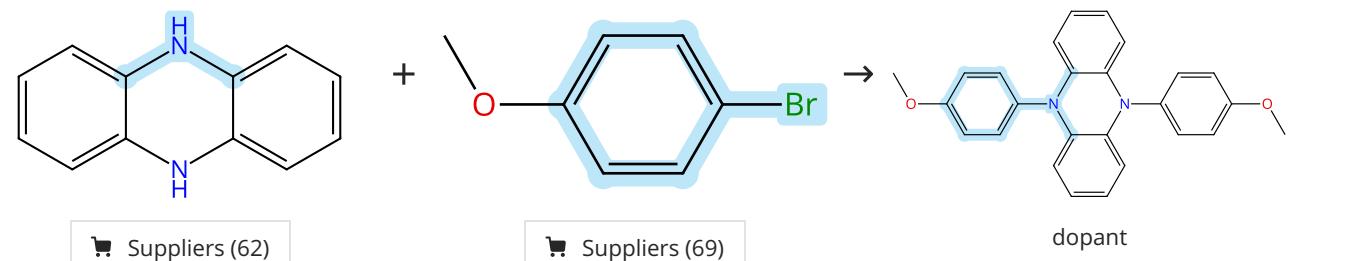
Experimental Protocols

Simple Ether-Directed Enantioselective C(sp<sup>3</sup>)-H Borylation of Cyclopropanes Enabled by Iridium Catalysis

By: Xie, Tian; et al

Angewandte Chemie, International Edition (2023), 62(14), e202300199.

## Scheme 228 (1 Reaction)



31-614-CAS-36834257

Steps: 1 Yield: 81%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, Tri-*tert*-butylphosphine  
**Solvents:** Toluene; 8 h, rt → 115 °C

Experimental Protocols

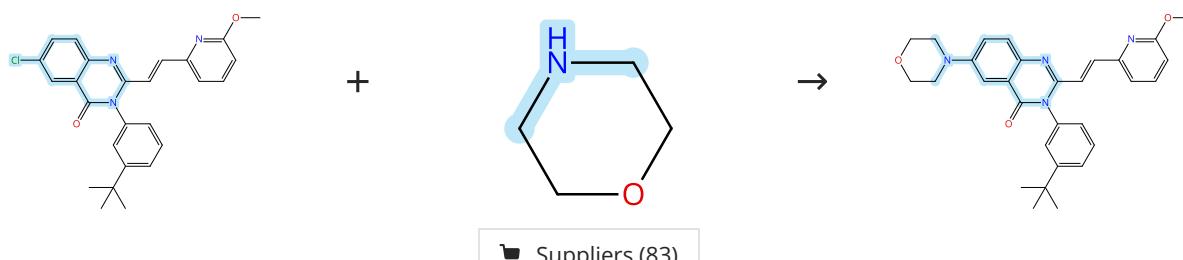
Radical Afterglow Emission Harnessed by Doping N, N'-Diaryl-5,10-Dihydrophenazines to Epoxy Resins

By: Su, Yonghao; et al

Advanced Optical Materials (2023), 11(20), 2300604.

## Scheme 229 (1 Reaction)

Steps: 1 Yield: 81%



31-614-CAS-37363424

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C; cooled

1.2 Reagents: Sodium chloride

Solvents: Water; cooled

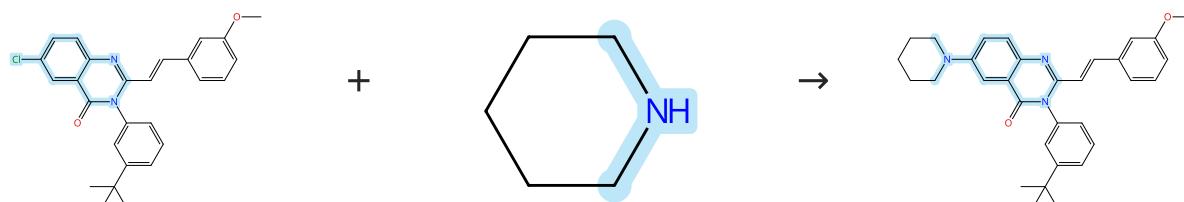
Experimental Protocols

Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

Scheme 230 (1 Reaction)



Suppliers (50)

31-614-CAS-37363431

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C; cooled

1.2 Reagents: Sodium chloride

Solvents: Water; cooled

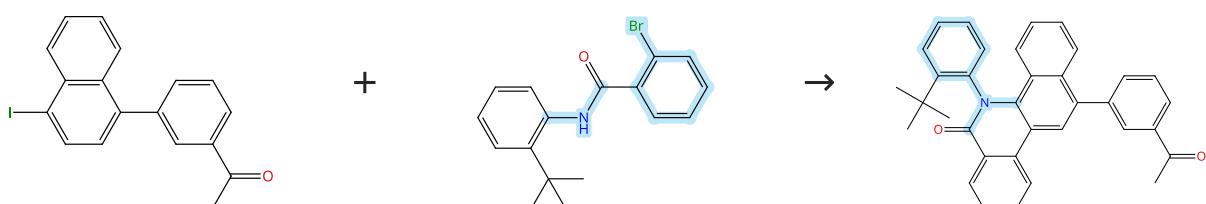
Experimental Protocols

Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

Scheme 231 (1 Reaction)



Suppliers (5)

31-614-CAS-41071033

Steps: 1 Yield: 81%

1.1 Reagents: Norbornene, Silver sulfate

Catalysts: Tris(dibenzylideneacetone)dipalladium, (4*S*,4'*S*)-4,4',5,5'-Tetrahydro-4,4'-bis(1-methylethyl)-1,1'-bis[3-(trifluoromethyl)phenyl]-2,2'-bi-1*H*-imidazole

Solvents: Toluene, Water; 36 h, 80 °C

Experimental Protocols

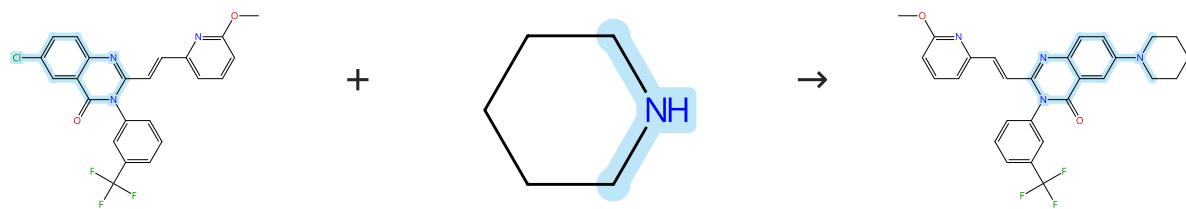
Chiral dinitrogen ligand enabled asymmetric Pd/norbornene cooperative catalysis toward the assembly of C-N axially chiral scaffolds

By: Jin, Liang; et al

Nature Communications (2024), 15(1), 4908.

Scheme 232 (1 Reaction)

Steps: 1 Yield: 81%



Suppliers (50)

31-614-CAS-37363442

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C; cooled

1.2 Reagents: Sodium chloride

Solvents: Water; cooled

Experimental Protocols

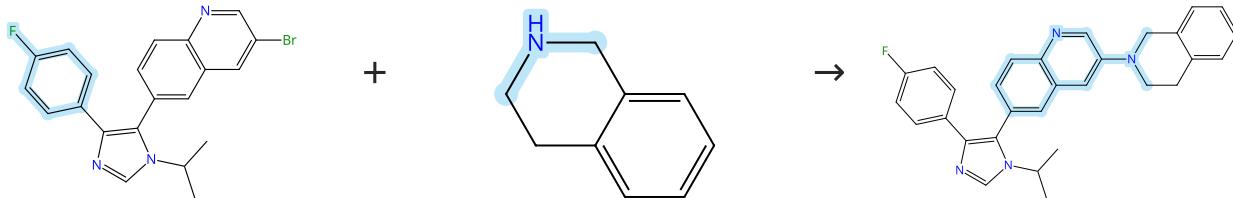
Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

Scheme 233 (1 Reaction)

Steps: 1 Yield: 81%



Suppliers (92)

31-614-CAS-39722134

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2'-(Dicyclohexylphosphino)-*N,N*-dimethyl[1,1'-biphenyl]-2-amine

Solvents: Toluene; 18 h, 100 °C

Experimental Protocols

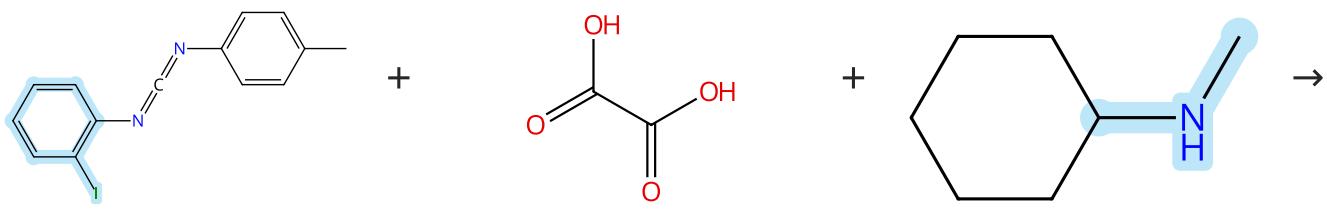
Fragment growth-based discovery of novel TNIK inhibitors for the treatment of colorectal cancer

By: Teng, Yixin; et al

European Journal of Medicinal Chemistry (2024), 268, 116240.

Scheme 234 (1 Reaction)

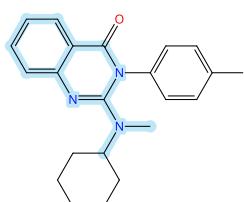
Steps: 1 Yield: 81%



Supplier (1)

Suppliers (152)

Suppliers (78)



31-614-CAS-35649897

Steps: 1 Yield: 81%

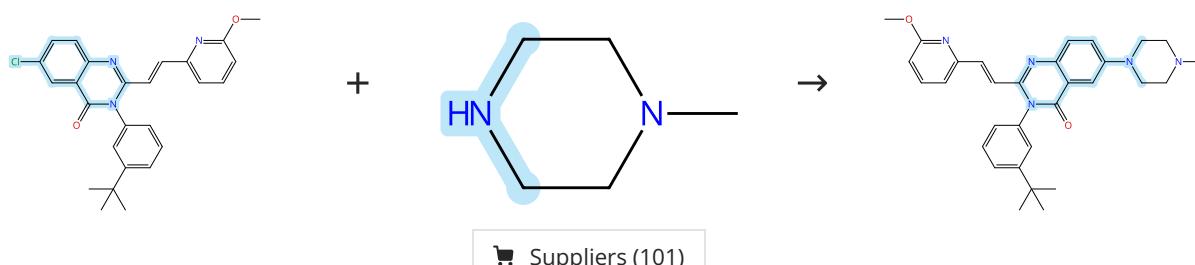
**1.1 Reagents:** Potassium carbonate  
**Catalysts:** Palladium  
**Solvents:** Dimethylformamide, Xylene; 15 h, 130 °C

Experimental Protocols

**Supported Palladium-Catalyzed Tandem Synthesis of 2-(Alkylamino/amino)-3-arylquinazolin-4(3H)-ones Employing C O Source**

By: Shaifali; et al

Chemistry - An Asian Journal (2023), 18(6), e202201288.

**Scheme 235 (1 Reaction)**

31-614-CAS-37363423

Steps: 1 Yield: 81%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
**Solvents:** Toluene; 24 h, 110 °C; cooled

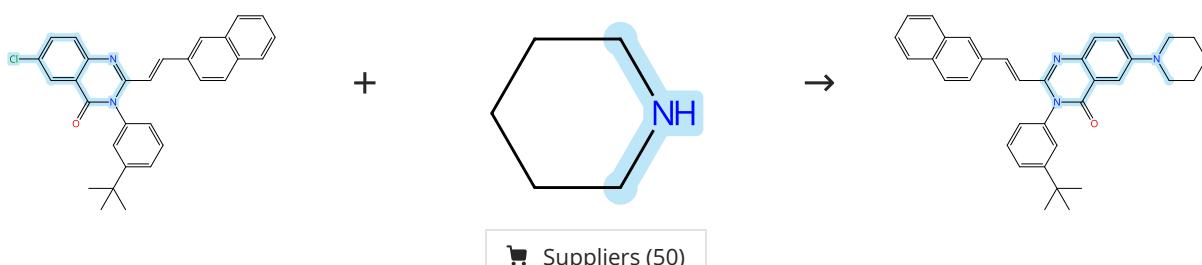
**1.2 Reagents:** Sodium chloride  
**Solvents:** Water; cooled

Experimental Protocols

**Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus**

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

**Scheme 236 (1 Reaction)**

31-614-CAS-37363429

Steps: 1 Yield: 81%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
**Solvents:** Toluene; 24 h, 110 °C; cooled

**1.2 Reagents:** Sodium chloride  
**Solvents:** Water; cooled

Experimental Protocols

**Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus**

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

**Scheme 237 (1 Reaction)**

31-614-CAS-37199976

Steps: 1 Yield: 81%

1.1 Reagents: Cesium carbonate

Catalysts: Tris(dibenzylideneacetone)dipalladium, Bis(*tri-tert*-butylphosphine)palladium

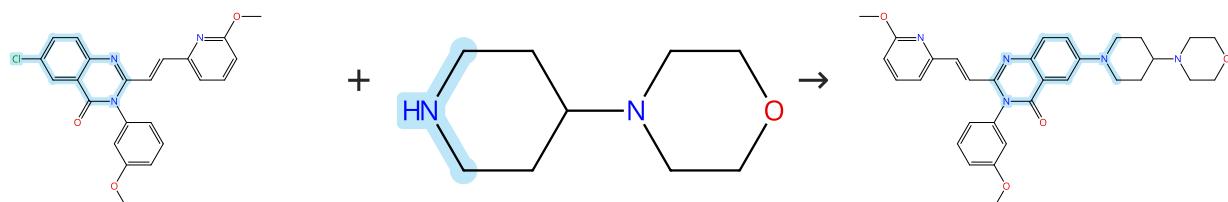
Solvents: Dichloromethane; 20 h, rt → 110 °C

Experimental Protocols

**Discovery of LNP1892: A Precision Calcimimetic for the Treatment of Secondary Hyperparathyroidism**

By: Shukla, Manojkumar R.; et al

Journal of Medicinal Chemistry (2023), 66(14), 9418-9444.

**Scheme 238 (1 Reaction)**

Suppliers (76)

31-614-CAS-37363447

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C; cooled

1.2 Reagents: Sodium chloride

Solvents: Water; cooled

Experimental Protocols

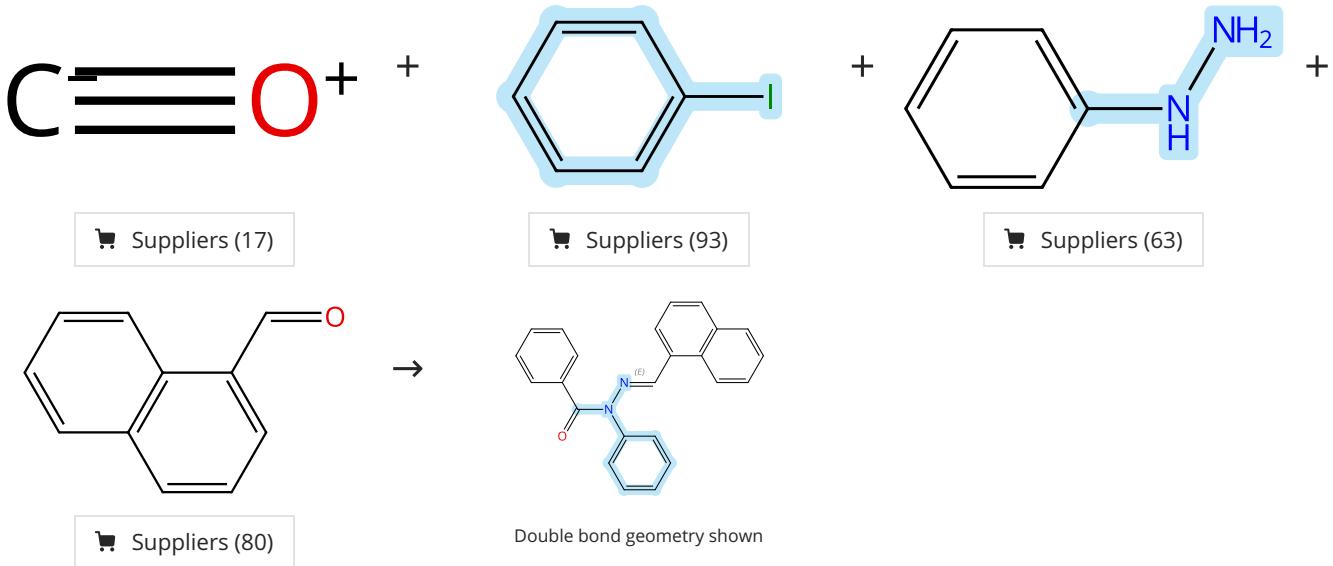
**Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus**

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

**Scheme 239 (1 Reaction)**

Steps: 1 Yield: 81%



31-614-CAS-40733454

Steps: 1 Yield: 81%

1.1 Reagents: Sodium hydroxide

Catalysts: Bis(*tri-tert*-butylphosphine)palladium

Solvents: Anisole; 12 h, 4 MPa, 120 °C

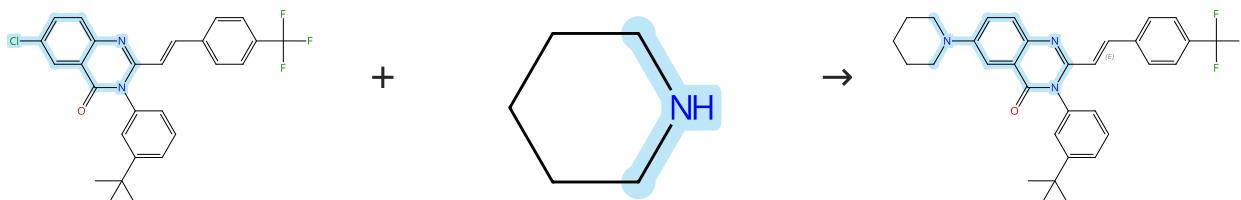
Experimental Protocols

**Palladium-Catalyzed Multicomponent Carbonylation of Halides to Acylhydrazones**

By: Liang, Qianqian; et al

Journal of Organic Chemistry (2024), 89(12), 8537-8545.

### Scheme 240 (1 Reaction)



## Suppliers (50)

Double bond geometry shown

31-614-CAS-37363434

Steps: 1 Yield: 81%

## Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
**Solvents:** Toluene; 24 h, 110 °C; cooled

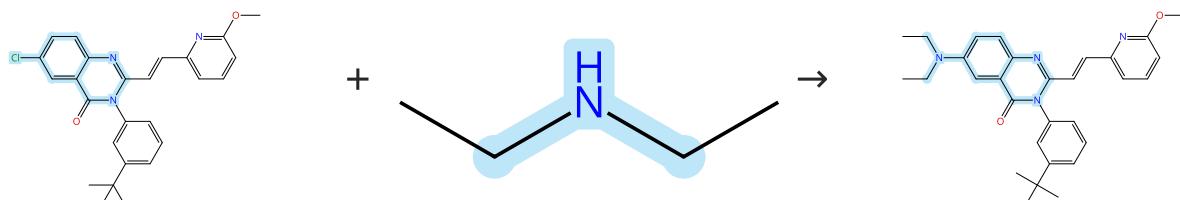
1.2 **Reagents:** Sodium chloride  
**Solvents:** Water; cooled

By: Ashraf-Uz-Zaman; Md: et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

## Experimental Protocols

### Scheme 241 (1 Reaction)



 Suppliers (67)

Steps: 1 Yield: 81%

31-614-CAS-37363422

Steps: 1 Yield: 81%

## Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
**Solvents:** Toluene; 24 h, 110 °C; cooled

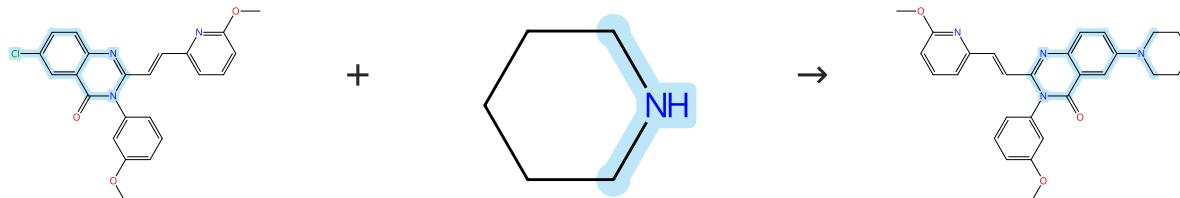
1.2 **Reagents:** Sodium chloride  
**Solvents:** Water; cooled

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

## Experimental Protocols

### Scheme 242 (1 Reaction)



 Suppliers (50)

Steps: 1 Yield: 81%

31-614-CAS-37363437

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C; cooled

1.2 Reagents: Sodium chloride

Solvents: Water; cooled

Experimental Protocols

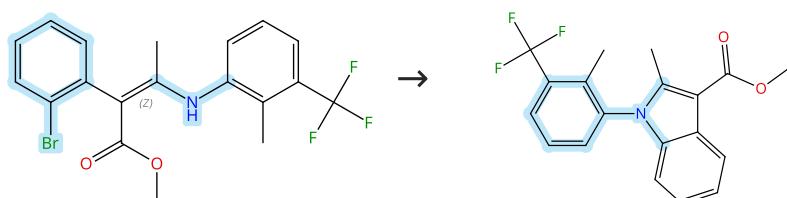
Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

Scheme 243 (1 Reaction)

Steps: 1 Yield: 81%



Double bond geometry shown

31-614-CAS-40129191

Steps: 1 Yield: 81%

1.1 Catalysts: Palladium diacetate, (-)-BINAP

Solvents: Toluene; 20 min, rt

1.2 Reagents: Cesium carbonate

Solvents: Toluene; 5 min, rt

1.3 5 min, rt; 18 h, 60 °C

Experimental Protocols

Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers

By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

Scheme 244 (1 Reaction)

Steps: 1 Yield: 81%



Suppliers (50)

31-614-CAS-37363427

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C; cooled

1.2 Reagents: Sodium chloride

Solvents: Water; cooled

Experimental Protocols

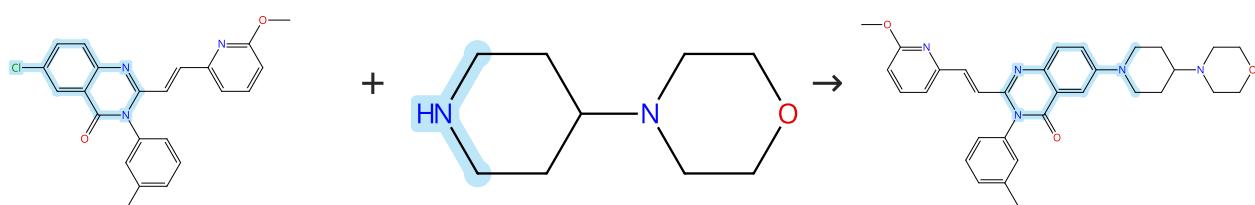
Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

Scheme 245 (1 Reaction)

Steps: 1 Yield: 81%



Suppliers (76)

31-614-CAS-37363438

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C; cooled

1.2 Reagents: Sodium chloride

Solvents: Water; cooled

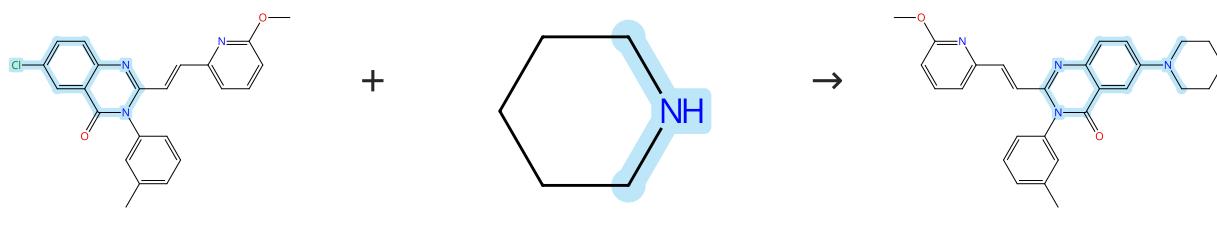
Experimental Protocols

**Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus**

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

Scheme 246 (1 Reaction)



Suppliers (50)

31-614-CAS-37363436

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C; cooled

1.2 Reagents: Sodium chloride

Solvents: Water; cooled

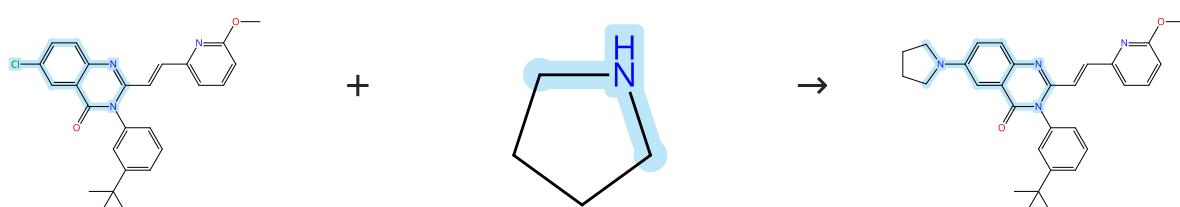
Experimental Protocols

**Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus**

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

Scheme 247 (1 Reaction)



Suppliers (74)

31-614-CAS-37363420

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C; cooled

1.2 Reagents: Sodium chloride

Solvents: Water; cooled

Experimental Protocols

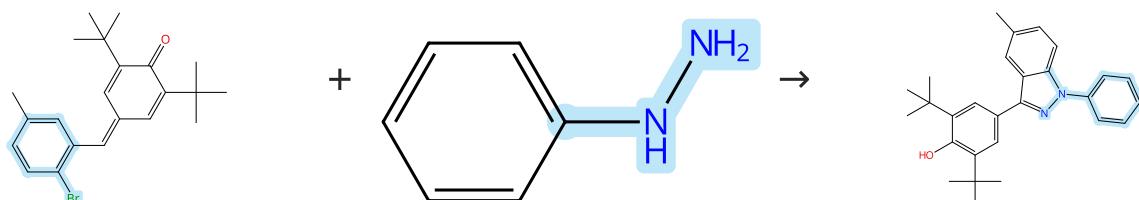
**Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus**

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

Scheme 248 (1 Reaction)

Steps: 1 Yield: 81%



Suppliers (63)

31-614-CAS-38947666

Steps: 1 Yield: 81%

1.1 Reagents: Potassium *tert*-butoxide

Catalysts: Palladium diacetate, 1,3-Bis(diphenylphosphino)propane

Solvents: Toluene; 15 h, 110 °C

Experimental Protocols

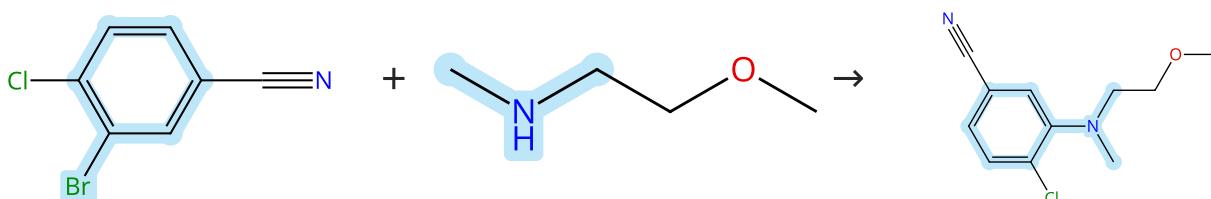
Synthesis and Photophysical Properties of 3-Substituted-1*H*-Indazoles: A Pd-Catalyzed Double C–N Bond Formation Strategy via 1,6-Conjugate Addition

By: Kayastha, Nasib; et al

Journal of Organic Chemistry (2024), 89(1), 402-413.

Scheme 249 (1 Reaction)

Steps: 1 Yield: 81%



Suppliers (63)

Suppliers (63)

31-614-CAS-39012759

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Palladium diacetate, BINAP

Solvents: Toluene; 10 h, 80 °C

Experimental Protocols

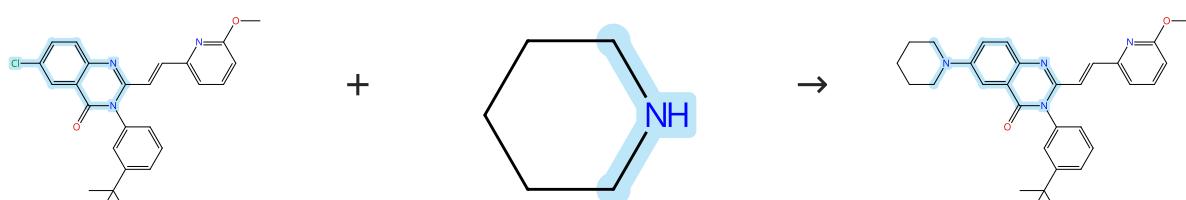
Discovery of CZS-241: A Potent, Selective, and Orally Available Polo-Like Kinase 4 Inhibitor for the Treatment of Chronic Myeloid Leukemia

By: Sun, Yin; et al

Journal of Medicinal Chemistry (2023), 66(4), 2396-2421.

Scheme 250 (1 Reaction)

Steps: 1 Yield: 81%



Suppliers (50)

31-614-CAS-37363416

Steps: 1 Yield: 81%

Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

1.1 Reagents: Sodium *tert*-butoxide

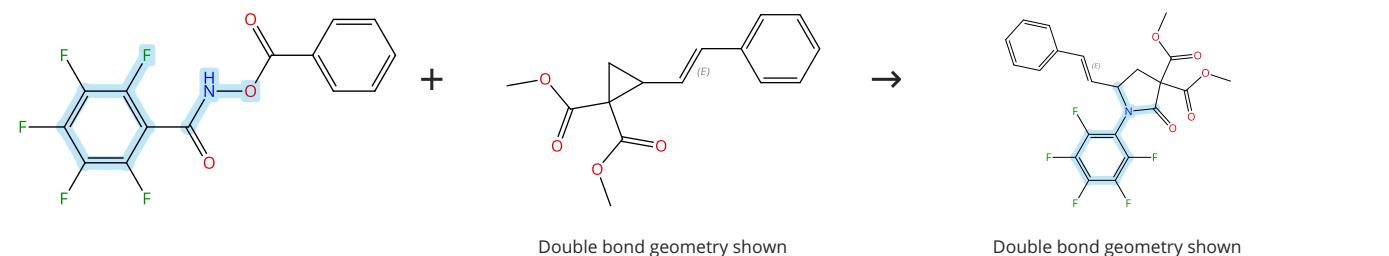
Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C; cooled

1.2 Reagents: Sodium chloride

Solvents: Water; cooled

Experimental Protocols

**Scheme 251 (1 Reaction)**

31-614-CAS-36837151

Steps: 1 Yield: 81%

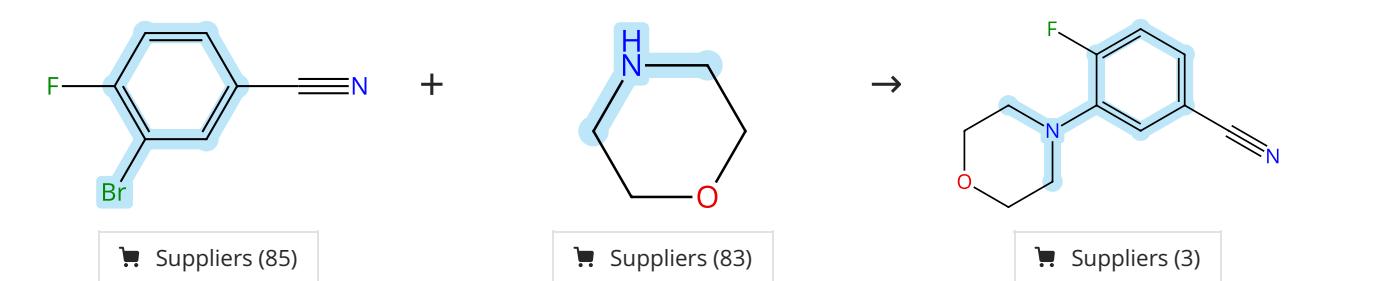
- 1.1 **Reagents:** Cesium carbonate  
**Catalysts:** 2,2'-Bipyridine, Tris(dibenzylideneacetone)dipalladium  
**Solvents:** Tetrahydrofuran; 24 h, 50 °C

[3+2] Cycloaddition of Vinyl Cyclopropane and Hydroxylamines via Isocyanate Intermediate to  $\gamma$ -Lactams

By: Huang, Xiaobing; et al

Chinese Journal of Chemistry (2023), 41(16), 1937-1942.

Experimental Protocols

**Scheme 252 (1 Reaction)**

31-614-CAS-39012751

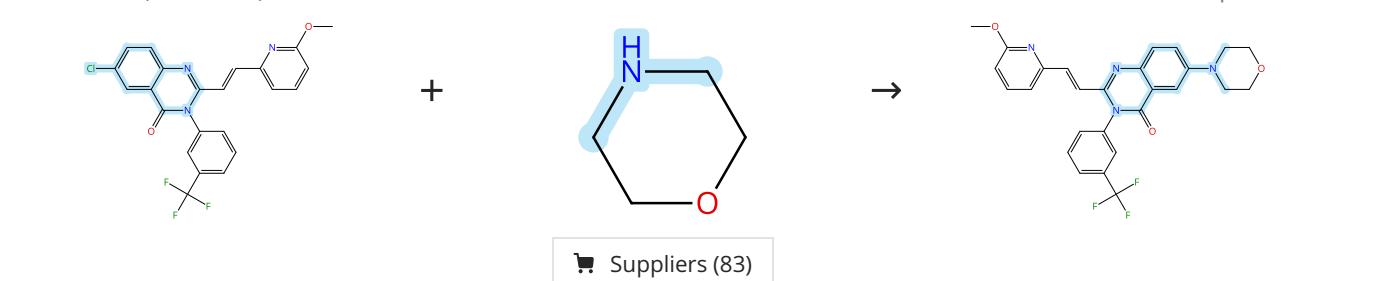
Steps: 1 Yield: 81%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, BINAP  
**Solvents:** Toluene; 10 h, 80 °C

Discovery of CZS-241: A Potent, Selective, and Orally Available Polo-Like Kinase 4 Inhibitor for the Treatment of Chronic Myeloid Leukemia

By: Sun, Yin; et al

Journal of Medicinal Chemistry (2023), 66(4), 2396-2421.

**Scheme 253 (1 Reaction)**

31-614-CAS-37363445

Steps: 1 Yield: 81%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
**Solvents:** Toluene; 24 h, 110 °C; cooled
- 1.2 **Reagents:** Sodium chloride  
**Solvents:** Water; cooled

Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus

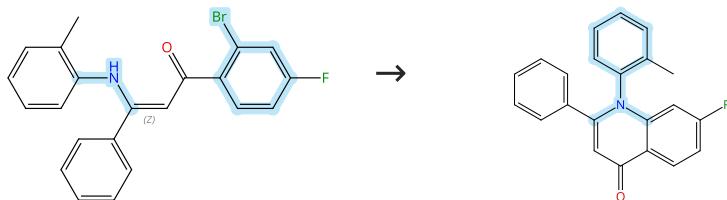
By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

Experimental Protocols

**Scheme 254 (1 Reaction)**

Steps: 1 Yield: 81%



Double bond geometry shown

31-614-CAS-40129276

Steps: 1 Yield: 81%

**1.1 Reagents:** Potassium carbonate, Sodium hydroxide  
**Catalysts:** Palladium diacetate, (-)-BINAP  
**Solvents:** Toluene, 1,4-Dioxane; 18 h, 40 °C

**Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers**

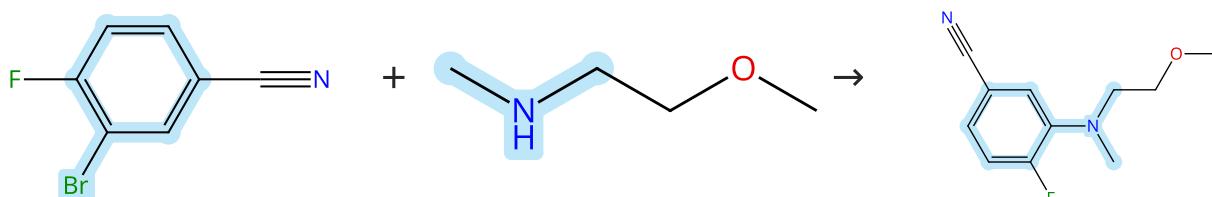
By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

Experimental Protocols

**Scheme 255 (1 Reaction)**

Steps: 1 Yield: 81%



Suppliers (85)

Suppliers (63)

31-614-CAS-39012750

Steps: 1 Yield: 81%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, BINAP  
**Solvents:** Toluene; 10 h, 80 °C

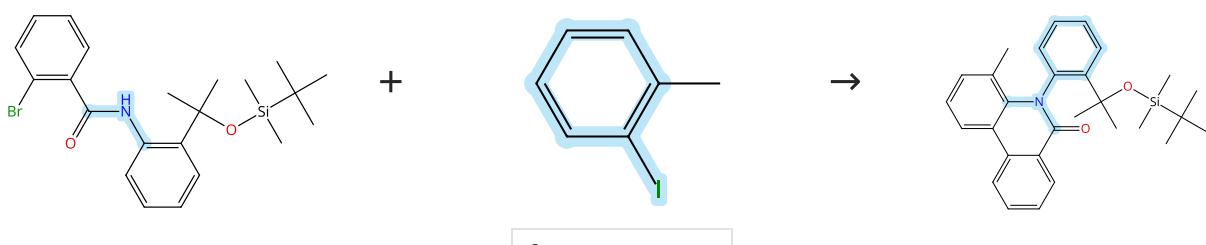
**Discovery of CZS-241: A Potent, Selective, and Orally Available Polo-Like Kinase 4 Inhibitor for the Treatment of Chronic Myeloid Leukemia**

By: Sun, Yin; et al

Journal of Medicinal Chemistry (2023), 66(4), 2396-2421.

**Scheme 256 (1 Reaction)**

Steps: 1 Yield: 81%



Suppliers (75)

31-614-CAS-41071003

Steps: 1 Yield: 81%

**1.1 Reagents:** Norbornene, Silver sulfate  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, (4,5,4'S)-4,4',5,5'-Tetrahydro-4,4'-bis(1-methylethyl)-1,1'-bis[3-(trifluoromethyl)phenyl]-2,2'-bi-1*H*-imidazole  
**Solvents:** 1,2-Dichloroethane, Water; 36 h, 80 °C

**Chiral dinitrogen ligand enabled asymmetric Pd/norbornene cooperative catalysis toward the assembly of C-N axially chiral scaffolds**

By: Jin, Liang; et al

Nature Communications (2024), 15(1), 4908.

Experimental Protocols

Scheme 257 (1 Reaction)



Suppliers (50)

31-614-CAS-37363430

Steps: 1 Yield: 81%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
**Solvents:** Toluene; 24 h, 110 °C; cooled
- 1.2 **Reagents:** Sodium chloride  
**Solvents:** Water; cooled

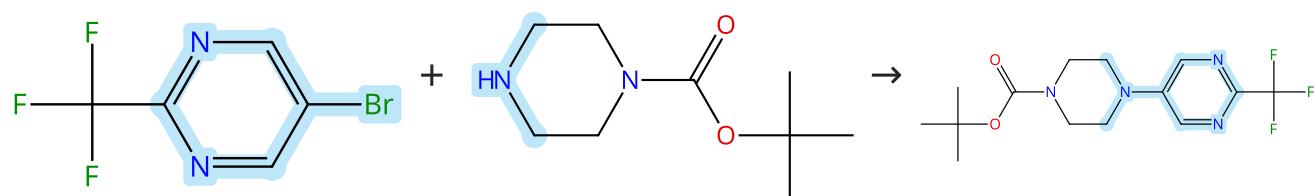
Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

Experimental Protocols

Scheme 258 (1 Reaction)



Suppliers (76)

Suppliers (112)

Suppliers (15)

31-614-CAS-39925925

Steps: 1 Yield: 81%

- 1.1 **Reagents:** Cesium carbonate  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 1,1'-(9,9-Dimethyl-9*H*-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]  
**Solvents:** Tetrahydrofuran; 10 h, 70 °C

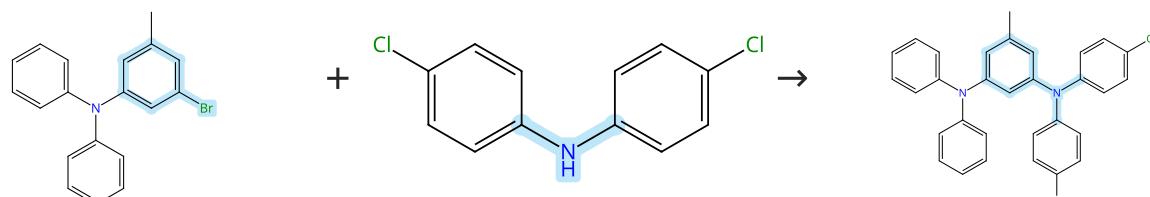
Design, synthesis, and biological evaluation of piperazine derivatives as pan-PPARs agonists for the treatment of liver fibrosis

By: Sun, Gang; et al

European Journal of Medicinal Chemistry (2024), 269, 116344.

Experimental Protocols

Scheme 259 (1 Reaction)



Suppliers (19)

Suppliers (41)

31-614-CAS-41860544

Steps: 1 Yield: 81%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate  
**Solvents:** Toluene; overnight, 110 °C

Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

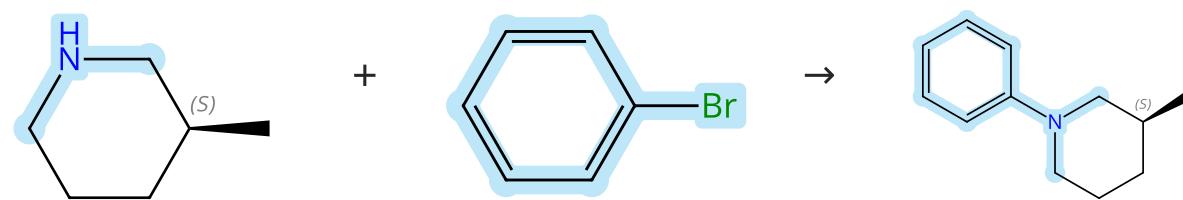
By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

Experimental Protocols

Scheme 260 (1 Reaction)

Steps: 1 Yield: 81%



Suppliers (71)

Suppliers (46)

31-614-CAS-42934079

Steps: 1 Yield: 81%

1.1 **Catalysts:** Tris(dibenzylideneacetone)dipalladium, BINAP  
**Solvents:** Toluene; 1 h

1.2 **Reagents:** Sodium *tert*-butoxide; 15 h, 100 °C

Experimental Protocols

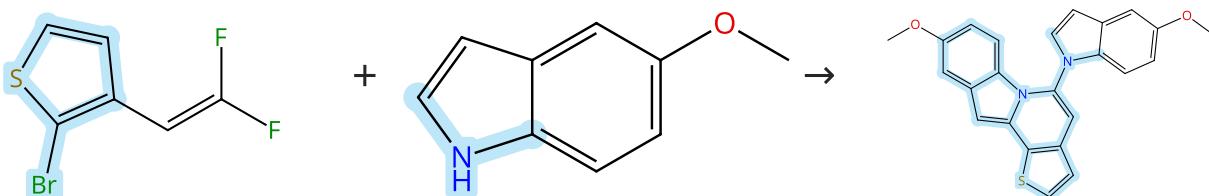
**Copper(I)-Catalyzed  $\alpha,\beta$ -Dehydrogenative [2 + 3] Heterocoupling of Saturated Amines with Diazirinone via Hydrogen Atom Transfer**

By: Du, Zihang; et al

ACS Catalysis (2024), 14(23), 18107-18115.

Scheme 261 (1 Reaction)

Steps: 1 Yield: 81%



31-614-CAS-37012580

Steps: 1 Yield: 81%

1.1 **Reagents:** Tripotassium phosphate

**Solvents:** Dimethylformamide; 12 h, 100 °C; 100 °C → rt

1.2 **Catalysts:** Triphenylphosphine, Palladium diacetate; 20 h, 140 °C; 140 °C → rt

1.3 **Reagents:** Water

Experimental Protocols

**Thienoindolizines and their Benzo-Fused Derivatives: Synthesis and Physical Properties**

By: Ausekle, Elina; et al

Chemistry - A European Journal (2023), 29(42), e202301038.

Scheme 262 (1 Reaction)

Steps: 1 Yield: 81%



31-614-CAS-36215332

Steps: 1 Yield: 81%

1.1 **Reagents:** Potassium carbonate

**Catalysts:** Palladium diacetate, Ferrocene, 1-(diphenylphosphino)-2-[(1*S*)-1-[(diphenylphosphino)propylamino]ethyl]-, (1*S*)-

**Solvents:** Toluene; 20 h, 80 °C

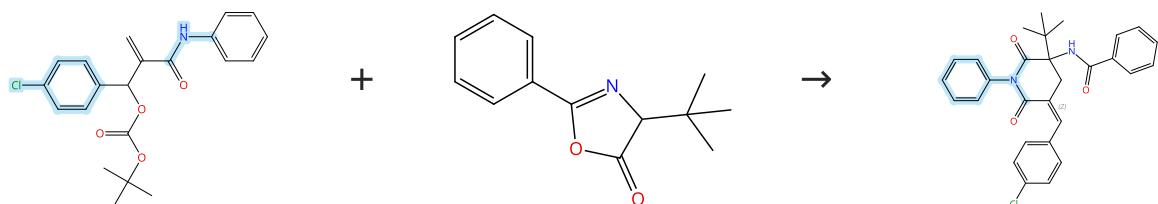
Experimental Protocols

**Synthesis of N-Substituted 4-Quinolones via Palladium-Catalyzed Enantioselective C-N Coupling and Base-Promoted Reactions**

By: Pu, Xiaoyun; et al

Advanced Synthesis &amp; Catalysis (2023), 365(8), 1152-1157.

Scheme 263 (1 Reaction)



Suppliers (4)

Double bond geometry shown

31-614-CAS-35547299

Steps: 1 Yield: 81%

1.1 **Catalysts:** 1,1-Bis(diphenylphosphino)ferrocene, Tris(dibenzylideneacetone)dipalladium

**Solvents:** Dichloromethane; 24 h, 40 °C

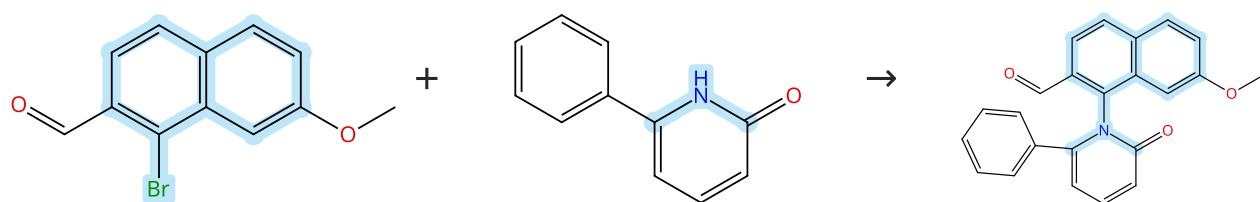
Experimental Protocols

Palladium-catalyzed [4 + 2] cycloaddition of amido-tethered allylic carbonates with oxazol-5(4H)-ones: synthesis of piperidine-2,6-dione derivatives

By: Wang, Lan; et al

Organic Chemistry Frontiers (2023), 10(3), 813-818.

Scheme 264 (1 Reaction)



Suppliers (6)

Suppliers (65)

31-614-CAS-41335344

Steps: 1 Yield: 81%

1.1 **Catalysts:** Palladium, tris[μ-[(1,2-η;4,5-η)-(1E,4E)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2R)-1-[(1R)-1-[Bis(1,1-dimethyl ethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene

**Solvents:** Toluene; 30 min, rt

1.2 **Reagents:** Cesium carbonate; 36 h, 90 °C

Experimental Protocols

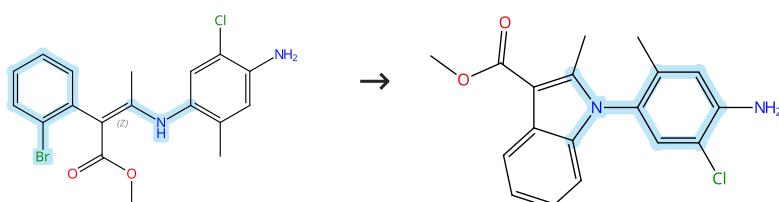
Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

Scheme 265 (1 Reaction)

Steps: 1 Yield: 81%



31-614-CAS-40129206

Steps: 1 Yield: 81%

Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers

By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

1.1 **Catalysts:** Palladium diacetate, (-)-BINAP

**Solvents:** Toluene; 20 min, rt

1.2 **Reagents:** Cesium carbonate

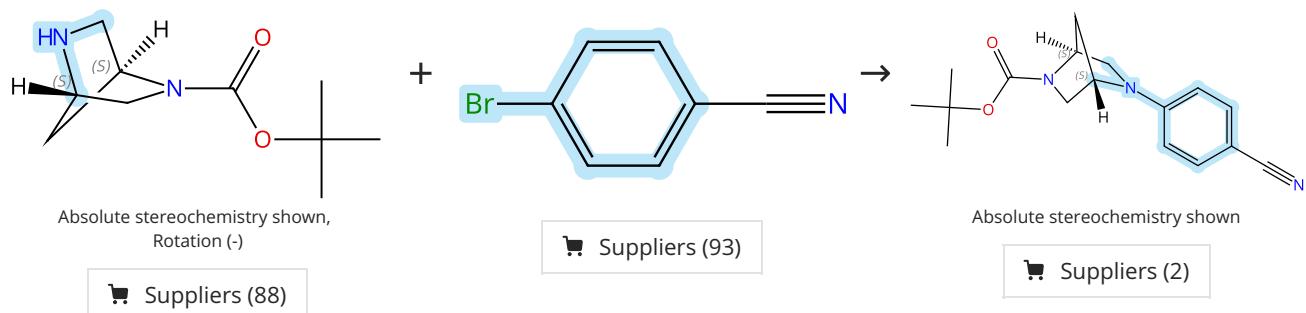
**Solvents:** Toluene; 5 min, rt

1.3 5 min, rt; 18 h, 60 °C

Experimental Protocols

**Scheme 266 (1 Reaction)**

Steps: 1 Yield: 81%

**31-614-CAS-38701018**

Steps: 1 Yield: 81%

- 1.1 Reagents: Sodium *tert*-butoxide  
Catalysts: Palladium diacetate, Tri-*tert*-butylphosphine  
Solvents: Toluene; 4 h, 80 °C; 80 °C → rt
- 1.2 Reagents: Water; rt

## Experimental Protocols

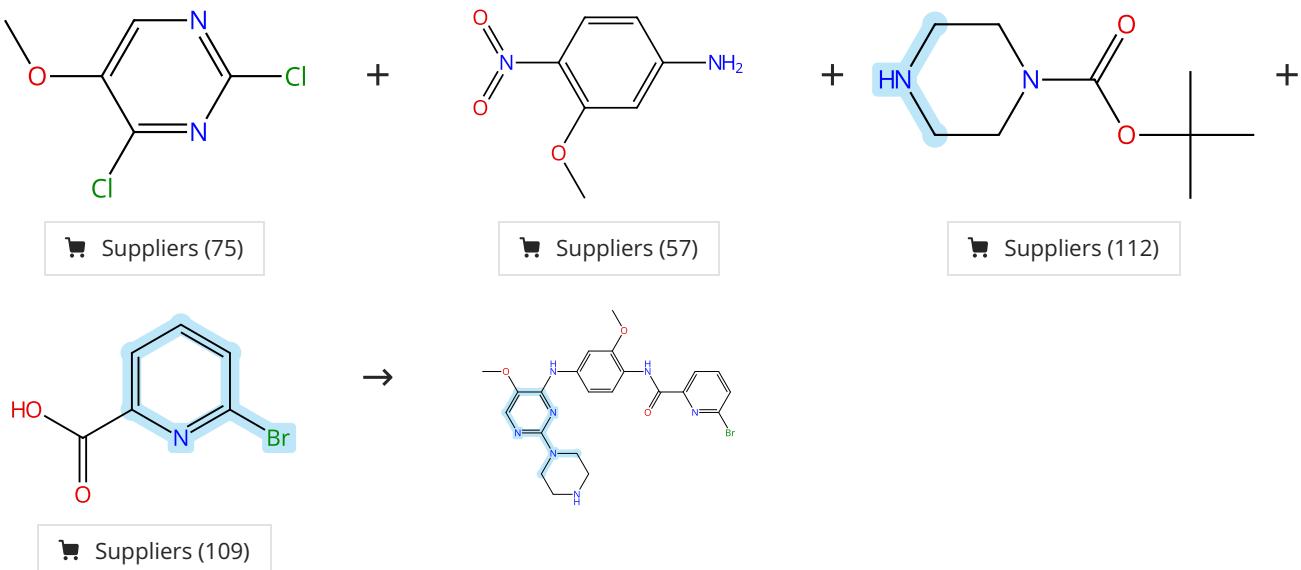
Discovery of (2*S*)-N-(6-cyano-5-(trifluoromethyl)pyridin-3-yl)-3-(6-(4-cyanophenyl)-3,6-diazabicyclo[3.1.1]heptan-3-yl)-2-hydroxy-2-methylpropanamide as a Highly Potent and Selective Topical Androgen Receptor Antagonist for Androgenetic Alopecia Treatment

By: Zhang, Wenqiang; et al

Journal of Medicinal Chemistry (2024), 67(1), 322-348.

**Scheme 267 (1 Reaction)**

Steps: 1 Yield: 81%

**31-614-CAS-36602317**

Steps: 1 Yield: 81%

- 1.1 Reagents: Cesium carbonate  
Solvents: Dimethylformamide; 5 h, 80 °C
- 1.2 Reagents: Diisopropylethylamine  
Solvents: 1-Butanol; 8 h, 120 °C
- 1.3 Reagents: Hydrogen  
Catalysts: Palladium  
Solvents: Methanol; overnight, rt
- 1.4 Reagents: 1-Hydroxybenzotriazole, 1-Ethyl-3-(3'-dimethylamino-propyl)carbodiimide hydrochloride  
Solvents: Dimethylformamide; 6 h, rt
- 1.5 Reagents: Hydrochloric acid  
Solvents: Dichloromethane, 1,4-Dioxane; 4 h, rt

Discovery of Pyrimidinediamine Derivatives as Potent Methuosis Inducers for the Treatment of Triple-Negative Breast Cancer

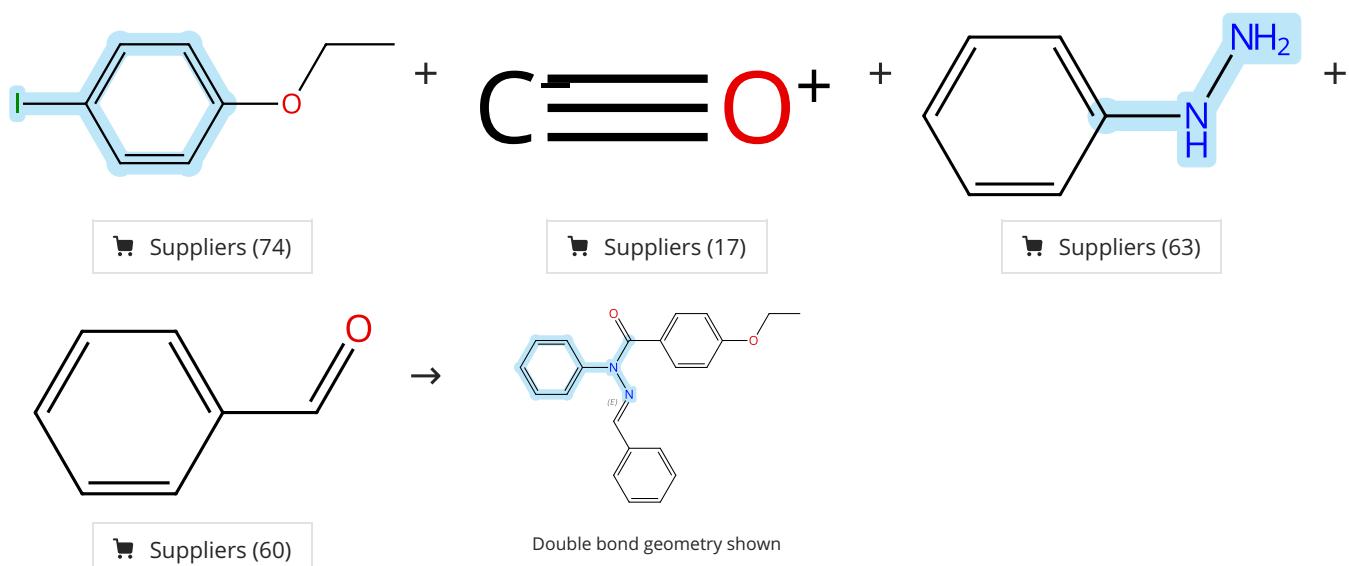
By: He, Jia; et al

Journal of Medicinal Chemistry (2023), 66(11), 7421-7437.

## Experimental Protocols

Scheme 268 (1 Reaction)

Steps: 1 Yield: 81%



31-614-CAS-40733463

Steps: 1 Yield: 81%

1.1 **Reagents:** Sodium hydroxide  
**Catalysts:** Bis(*tri-tert*-butylphosphine)palladium  
**Solvents:** Anisole; 12 h, 4 MPa, 120 °C

**Palladium-Catalyzed Multicomponent Carbonylation of Halides to Acylhydrazones**

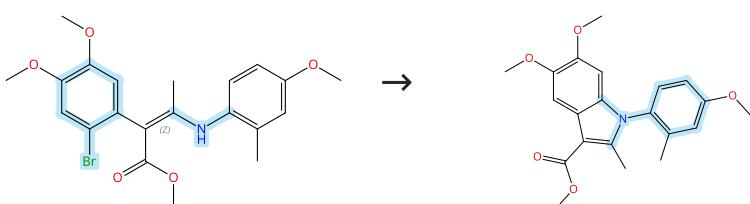
By: Liang, Qianqian; et al

Journal of Organic Chemistry (2024), 89(12), 8537-8545.

Experimental Protocols

Scheme 269 (1 Reaction)

Steps: 1 Yield: 81%



31-614-CAS-40129190

Steps: 1 Yield: 81%

**Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers**

By: Zhang, Peng; et al

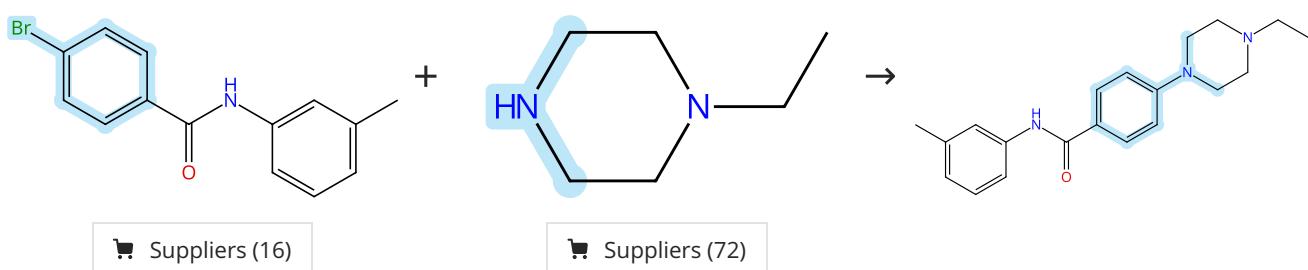
ACS Catalysis (2023), 13(11), 7680-7690.

1.1 **Catalysts:** Palladium diacetate, (-)-BINAP  
**Solvents:** Toluene; 20 min, rt  
 1.2 **Reagents:** Cesium carbonate  
**Solvents:** Toluene; 5 min, rt  
 1.3 5 min, rt; 18 h, 60 °C

Experimental Protocols

Scheme 270 (1 Reaction)

Steps: 1 Yield: 81%



31-614-CAS-40551301

Steps: 1 Yield: 81%

1.1 Reagents: Cesium carbonate

Catalysts: Tris(dibenzylideneacetone)dipalladium, (+)-BINAP

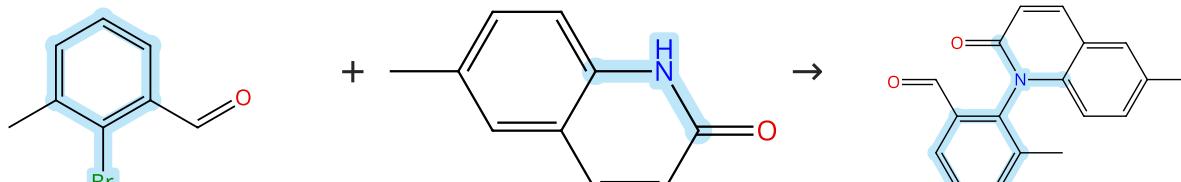
Solvents: Toluene, 1,4-Dioxane; 8 h, 90 °C

Experimental Protocols

**Explorations of Agonist Selectivity for the  $\alpha 9^*$  nAChR with Novel Substituted Carbamoyl/Amido/Heteroaryl Dialkylpicrerazinium Salts and Their Therapeutic Implications in Pain and Inflammation**

By: Andleeb, Hina; et al

Journal of Medicinal Chemistry (2024), 67(11), 8642-8666.

**Scheme 271 (1 Reaction)**

Suppliers (65)

Suppliers (67)

31-614-CAS-41335292

Steps: 1 Yield: 81%

1.1 Catalysts: Palladium, tris[ $\mu$ -[(1,2- $\eta$ ;4,5- $\eta$ )-(1E,4E)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2*R*)-1-[(1*R*)-1-[Bis(1,1-dimethylpropyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferroceneSolvents: *tert*-Butyl methyl ether; 30 min, rt

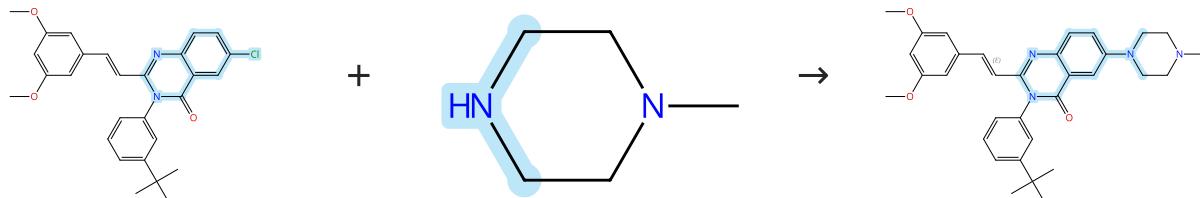
1.2 Reagents: Tripotassium phosphate; 36 h, 90 °C

Experimental Protocols

**Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination**

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

**Scheme 272 (1 Reaction)**

Suppliers (101)

Double bond geometry shown

31-614-CAS-37363425

Steps: 1 Yield: 81%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C; cooled

1.2 Reagents: Sodium chloride

Solvents: Water; cooled

Experimental Protocols

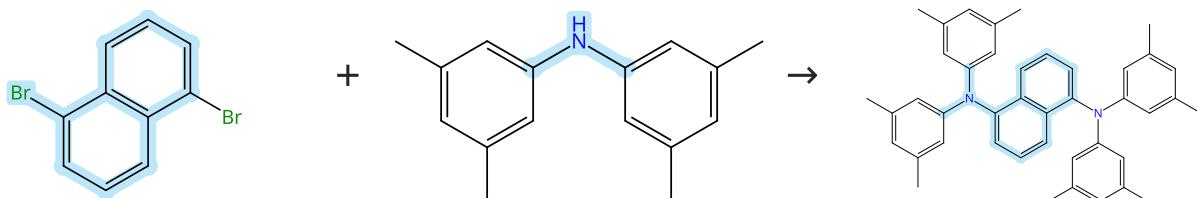
**Quinazolinone Compounds Have Potent Antiviral Activity against Zika and Dengue Virus**

By: Ashraf-Uz-Zaman, Md; et al

Journal of Medicinal Chemistry (2023), 66(15), 10746-10760.

**Scheme 273 (1 Reaction)**

Steps: 1 Yield: 81%



Suppliers (72)

Suppliers (14)

31-614-CAS-36905747

Steps: 1 Yield: 81%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, X-Phos  
**Solvents:** Toluene; 24 h, 120 °C

Experimental Protocols

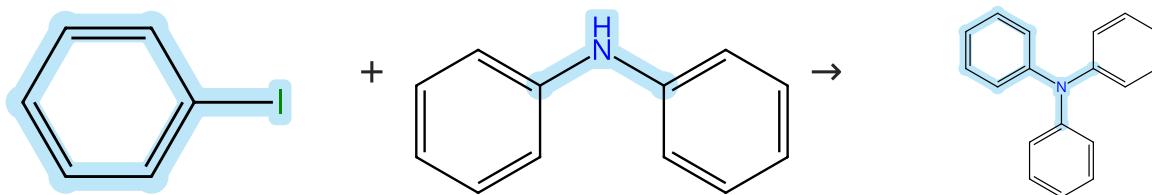
Straightforward and regiospecific synthesis of 1,3,5,7-tetraarylated acene bearing different aryl groups

By: Sato, Ryota; et al

Organic Chemistry Frontiers (2023), 10(12), 2955-2962.

**Scheme 274 (1 Reaction)**

Steps: 1 Yield: 81%



Suppliers (93)

Suppliers (98)

Suppliers (88)

31-614-CAS-42544602

Steps: 1 Yield: 81%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, Tri-*tert*-butylphosphonium tetrafluoroborate  
**Solvents:** Toluene; 14 h, 110 °C

Experimental Protocols

Temperature-Dependent Reversible Afterglow Between Green, Orange, and Red in Dual-Delay Organic Doped Material

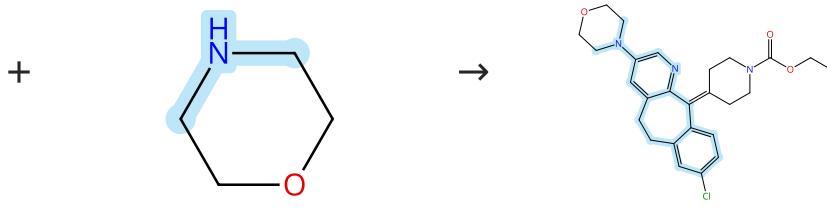
By: Chen, Jianai; et al

Advanced Optical Materials (2024), 12(34), 2401660.

**Scheme 275 (1 Reaction)**

Steps: 1 Yield: 81%

Multi-component structure image available in CAS SciFinder



Suppliers (83)

31-614-CAS-37407747

Steps: 1 Yield: 81%

**1.1 Reagents:** Cesium carbonate  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine  
**Solvents:** Dimethylformamide; 20 h, 90 °C

Experimental Protocols

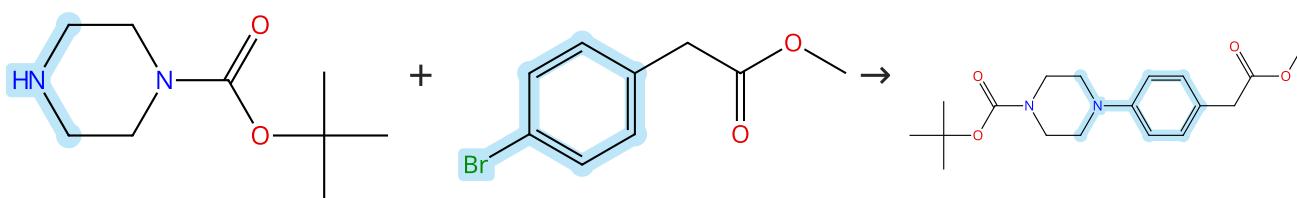
Cu-Mediated Thianthrenation and Phenoxathiation of Arylborons

By: Chen, Xiao-Yue; et al

Journal of the American Chemical Society (2023), 145(18), 10431-10440.

## Scheme 276 (1 Reaction)

Steps: 1 Yield: 81%



Suppliers (112)

Suppliers (71)

Suppliers (5)

31-614-CAS-36966180

Steps: 1 Yield: 81%

1.1 Reagents: Cesium carbonate  
Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos  
Solvents: 1,4-Dioxane; 6 h, 80 °C

Experimental Protocols

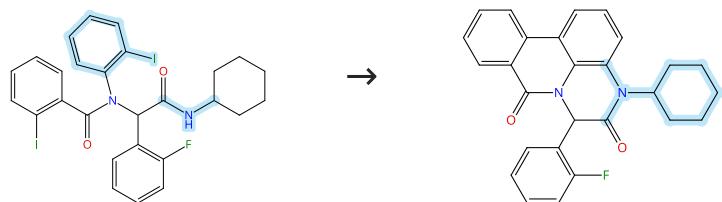
**Discovery of the First Potent, Selective, and In Vivo Efficacious Polo-like Kinase 4 Proteolysis Targeting Chimera Degrader for the Treatment of TRIM37-Amplified Breast Cancer**

By: Sun, Yin; et al

Journal of Medicinal Chemistry (2023), 66(12), 8200-8221.

## Scheme 277 (1 Reaction)

Steps: 1 Yield: 81%



31-614-CAS-38556051

Steps: 1 Yield: 81%

1.1 Reagents: Potassium carbonate  
Catalysts: Palladium diacetate  
Solvents: Dimethylformamide; 12 h, 110 °C

Experimental Protocols

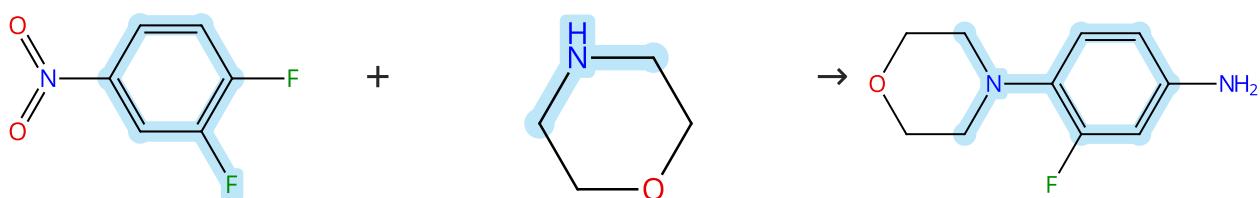
**Preparation of pyridopyrazines through tandem Pd-catalyzed C-N/C-C coupling reactions of Ugi adducts**

By: Takallou, Ahmad; et al

Organic &amp; Biomolecular Chemistry (2023), 21(48), 9530-9533.

## Scheme 278 (1 Reaction)

Steps: 1 Yield: 81%



Suppliers (86)

Suppliers (83)

Suppliers (85)

31-614-CAS-38400103

Steps: 1 Yield: 81%

1.1 Solvents: Methanol; 2 h, 65 °C  
1.2 Reagents: Sodium hydroxide, Aluminum  
Catalysts: Palladium  
Solvents: Methanol, Water; 15 min, rt

Experimental Protocols

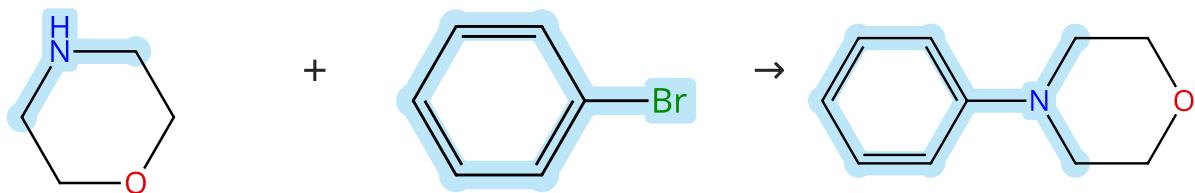
**Two-Chamber-Enabled Hydrogenation Reactions Using Al-H<sub>2</sub>/O/NaOH: Access to Pharmaceuticals**

By: Iqbal, Ashif; et al

Journal of Organic Chemistry (2023), 88(24), 17047-17061.

Scheme 279 (1 Reaction)

Steps: 1 Yield: 80%



Suppliers (83)

Suppliers (71)

Suppliers (74)

31-614-CAS-41965542

Steps: 1 Yield: 80%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, [1-(4-Methoxyphenyl)ethenyl]diphenylphosphine  
**Solvents:** Toluene; 24 h, reflux

Experimental Protocols

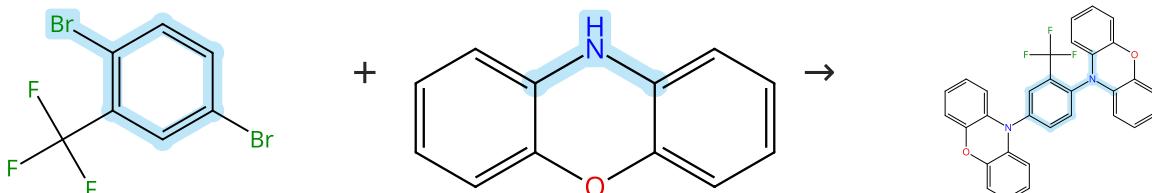
Synthesis of alkenylphosphine oxides via  $\text{Tf}_2\text{O}$  promoted addition-elimination of ketones and secondary phosphine oxides

By: Ma, Jiangkai; et al

Organic &amp; Biomolecular Chemistry (2024), 22(18), 3592-3596.

Scheme 280 (1 Reaction)

Steps: 1 Yield: 80%



Suppliers (72)

Suppliers (96)

31-614-CAS-38204044

Steps: 1 Yield: 80%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, X-Phos  
**Solvents:** Toluene; 24 h, 110 - 120 °C

Experimental Protocols

Switching thermally activated delayed fluorescence to room temperature phosphorescence for oxygen sensing: Effect of donor substituents of trifluoromethylphenyl

By: Skhirtladze, Levani; et al

Spectrochimica Acta, Part A: Molecular and Biomolecular Spectroscopy (2024), 306, 123531.

Scheme 281 (1 Reaction)

Steps: 1 Yield: 80%



31-614-CAS-38556050

Steps: 1 Yield: 80%

**1.1 Reagents:** Potassium carbonate  
**Catalysts:** Palladium diacetate  
**Solvents:** Dimethylformamide; 12 h, 110 °C

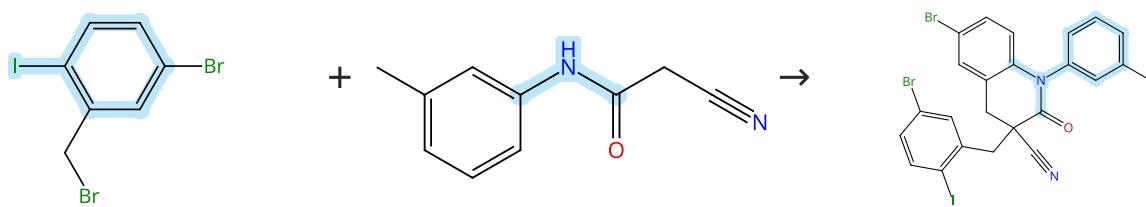
Experimental Protocols

Preparation of pyridopyrazines through tandem Pd-catalyzed C-N/C-C coupling reactions of Ugi adducts

By: Takallou, Ahmad; et al

Organic &amp; Biomolecular Chemistry (2023), 21(48), 9530-9533.

Scheme 282 (1 Reaction)



Suppliers (60)

Suppliers (55)

31-614-CAS-39519110

Steps: 1 Yield: 80%

1.1 Reagents: Cesium carbonate

Solvents: 1,4-Dioxane; 1 h, 110 °C

1.2 Catalysts: Palladium diacetate, 1,1'-(9,9-Dimethyl-9H-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]

Solvents: 1,4-Dioxane; 10 h, 110 °C

1.3 Reagents: Ammonium chloride

Solvents: Water

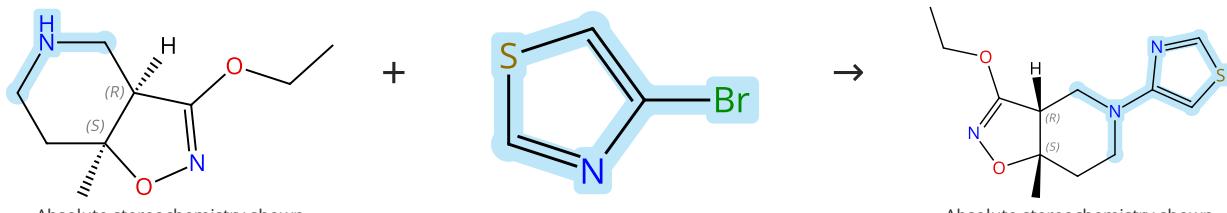
Synthesis of highly functionalized dihydroquinolinones via a tandem benzylation/intramolecular C-N coupling strategy

By: Gao, Pei-Sen; et al

Tetrahedron (2024), 155, 133865.

Experimental Protocols

Scheme 283 (1 Reaction)



Absolute stereochemistry shown

Suppliers (98)

Absolute stereochemistry shown

31-614-CAS-35422571

Steps: 1 Yield: 80%

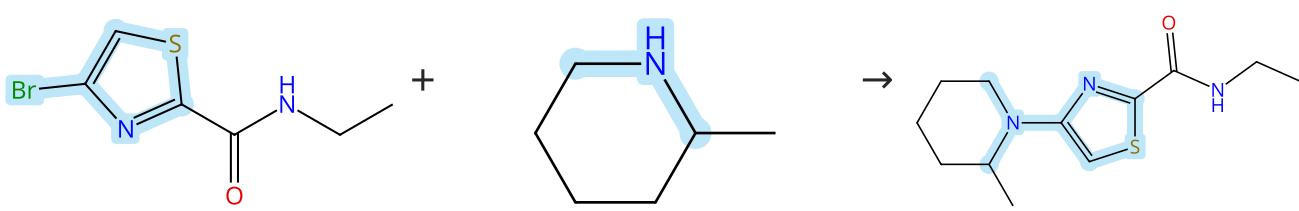
Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteroaryl Halides with Aliphatic Amines

By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

Experimental Protocols

Scheme 284 (1 Reaction)



Suppliers (5)

Suppliers (51)

31-614-CAS-35422508

Steps: 1 Yield: 80%

1.1 **Reagents:** Sodium trimethylsilanolate  
**Solvents:** Tetrahydrofuran; 5 min, rt

1.2 **Catalysts:** Palladium, bromo[dicyclohexyl[3-(1,1-dimethylethoxy)-6-methoxy-2',6'-bis(1-methylethyl)[1,1'-biphenyl]-2-yl- $\kappa C^1$ ]phosphine- $\kappa P$ ][4-[[2-(trimethylsilyl)ethoxy]carbonyl]phenyl]-, (*SP*-4-2)-  
**Solvents:** Tetrahydrofuran; 3 h, 50 °C

Experimental Protocols

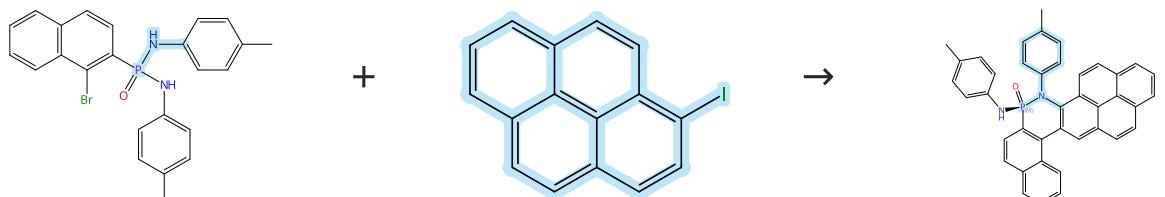
**Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteraryl Halides with Aliphatic Amines**

By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

**Scheme 285 (1 Reaction)**

Steps: 1 Yield: 80%



Suppliers (42)

Absolute stereochemistry shown

31-614-CAS-42232616

Steps: 1 Yield: 80%

1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, Tris(2-furyl)phosphine, Bicyclo[2.2.1]hept-2-ene-2-carboxylic acid, methyl ester, (*1R,4R*)-  
**Solvents:** Toluene; 12 h, 100 °C

Experimental Protocols

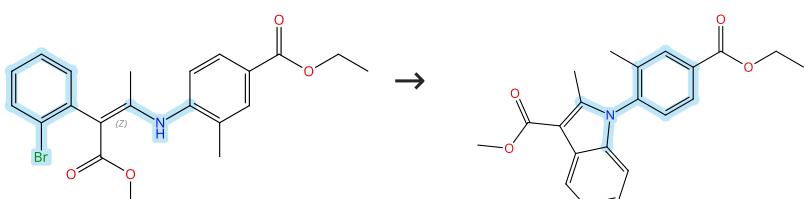
**Solvent-Controlled Enantiodivergent Construction of P(V)-Stereogenic Molecules via Palladium-Catalyzed Annulation of Prochiral N-Aryl Phosphonamides with Aromatic Iodides**

By: Tian, Qingyu; et al

Angewandte Chemie, International Edition (2024), 63(41), e202409366.

**Scheme 286 (1 Reaction)**

Steps: 1 Yield: 80%



Double bond geometry shown

31-614-CAS-40129195

Steps: 1 Yield: 80%

1.1 **Catalysts:** Palladium diacetate, (-)-BINAP  
**Solvents:** Toluene; 20 min, rt

1.2 **Reagents:** Cesium carbonate  
**Solvents:** Toluene; 5 min, rt

1.3 5 min, rt; 18 h, 60 °C

Experimental Protocols

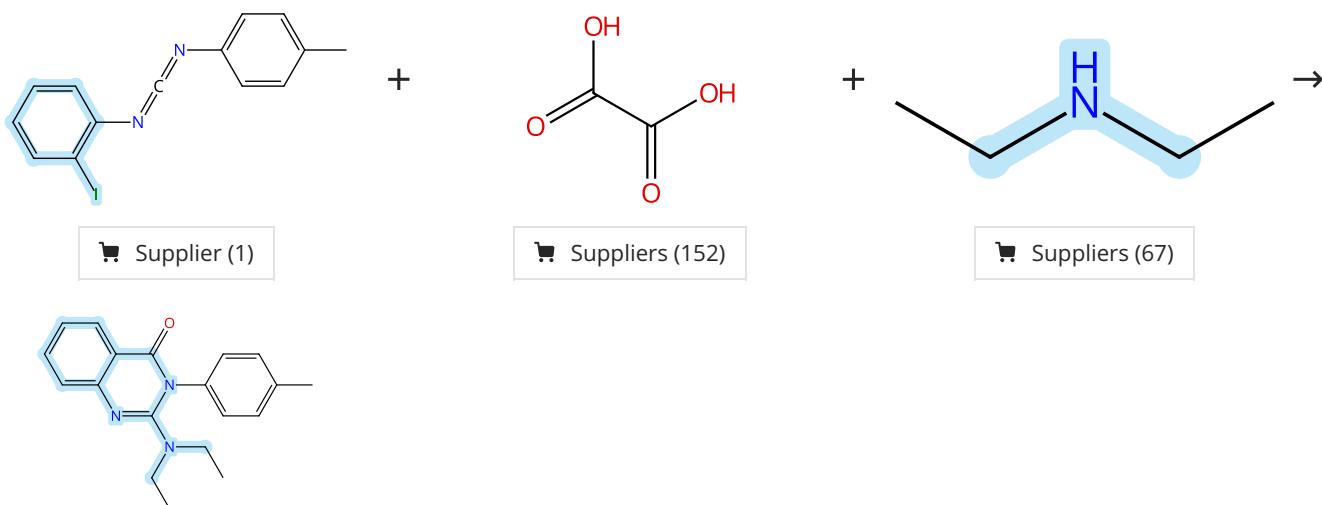
**Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers**

By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

Scheme 287 (1 Reaction)

Steps: 1 Yield: 80%



31-614-CAS-35649899

Steps: 1 Yield: 80%

1.1 Reagents: Potassium carbonate

Catalysts: Palladium

Solvents: Dimethylformamide, Xylene; 15 h, 130 °C

Experimental Protocols

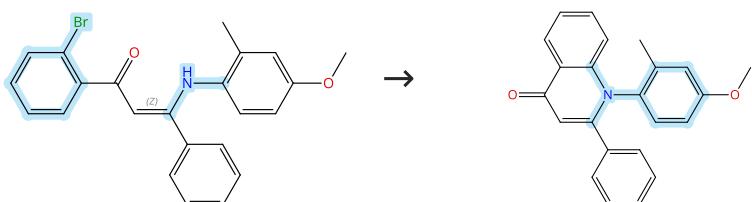
Supported Palladium-Catalyzed Tandem Synthesis of 2-(Alkylamino/amino)-3-arylquinazolin-4(3H)-ones Employing C O Source

By: Shaifali; et al

Chemistry - An Asian Journal (2023), 18(6), e202201288.

Scheme 288 (1 Reaction)

Steps: 1 Yield: 80%



31-614-CAS-40129305

Steps: 1 Yield: 80%

1.1 Reagents: Potassium carbonate, Sodium hydroxide

Catalysts: Palladium diacetate, (-)-BINAP

Solvents: Toluene, 1,4-Dioxane; 18 h, 40 °C

Experimental Protocols

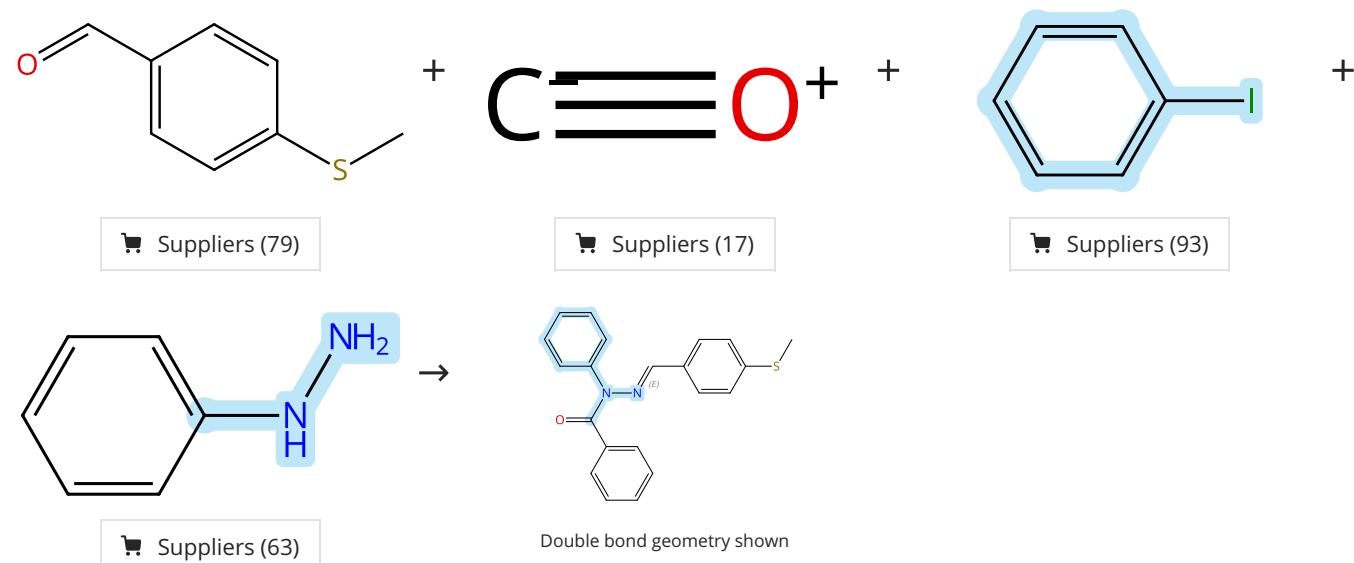
Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers

By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

Scheme 289 (1 Reaction)

Steps: 1 Yield: 80%



31-614-CAS-40733442

Steps: 1 Yield: 80%

1.1 Reagents: Sodium hydroxide  
 Catalysts: Bis(*tri-tert*-butylphosphine)palladium  
 Solvents: Anisole; 12 h, 4 MPa, 120 °C

**Palladium-Catalyzed Multicomponent Carbonylation of Halides to Acylhydrazones**

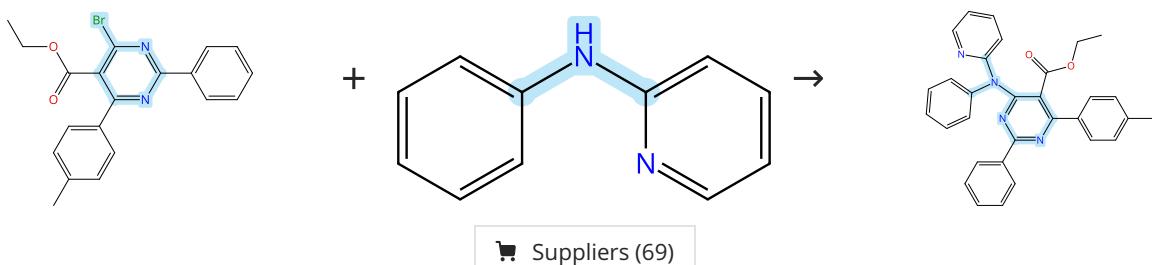
By: Liang, Qianqian; et al

Journal of Organic Chemistry (2024), 89(12), 8537-8545.

Experimental Protocols

Scheme 290 (1 Reaction)

Steps: 1 Yield: 80%



31-614-CAS-36071541

Steps: 1 Yield: 80%

1.1 Reagents: Potassium *tert*-butoxide  
 Catalysts: 1,1-Bis(diphenylphosphino)ferrocene, Tris  
 (dibenzylideneacetone)dipalladium  
 Solvents: Toluene; 2 d, 110 °C

**Metal carbonyl mediated rearrangement of 5-(2-oxoalkyl)-1,2,4-oxadiazoles: synthesis of fully substituted pyrimidines**

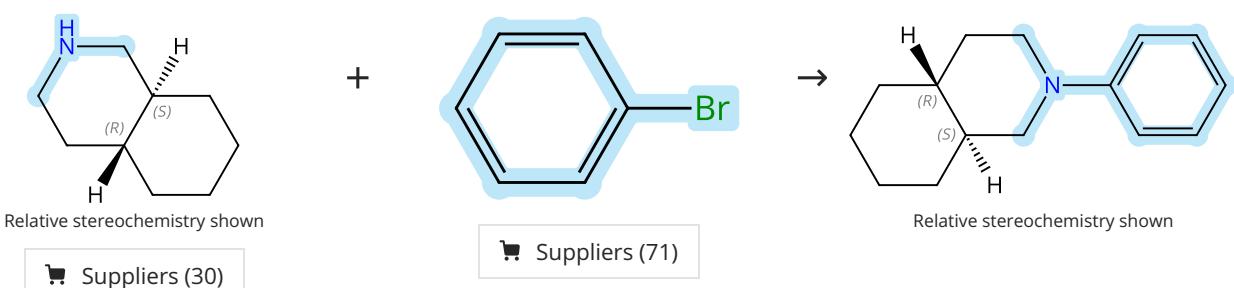
By: Galenko, Ekaterina E.; et al

Organic &amp; Biomolecular Chemistry (2023), 21(14), 2990-3001.

Experimental Protocols

Scheme 291 (1 Reaction)

Steps: 1 Yield: 80%



31-614-CAS-42934088

Steps: 1 Yield: 80%

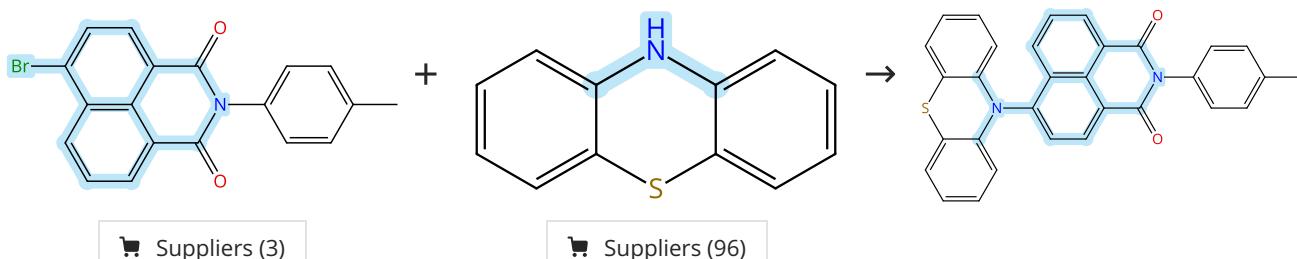
1.1 **Catalysts:** Tris(dibenzylideneacetone)dipalladium, BINAP**Solvents:** Toluene; 1 h1.2 **Reagents:** Sodium *tert*-butoxide; 15 h, 100 °C

Experimental Protocols

**Copper(I)-Catalyzed  $\alpha,\beta$ -Dehydrogenative [2 + 3] Heterocyclization of Saturated Amines with Diaziridinone via Hydrogen Atom Transfer**

By: Du, Zihang; et al

ACS Catalysis (2024), 14(23), 18107-18115.

**Scheme 292 (1 Reaction)**

31-614-CAS-37357250

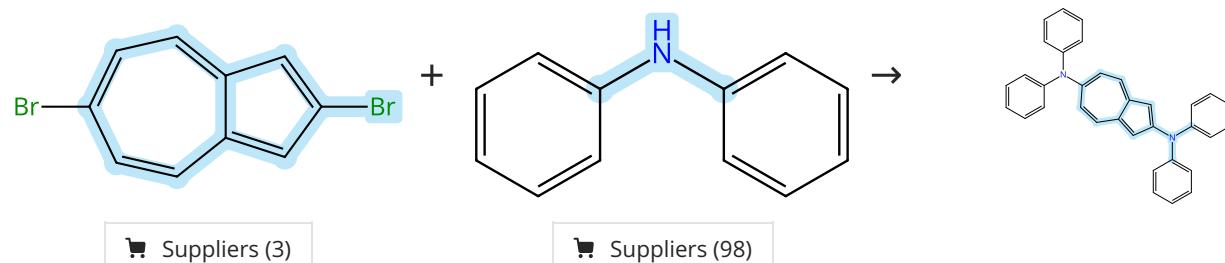
Steps: 1 Yield: 80%

1.1 **Reagents:** Sodium *tert*-butoxide**Catalysts:** Palladium diacetate, Tri-*tert*-butylphosphonium tetrafluoroborate**Solvents:** Toluene; 8 h, 120 °C

**The effect of dark states on the intersystem crossing and thermally activated delayed fluorescence of naphthalimide-phenothiazine dyads**

By: Cao, Liyuan; et al

Beilstein Journal of Organic Chemistry (2023), 19, 1028-1046.

**Scheme 293 (1 Reaction)**

31-614-CAS-37345821

Steps: 1 Yield: 80%

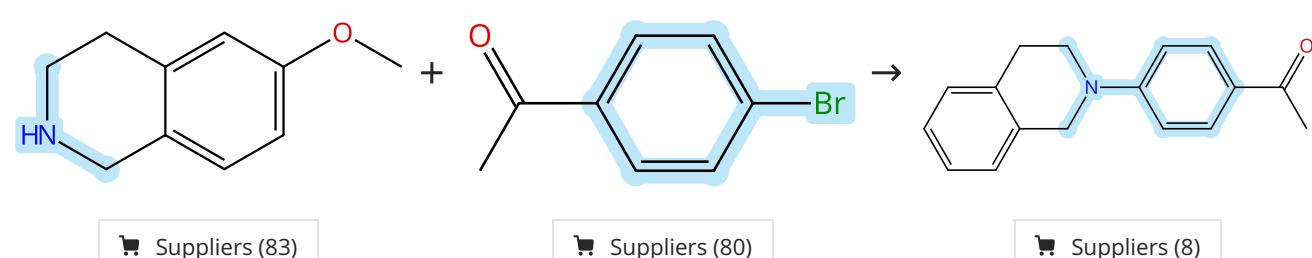
1.1 **Reagents:** Potassium *tert*-butoxide**Catalysts:** Palladium diacetate, Tri-*tert*-butylphosphonium tetrafluoroborate**Solvents:** Toluene; 2 - 3 h, reflux

**Intense absorption of azulene realized by molecular orbital inversion**

By: Tsuchiya, Takahiro; et al

Chemical Communications (Cambridge, United Kingdom) (2023), 59(71), 10604-10607.

Experimental Protocols

**Scheme 294 (1 Reaction)**

31-614-CAS-41429353

Steps: 1 Yield: 80%

- 1.1 Reagents: Potassium *tert*-butoxide  
 Catalysts: Palladium diacetate, BINAP  
 Solvents: Toluene; 24 h, 100 °C
- 1.2 Reagents: Water

Experimental Protocols

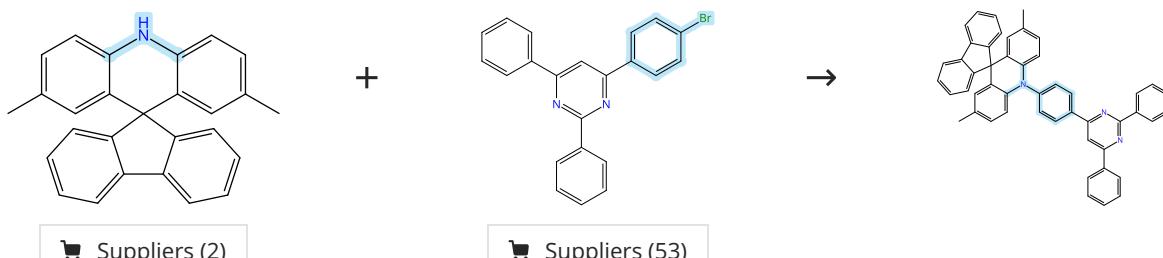
**Green approach to the synthesis of α-aminophosphonate-tetrahydroisoquinoline hybrids and their anti-cholinesterase activity**

By: Marchan-Garcia, Joaquin; et al

Bioorganic Chemistry (2024), 143, 107008.

**Scheme 295 (1 Reaction)**

Steps: 1 Yield: 80%



31-614-CAS-36851725

Steps: 1 Yield: 80%

- 1.1 Reagents: Sodium *tert*-butoxide  
 Catalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate  
 Solvents: Toluene; 12 h, 110 °C

Experimental Protocols

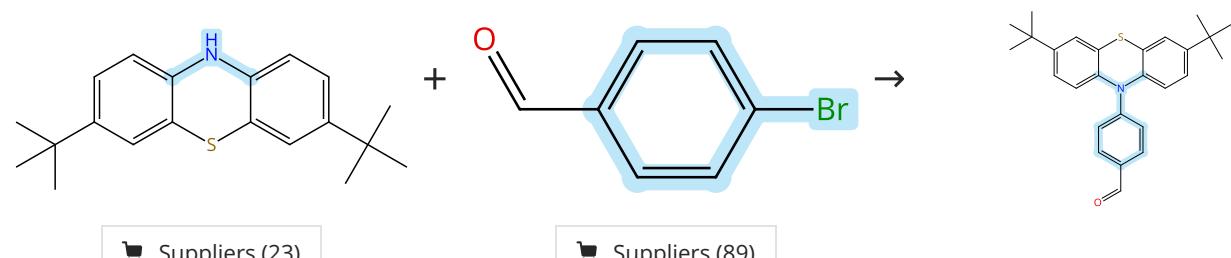
**Constructing high-efficiency aggregation-induced delayed fluorescence molecules and OLEDs applying C-H···N hydrogen bond manipulation strategy**

By: Ma, Zhiwei; et al

Dyes and Pigments (2023), 215, 111298.

**Scheme 296 (1 Reaction)**

Steps: 1 Yield: 80%



31-614-CAS-36005106

Steps: 1 Yield: 80%

- 1.1 Reagents: Potassium carbonate  
 Catalysts: Palladium diacetate, Tri-*tert*-butylphosphine  
 Solvents: Toluene; overnight, reflux

Experimental Protocols

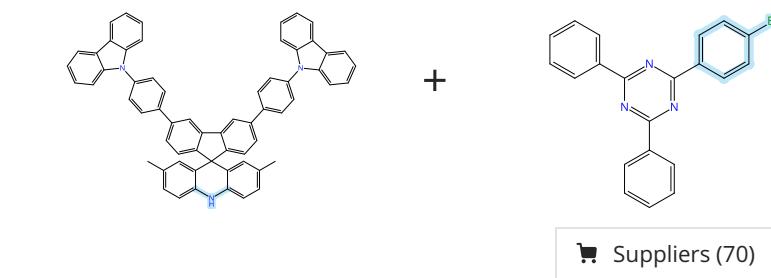
**Efficient organic deep-red to near-infrared light emitters based on boron difluoride curcuminoid derivatives**

By: Kim, Hae Un; et al

Dyes and Pigments (2023), 211, 111064.

**Scheme 297 (1 Reaction)**

Steps: 1 Yield: 80%



31-614-CAS-38988003

Steps: 1 Yield: 80%

1.1 **Reagents:** Sodium *tert*-butoxide  
**Solvents:** Toluene; 0.5 h, rt

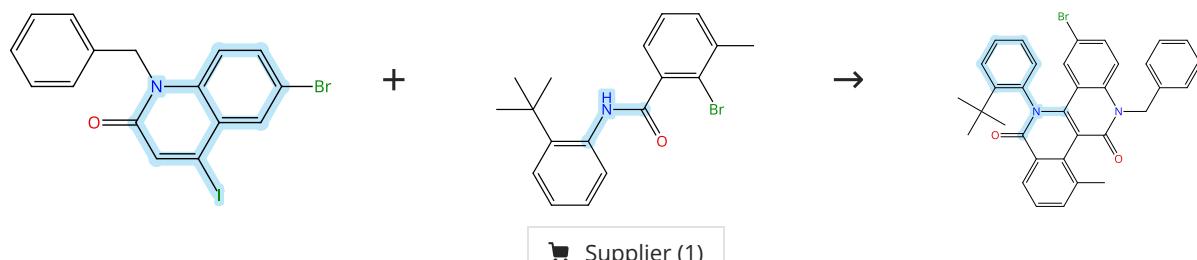
1.2 **Catalysts:** Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate; 24 h, reflux

Experimental Protocols

**Versatile Thermally Activated Delayed Fluorescence Emitters via Non-conjugated Extension Strategy Enabling O LEDs with Efficiency Over 37%**

By: Ma, Zhiwei; et al

Advanced Optical Materials (2024), 12(11), 2302386.

**Scheme 298 (1 Reaction)**

31-614-CAS-39194488

Steps: 1 Yield: 80%

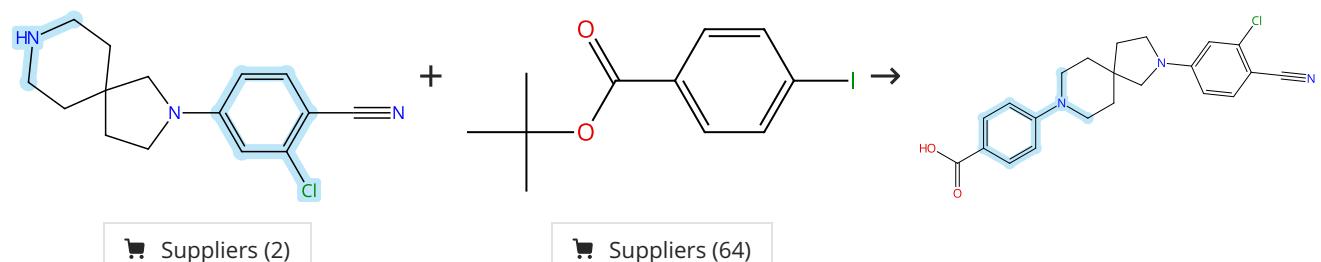
1.1 **Reagents:** Potassium carbonate  
**Catalysts:** Palladium diacetate, Ethyl (1*S*,4*R*)-bicyclo[2.2.1]hept-2-ene-2-carboxylate  
**Solvents:** Tetrahydrofuran; 5 min, rt; 48 h, 80 °C

Experimental Protocols

**Asymmetric Two-Component Alkenyl Catellani Reaction for the Construction of C-N Axial Chirality**

By: Wu, Chenggui; et al

Chinese Journal of Chemistry (2024), 42(7), 699-704.

**Scheme 299 (1 Reaction)**

31-614-CAS-37697226

Steps: 1 Yield: 80%

1.1 **Reagents:** Cesium carbonate  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, X-Phos  
**Solvents:** 1,4-Dioxane; overnight, 110 °C; cooled

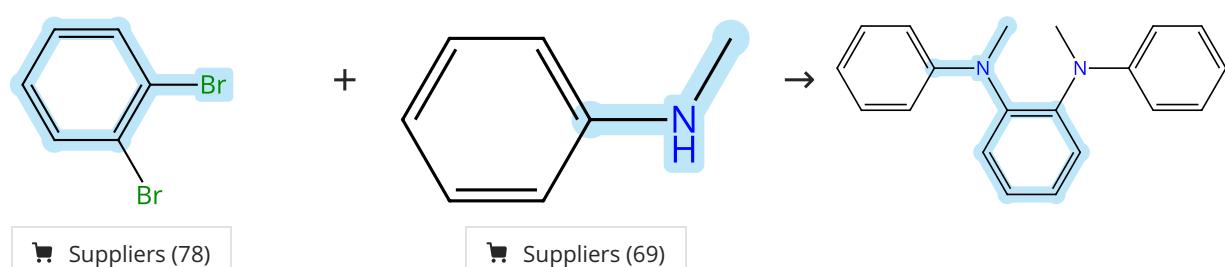
1.2 **Reagents:** Trifluoroacetic acid  
**Solvents:** Dichloromethane; 2 h, rt

Experimental Protocols

**Discovery of ARD-1676 as a Highly Potent and Orally Efficacious AR PROTAC Degrader with a Broad Activity against A R Mutants for the Treatment of AR + Human Prostate Cancer**

By: Xiang, Weiguo; et al

Journal of Medicinal Chemistry (2023), 66(18), 13280-13303.

**Scheme 300 (1 Reaction)**

31-614-CAS-40025831

Steps: 1 Yield: 80%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 12 h, reflux

Experimental Protocols

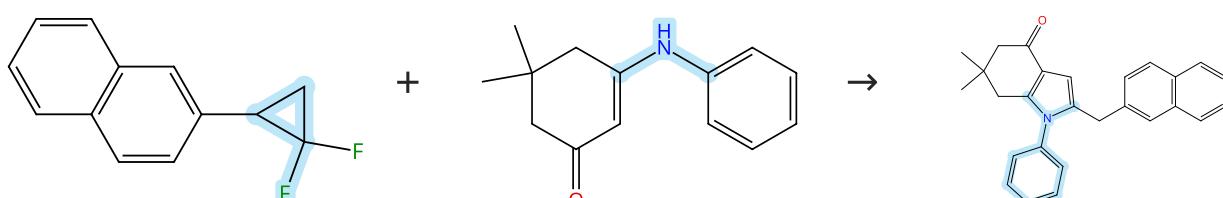
A novel group of N,N-diaryl-1,2-benzenediamine room temperature phosphors based on structural engineering

By: Wei, Juan; et al

Dyes and Pigments (2024), 225, 112104.

Scheme 301 (1 Reaction)

Steps: 1 Yield: 80%



Supplier (1)

Suppliers (37)

31-614-CAS-39213699

Steps: 1 Yield: 80%

1.1 Reagents: Monosodium phosphate

Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos

Solvents: Tetrahydrofuran; 12 h, 65 °C; 65 °C → rt

1.2 Reagents: Cesium carbonate

Solvents: Ethanol; 12 h, 80 °C

Experimental Protocols

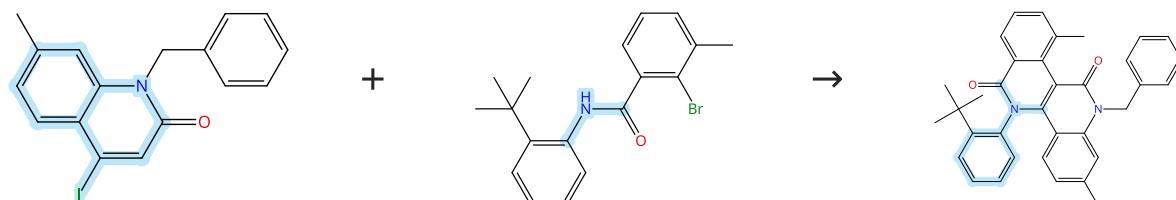
Ligand-controlled regioselective cascade C-C/C-F cleavage/annulation of gem-DFCPs: a divergent synthesis of pyrroles

By: Wu, Tian-Shu; et al

Organic Chemistry Frontiers (2024), 11(4), 1057-1061.

Scheme 302 (1 Reaction)

Steps: 1 Yield: 80%



Supplier (1)

31-614-CAS-39194489

Steps: 1 Yield: 80%

1.1 Reagents: Potassium carbonate

Catalysts: Palladium diacetate, Ethyl (1*S,4R*)-bicyclo[2.2.1]hept-2-ene-2-carboxylate

Solvents: Tetrahydrofuran; 5 min, rt; 48 h, 80 °C

Experimental Protocols

Asymmetric Two-Component Alkenyl Catellani Reaction for the Construction of C-N Axial Chirality

By: Wu, Chenggui; et al

Chinese Journal of Chemistry (2024), 42(7), 699-704.

Scheme 303 (1 Reaction)

Steps: 1 Yield: 80%



Supplier (55)

Suppliers (39)

31-614-CAS-37198196

Steps: 1 Yield: 80%

Design, synthesis and mechanism studies of dual EZH2/BRD4 inhibitors for cancer therapy

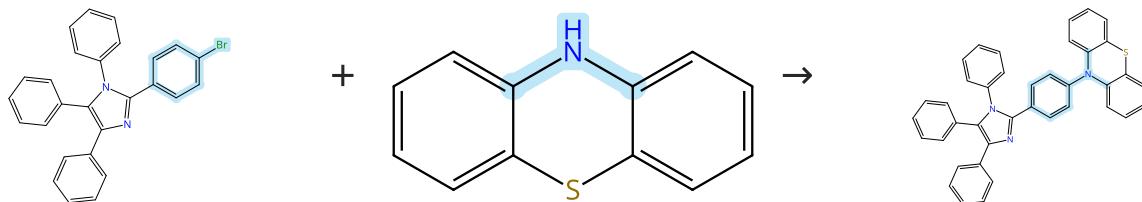
By: Chen, Xinye; et al

Bioorganic &amp; Medicinal Chemistry (2023), 91, 117386.

1.1 Reagents: Cesium carbonate  
Catalysts: Tris(dibenzylideneacetone)dipalladium, BINAP  
Solvents: 1,4-Dioxane; 12 h, 100 °C

Experimental Protocols

## Scheme 304 (1 Reaction)



Steps: 1 Yield: 80%

31-614-CAS-39191931

Steps: 1 Yield: 80%

Sulphur-induced structural rearrangement in the self-sensitization photo-oxidation behaviour of phenothiazine-imidazole molecules

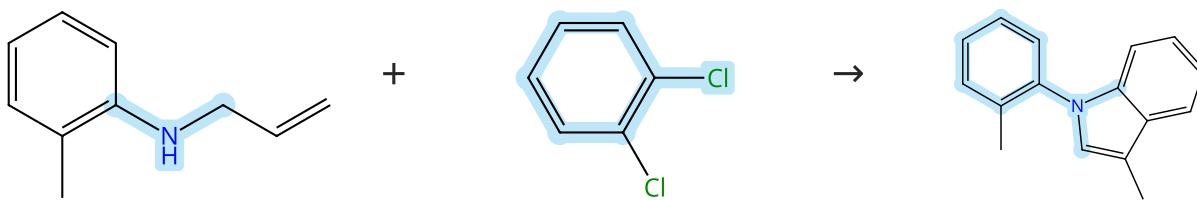
By: Chen, Jianai; et al

Chemical Communications (Cambridge, United Kingdom) (2024), 60(14), 1888-1891.

1.1 Reagents: Sodium *tert*-butoxide  
Catalysts: Palladium diacetate, Tri-*tert*-butylphosphine  
Solvents: Toluene; 14 h, 100 °C

Experimental Protocols

## Scheme 305 (1 Reaction)



Steps: 1 Yield: 80%

31-614-CAS-38969943

Steps: 1 Yield: 80%

A General Protocol toward Synthesis of 3-Methylindoles Using Acenaphthoimidazolidene-Ligated Oxazoline Palladacycle

By: Fan, Ruojian; et al

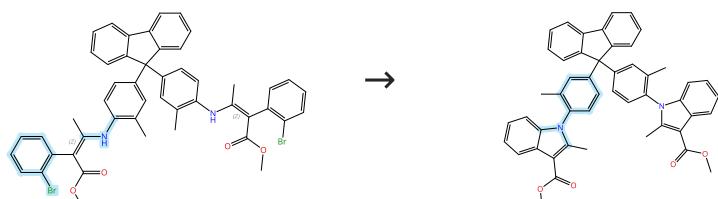
Organic Letters (2024), 26(1), 22-28.

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Palladium, [7,9-bis[2,6-bis(1-methylethyl)phenyl]-7,9-dihydro-8*H*-acenaphth[1,2-*d*]imidazol-8-ylidene]bromo[2-(4,5-dihydro-4,4-dimethyl-2-oxazolyl- $\kappa$ N<sup>3</sup>)-1-naphthalenyl- $\kappa$ C]-, (SP-4-4)

Solvents: 1,4-Dioxane; 24 h, 100 °C

Experimental Protocols

## Scheme 306 (1 Reaction)



Steps: 1 Yield: 80%

31-614-CAS-40129236

Steps: 1 Yield: 80%

Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers

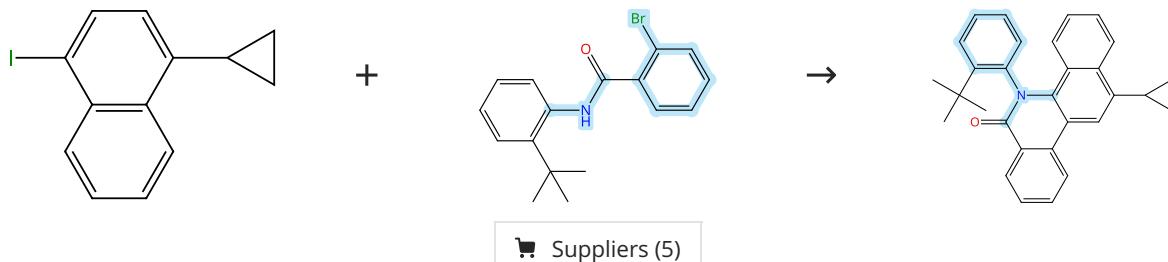
By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

- 1.1 **Catalysts:** Palladium diacetate, (-)-BINAP  
**Solvents:** Toluene; 20 min, rt
- 1.2 **Reagents:** Cesium carbonate  
**Solvents:** Toluene; 5 min, rt
- 1.3 5 min, rt; 18 h, 60 °C

Experimental Protocols

Scheme 307 (1 Reaction)



31-614-CAS-41070993

Steps: 1 Yield: 80%

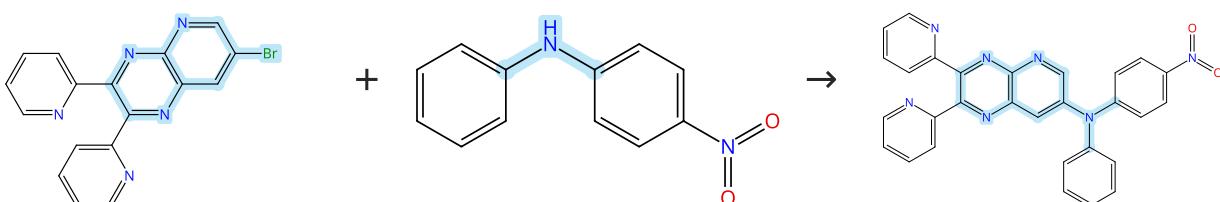
Chiral dinitrogen ligand enabled asymmetric Pd/norbornene cooperative catalysis toward the assembly of C-N axially chiral scaffolds

By: Jin, Liang; et al

Nature Communications (2024), 15(1), 4908.

Experimental Protocols

Scheme 308 (1 Reaction)



31-614-CAS-39479221

Steps: 1 Yield: 80%

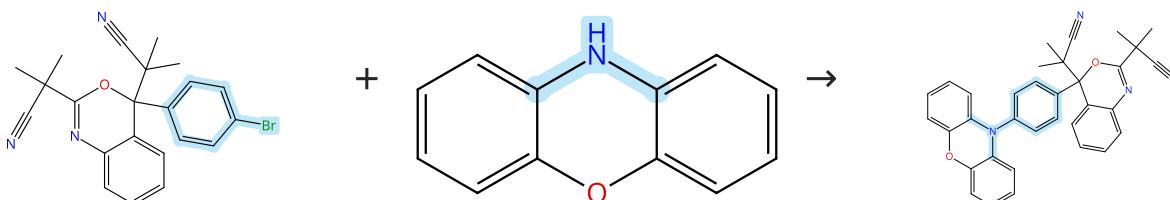
D-A Based 2,3-di(pyridin-2-yl)pyrido[2,3-b]pyrazine Amine derivatives as Blue-Orange Emitting Materials: Tuning of Opto-electrochemical and Theoretical properties

By: Mahadik, Suraj S.; et al

ChemistrySelect (2023), 8(48), e202303026.

Experimental Protocols

Scheme 309 (1 Reaction)



31-614-CAS-39507242

Steps: 1 Yield: 80%

1.1 Reagents: Cesium carbonate

Catalysts: Palladium diacetate, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; 36 h, 110 °C

Experimental Protocols

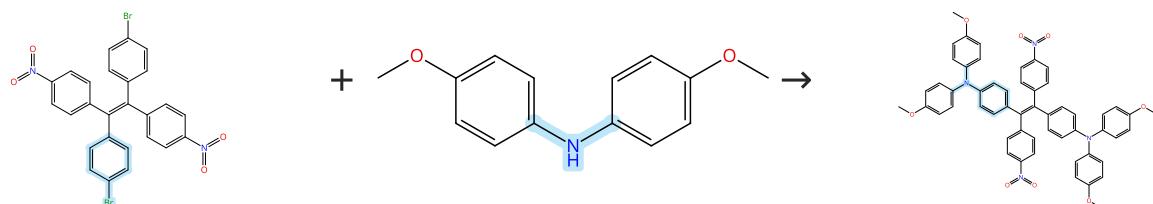
**Synthesis of 2,4-Dicyanoalkylated Benzoxazines through Radical-mediated Cascade Cyclization of Isocyanides with AIBN under Metal- and Additive-free Conditions**

By: Ni, Mengjia; et al

Journal of Organic Chemistry (2024), 89(6), 3970-3976.

**Scheme 310 (1 Reaction)**

Steps: 1 Yield: 80%



Suppliers (70)

31-614-CAS-40548381

Steps: 1 Yield: 80%

1.1 Reagents: Potassium *tert*-butoxide, Tri-*tert*-butylphosphine

Catalysts: Palladium diacetate

Solvents: Toluene; 48 h, reflux

Experimental Protocols

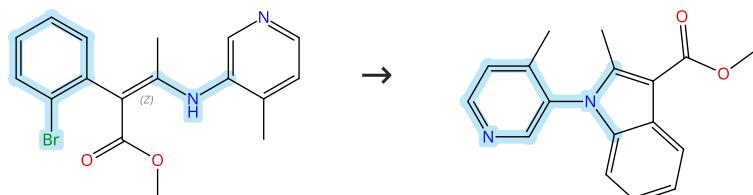
**High-performance transmissive-to-black electrochromism derived from diphenylamine-based polyimides with tetraphenylethylene as bridging units**

By: Yu, Tiechen; et al

Journal of Materials Chemistry C: Materials for Optical and Electronic Devices (2024), 12(5), 1877-1887.

**Scheme 311 (1 Reaction)**

Steps: 1 Yield: 80%



Double bond geometry shown

31-614-CAS-40129214

Steps: 1 Yield: 80%

1.1 Catalysts: Palladium diacetate, (-)-BINAP

Solvents: Toluene; 20 min, rt

1.2 Reagents: Cesium carbonate

Solvents: Toluene; 5 min, rt

1.3 5 min, rt; 18 h, 60 °C

Experimental Protocols

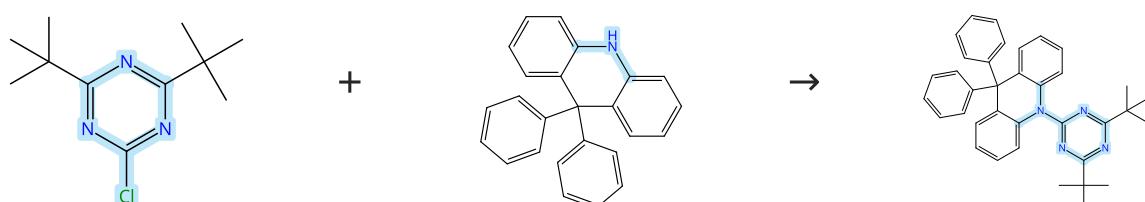
**Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers**

By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

**Scheme 312 (1 Reaction)**

Steps: 1 Yield: 80%



Suppliers (43)

Suppliers (56)

31-614-CAS-36750084

Steps: 1 Yield: 80%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Palladium diacetate, Tri-*tert*-butylphosphine

Solvents: Toluene, Hexane; 12 h, reflux

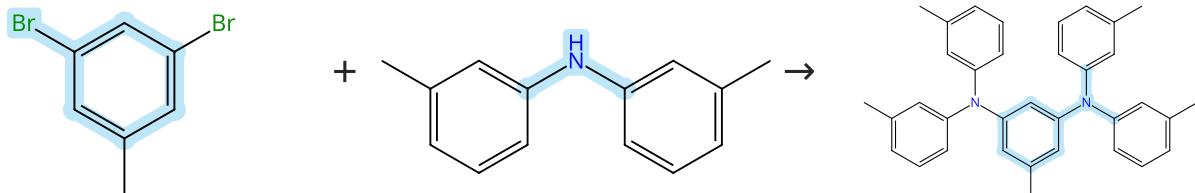
Experimental Protocols

Ambipolar hosts for blue TADF OLEDs: Assessment of the device performance and lifetime

By: Kreiza, Gediminas; et al

Organic Electronics (2023), 120, 106849.

Scheme 313 (1 Reaction)



Suppliers (81)

Suppliers (55)

Steps: 1 Yield: 80%

31-614-CAS-41860523

Steps: 1 Yield: 80%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; overnight, 110 °C

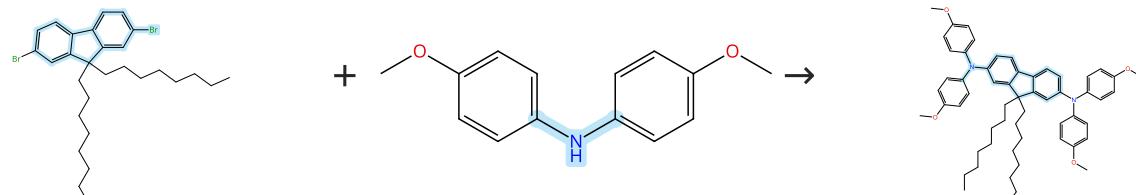
Experimental Protocols

Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

Scheme 314 (1 Reaction)



Suppliers (68)

Suppliers (70)

Steps: 1 Yield: 80%

31-614-CAS-37035193

Steps: 1 Yield: 80%

1.1 Reagents: Potassium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; 12 h, rt → 110 °C

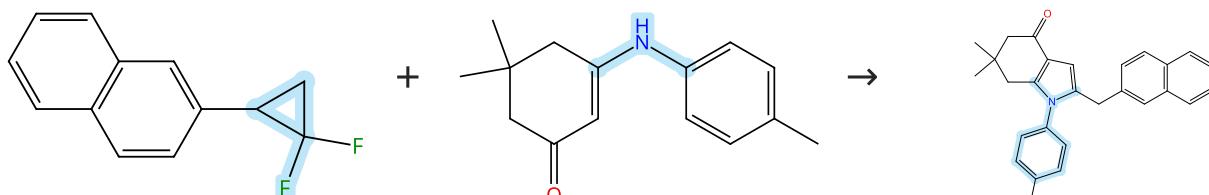
Experimental Protocols

Achieving ultra-narrow band deep blue emission by designing D-π-D molecular-structure with conjugated donors

By: Yan, Lei; et al

Tetrahedron (2023), 140, 133475.

Scheme 315 (1 Reaction)



Supplier (1)

Suppliers (31)

Steps: 1 Yield: 80%

31-614-CAS-39213705

Steps: 1 Yield: 80%

1.1 Reagents: Monosodium phosphate

Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos  
Solvents: Tetrahydrofuran; 12 h, 65 °C; 65 °C → rt

1.2 Reagents: Cesium carbonate

Solvents: Ethanol; 12 h, 80 °C

Experimental Protocols

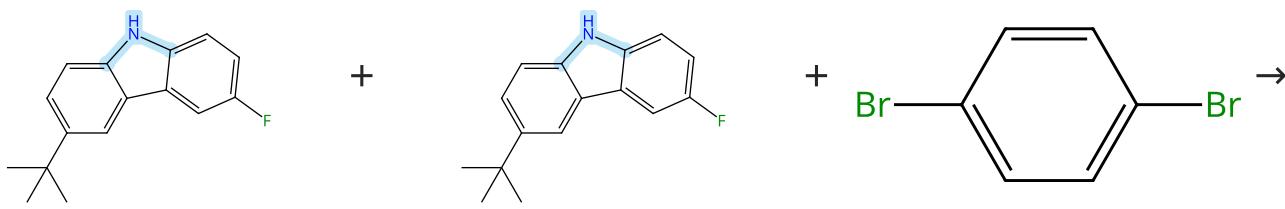
Ligand-controlled regioselective cascade C-C/C-F cleavage/annulation of gem-DFCPs: a divergent synthesis of pyrroles

By: Wu, Tian-Shu; et al

Organic Chemistry Frontiers (2024), 11(4), 1057-1061.

Scheme 316 (1 Reaction)

Steps: 1 Yield: 80%



31-614-CAS-43376624

Steps: 1 Yield: 80%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos  
Solvents: Toluene; 30 min, 150 °C

Experimental Protocols

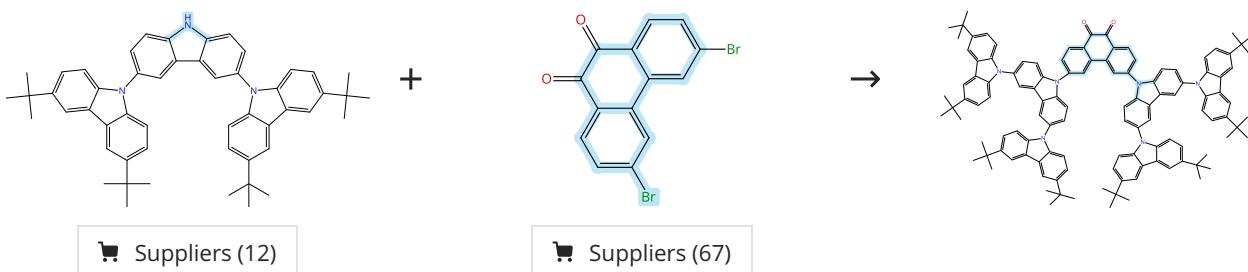
Microwave-Assisted Buchwald-Hartwig Double Amination: A Rapid and Promising Approach for the Synthesis of TADF Compounds

By: Mohd Jamel, Nor Shafiq; et al

ACS Omega (2024), 9(51), 50446-50457.

Scheme 317 (1 Reaction)

Steps: 1 Yield: 80%



31-614-CAS-39557989

Steps: 1 Yield: 80%

1.1 Reagents: Cesium carbonate

Catalysts: Palladium diacetate, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C

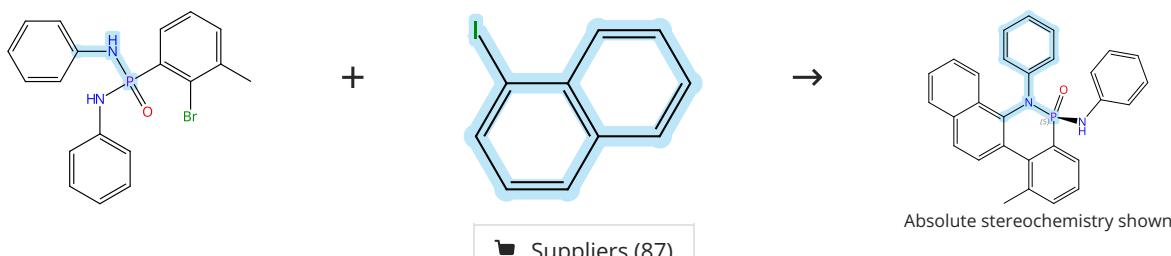
Experimental Protocols

Rational molecular design of efficient yellow-red dendrimer TADF for solution-processed OLEDs: a combined effect of substitution position and strength of the donors

By: Si, Changfeng; et al

Science China: Chemistry (2024), 67(5), 1613-1623.

Scheme 318 (1 Reaction)



31-614-CAS-42232680

Steps: 1 Yield: 80%

- 1.1 Reagents: Potassium carbonate  
Catalysts: Palladium diacetate, Tris(2-furyl)phosphine, Bicyclo[2.2.1]hept-2-ene-2-carboxylic acid, methyl ester, (1*R*,4*R*)-  
Solvents: Acetonitrile; 12 h, 100 °C

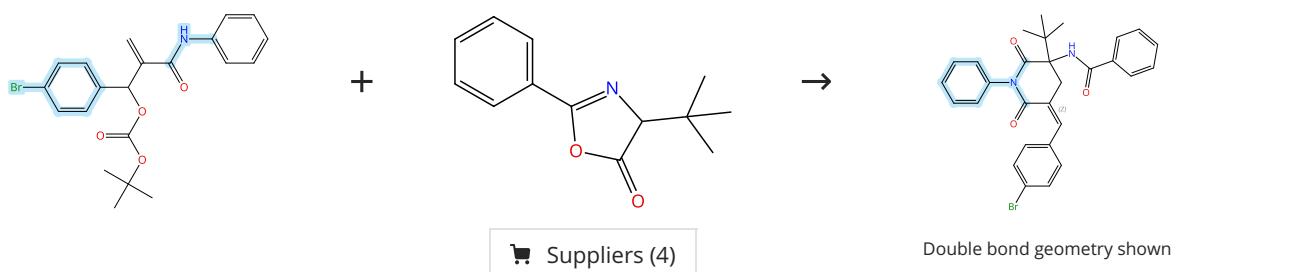
Experimental Protocols

Solvent-Controlled Enantiodivergent Construction of P(V)-Stereogenic Molecules via Palladium-Catalyzed Annulation of Prochiral N-Aryl Phosphonamides with Aromatic Iodides

By: Tian, Qingyu; et al

Angewandte Chemie, International Edition (2024), 63(41), e202409366.

Scheme 319 (1 Reaction)



31-614-CAS-35547296

Steps: 1 Yield: 80%

- 1.1 Catalysts: 1,1-Bis(diphenylphosphino)ferrocene, Tris(dibenzylideneacetone)dipalladium  
Solvents: Dichloromethane; 24 h, 40 °C

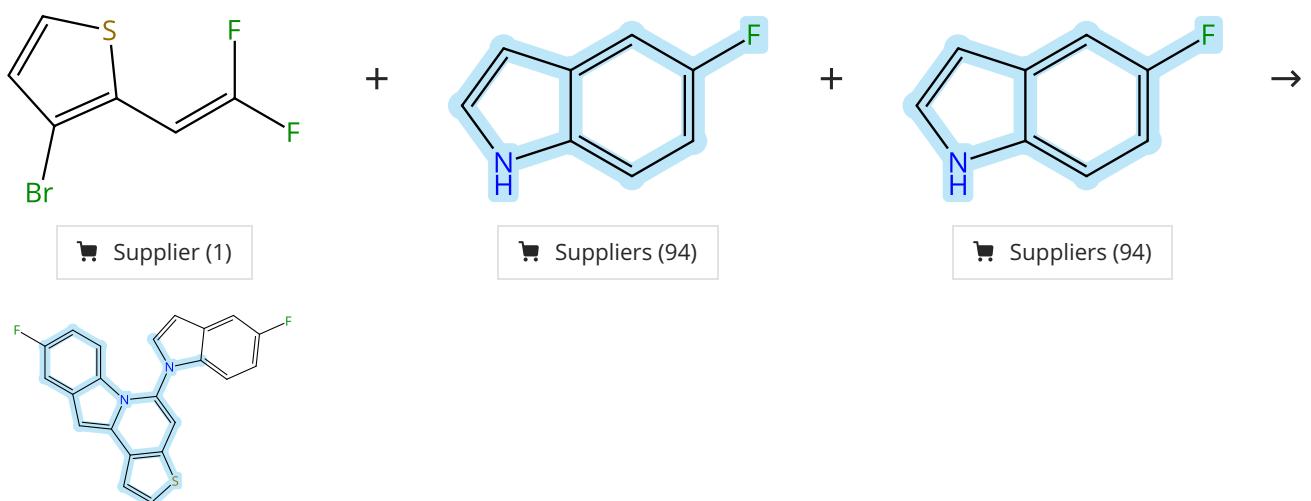
Experimental Protocols

Palladium-catalyzed [4 + 2] cycloaddition of amido-tethered allylic carbonates with oxazol-5(4H)-ones: synthesis of piperidine-2,6-dione derivatives

By: Wang, Lan; et al

Organic Chemistry Frontiers (2023), 10(3), 813-818.

Scheme 320 (1 Reaction)



31-614-CAS-37012569

Steps: 1 Yield: 80%

1.1 Reagents: Tripotassium phosphate

Solvents: Dimethylformamide; 12 h, 100 °C; 100 °C → rt

1.2 Catalysts: Triphenylphosphine, Palladium diacetate; 20 h, 140 °C; 140 °C → rt

1.3 Reagents: Water

Experimental Protocols

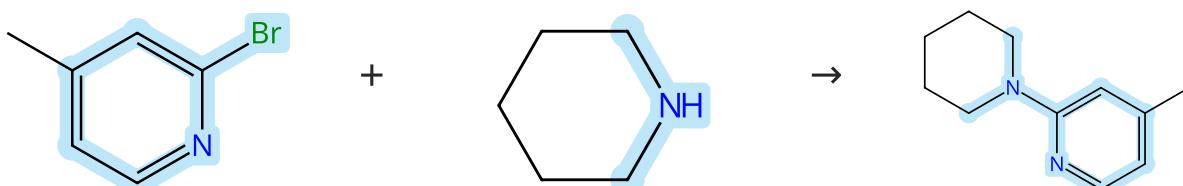
**Thienoindolizines and their Benzo-Fused Derivatives:  
Synthesis and Physical Properties**

By: Ausekle, Elina; et al

Chemistry - A European Journal (2023), 29(42), e202301038.

Scheme 321 (1 Reaction)

Steps: 1 Yield: 80%



Suppliers (98)

Suppliers (50)

Suppliers (5)

31-614-CAS-39524857

Steps: 1 Yield: 80%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Palladium diacetate, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 1 h, 120 °C; 120 °C → rt

1.2 Reagents: Water; rt

Experimental Protocols

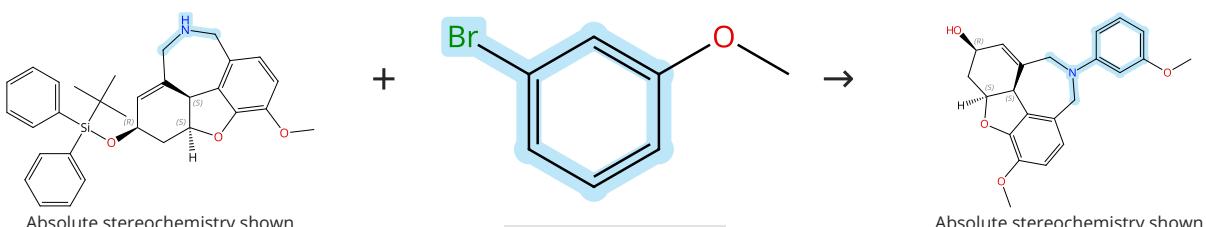
**Metal-Free Directed Site-Selective Csp<sup>3</sup>-H Borylation of Saturated Cyclic Amines**

By: Kumar Someswara Ashwathappa, Puneeth; et al

Angewandte Chemie, International Edition (2023), 62(39), e202309295.

Scheme 322 (1 Reaction)

Steps: 1 Yield: 80%



Absolute stereochemistry shown

Suppliers (80)

Absolute stereochemistry shown

31-614-CAS-36363943

Steps: 1 Yield: 80%

1.1 Catalysts: Palladium diacetate, BINAP

Solvents: Toluene; 4 h, rt

1.2 Reagents: Potassium *tert*-butoxide

Solvents: Toluene; 24 h, 110 °C

1.3 Reagents: Water

1.4 Reagents: Hydrochloric acid

Solvents: Methanol, Water; rt; overnight, 35 °C

1.5 Reagents: Ammonium hydroxide

Solvents: Water; pH 10

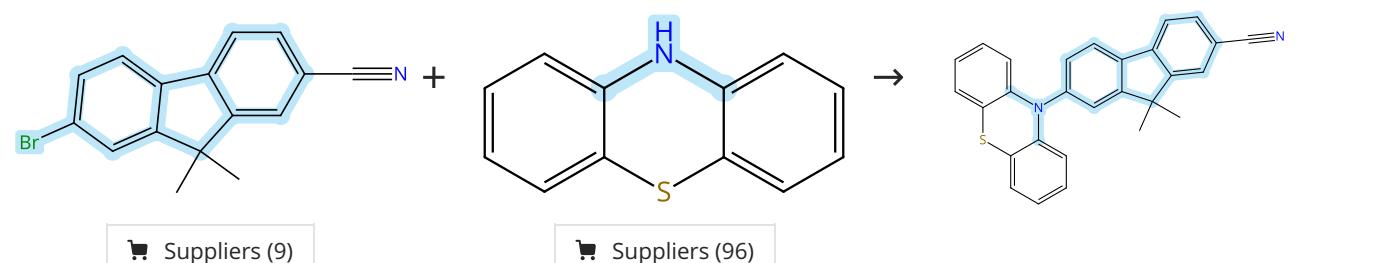
Experimental Protocols

**Palladium-Catalyzed Synthesis, Acetylcholinesterase Inhibition, and Neuroprotective Activities of N-Aryl Galantamine Analogues**

By: Zhang, Yang; et al

Journal of Natural Products (2023), 86(4), 939-946.

Scheme 323 (1 Reaction)



31-614-CAS-42505240

Steps: 1 Yield: 80%

1.1 **Catalysts:** Palladium diacetate, Tri-*tert*-butylphosphine  
**Solvents:** Toluene; 30 min, rt1.2 **Reagents:** Cesium carbonate  
**Solvents:** Toluene; 18 h, rt → 110 °C; 110 °C → rt1.3 **Reagents:** Water

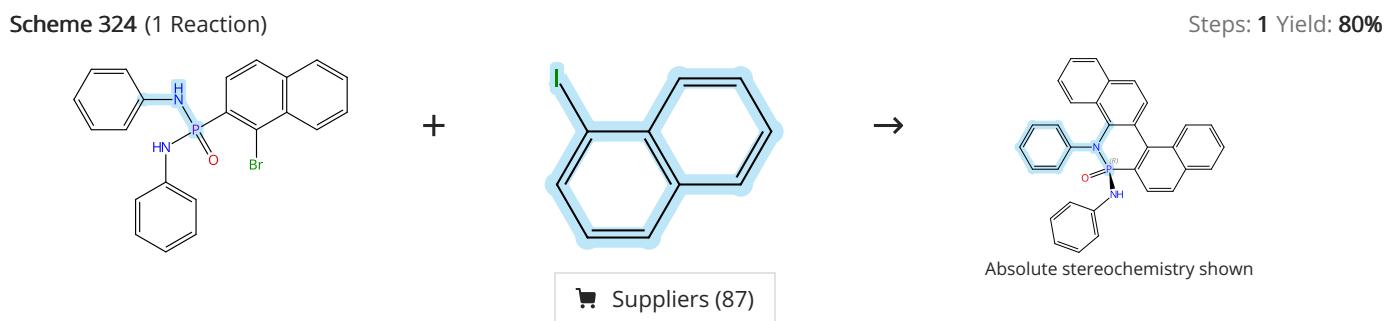
Experimental Protocols

**Fluorene vs. Spirobifluorene: Effect of the π-System on TADF Properties**

By: Silies, Tim; et al

ChemPhotoChem (2024), 8(12), e202400235.

Scheme 324 (1 Reaction)



31-614-CAS-42232618

Steps: 1 Yield: 80%

1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, Tris(2-furyl)phosphine, Bicyclo[2.2.1]hept-2-ene-2-carboxylic acid, methyl ester, (1*R*,4*R*)-  
**Solvents:** Toluene; 12 h, 100 °C

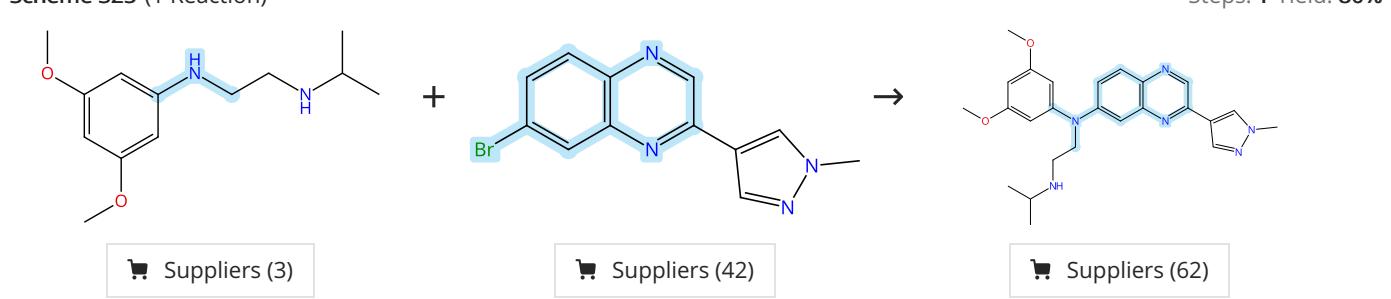
Experimental Protocols

**Solvent-Controlled Enantiodivergent Construction of P(V)-Stereogenic Molecules via Palladium-Catalyzed Annulation of Prochiral N-Aryl Phosphonamides with Aromatic Iodides**

By: Tian, Qingyu; et al

Angewandte Chemie, International Edition (2024), 63(41), e202409366.

Scheme 325 (1 Reaction)



31-614-CAS-42623346

Steps: 1 Yield: 80%

1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 1,1'-(9,9-Dimethyl-9H-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]  
**Solvents:** Toluene; 8 h, 100 °C

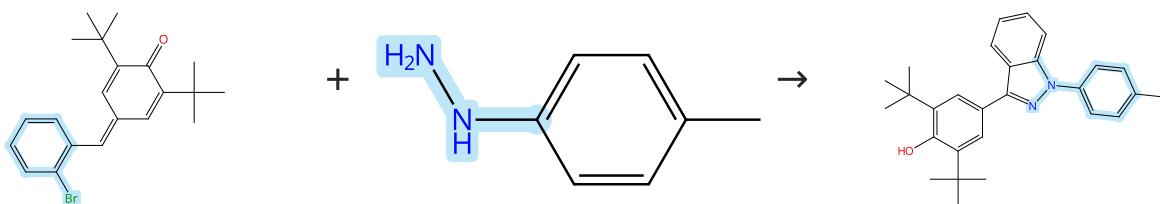
Experimental Protocols

**Development of an improved and facile synthesis route of the FGFR inhibitor erdafitinib**

By: Wang, Shuang; et al

Synthetic Communications (2024), 54(24), 2120-2129.

Scheme 326 (1 Reaction)



Supplier (1)

Suppliers (55)

31-614-CAS-38947665

Steps: 1 Yield: 80%

1.1 Reagents: Potassium *tert*-butoxide

Catalysts: Palladium diacetate, 1,3-Bis(diphenylphosphino)propane

Solvents: Toluene; 15 h, 110 °C

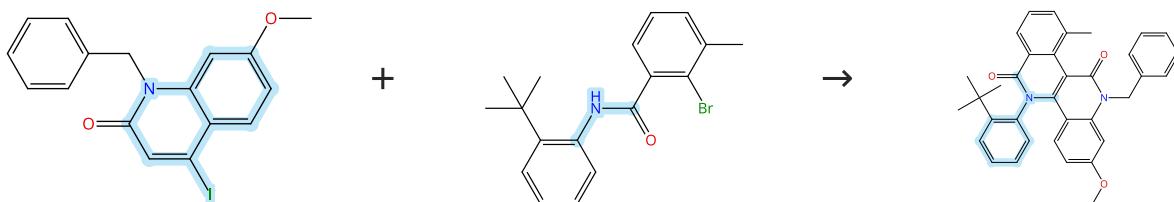
Experimental Protocols

Synthesis and Photophysical Properties of 3-Substituted-1*H*-Indazoles: A Pd-Catalyzed Double C-N Bond Formation Strategy via 1,6-Conjugate Addition

By: Kayastha, Nasib; et al

Journal of Organic Chemistry (2024), 89(1), 402-413.

Scheme 327 (1 Reaction)



Supplier (1)

31-614-CAS-39194493

Steps: 1 Yield: 80%

1.1 Reagents: Potassium carbonate

Catalysts: Palladium diacetate, Ethyl (1*S,4R*)-bicyclo[2.2.1]hept-2-ene-2-carboxylate

Solvents: Tetrahydrofuran; 5 min, rt; 48 h, 80 °C

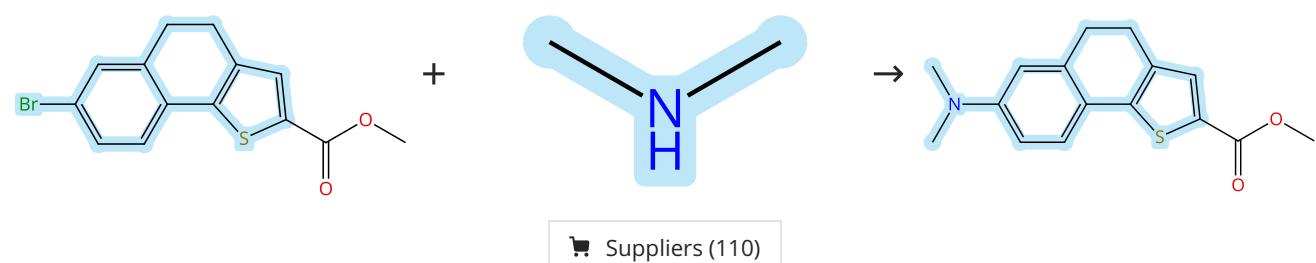
Experimental Protocols

Asymmetric Two-Component Alkenyl Catellani Reaction for the Construction of C-N Axial Chirality

By: Wu, Chenggui; et al

Chinese Journal of Chemistry (2024), 42(7), 699-704.

Scheme 328 (1 Reaction)



Suppliers (110)

31-614-CAS-39498671

Steps: 1 Yield: 80%

1.1 Reagents: Cesium carbonate

Catalysts: Palladium diacetate, BINAP

Solvents: 1,4-Dioxane; overnight, reflux

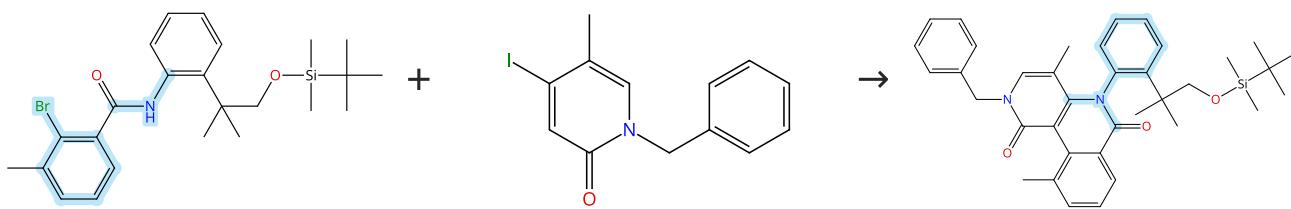
Experimental Protocols

Structure-based design and optimization of a new class of small molecule inhibitors targeting the P-stalk binding pocket of ricin

By: Rudolph, Michael J.; et al

Bioorganic &amp; Medicinal Chemistry (2024), 100, 117614.

Scheme 329 (1 Reaction)



31-614-CAS-39194519

Steps: 1 Yield: 80%

1.1 Reagents: Potassium carbonate

Catalysts: Palladium diacetate, Tris(2-furyl)phosphine, Ethyl (1*S*,4*R*)-bicyclo[2.2.1]hept-2-ene-2-carboxylate

Solvents: Tetrahydrofuran; 5 min, rt; 48 h, 90 °C

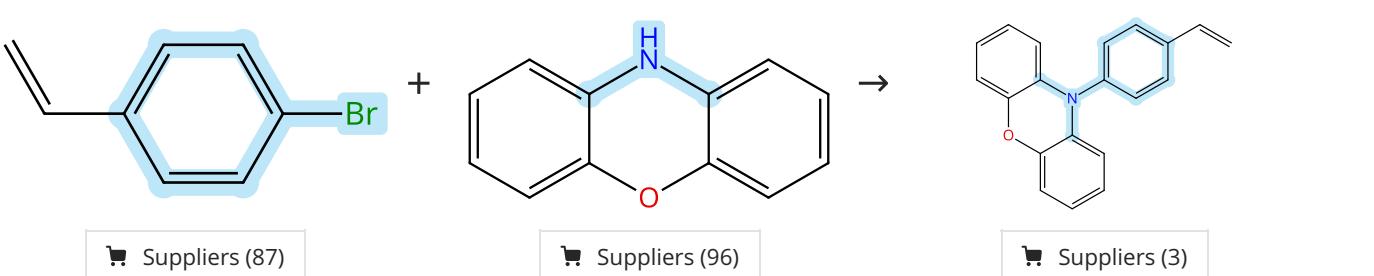
**Asymmetric Two-Component Alkenyl Catellani Reaction for the Construction of C-N Axial Chirality**

By: Wu, Chenggui; et al

Chinese Journal of Chemistry (2024), 42(7), 699-704.

Experimental Protocols

Scheme 330 (1 Reaction)



31-614-CAS-36262996

Steps: 1 Yield: 80%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tri-*tert*-butylphosphine, Tris(dibenzylideneacetone)dipalladium

Solvents: Toluene; 10 min, rt; 4 h, 90 °C

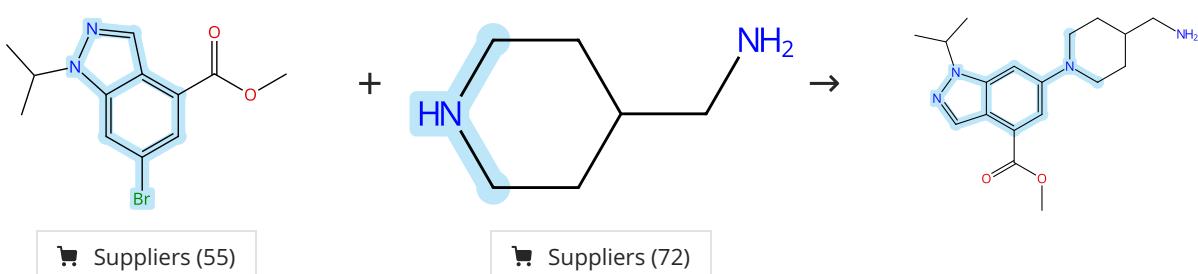
**Through-Space Charge-Transfer Thermally Activated Delayed Fluorescence Alternating Donor-Acceptor Copolymers for Nondoped Solution-Processable OLEDs**

By: Belousov, George K.; et al

Macromolecules (Washington, DC, United States) (2023), 56(7), 2686-2699.

Experimental Protocols

Scheme 331 (1 Reaction)



31-614-CAS-37198202

Steps: 1 Yield: 80%

**Design, synthesis and mechanism studies of dual EZH2/BRD4 inhibitors for cancer therapy**

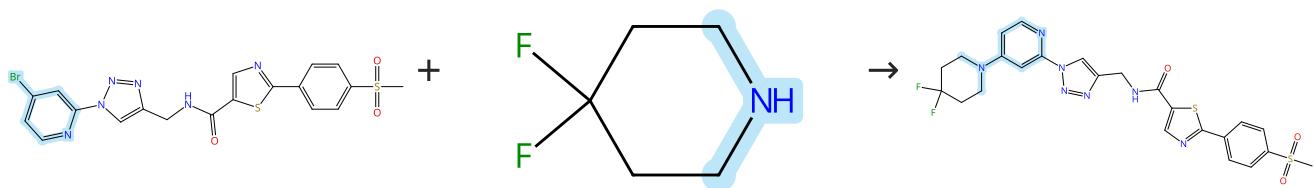
By: Chen, Xinye; et al

Bioorganic &amp; Medicinal Chemistry (2023), 91, 117386.

Experimental Protocols

## Scheme 332 (1 Reaction)

Steps: 1 Yield: 80%



31-614-CAS-42560319

Steps: 1 Yield: 80%

1.1 Reagents: Tripotassium phosphate

Catalysts: Palladium diacetate, 2'-(Dicyclohexylphosphino)-N,N-dimethyl[1,1'-biphenyl]-2-amine

Solvents: Toluene, Water; overnight, 85 °C

Experimental Protocols

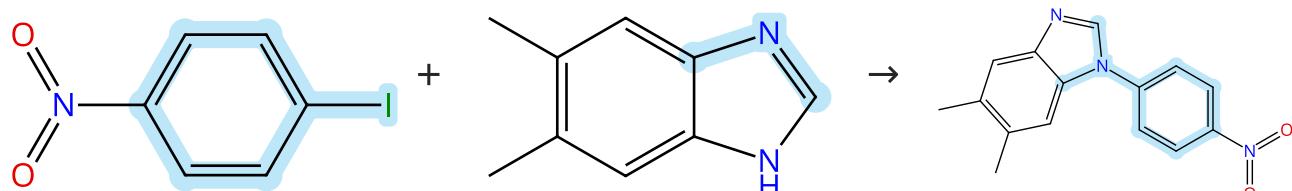
Discovery of a Potent, Orally Active, and Long-Lasting P2X7 Receptor Antagonist as a Preclinical Candidate for Delaying the Progression of Chronic Kidney Disease

By: Zhang, Ruijia; et al

Journal of Medicinal Chemistry (2024), 67(19), 17472-17496.

## Scheme 333 (1 Reaction)

Steps: 1 Yield: 80%



31-614-CAS-41203515

Steps: 1 Yield: 80%

1.1 Reagents: Cesium carbonate

Catalysts: Palladium

Solvents: Dimethylformamide; 5 h, 100 °C

Experimental Protocols

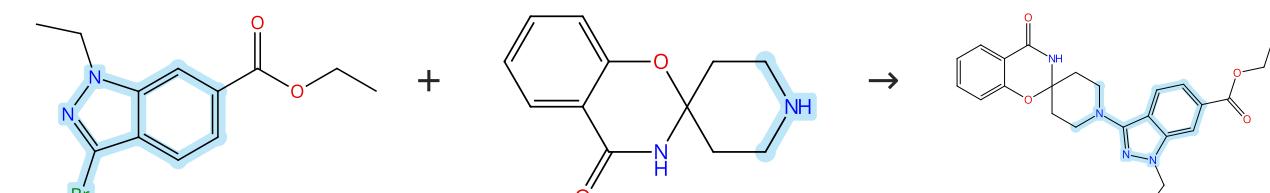
Palladium nanoparticle immobilized on coconut coir extract coated boron carbon nitride: A green and sustainable nanocatalyst for cross-coupling reactions and HER studies

By: Chandrashekharan, Bhuwaneshwari; et al

Diamond and Related Materials (2024), 147, 111261.

## Scheme 334 (1 Reaction)

Steps: 1 Yield: 80%



31-614-CAS-35422540

Steps: 1 Yield: 80%

1.1 Reagents: Sodium trimethylsilanolate  
Solvents: Tetrahydrofuran; 5 min, rt1.2 Catalysts: Palladium, bromo[dicyclohexyl[3-(1,1-dimethylethoxy)-6-methoxy-2',6'-bis(1-methylethyl)[1,1'-biphenyl]-2-yl- $\kappa C^1$ ]phosphine- $\kappa P$ [4-[[2-(trimethylsilyl)ethoxy]carbonyl]phenyl]-, (*SP*-4-2)-  
Solvents: Tetrahydrofuran; 3 h, 90 °C

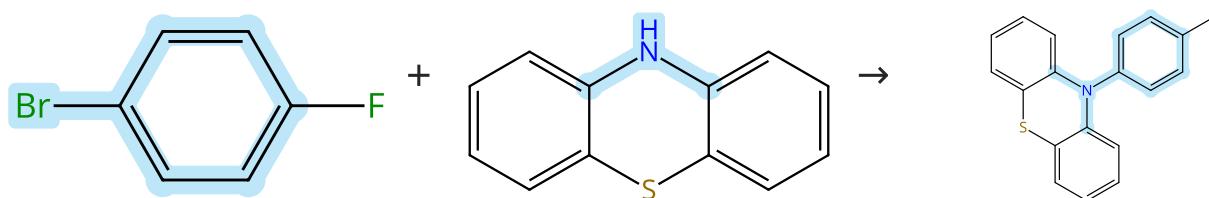
Experimental Protocols

Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteroaryl Halides with Aliphatic Amines

By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

Scheme 335 (1 Reaction)



Suppliers (88)

Suppliers (96)

Suppliers (2)

31-614-CAS-35203623

Steps: 1 Yield: 80%

1.1 Reagents: Potassium *tert*-butoxide, Tri-*tert*-butylphosphine  
Catalysts: Palladium diacetate  
Solvents: Toluene; 24 h, 110 °C

Experimental Protocols

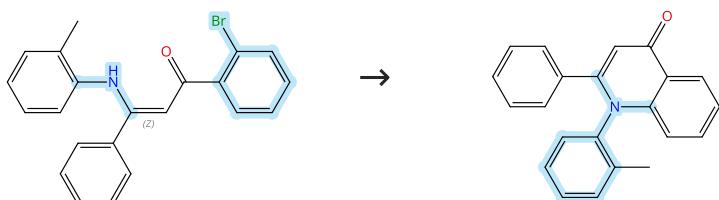
The Effect of Molecular Conformations and Simulated "Self-Doping" in Phenothiazine Derivatives on Room-Temperature Phosphorescence

By: Gao, Mingxue; et al

Angewandte Chemie, International Edition (2023), 62(5), e202214908.

Scheme 336 (1 Reaction)

Steps: 1 Yield: 80%



Double bond geometry shown

31-614-CAS-40129279

Steps: 1 Yield: 80%

1.1 Reagents: Potassium carbonate, Sodium hydroxide  
Catalysts: Palladium diacetate, (-)-BINAP  
Solvents: Toluene, 1,4-Dioxane; 18 h, 40 °C

Experimental Protocols

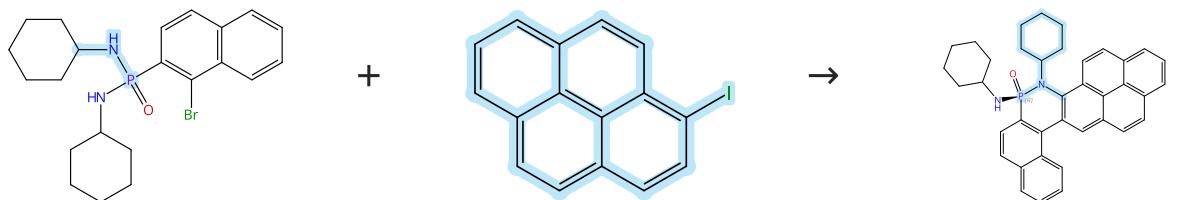
Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers

By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

Scheme 337 (1 Reaction)

Steps: 1 Yield: 80%



Suppliers (42)

Absolute stereochemistry shown

31-614-CAS-42232655

Steps: 1 Yield: 80%

1.1 Reagents: Potassium carbonate  
Catalysts: Palladium diacetate, Tris(2-furyl)phosphine, Bicyclo [2.2.1]hept-2-ene-2-carboxylic acid, methyl ester, (1*R*,4*R*)-  
Solvents: Toluene; 12 h, 105 °C

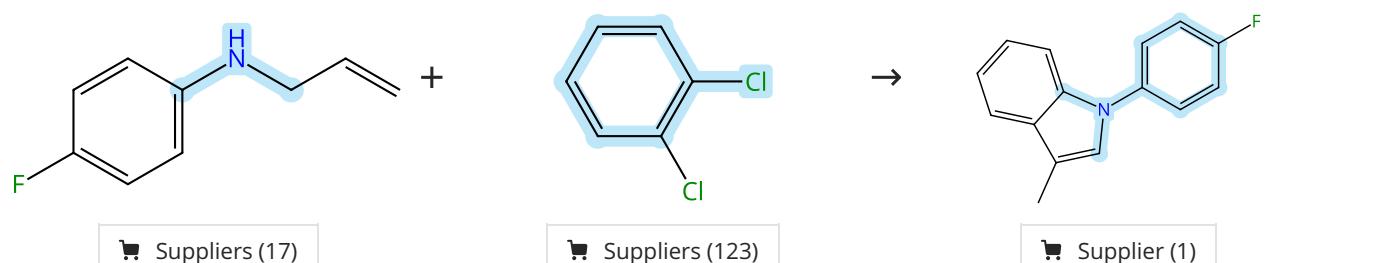
Experimental Protocols

Solvent-Controlled Enantiodivergent Construction of P(V)-Stereogenic Molecules via Palladium-Catalyzed Annulation of Prochiral N-Aryl Phosphonamides with Aromatic Iodides

By: Tian, Qingyu; et al

Angewandte Chemie, International Edition (2024), 63(41), e202409366.

## Scheme 338 (1 Reaction)



31-614-CAS-38969966

Steps: 1 Yield: 80%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Palladium, [7,9-bis[2,6-bis(1-methylethyl)phenyl]-7,9-dihydro-8*H*-acenaphth[1,2-*d*]imidazol-8-ylidene]bromo[2-(4,5-dihydro-4,4-dimethyl-2-oxazolyl-*kN*<sup>3</sup>)-1-naphthalenyl-*kC*]-, (*SP*-4-4)-

Solvents: 1,4-Dioxane; 24 h, 100 °C

## A General Protocol toward Synthesis of 3-Methylindoles Using Acenaphthoimidazolidene-Ligated Oxazoline Palladacycle

By: Fan, Ruqian; et al

Organic Letters (2024), 26(1), 22-28.

## Experimental Protocols

## Scheme 339 (1 Reaction)



31-614-CAS-41860530

Steps: 1 Yield: 80%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; overnight, 110 °C

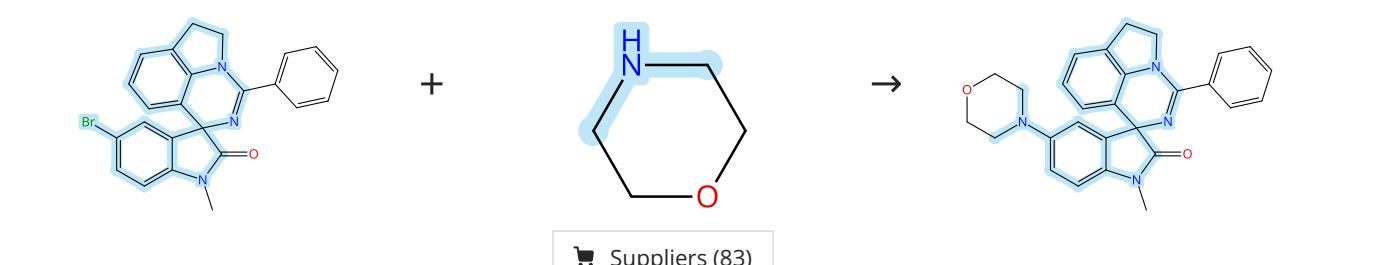
## Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

## Experimental Protocols

## Scheme 340 (1 Reaction)



31-614-CAS-38966807

Steps: 1 Yield: 80%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2'-(Dicyclohexylphosphino)-*N,N*-dimethyl[1,1'-biphenyl]-2-amine

Solvents: 1,4-Dioxane; 12 h, 100 °C; 100 °C → rt

## Synthesis of 1,7-Fused Indolines Tethered with Spiroindolinone Based on C-H Activation Strategy with Air as Sustainable Oxidant

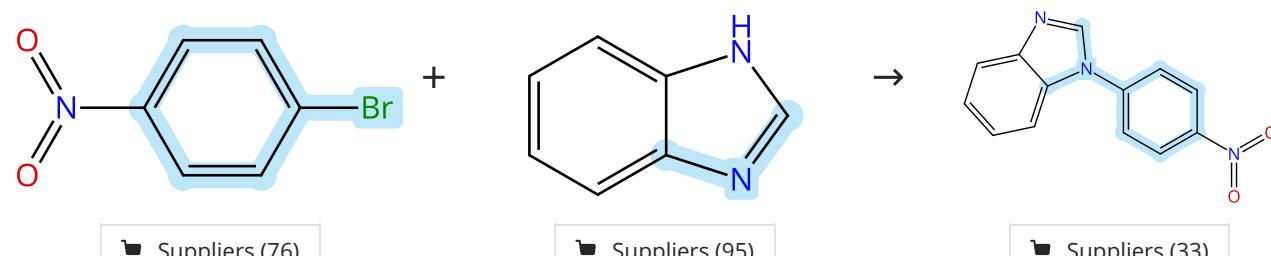
By: He, Xing; et al

Journal of Organic Chemistry (2024), 89(3), 1880-1897.

## 1.2 Reagents: Water

## Experimental Protocols

Scheme 341 (1 Reaction)



31-614-CAS-41203510

Steps: 1 Yield: 80%

1.1 Reagents: Cesium carbonate

Catalysts: Palladium

Solvents: Dimethylformamide; 4.5 h, 100 °C

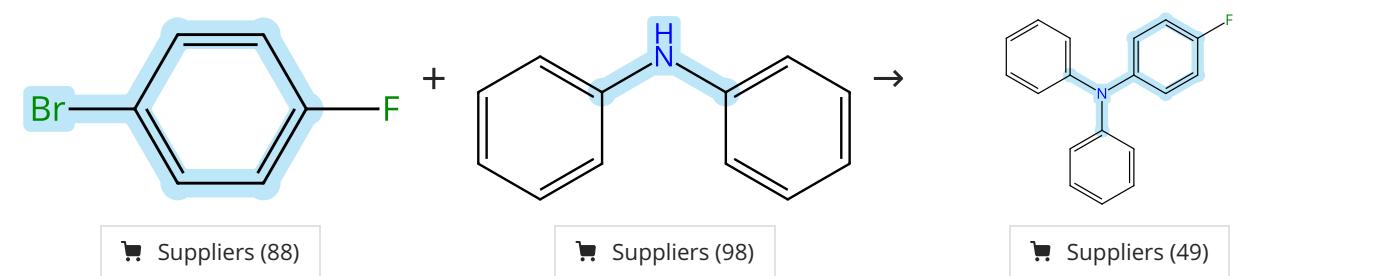
Experimental Protocols

Palladium nanoparticle immobilized on coconut coir extract coated boron carbon nitride: A green and sustainable nanocatalyst for cross-coupling reactions and HER studies

By: Chandrashekharan, Bhuvaneshwari; et al

Diamond and Related Materials (2024), 147, 111261.

Scheme 342 (1 Reaction)



31-614-CAS-37754074

Steps: 1 Yield: 80%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos

Solvents: 1,4-Dioxane; 48 h, 110 °C

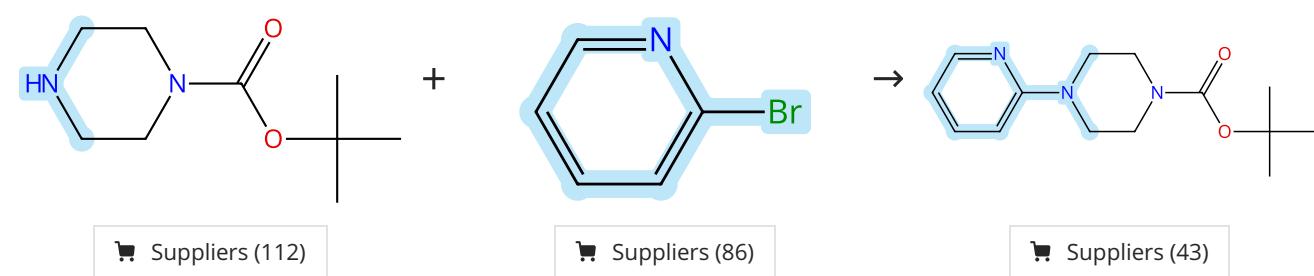
Experimental Protocols

Thermodynamic Phase Transition of Three-Dimensional Solid Additives Guiding Molecular Assembly for Efficient Organic Solar Cells

By: Yu, Runnan; et al

Angewandte Chemie, International Edition (2023), 62(40), e202308367.

Scheme 343 (1 Reaction)



31-614-CAS-36748987

Steps: 1 Yield: 80%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine

Solvents: 1,4-Dioxane; overnight, heated

Experimental Protocols

Structure-Activity relationships of replacements for the triazolopyridazine of Anti-Cryptosporidium lead SLU-2633

By: Oboh, Edmund; et al

Bioorganic &amp; Medicinal Chemistry (2023), 86, 117295.

Scheme 344 (1 Reaction)

Steps: 1 Yield: 80%



Suppliers (95)

Suppliers (50)

31-614-CAS-35760360

Steps: 1 Yield: 80%

Direct Stannylation and Silylation of Arylmet hanols by Palladium Catalysis

By: Yue, Guanglu; et al

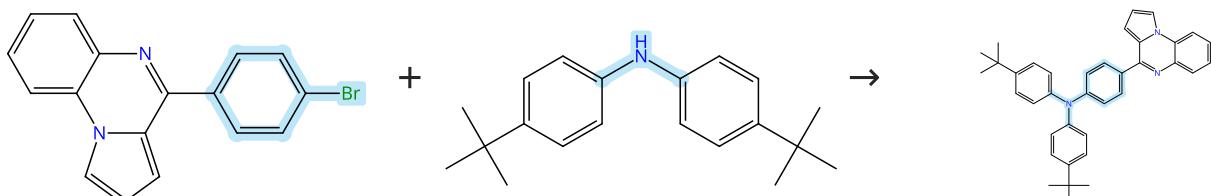
Journal of Organic Chemistry (2023), 88(5), 2735-2741.

- 1.1 Reagents: Cesium carbonate  
Catalysts: Palladium diacetate, BINAP  
Solvents: Toluene; 16 h, 100 °C
- 1.2 Reagents: Lithium aluminum hydride  
Solvents: Tetrahydrofuran; 0 °C; 30 min, 0 °C; 0 °C → rt;  
overnight, rt
- 1.3 Reagents: Water; rt

Experimental Protocols

Scheme 345 (1 Reaction)

Steps: 1 Yield: 80%



Supplier (1)

Suppliers (55)

31-614-CAS-39668007

Steps: 1 Yield: 80%

Controlling the molecular orbital overlap of pyrrolo[1,2-a]quinoxaline-based D-π-A materials via change structural rigidity of donor unit

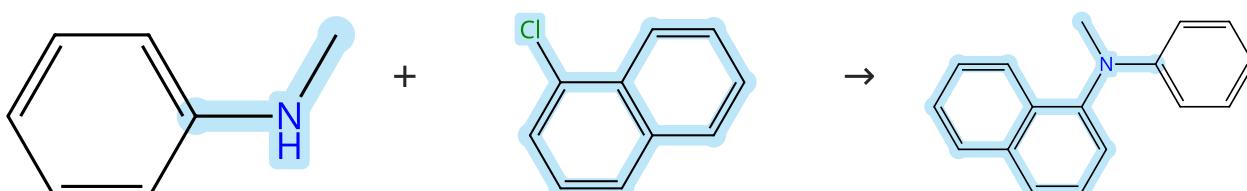
By: Wang, Wenquan; et al

Journal of Molecular Structure (2024), 1306, 137829.

Experimental Protocols

Scheme 346 (1 Reaction)

Steps: 1 Yield: 80%



Suppliers (69)

Suppliers (85)

Suppliers (13)

31-614-CAS-42014403

Steps: 1 Yield: 80%

1.1 **Catalysts:** Palladium diacetate, 1*H*-Indole, 3-(dicyclohexylphosphino)-1-methyl-2-(2,3,4-trimethoxyphenyl)-  
**Solvents:** Dichloromethane; rt

1.2 **Reagents:** Sodium *tert*-butoxide  
**Solvents:** Toluene, Hexane; rt; 24 h, 110 °C; 110 °C → rt

1.3 **Solvents:** Water; rt

Experimental Protocols

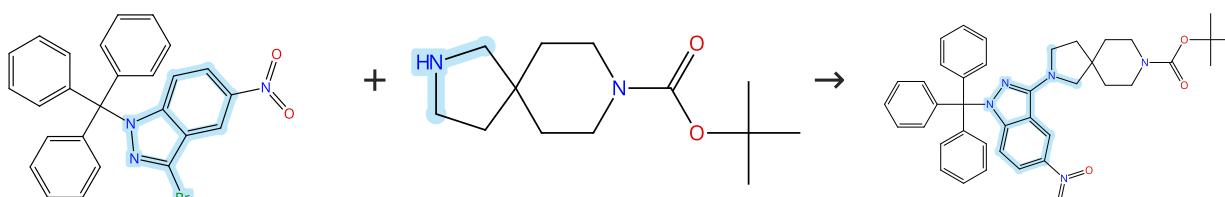
**Application of indole-based monophosphine in ppm level Pd-catalyzed C-N bond formation**

By: Li, Cheuk Long; et al

Journal of Organometallic Chemistry (2024), 1011, 123124.

**Scheme 347 (1 Reaction)**

Steps: 1 Yield: 80%



Suppliers (42)

Suppliers (81)

31-614-CAS-35422630

Steps: 1 Yield: 80%

1.1 **Reagents:** Sodium trimethylsilanolate  
**Catalysts:** Palladium, bromo[dicyclohexyl[3-(1,1-dimethylethoxy)-6-methoxy-2',6'-bis(1-methylethyl)[1,1'-biphenyl]-2-yl- $\kappa C^1$ ]phosphine- $\kappa P$ ][4-[[2-(trimethylsilyl)ethoxy]carbonyl]phenyl]-, (*SP*-4-2)-  
**Solvents:** Tetrahydrofuran; 3 h, 90 °C

Experimental Protocols

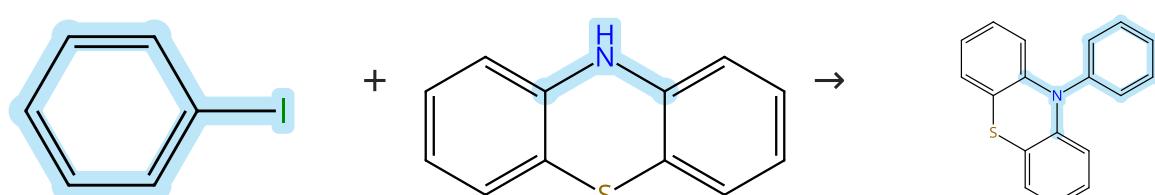
**Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteroaryl Halides with Aliphatic Amines**

By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

**Scheme 348 (1 Reaction)**

Steps: 1 Yield: 80%



Suppliers (93)

Suppliers (96)

Suppliers (61)

31-614-CAS-35007598

Steps: 1 Yield: 80%

1.1 **Reagents:** Potassium *tert*-butoxide  
**Catalysts:** *tert*-Butylphosphine, Palladium diacetate  
**Solvents:** Toluene; 24 h, 110 °C

Experimental Protocols

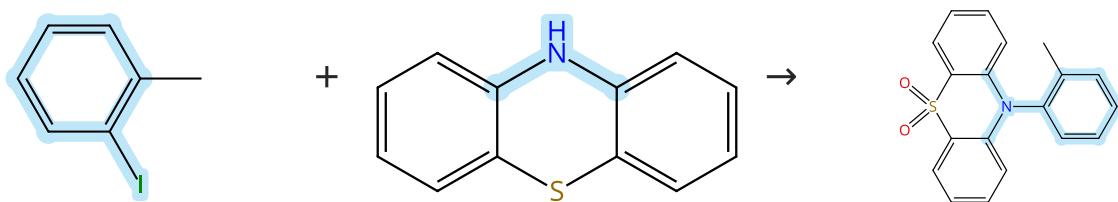
**Rational design of a phenothiazine-based donor-acceptor covalent organic framework for enhanced photocatalytic oxidative coupling of amines and cyclization of thioamides**

By: Liu, Yang; et al

Journal of Materials Chemistry A: Materials for Energy and Sustainability (2023), 11(3), 1208-1215.

**Scheme 349 (1 Reaction)**

Steps: 1 Yield: 80%



Suppliers (75)

Suppliers (96)

Supplier (1)

31-614-CAS-40645170

Steps: 1 Yield: 80%

1.1 Reagents: Potassium *tert*-butoxideCatalysts: Palladium diacetate, Tri-*tert*-butylphosphine  
Solvents: Toluene; 12 h, 110 °C

1.2 Reagents: Hydrogen peroxide

Solvents: Acetic acid, Dichloromethane; 24 h, 60 °C

Experimental Protocols

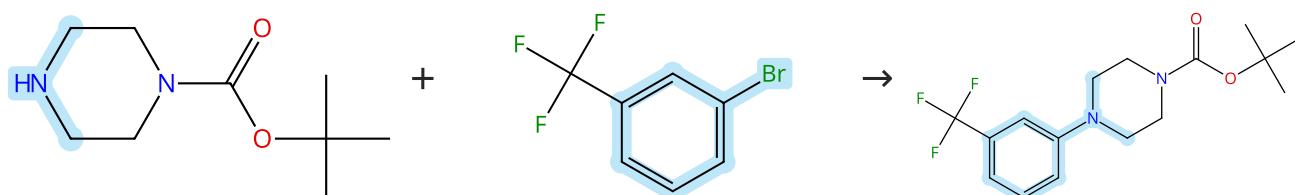
Modulating the crystal packing to achieve efficient ultralong organic phosphorescence by simple methylation engineering

By: Mao, Huiting; et al

Journal of Materials Chemistry C: Materials for Optical and Electronic Devices (2024), 12(23), 8545-8550.

## Scheme 350 (1 Reaction)

Steps: 1 Yield: 80%



Suppliers (112)

Suppliers (85)

Suppliers (31)

31-614-CAS-40320046

Steps: 1 Yield: 80%

1.1 Reagents: Sodium butoxide, BINAP

Catalysts: Palladium diacetate  
Solvents: Toluene; 16 h, 110 °C

Experimental Protocols

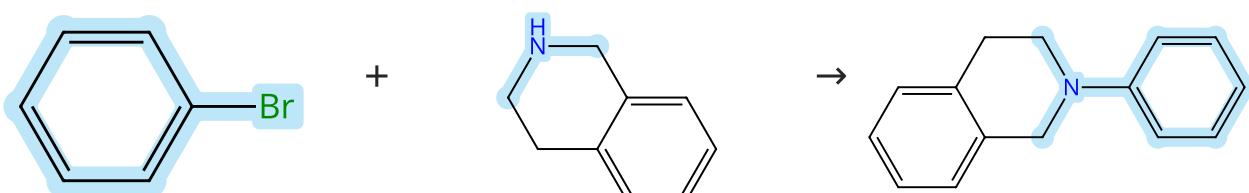
Antibiotic class with potent *in vivo* activity targeting lipopolysaccharide synthesis in Gram-negative bacteria

By: Huseby, Douglas L.; et al

Proceedings of the National Academy of Sciences of the United States of America (2024), 121(15), e2317274121.

## Scheme 351 (1 Reaction)

Steps: 1 Yield: 79%



Suppliers (71)

Suppliers (92)

Suppliers (51)

31-614-CAS-40985578

Steps: 1 Yield: 79%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Palladium diacetate, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine; 12 h, 115 °C

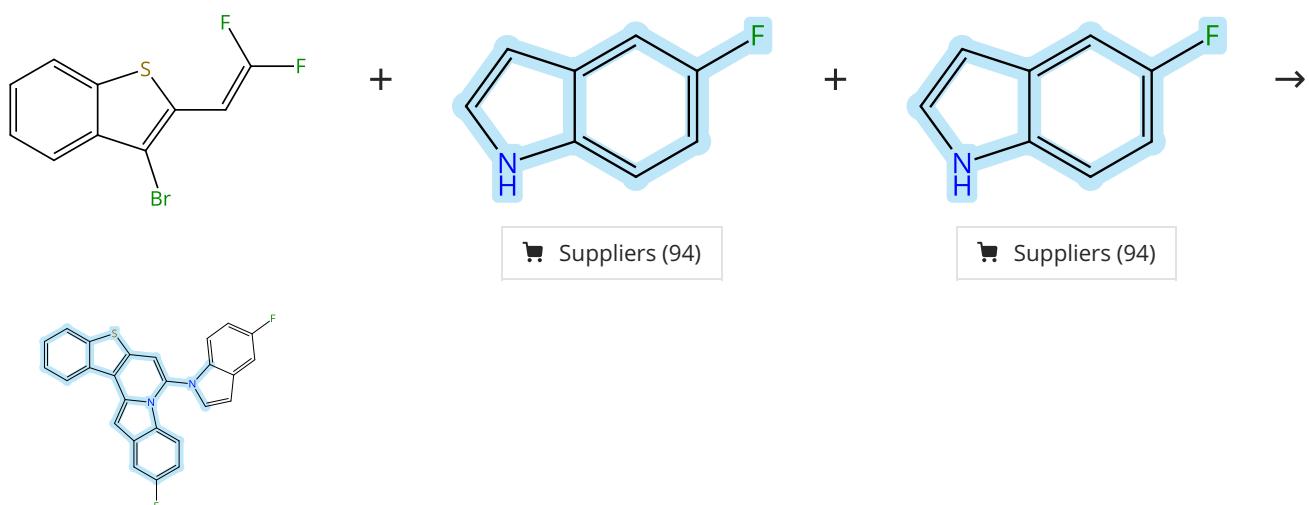
Experimental Protocols

Mechanistic Investigation, Wavelength-Dependent Reactivity, and Expanded Reactivity of N-Aryl Azacycle Photomediated Ring Contractions

By: Kim, Sojung F.; et al

Journal of the American Chemical Society (2024), 146(8), 5580-5596.

Scheme 352 (1 Reaction)



31-614-CAS-37012587

Steps: 1 Yield: 79%

1.1 Reagents: Tripotassium phosphate

Solvents: Dimethylformamide; 12 h, 100 °C; 100 °C → rt

1.2 Catalysts: Triphenylphosphine, Palladium diacetate; 20 h, 140 °C; 140 °C → rt

1.3 Reagents: Water

Experimental Protocols

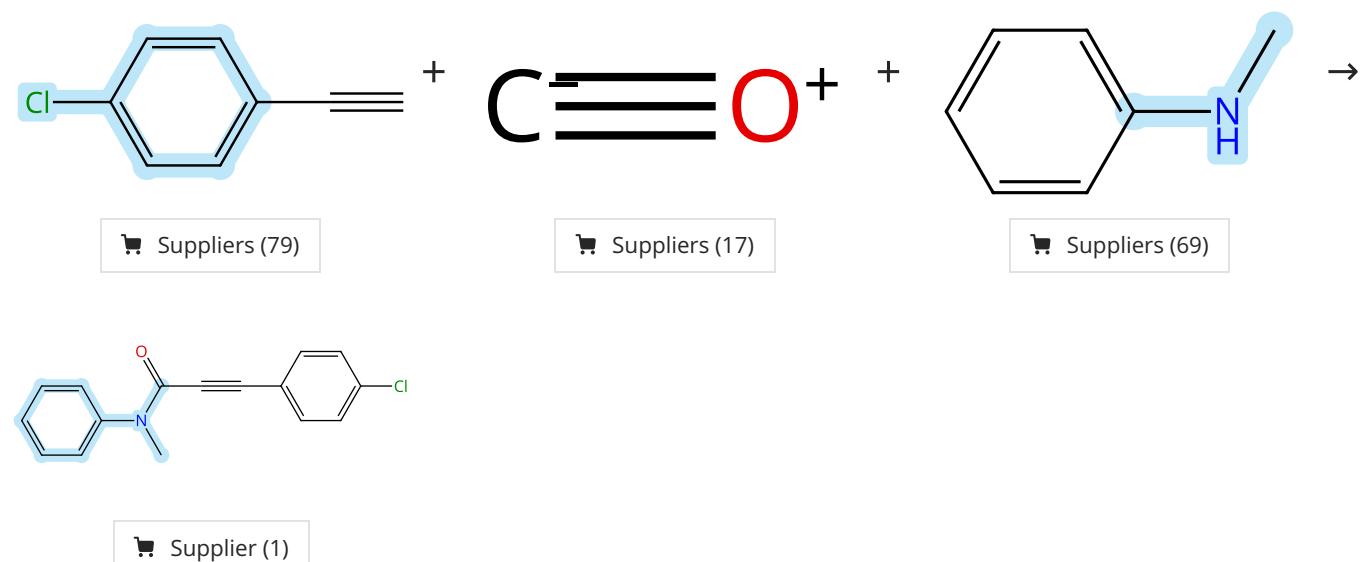
**Thienoindolizines and their Benzo-Fused Derivatives:  
Synthesis and Physical Properties**

By: Ausekle, Elina; et al

Chemistry - A European Journal (2023), 29(42), e202301038.

Scheme 353 (1 Reaction)

Steps: 1 Yield: 79%



31-614-CAS-40820985

Steps: 1 Yield: 79%

1.1 Reagents: Oxygen

Catalysts: Tetrabutylammonium iodide, Palladium

Solvents: Ethyl acetate; 16 h, 25 bar, 120 °C

Experimental Protocols

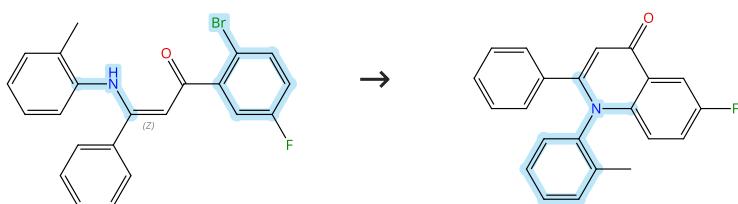
**A General and Highly Versatile Heterogeneous Pd-Catalyzed  
Oxidative Aminocarbonylation of Alkynes with Aromatic and  
Aliphatic Amines**

By: Arango-Daza, Juan Camilo; et al

ChemSusChem (2024), 17(13), e202400331.

**Scheme 354 (1 Reaction)**

Steps: 1 Yield: 79%



Double bond geometry shown

31-614-CAS-40129273

Steps: 1 Yield: 79%

**1.1 Reagents:** Potassium carbonate, Sodium hydroxide  
**Catalysts:** Palladium diacetate, (-)-BINAP  
**Solvents:** Toluene, 1,4-Dioxane; 18 h, 40 °C

**Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers**

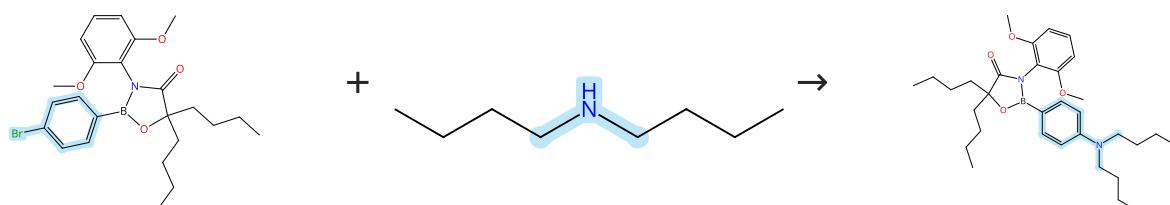
By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

Experimental Protocols

**Scheme 355 (1 Reaction)**

Steps: 1 Yield: 79%



Suppliers (71)

31-614-CAS-41196799

Steps: 1 Yield: 79%

**1.1 Reagents:** Potassium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 1'-[Bis(1,1-dimethylethyl)phosphino]-1,2,3,4,5-pentaphenylferrocene  
**Solvents:** Toluene; 24 h, 50 °C

**Sterically Congested Protecting Group for a Boronyl Group in Iterative Aminations**

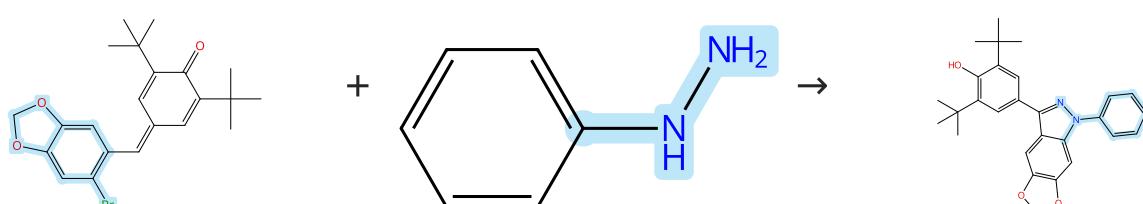
By: Nojiri, Takaki; et al

Chemistry - A European Journal (2024), 30(18), e202303953.

Experimental Protocols

**Scheme 356 (1 Reaction)**

Steps: 1 Yield: 79%



Suppliers (63)

31-614-CAS-38947678

Steps: 1 Yield: 79%

**1.1 Reagents:** Potassium *tert*-butoxide  
**Catalysts:** Palladium diacetate, 1,3-Bis(diphenylphosphino)propane  
**Solvents:** Toluene; 15 h, 110 °C

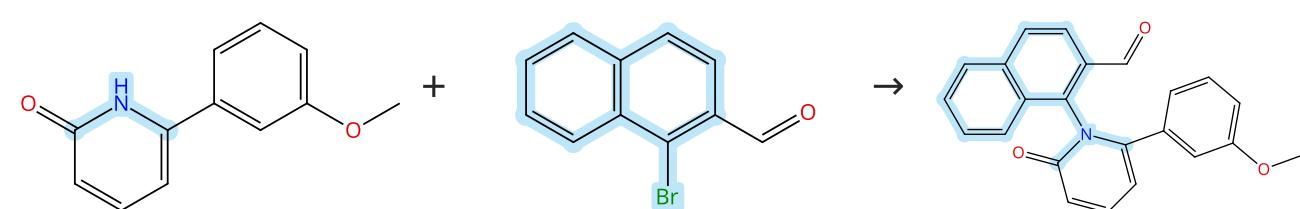
**Synthesis and Photophysical Properties of 3-Substituted-1*H*-Indazoles: A Pd-Catalyzed Double C-N Bond Formation Strategy via 1,6-Conjugate Addition**

By: Kayastha, Nasib; et al

Journal of Organic Chemistry (2024), 89(1), 402-413.

Experimental Protocols

Scheme 357 (1 Reaction)



Suppliers (28)

Suppliers (71)

31-614-CAS-41335333

Steps: 1 Yield: 79%

- 1.1 **Catalysts:** Palladium, tris[ $\mu$ -[(1,2- $\eta$ ;4,5- $\eta$ )-(1E,4E)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2R)-1-[(1R)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene  
**Solvents:** Toluene; 30 min, rt
- 1.2 **Reagents:** Cesium carbonate; 36 h, 90 °C

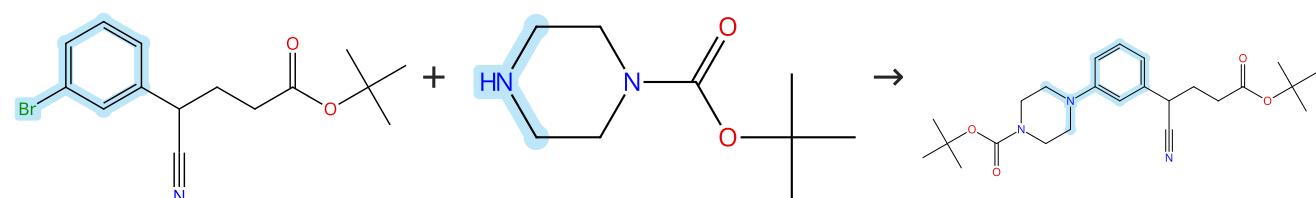
**Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination**

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

Experimental Protocols

Scheme 358 (1 Reaction)



Supplier (1)

Suppliers (112)

31-614-CAS-45989312

Steps: 1 Yield: 79%

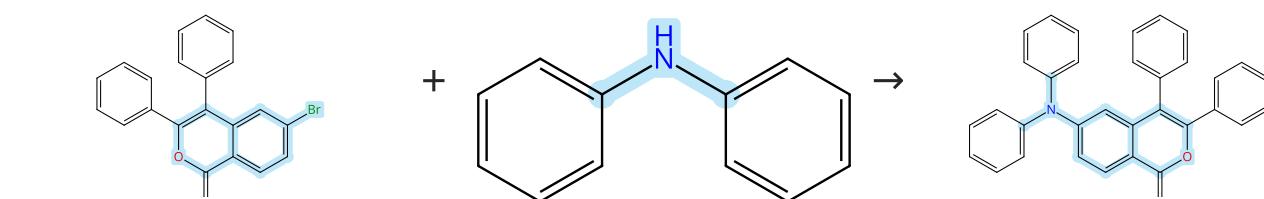
- 1.1 **Reagents:** Cesium carbonate  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, X-Phos  
**Solvents:** 1,4-Dioxane; 16 h, 90 °C

**Discovery and synthesis of heterobifunctional degraders of rearranged during transfection (RET) kinase**

By: Qiao, Jennifer X.; et al

Journal of Medicinal Chemistry (2024), 67(21), 19736-19754.

Scheme 359 (1 Reaction)



Supplier (1)

Suppliers (98)

31-614-CAS-39517526

Steps: 1 Yield: 79%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine  
**Solvents:** 1,4-Dioxane; 16 h, 110 °C

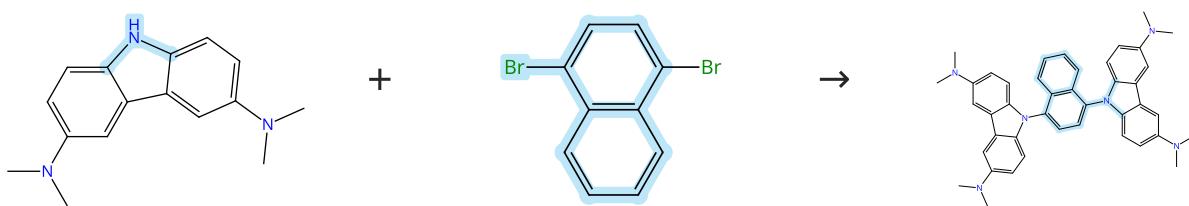
**Synthesis and photophysical activity of 6-substituted isocoumarins**

By: Fedina, Elena S.; et al

Mendeleev Communications (2024), 34(1), 107-109.

Experimental Protocols

Scheme 360 (1 Reaction)



Suppliers (5)

Suppliers (96)

31-614-CAS-39204580

Steps: 1 Yield: 79%

**Photophysical and electrochemical properties of 9-naphthyl-3,6-diaminocarbazole derivatives and their application as photosensitizers**

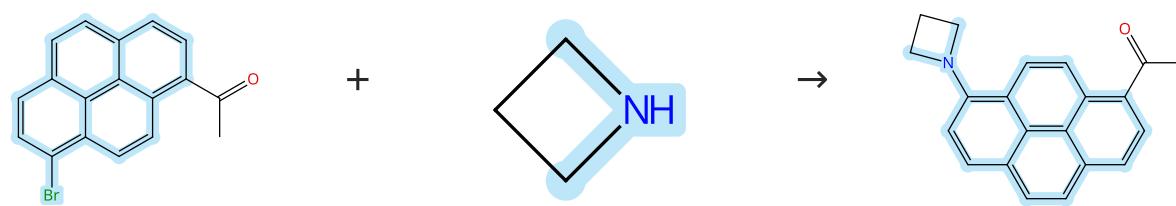
By: Matsubara, Ryosuke; et al

Journal of Photochemistry and Photobiology (2023), 15, 100176.

- 1.1 **Catalysts:** Tris(dibenzylideneacetone)dipalladium, Bis(1,1-dimethylethyl)[2',4',6'-tris(1-methylethyl)[1,1'-biphenyl]-2-yl]phosphine  
**Solvents:** Toluene; 5 min, rt
- 1.2 **Reagents:** Lithium bis(trimethylsilyl)amide  
**Solvents:** Toluene; 6 h, 90 °C
- 1.3 **Reagents:** Water

Experimental Protocols

Scheme 361 (1 Reaction)



Supplier (1)

Suppliers (71)

31-614-CAS-41009591

Steps: 1 Yield: 79%

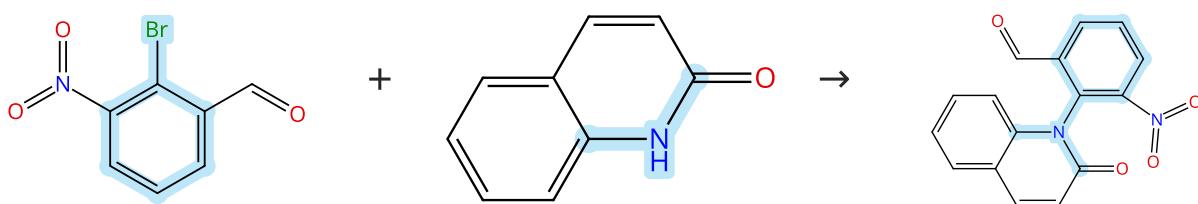
**Brightness-constant solvatochromic dye for ratiometric fluorescent imaging of lipid dynamics in developing zebrafish**

By: Wang, Guangying; et al

Sensors and Actuators, B: Chemical (2024), 417, 136155.

Experimental Protocols

Scheme 362 (1 Reaction)



Suppliers (61)

Suppliers (83)

31-614-CAS-41335325

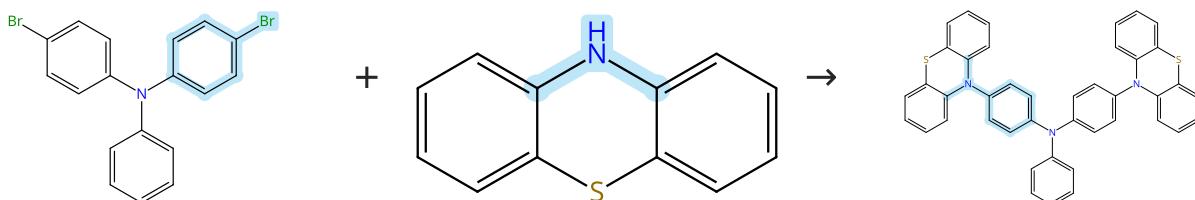
Steps: 1 Yield: 79%

**Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination**

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

Experimental Protocols

**Scheme 363 (1 Reaction)**

🛒 Suppliers (85)

🛒 Suppliers (96)

31-614-CAS-42988970

Steps: 1 Yield: 79%

1.1 Reagents: Potassium *tert*-butoxideCatalysts: Palladium diacetate, Tri-*tert*-butylphosphine

Solvents: Toluene; 12 h, reflux

Photoinduced room-temperature phosphorescence of triphenylamine-phenothiazine derivative-doped polymers

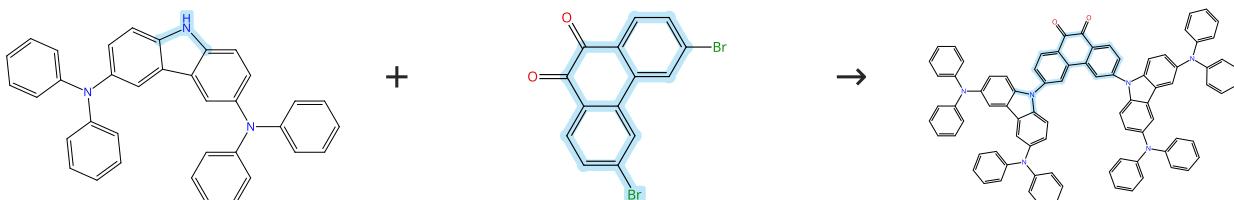
By: Li, Nan; et al

Youji Huaxue (2024), 44(8), 2487-2494.

Experimental Protocols

**Scheme 364 (1 Reaction)**

Steps: 1 Yield: 79%



🛒 Suppliers (32)

🛒 Suppliers (67)

31-614-CAS-39557992

Steps: 1 Yield: 79%

1.1 Reagents: Cesium carbonate

Catalysts: Palladium diacetate, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 24 h, 110 °C

Rational molecular design of efficient yellow-red dendrimer T ADF for solution-processed OLEDs: a combined effect of substitution position and strength of the donors

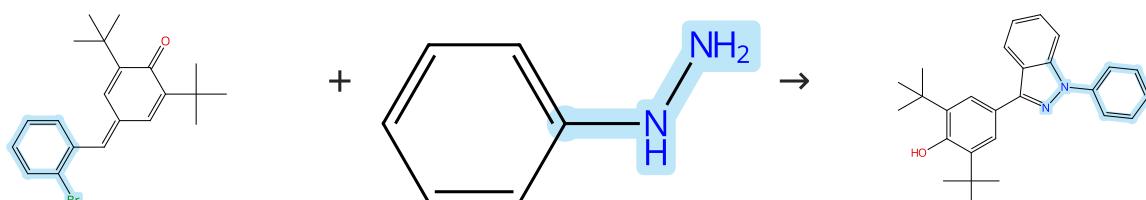
By: Si, Changfeng; et al

Science China: Chemistry (2024), 67(5), 1613-1623.

Experimental Protocols

**Scheme 365 (1 Reaction)**

Steps: 1 Yield: 79%



🛒 Supplier (1)

🛒 Suppliers (63)

31-614-CAS-38947662

Steps: 1 Yield: 79%

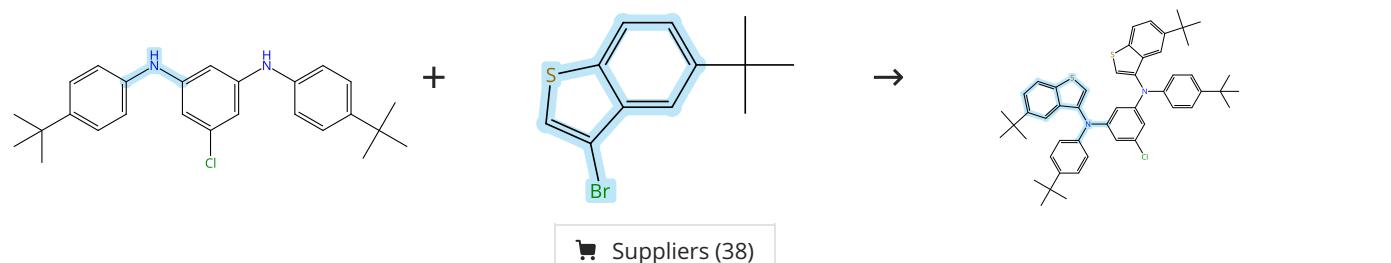
Synthesis and Photophysical Properties of 3-Substituted-1H-Indazoles: A Pd-Catalyzed Double C-N Bond Formation Strategy via 1,6-Conjugate Addition

By: Kayastha, Nasib; et al

Journal of Organic Chemistry (2024), 89(1), 402-413.

Experimental Protocols

Scheme 366 (1 Reaction)



31-614-CAS-42162968

Steps: 1 Yield: 79%

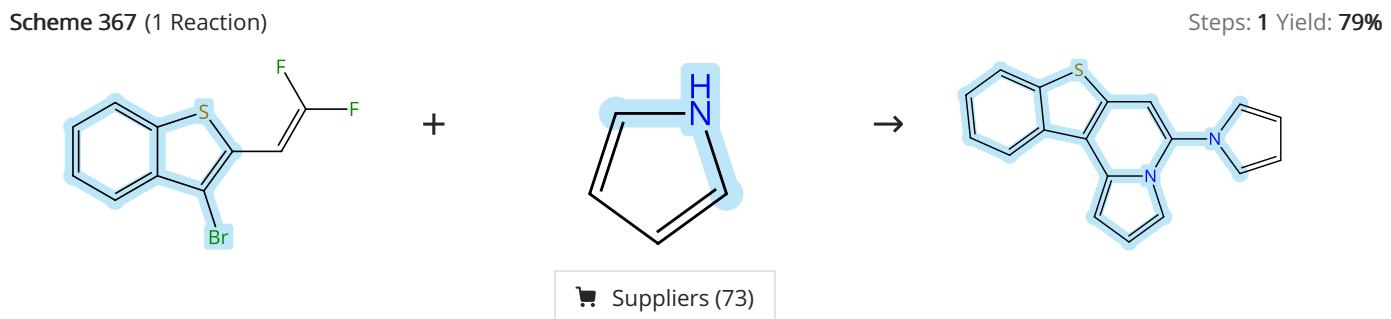
- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tri-*tert*-butylphosphine, Tris(dibenzylideneacetone) dipalladium  
**Solvents:** Toluene; 12 h, 100 °C; 100 °C → rt
- 1.2 **Solvents:** Water; rt
- Experimental Protocols

Constructing highly efficient multiple resonance fluorescence materials by inserting benzothiophene within B/N-skeletons

By: Zhao, He; et al

New Journal of Chemistry (2024), 48(36), 16119-16126.

Scheme 367 (1 Reaction)



31-614-CAS-37012604

Steps: 1 Yield: 79%

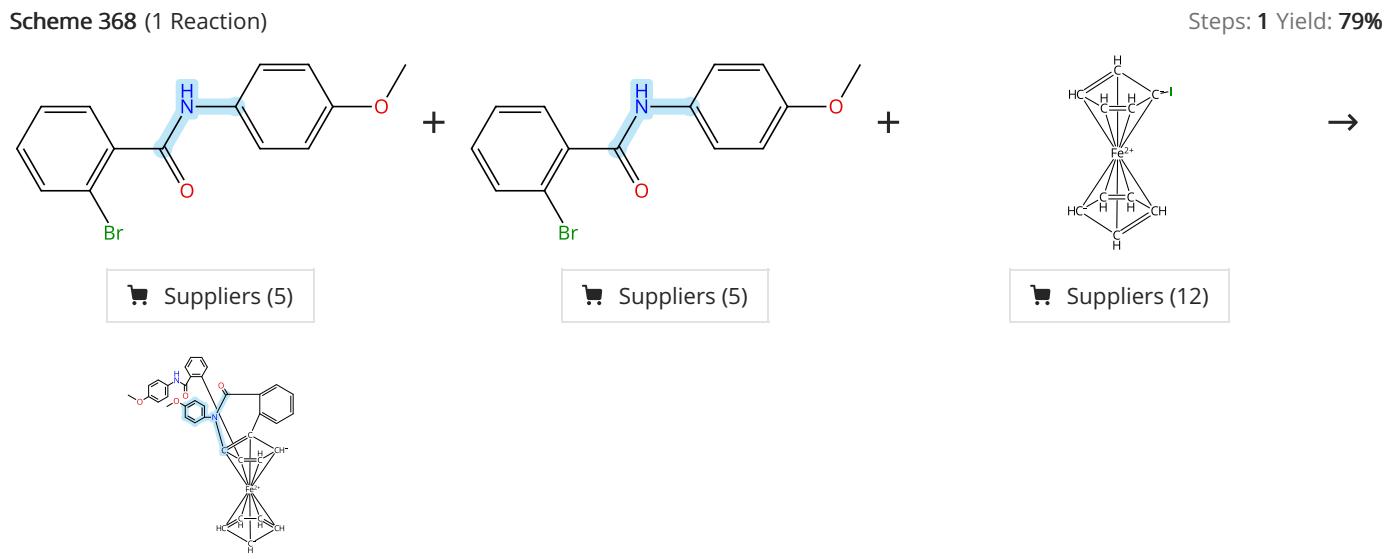
- 1.1 **Reagents:** Tripotassium phosphate  
**Solvents:** Dimethylformamide; 12 h, 100 °C; 100 °C → rt
- 1.2 **Catalysts:** Triphenylphosphine, Palladium diacetate; 20 h, 140 °C; 140 °C → rt
- 1.3 **Reagents:** Water
- Experimental Protocols

Thienoindolizines and their Benzo-Fused Derivatives:  
 Synthesis and Physical Properties

By: Ausekle, Elina; et al

Chemistry - A European Journal (2023), 29(42), e202301038.

Scheme 368 (1 Reaction)



31-614-CAS-45428453

Steps: 1 Yield: 79%

1.1 Reagents: Potassium carbonate

Catalysts: Methyl bicyclo[2.2.1]hept-2-ene-2-carboxylate, Palladium diacetate, Tris(2-furyl)phosphine

Solvents: 1,4-Dioxane; 48 h, rt → 120 °C

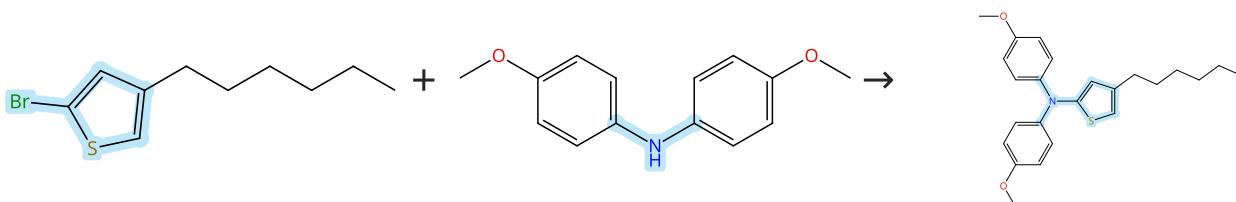
Experimental Protocols

Palladium-Catalyzed Dual C-H Arylation/Cyclization Reaction of Iodoferrocenes with ortho-Bromobenzamides for the Construction of Arylated Isoquinolone-Fused Ferrocenes

By: Li, Zhiyong; et al

Journal of Organic Chemistry (2024), 89(24), 18280-18290.

## Scheme 369 (1 Reaction)



Suppliers (55)

Suppliers (70)

31-614-CAS-37275248

Steps: 1 Yield: 79%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tri-*tert*-butylphosphine, Tris(dibenzylideneacetone)dipalladium; 24 h, 110 °C

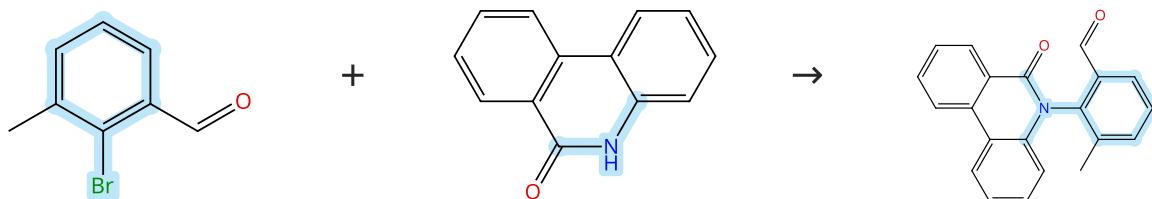
Experimental Protocols

"Trojan Horse" Phototheranostics: Fine-Engineering NIR-II AI Egen Camouflaged by Cancer Cell Membrane for Homologous-Targeting Multimodal Imaging-Guided Phototherapy

By: Cui, Jie; et al

Advanced Materials (Weinheim, Germany) (2023), 35(33), 2302639.

## Scheme 370 (1 Reaction)



Suppliers (65)

Suppliers (78)

31-614-CAS-41335289

Steps: 1 Yield: 79%

1.1 Catalysts: Palladium, tris[μ-[(1,2-η;4,5-η)-(1E,4E)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2*R*)-1-[*(1R*)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferroceneSolvents: *tert*-Butyl methyl ether; 30 min, rt

1.2 Reagents: Tripotassium phosphate; 36 h, 90 °C

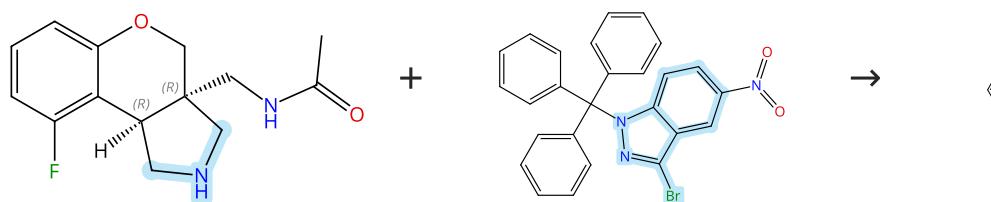
Experimental Protocols

Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination

By: Wang, Wei; et al

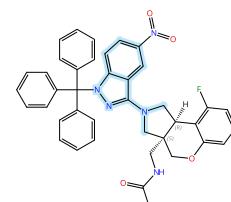
Journal of the American Chemical Society (2024), 146(24), 16567-16580.

## Scheme 371 (1 Reaction)



Relative stereochemistry shown

Suppliers (42)



Relative stereochemistry shown

Steps: 1 Yield: 79%

31-614-CAS-35422528

Steps: 1 Yield: 79%

**1.1 Reagents:** Sodium trimethylsilanolate  
**Solvents:** Tetrahydrofuran; 5 min, rt

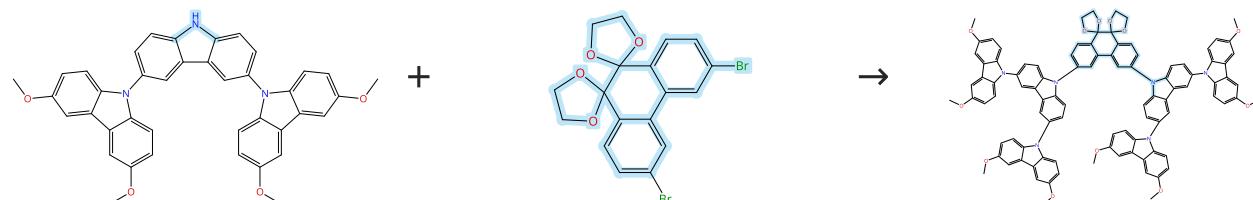
**1.2 Catalysts:** Palladium, bromo[dicyclohexyl[3-(1,1-dimethylethoxy)-6-methoxy-2',6'-bis(1-methylethyl)[1,1'-biphenyl]-2-yl- $\kappa C^1$ ]phosphine- $\kappa P$ ][4-[[2-(trimethylsilyl)ethoxy]carbonyl]phenyl]-, (*SP*-4-2)  
**Solvents:** Tetrahydrofuran; 3 h, 90 °C

Experimental Protocols

**Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteroaryl Halides with Aliphatic Amines**

By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

**Scheme 372 (1 Reaction)**

Steps: 1 Yield: 79%

31-614-CAS-36138046

Steps: 1 Yield: 79%

**1.1 Reagents:** Sodium *tert*-butoxide

**Catalysts:** Palladium diacetate, Tri-*tert*-butylphosphonium tetrafluoroborate

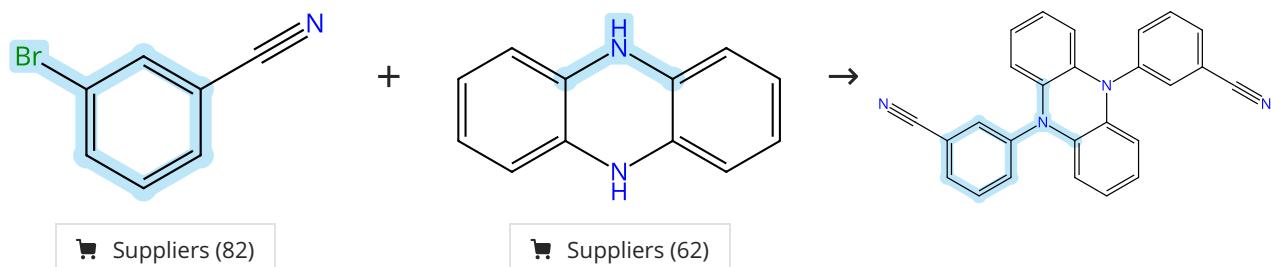
**Solvents:** Toluene; rt → 130 °C; 96 h, 130 °C

Experimental Protocols

**Dibenzodipyridophenazines with Dendritic Electron Donors Exhibiting Deep-Red Emission and Thermally Activated Delayed Fluorescence**

By: Primrose, William L.; et al

Journal of Organic Chemistry (2023), 88(7), 4224-4233.

**Scheme 373 (1 Reaction)**

Steps: 1 Yield: 79%

31-614-CAS-36922439

Steps: 1 Yield: 79%

**1.1 Reagents:** Potassium carbonate

**Catalysts:** Palladium diacetate, Tri-*tert*-butylphosphine

**Solvents:** Toluene; 24 h, reflux

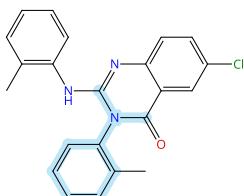
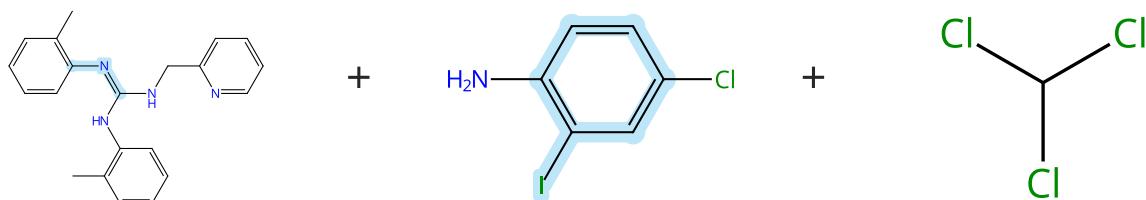
Experimental Protocols

**Molecular design of phenazine-5,10-diyl-dibenzonitriles and the impact on their thermally activated delayed fluorescence properties**

By: Pueschel, Dietrich; et al

Journal of Materials Chemistry C: Materials for Optical and Electronic Devices (2023), 11(26), 8982-8991.

Scheme 374 (1 Reaction)



31-614-CAS-42830444

Steps: 1 Yield: 79%

1.1 Reagents: Cesium hydroxide  
Catalysts: Bis(diphenylphosphino)methane, Palladium diacetate  
Solvents: Toluene; 15 h, 80 °C

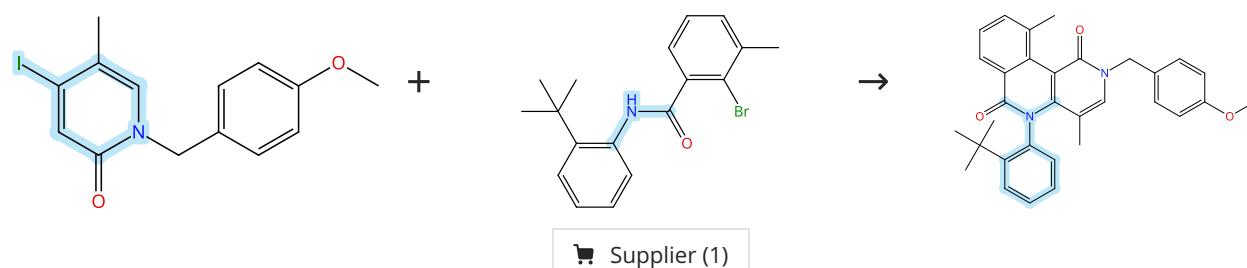
Experimental Protocols

Iodoaniline Dependent Formation of N-Aroylguanidines Versus 2-Aminoquinazolinones from Palladium(0) Catalyzed Aminocarbonylation of N-Arylguanidines

By: Yadav, Pooja; et al

European Journal of Organic Chemistry (2024), 27(46), e202400803.

Scheme 375 (1 Reaction)



31-614-CAS-39194501

Steps: 1 Yield: 79%

1.1 Reagents: Potassium carbonate  
Catalysts: Palladium diacetate, Tris(2-furyl)phosphine, Ethyl (1*S*,4*R*)-bicyclo[2.2.1]hept-2-ene-2-carboxylate  
Solvents: Tetrahydrofuran; 5 min, rt; 48 h, 90 °C

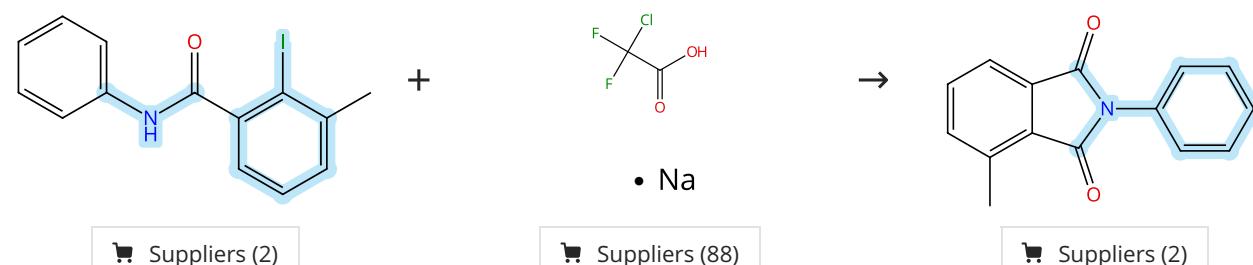
Experimental Protocols

Asymmetric Two-Component Alkenyl Catellani Reaction for the Construction of C-N Axial Chirality

By: Wu, Chenggui; et al

Chinese Journal of Chemistry (2024), 42(7), 699-704.

Scheme 376 (1 Reaction)



31-614-CAS-38558303

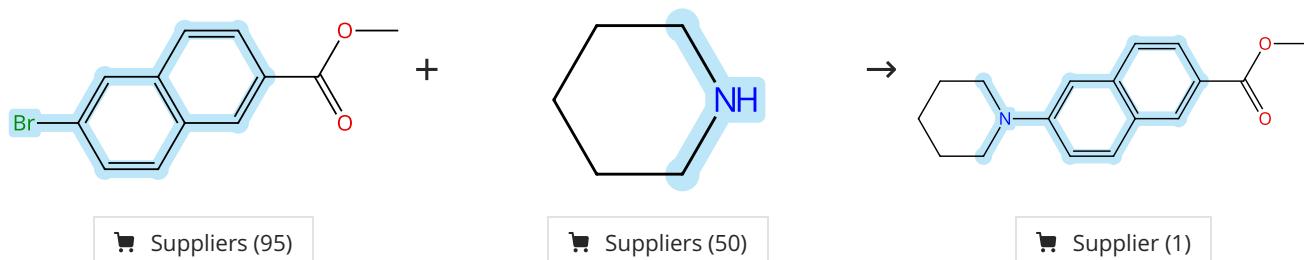
Steps: 1 Yield: 79%

Synthesis of N-substituted phthalimides via Pd-catalyzed [4+1] cycloaddition reaction

By: Hu, Chengxian; et al

Chemical Communications (Cambridge, United Kingdom) (2023), 59(100), 14839-14842.

Experimental Protocols

**Scheme 377 (1 Reaction)**

31-614-CAS-38838626

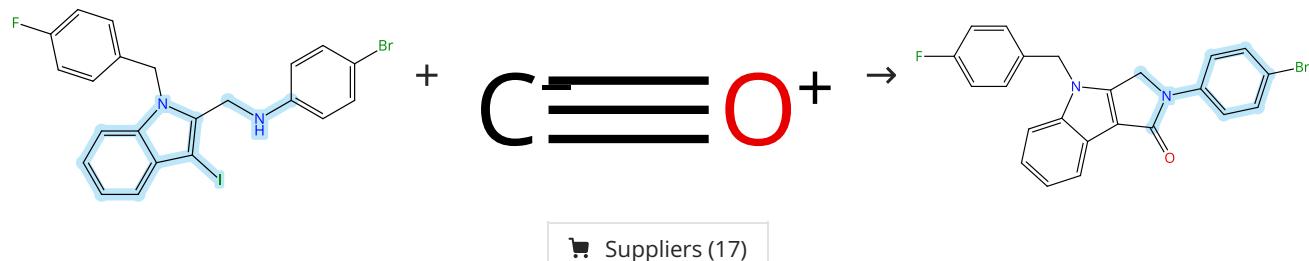
Steps: 1 Yield: 79%

Fluorescent molecular rotors as versatile in situ sensors for protein quantitation

By: Daus, Kevin; et al

Scientific Reports (2023), 13(1), 20529.

Experimental Protocols

**Scheme 378 (1 Reaction)**

31-614-CAS-37486998

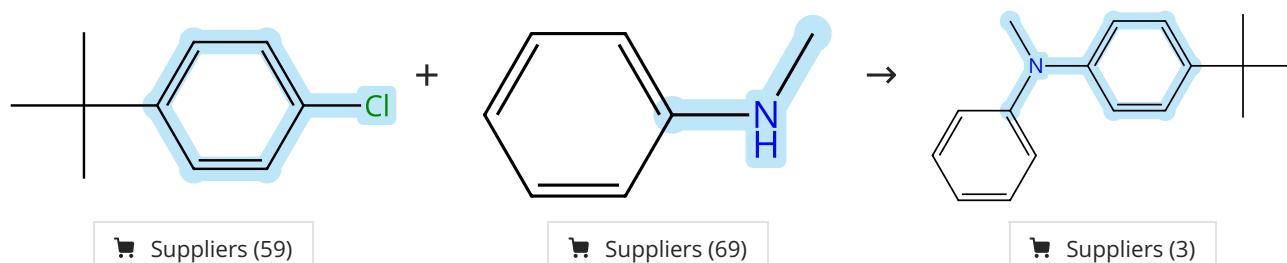
Steps: 1 Yield: 79%

Accessing Dihydropyrrolo[3,4-b]indol-1(2H)-ones via Pd-Catalyzed Intramolecular Aminocarbonylative Ring Closure

By: Alam, Ryan M.; et al

European Journal of Organic Chemistry (2023), 26(34), e202300646.

Experimental Protocols

**Scheme 379 (1 Reaction)**

31-614-CAS-42014415

Steps: 1 Yield: 79%

**1.1 Catalysts:** Palladium diacetate, 1*H*-Indole, 3-(dicyclohexylphosphino)-1-methyl-2-(2,3,4-trimethoxyphenyl)-

**Solvents:** Dichloromethane; rt

**1.2 Reagents:** Sodium *tert*-butoxide  
**Solvents:** Toluene, Hexane; rt; 24 h, 110 °C; 110 °C → rt

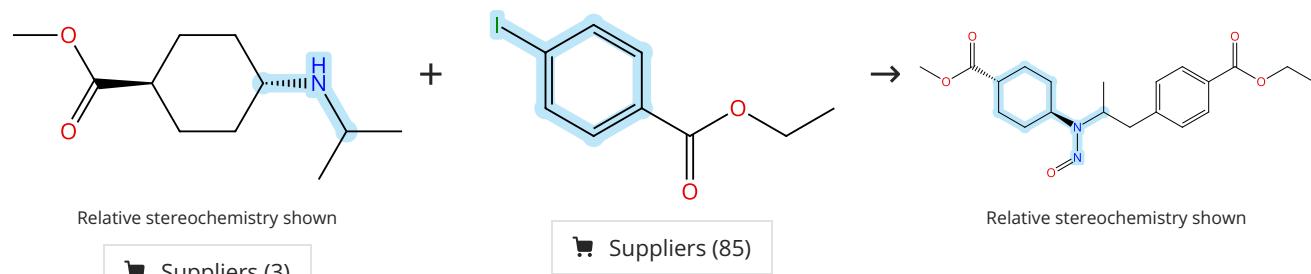
**1.3 Solvents:** Water; rt

Experimental Protocols

**Application of indole-based monophosphine in ppm level Pd-catalyzed C-N bond formation**

By: Li, Cheuk Long; et al

Journal of Organometallic Chemistry (2024), 1011, 123124.

**Scheme 380 (1 Reaction)**

31-614-CAS-42625423

Steps: 1 Yield: 79%

**1.1 Reagents:** Isoamyl nitrite; 12 h, 60 °C

**1.2 Reagents:** Silver trifluoroacetate

**Catalysts:** Palladium diacetate, Glycine, *N*-(1,6-dihydro-5-nitro-6-oxo-2-pyridinyl)carbonyl-, methyl ester

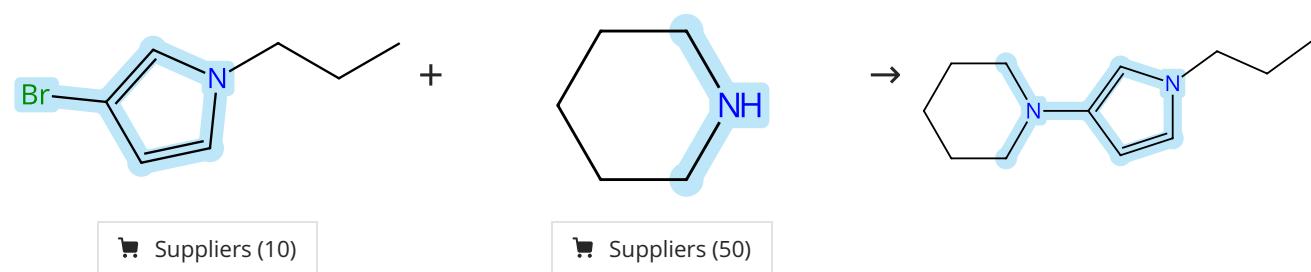
**Solvents:** 1,1,1,3,3-Hexafluoro-2-propanol; 24 h, 100 °C

Experimental Protocols

**Efficient Construction of β-Arylethylamines via Selective C(sp<sup>3</sup>)-H Arylation of Aliphatic Amines**

By: Tu, Hua; et al

ACS Catalysis (2024), 14(23), 17535-17546.

**Scheme 381 (1 Reaction)**

31-614-CAS-35422507

Steps: 1 Yield: 79%

**1.1 Reagents:** Sodium trimethylsilanolate

**Catalysts:** Palladium, bromo[dicyclohexyl[3-(1,1-dimethylethoxy)-6-methoxy-2',6'-bis(1-methylethyl)[1,1'-biphenyl]-2-yl-κC<sup>1</sup>]phosphine-κP][4-[2-(trimethylsilyl)ethoxy]carbonyl]phenyl]-, (*SP*-4-2)-

**Solvents:** Tetrahydrofuran; 5 h, 70 °C

Experimental Protocols

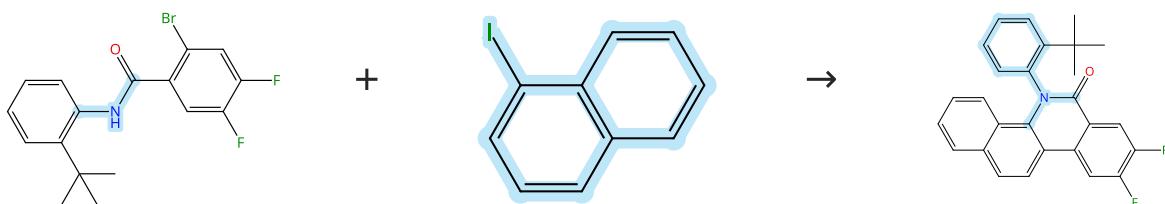
**Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteroaryl Halides with Aliphatic Amines**

By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

Scheme 382 (1 Reaction)

Steps: 1 Yield: 79%



Suppliers (87)

31-614-CAS-41071044

Steps: 1 Yield: 79%

## 1.1 Reagents:

Norbornene, Silver sulfate  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, (4S,4'S)-4,4',5,5'-Tetrahydro-4,4'-bis(1-methylethyl)-1,1'-bis[3-(trifluoromethyl)phenyl]-2,2'-bi-1H-imidazole  
**Solvents:** Toluene, Water; 36 h, 80 °C

Chiral dinitrogen ligand enabled asymmetric Pd/norbornene cooperative catalysis toward the assembly of C–N axially chiral scaffolds

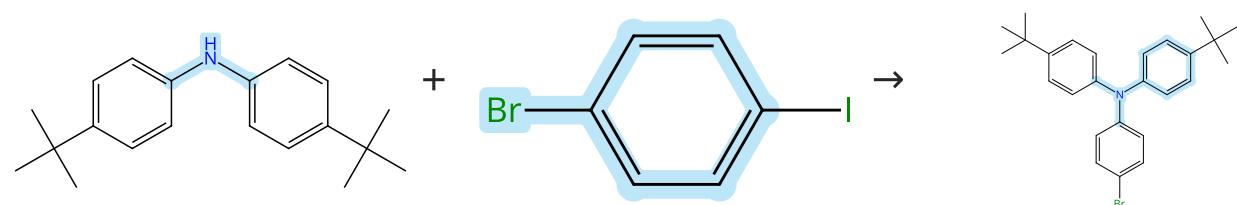
By: Jin, Liang; et al

Nature Communications (2024), 15(1), 4908.

## Experimental Protocols

Scheme 383 (1 Reaction)

Steps: 1 Yield: 78%



Suppliers (55)

Suppliers (94)

Suppliers (26)

31-614-CAS-40819639

Steps: 1 Yield: 78%

Dopants Induce Persistent Room Temperature Phosphorescence in Triarylamine Boronate Esters

By: Wu, Zhu; et al

Angewandte Chemie, International Edition (2024), 63(12), e202319089.

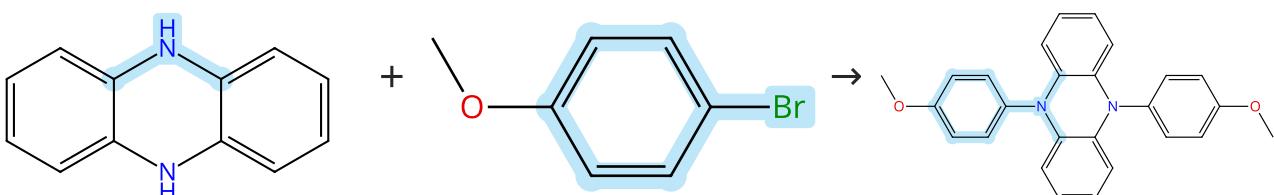
## 1.2 Reagents:

Sodium chloride  
**Solvents:** Water

## Experimental Protocols

Scheme 384 (1 Reaction)

Steps: 1 Yield: 78%



Suppliers (62)

Suppliers (69)

Suppliers (2)

31-614-CAS-35436071

Steps: 1 Yield: 78%

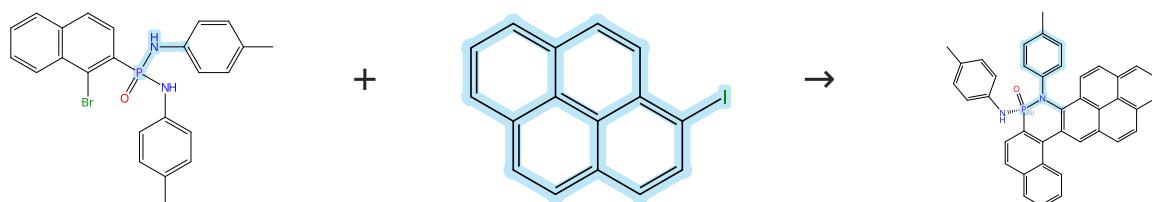
Aggregation Effect on Multiperformance Improvement in Aryl-Armed Phenazine-Based Emitters

By: Wan, Qing; et al

Journal of the American Chemical Society (2023), 145(3), 1607-1616.

## Experimental Protocols

Scheme 385 (1 Reaction)



Steps: 1 Yield: 78%

Absolute stereochemistry shown

Suppliers (42)

31-614-CAS-42232667

Steps: 1 Yield: 78%

1.1 Reagents: Potassium carbonate  
 Catalysts: Palladium diacetate, Tris(2-furyl)phosphine, Bicyclo[2.2.1]hept-2-ene-2-carboxylic acid, methyl ester, (1*R*,4*R*)-  
 Solvents: Acetonitrile; 12 h, 100 °C

Experimental Protocols

Solvent-Controlled Enantiodivergent Construction of P(V)-Stereogenic Molecules via Palladium-Catalyzed Annulation of Prochiral N-Aryl Phosphonamides with Aromatic Iodides

By: Tian, Qingyu; et al

Angewandte Chemie, International Edition (2024), 63(41), e202409366.

Scheme 386 (1 Reaction)



Steps: 1 Yield: 78%

Suppliers (3)

Suppliers (77)

31-614-CAS-41860570

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxide  
 Catalysts: Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine  
 Solvents: Toluene; overnight, 110 °C

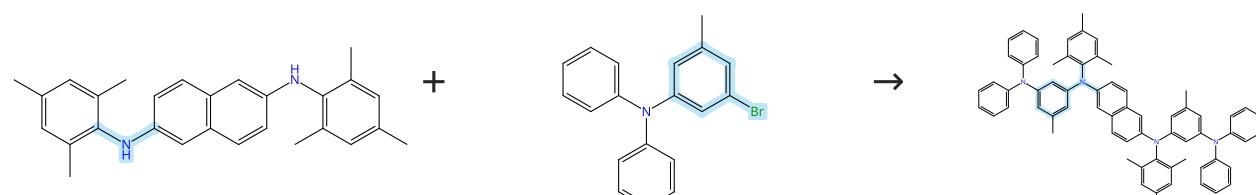
Experimental Protocols

Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

Scheme 387 (1 Reaction)



Steps: 1 Yield: 78%

Suppliers (19)

31-614-CAS-41860646

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxide  
 Catalysts: Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine  
 Solvents: Toluene; overnight, 120 °C

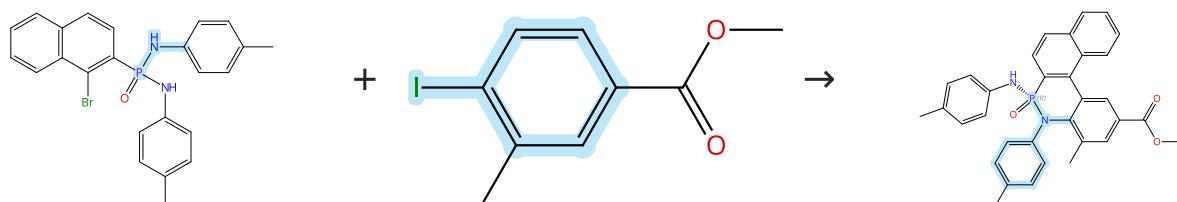
Experimental Protocols

Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

Scheme 388 (1 Reaction)



Suppliers (83)

31-614-CAS-42232617

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Palladium diacetate, Tris(2-furyl)phosphine, Bicyclo[2.2.1]hept-2-ene-2-carboxylic acid, methyl ester, (*1R,4R*)-Solvents: *tert*-Butyl methyl ether; 12 h, 100 °C

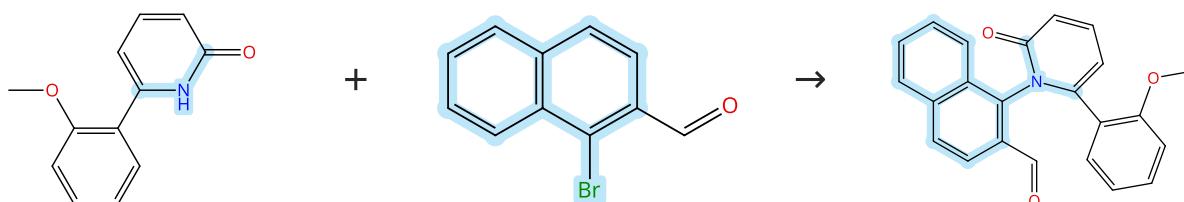
Experimental Protocols

Solvent-Controlled Enantiodivergent Construction of P(V)-Stereogenic Molecules via Palladium-Catalyzed Annulation of Prochiral N-Aryl Phosphonamides with Aromatic Iodides

By: Tian, Qingyu; et al

Angewandte Chemie, International Edition (2024), 63(41), e202409366.

Scheme 389 (1 Reaction)



Suppliers (26)

Suppliers (71)

31-614-CAS-41335331

Steps: 1 Yield: 78%

1.1 Catalysts: Palladium, tris[μ-[(1,2-η;4,5-η)-(1*E*,4*E*)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2*R*)-1-[(*1R*)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene

Solvents: Toluene; 30 min, rt

1.2 Reagents: Cesium carbonate; 36 h, 90 °C

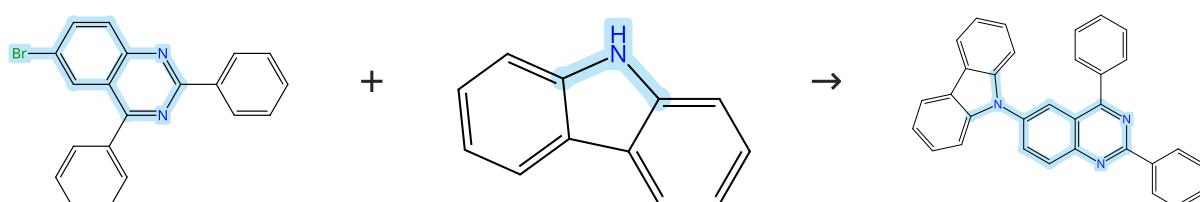
Experimental Protocols

Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

Scheme 390 (1 Reaction)



Supplier (1)

Suppliers (109)

31-614-CAS-36924723

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos

Solvents: Toluene; 15 h, reflux

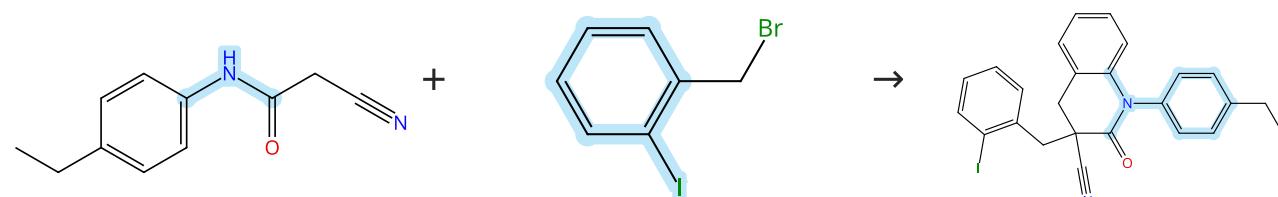
Experimental Protocols

Ortho-Lithiation driven one-pot synthesis of quinazolines via [2 + 2 + 2] cascade annulation of halofluorobenzenes with nitriles

By: Hsueh, Jen-Chun; et al

Organic &amp; Biomolecular Chemistry (2023), 21(25), 5297-5304.

Scheme 391 (1 Reaction)



31-614-CAS-39519095

Steps: 1 Yield: 78%

1.1 Reagents: Cesium carbonate  
Solvents: 1,4-Dioxane; 1 h, 110 °C1.2 Catalysts: Palladium diacetate, 1,1'-(9,9-Dimethyl-9H-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]  
Solvents: 1,4-Dioxane; 10 h, 110 °C1.3 Reagents: Ammonium chloride  
Solvents: Water

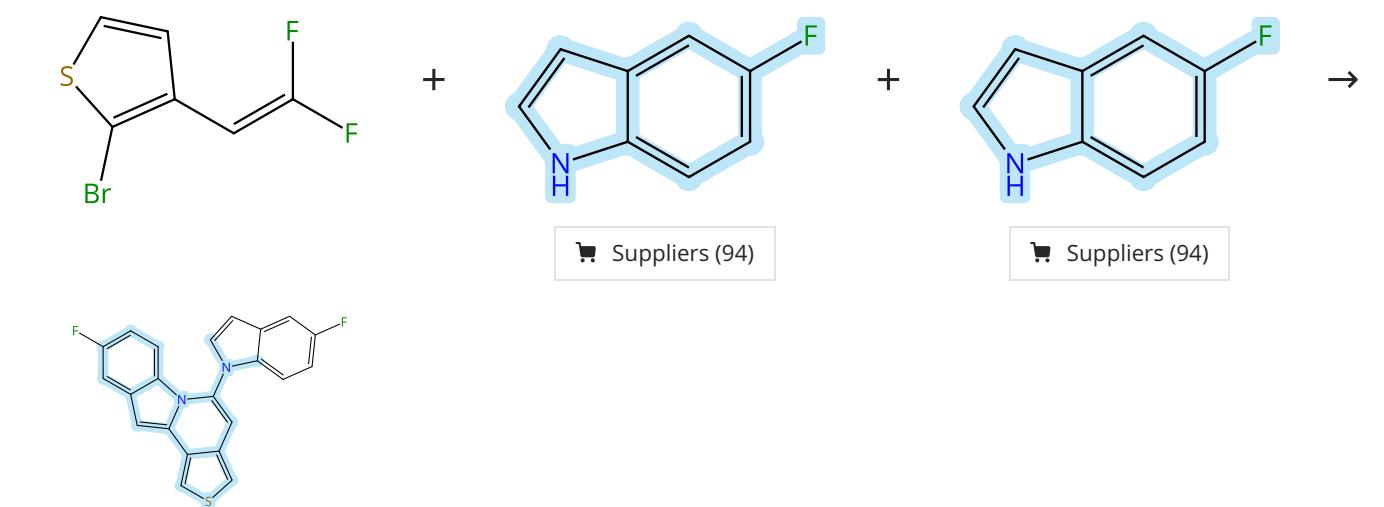
Synthesis of highly functionalized dihydroquinolinones via a tandem benzylation/intramolecular C-N coupling strategy

By: Gao, Pei-Sen; et al

Tetrahedron (2024), 155, 133865.

Experimental Protocols

Scheme 392 (1 Reaction)



31-614-CAS-37012600

Steps: 1 Yield: 78%

1.1 Reagents: Tripotassium phosphate

Solvents: Dimethylformamide; 12 h, 100 °C; 100 °C → rt

1.2 Catalysts: Triphenylphosphine, Palladium diacetate; 20 h, 140 °C; 140 °C → rt

1.3 Reagents: Water

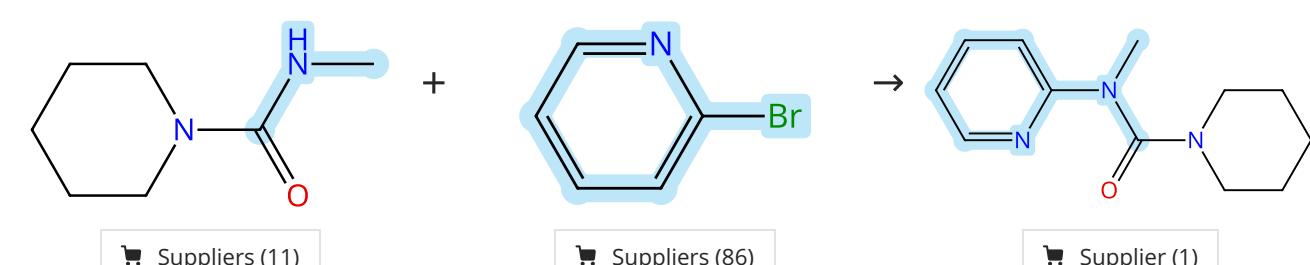
Thienoindolizines and their Benzo-Fused Derivatives:  
Synthesis and Physical Properties

By: Ausekle, Elina; et al

Chemistry - A European Journal (2023), 29(42), e202301038.

Experimental Protocols

Scheme 393 (1 Reaction)



31-614-CAS-41519895

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, 1,1'-(9,9-Dimethyl-9*H*-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]

Solvents: Toluene; 16 h, 110 °C; 110 °C → rt

1.2 Reagents: Ammonium chloride

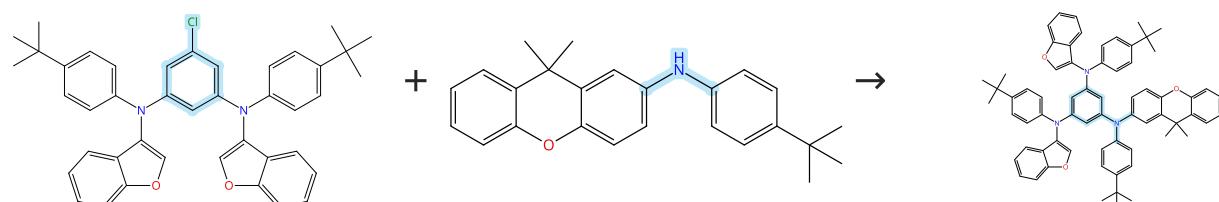
Solvents: Water; rt

Experimental Protocols

**Site-selective  $\alpha$ -C(sp<sup>3</sup>)-H arylation of dialkylamines via hydrogen atom transfer catalysis-enabled radical aryl migration**

By: Xu, Jie; et al

Nature Communications (2024), 15(1), 6791.

**Scheme 394 (1 Reaction)**

31-614-CAS-40799981

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Palladium diacetate, [Dicyclohexyl[2',4',6'-tris(1-methylethyl)[1,1'-biphenyl]-2-yl]phosphine][1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamido- $\kappa$ N]gold

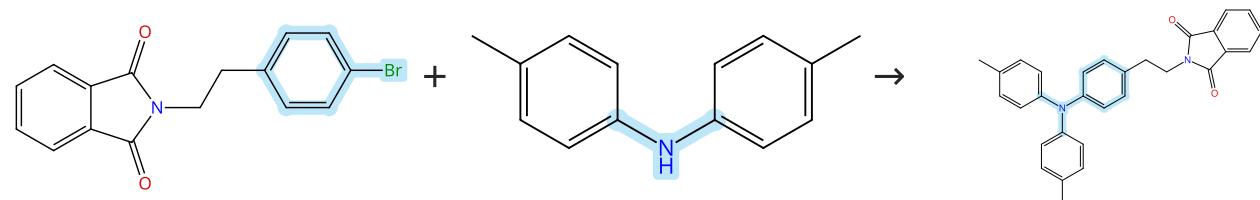
Solvents: Xylene; 10 h, 160 °C

Experimental Protocols

**One-shot borylation synthesis of multiple resonance (M R) blue emitters via fusing benzofuran fragments within B/N skeletons**

By: Zhao, He; et al

Journal of Materials Chemistry C: Materials for Optical and Electronic Devices (2024), 12(26), 9753-9759.

**Scheme 395 (1 Reaction)**

Suppliers (21)

Suppliers (80)

31-614-CAS-41681398

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Palladium diacetate, Tri-*tert*-butylphosphine

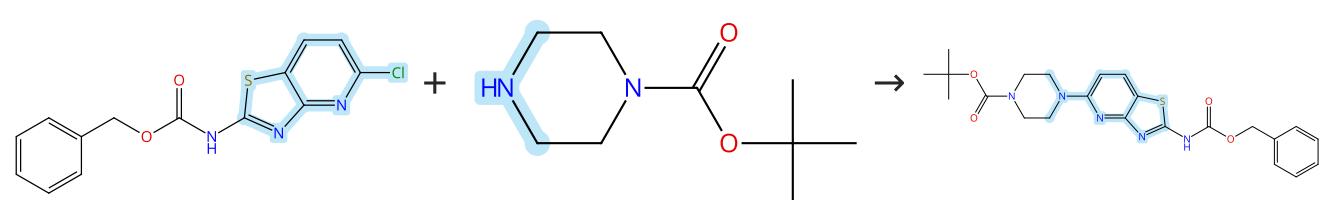
Solvents: Toluene; 10 h, 90 °C

Experimental Protocols

**Molecular Interlayer with Large Cations Supports Efficient, Stable Perovskite Solar Cells**

By: Ji, Tengxiao; et al

ACS Applied Energy Materials (2024), 7(13), 5371-5378.

**Scheme 396 (1 Reaction)**

Suppliers (3)

Suppliers (112)

31-614-CAS-36748908

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine

Solvents: 1,4-Dioxane; overnight, heated

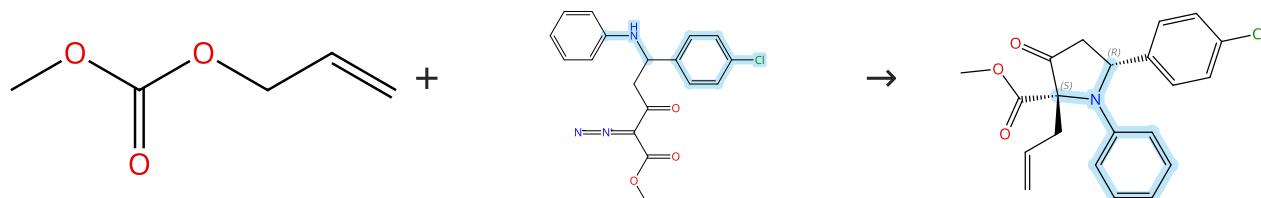
Experimental Protocols

Structure-Activity relationships of replacements for the triazolopyridazine of Anti-Cryptosporidium lead SLU-2633

By: Oboh, Edmund; et al

Bioorganic &amp; Medicinal Chemistry (2023), 86, 117295.

## Scheme 397 (1 Reaction)



Suppliers (59)

31-614-CAS-43802568

Steps: 1 Yield: 78%

1.1 Catalysts: Dirhodium tetraacetate, Tris(dibenzylideneacetone)dipalladium, X-Phos

Solvents: Dichloromethane; 15 min, rt

1.2 Solvents: Dichloromethane; rt; 16 h, rt

1.3 Reagents: Sodium chloride

Solvents: Water

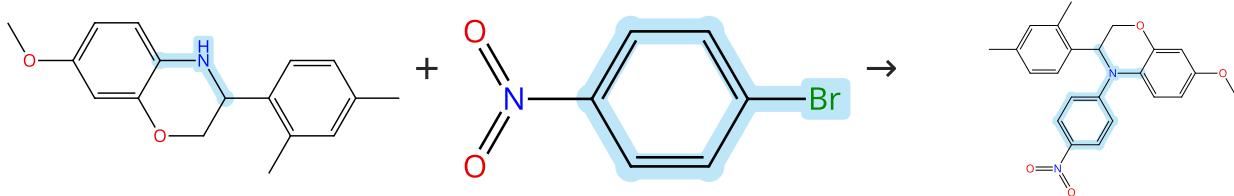
Experimental Protocols

Rh(II)/Pd(0) Dual Catalysis: Carbenoid N-H Insertion/Allylation Cascade Reaction to Construct Highly Functionalized and Polysubstituted Pyrrolidines

By: Tang, Maocheng; et al

Molecules (2024), 29(24), 5880.

## Scheme 398 (1 Reaction)



Suppliers (76)

31-614-CAS-39408112

Steps: 1 Yield: 78%

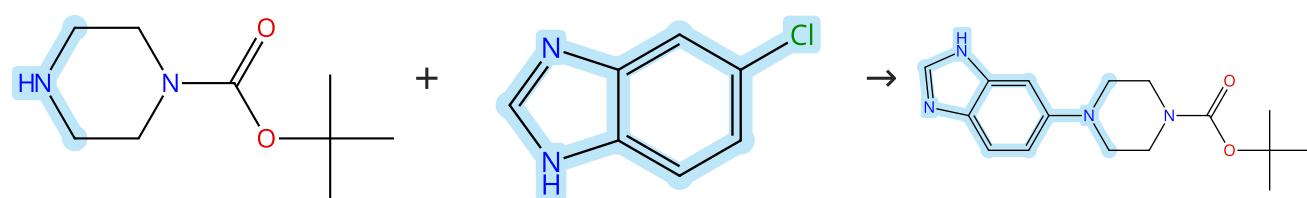
Rational Design, Synthesis, and Anti-Proliferative Evaluation of Novel 4-Aryl-3,4-Dihydro-2H-1,4-Benzoxazines

By: Fu, Xiaoming; et al

Molecules (2024), 29(1), 166.

Experimental Protocols

## Scheme 399 (1 Reaction)



Suppliers (112)

Suppliers (73)

Steps: 1 Yield: 78%

31-614-CAS-36748997

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine

Solvents: 1,4-Dioxane; overnight, heated

Experimental Protocols

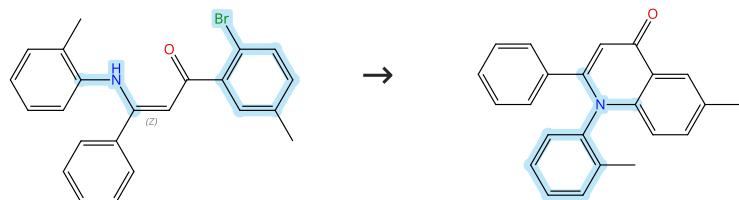
Structure-Activity relationships of replacements for the triazolopyridazine of Anti-Cryptosporidium lead SLU-2633

By: Oboh, Edmund; et al

Bioorganic &amp; Medicinal Chemistry (2023), 86, 117295.

## Scheme 400 (1 Reaction)

Steps: 1 Yield: 78%



Double bond geometry shown

31-614-CAS-40129281

Steps: 1 Yield: 78%

1.1 Reagents: Potassium carbonate, Sodium hydroxide

Catalysts: Palladium diacetate, (-)-BINAP

Solvents: Toluene, 1,4-Dioxane; 18 h, 40 °C

Experimental Protocols

Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers

By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

## Scheme 401 (1 Reaction)

Steps: 1 Yield: 78%



31-614-CAS-34978851

Steps: 1 Yield: 78%

1.1 Reagents: Aluminum nitrate nonahydrate

Catalysts: Palladium diacetate

Solvents: Acetonitrile; 24 h, 100 °C

Experimental Protocols

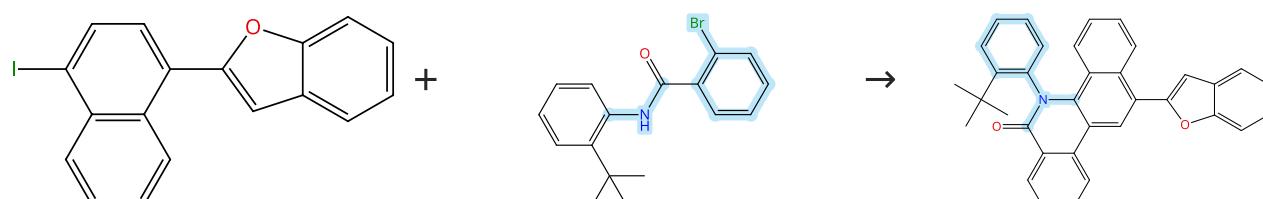
Palladium-catalyzed intramolecular C-H amination using aluminum nitrate as the oxidant

By: Jia, Kai; et al

Organic Chemistry Frontiers (2023), 10(1), 109-114.

## Scheme 402 (1 Reaction)

Steps: 1 Yield: 78%



Suppliers (5)

31-614-CAS-41071032

Steps: 1 Yield: 78%

1.1 Reagents: Norbornene, Silver sulfate

Catalysts: Tris(dibenzylideneacetone)dipalladium, (4*S*,4'*S*)-4,4',5,5'-Tetrahydro-4,4'-bis(1-methylethyl)-1,1'-bis[3-(trifluoromethyl)phenyl]-2,2'-bi-1*H*-imidazole

Solvents: Toluene, Water; 36 h, 80 °C

Experimental Protocols

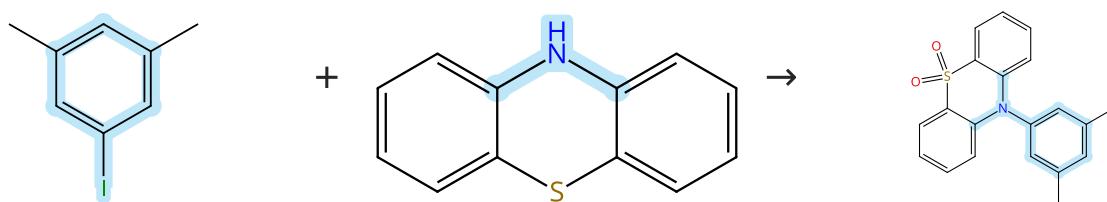
Chiral dinitrogen ligand enabled asymmetric Pd/norbornene cooperative catalysis toward the assembly of C-N axially chiral scaffolds

By: Jin, Liang; et al

Nature Communications (2024), 15(1), 4908.

Scheme 403 (1 Reaction)

Steps: 1 Yield: 78%



Suppliers (83)

Suppliers (96)

31-614-CAS-40645173

Steps: 1 Yield: 78%

1.1 Reagents: Potassium *tert*-butoxideCatalysts: Palladium diacetate, Tri-*tert*-butylphosphine

Solvents: Toluene; 12 h, 110 °C

1.2 Reagents: Hydrogen peroxide

Solvents: Acetic acid, Dichloromethane; 24 h, 60 °C

Experimental Protocols

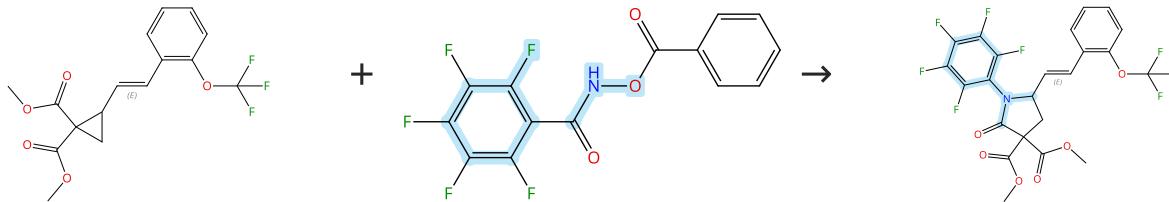
**Modulating the crystal packing to achieve efficient ultralong organic phosphorescence by simple methylation engineering**

By: Mao, Huiting; et al

Journal of Materials Chemistry C: Materials for Optical and Electronic Devices (2024), 12(23), 8545-8550.

Scheme 404 (1 Reaction)

Steps: 1 Yield: 78%



Double bond geometry shown

Double bond geometry shown

31-614-CAS-36837150

Steps: 1 Yield: 78%

1.1 Reagents: Cesium carbonate

Catalysts: 2,2'-Bipyridine, Tris(dibenzylideneacetone)dipalladium

Solvents: Tetrahydrofuran; 24 h, 50 °C

Experimental Protocols

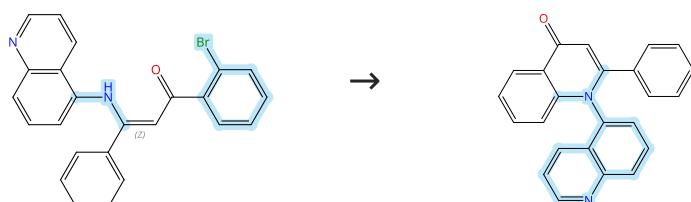
**[3+2] Cycloaddition of Vinyl Cyclopropane and Hydroxylamines via Isocynate Intermediate to γ-Lactams**

By: Huang, Xiaobing; et al

Chinese Journal of Chemistry (2023), 41(16), 1937-1942.

Scheme 405 (1 Reaction)

Steps: 1 Yield: 78%



Double bond geometry shown

31-614-CAS-40129313

Steps: 1 Yield: 78%

1.1 Reagents: Potassium carbonate, Sodium hydroxide

Catalysts: Palladium diacetate, (-)-BINAP

Solvents: Toluene, 1,4-Dioxane; 18 h, 40 °C

Experimental Protocols

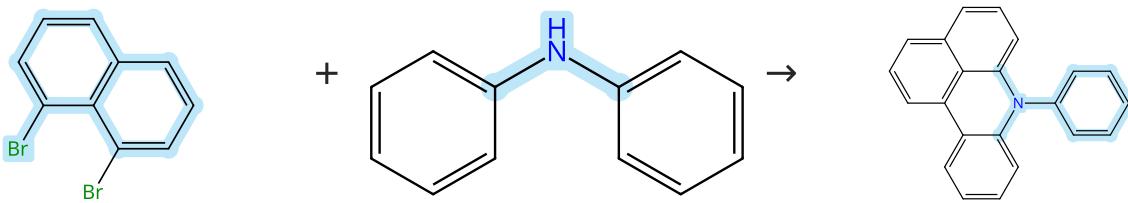
**Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers**

By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

Scheme 406 (1 Reaction)

Steps: 1 Yield: 78%



Suppliers (82)

Suppliers (98)

Supplier (1)

31-614-CAS-42041611

Steps: 1 Yield: 78%

1.1 Reagents: Tricyclohexylphosphine, Palladium diacetate, Tri-*tert*-butylphosphine

Solvents: Toluene; 10 h, 90 °C

Experimental Protocols

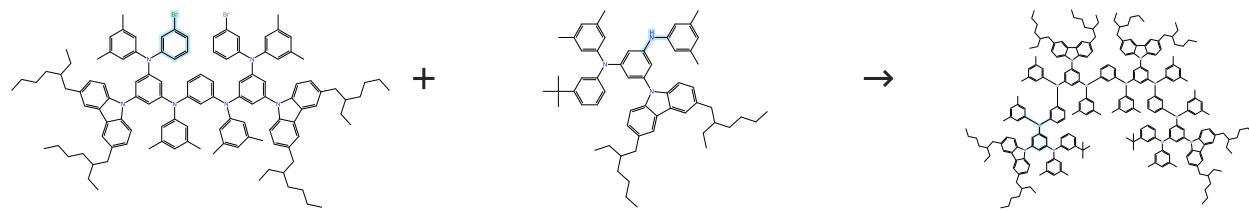
The Development of Visible-Light Organic Photocatalysts for Atom Transfer Radical Polymerization via Conjugation Extension

By: Shao, Hui; et al

Molecules (2024), 29(12), 2763.

Scheme 407 (1 Reaction)

Steps: 1 Yield: 78%



31-614-CAS-38006374

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: *o*-Xylene; 6 h, 110 °C

Experimental Protocols

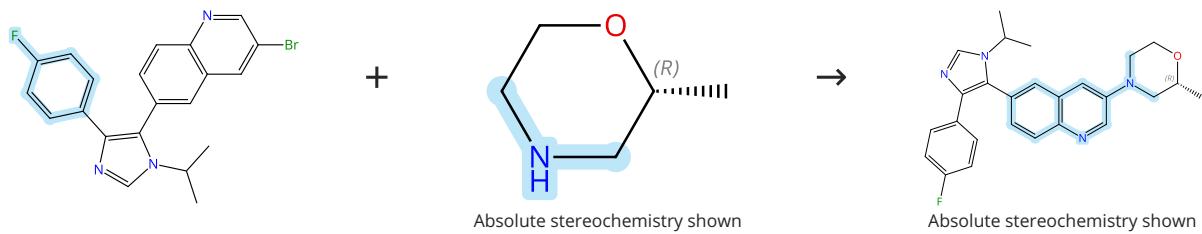
One-Shot Construction of BN-Embedded Heptadecacene Framework Exhibiting Ultra-narrowband Green Thermally Activated Delayed Fluorescence

By: Sano, Yusuke; et al

Journal of the American Chemical Society (2023), 145(21), 11504-11511.

Scheme 408 (1 Reaction)

Steps: 1 Yield: 78%



Suppliers (66)

31-614-CAS-39722125

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, 2'-(Dicyclohexylphosphino)-*N,N*-dimethyl[1,1'-biphenyl]-2-amine

Solvents: Toluene; 18 h, 100 °C

Experimental Protocols

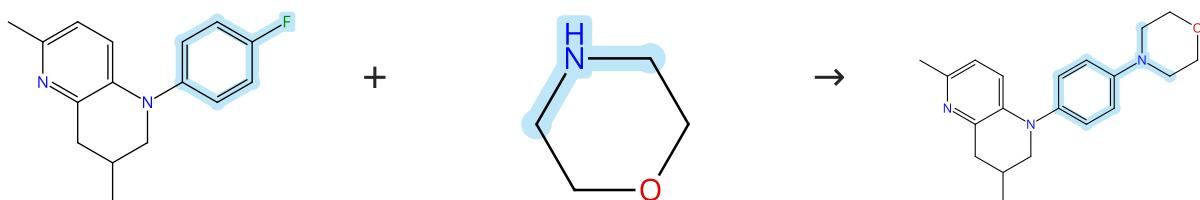
Fragment growth-based discovery of novel TNK inhibitors for the treatment of colorectal cancer

By: Teng, Yixin; et al

European Journal of Medicinal Chemistry (2024), 268, 116240.

**Scheme 409 (1 Reaction)**

Steps: 1 Yield: 78%



Suppliers (83)

31-614-CAS-35299565

Steps: 1 Yield: 78%

1.1 **Reagents:** Sodium *tert*-butoxide, Bis(*tri-tert*-butylphosphine) palladium  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium  
**Solvents:** Toluene; 12 h, 110 °C

Organocalcium Hydride-Catalyzed Intramolecular C(sp<sup>3</sup>)-H Annulation of Functionalized 2,6-Lutidines

By: Li, Shuo; et al

Journal of Organic Chemistry (2023), 88(3), 1742-1748.

Experimental Protocols

**Scheme 410 (1 Reaction)**

Steps: 1 Yield: 78%



Supplier (1)

Suppliers (70)

31-614-CAS-35288480

Steps: 1 Yield: 78%

1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate  
**Solvents:** Toluene; 25 h, reflux

Robust Spirobifluorene Core Based Hole Transporters with High Mobility for Long-Life Green Phosphorescent Organic Light-Emitting Devices

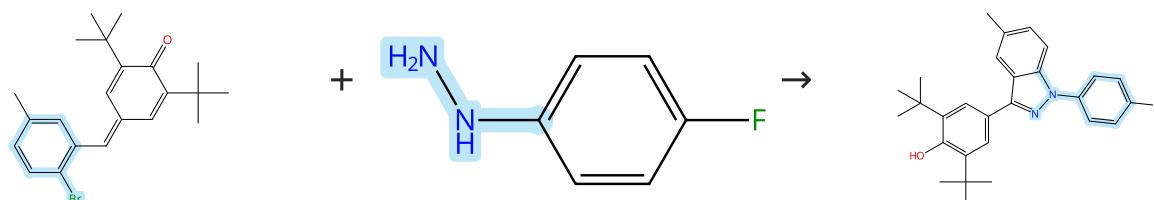
By: Nagamura, Natsuo; et al

Chemistry - A European Journal (2023), 29(1), e202202636.

Experimental Protocols

**Scheme 411 (1 Reaction)**

Steps: 1 Yield: 78%



Suppliers (61)

31-614-CAS-38947667

Steps: 1 Yield: 78%

1.1 **Reagents:** Potassium *tert*-butoxide  
**Catalysts:** Palladium diacetate, 1,3-Bis(diphenylphosphino)propane  
**Solvents:** Toluene; 15 h, 110 °C

Synthesis and Photophysical Properties of 3-Substituted-1*H*-Indazoles: A Pd-Catalyzed Double C-N Bond Formation Strategy via 1,6-Conjugate Addition

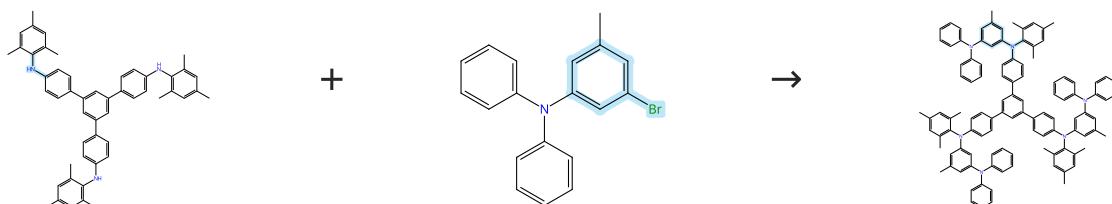
By: Kayastha, Nasib; et al

Journal of Organic Chemistry (2024), 89(1), 402-413.

Experimental Protocols

Scheme 412 (1 Reaction)

Steps: 1 Yield: 78%



Suppliers (19)

31-614-CAS-41860651

Steps: 1 Yield: 78%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine  
**Solvents:** Toluene; overnight, 120 °C

Experimental Protocols

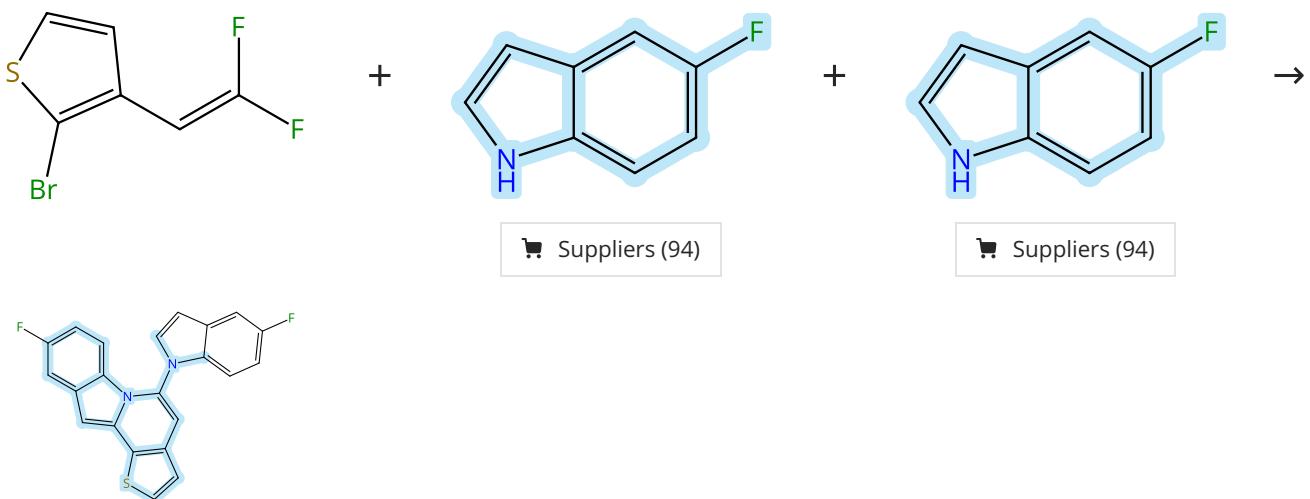
Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

Scheme 413 (1 Reaction)

Steps: 1 Yield: 78%



Suppliers (94)

Suppliers (94)

31-614-CAS-37012574

Steps: 1 Yield: 78%

- 1.1 **Reagents:** Tripotassium phosphate  
**Solvents:** Dimethylformamide; 12 h, 100 °C; 100 °C → rt  
1.2 **Catalysts:** Triphenylphosphine, Palladium diacetate; 20 h, 140 °C; 140 °C → rt  
1.3 **Reagents:** Water

Experimental Protocols

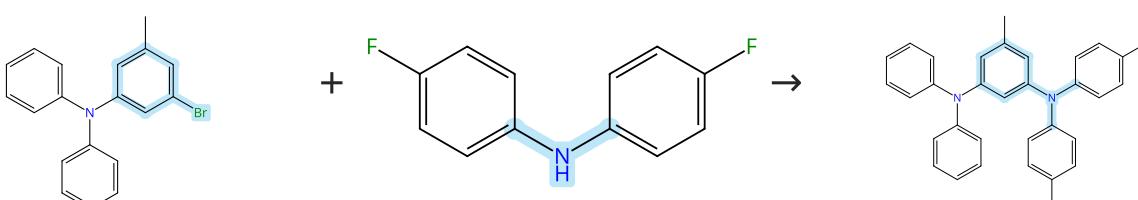
Thienoindolizines and their Benzo-Fused Derivatives: Synthesis and Physical Properties

By: Ausekle, Elina; et al

Chemistry - A European Journal (2023), 29(42), e202301038.

Scheme 414 (1 Reaction)

Steps: 1 Yield: 78%



Suppliers (19)

Suppliers (37)

31-614-CAS-41860541

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; overnight, 110 °C

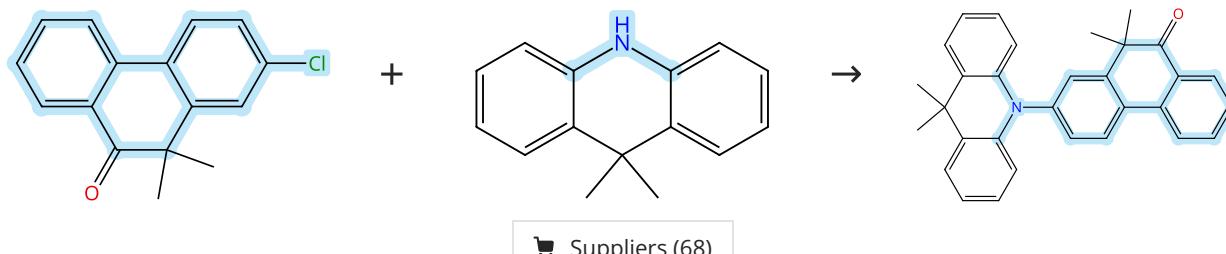
Experimental Protocols

Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

Scheme 415 (1 Reaction)



31-614-CAS-36610940

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Palladium diacetate, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 30 h, 150 °C

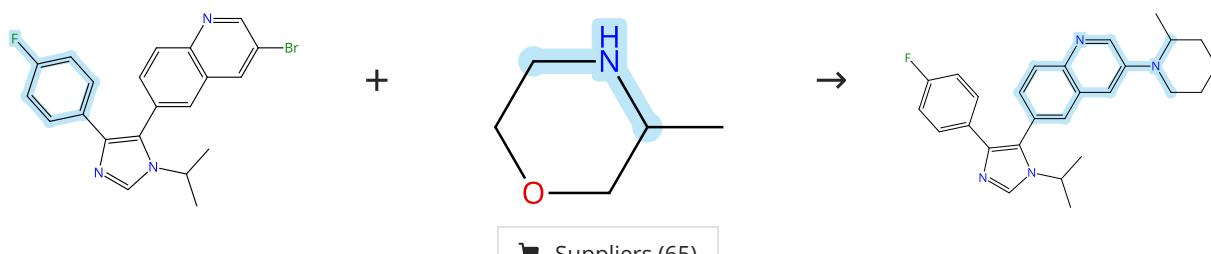
Experimental Protocols

Molecular engineering of locked alkyl aryl carbonyl-based thermally activated delayed fluorescence emitters via a cascade C-H activation process

By: Zhang, Yunxi; et al

Chemical Science (2023), 14(19), 5125-5131.

Scheme 416 (1 Reaction)



31-614-CAS-39722126

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 2'-(Dicyclohexylphosphino)-N,N-dimethyl[1,1'-biphenyl]-2-amine

Solvents: Toluene; 18 h, 100 °C

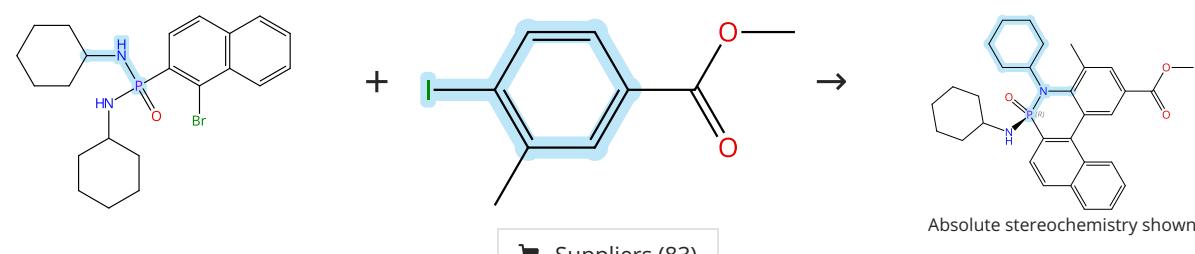
Experimental Protocols

Fragment growth-based discovery of novel TNIK inhibitors for the treatment of colorectal cancer

By: Teng, Yixin; et al

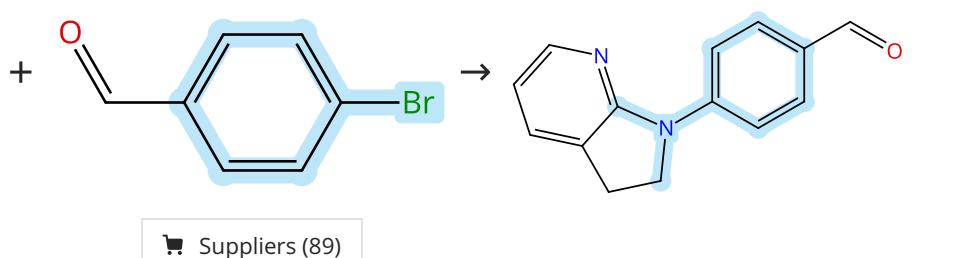
European Journal of Medicinal Chemistry (2024), 268, 116240.

Scheme 417 (1 Reaction)



31-614-CAS-42232640	Steps: 1 Yield: 78%	Solvent-Controlled Enantiodivergent Construction of P(V)-Stereogenic Molecules via Palladium-Catalyzed Annulation of Prochiral N-Aryl Phosphonamides with Aromatic Iodides By: Tian, Qingyu; et al Angewandte Chemie, International Edition (2024), 63(41), e202409366.
1.1 <b>Reagents:</b> Potassium carbonate <b>Catalysts:</b> Palladium diacetate, Tris(2-furyl)phosphine, Bicyclo [2.2.1]hept-2-ene-2-carboxylic acid, methyl ester, ( <i>1R,4R</i> )- <b>Solvents:</b> Toluene; 12 h, 105 °C	Experimental Protocols	

### Scheme 418 (1 Reaction)



 Suppliers (81)

## Suppliers (89)

31-614-CAS-36398902

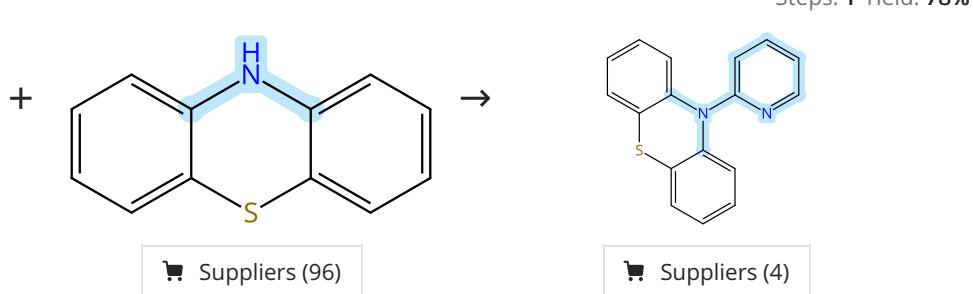
Steps: 1 Yield: 78%

# Discovery of N-substituted oseltamivir derivatives as novel neuraminidase inhibitors with improved drug resistance profiles and favorable drug-like properties

By: Jia, Ruifang; et al

European Journal of Medicinal Chemistry (2023), 252, 115275.

### Scheme 419 (1 Reaction)



 Suppliers (79)

 Suppliers (96)

 Suppliers (4)

31-614-CAS-39724042

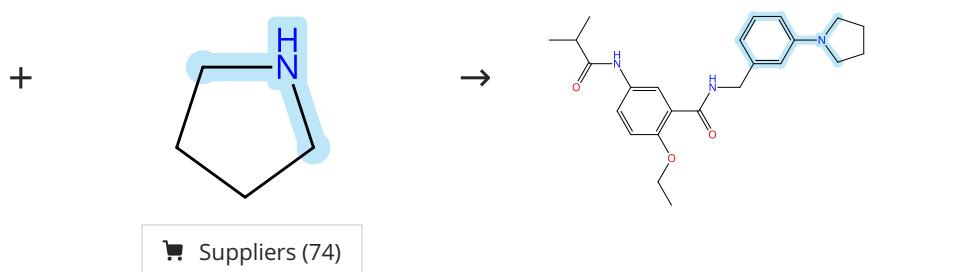
Steps: 1 Yield: 78%

# Polymorphism-Dependent Organic Room Temperature Phosphorescent Scintillation for X-Ray Imaging

By: Dong, Mengyang; et al

Advanced Materials (Weinheim, Germany) (2024), 36(18), 2310663.

### Scheme 420 (1 Reaction)



## Suppliers (74)

31-614-CAS-40725595

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, 1,1'-(9,9-Dimethyl-9*H*-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]

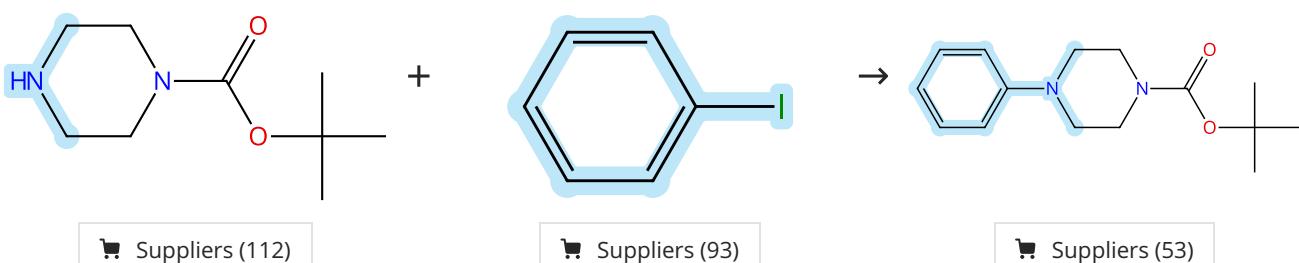
Solvents: Toluene; rt → 90 °C

Experimental Protocols

**Discovery of 2-Ethoxy-5-isobutyramido-N-1-substituted Benzamide Derivatives as Selective Kv2.1 Inhibitors with In Vivo Neuroprotective Effects**

By: Zhou, Jie; et al

Journal of Medicinal Chemistry (2024), 67(1), 213-233.

**Scheme 421 (1 Reaction)**

31-614-CAS-36749037

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine

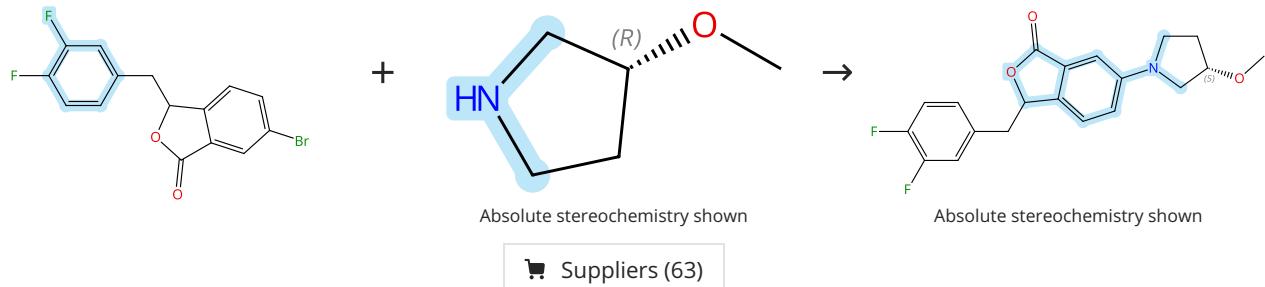
Solvents: 1,4-Dioxane; overnight, heated

Experimental Protocols

**Structure-Activity relationships of replacements for the triazolopyridazine of Anti-Cryptosporidium lead SLU-2633**

By: Oboh, Edmund; et al

Bioorganic &amp; Medicinal Chemistry (2023), 86, 117295.

**Scheme 422 (1 Reaction)**

31-614-CAS-41971267

Steps: 1 Yield: 78%

1.1 Reagents: Cesium carbonate

Catalysts: Palladium diacetate, 1,1'-(9,9-Dimethyl-9*H*-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]

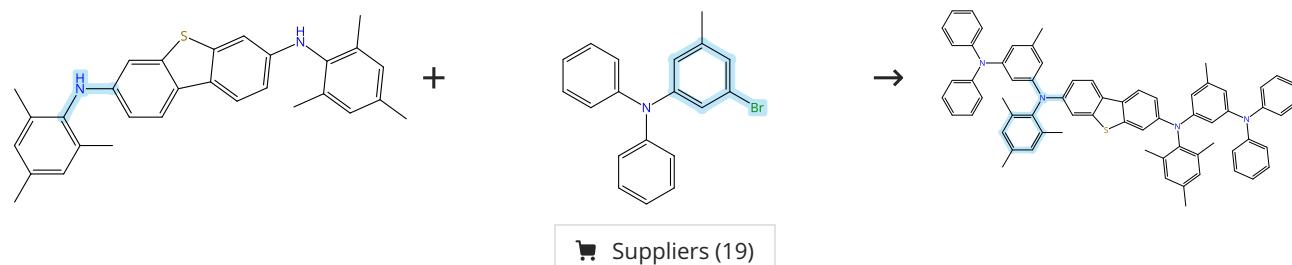
Solvents: Toluene; 11 h, rt → 100 °C

Experimental Protocols

**Construction of Lactones via Ligand-Enabled Ni-Catalyzed Alkene Hydroxylarylation/Lactonization**

By: Wang, Dao-Ming; et al

Organic Letters (2024), 26(38), 8171-8176.

**Scheme 423 (1 Reaction)**

31-614-CAS-41860636

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine

Solvents: Toluene; overnight, 120 °C

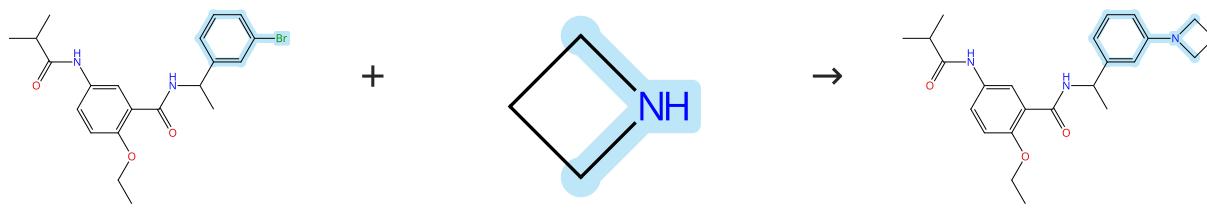
Experimental Protocols

Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

Scheme 424 (1 Reaction)

[Suppliers \(71\)](#)

31-614-CAS-40725599

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, 1,1'-(9,9-Dimethyl-9H-xanthene-4,5-diy)bis[1,1-diphenylphosphine]

Solvents: Toluene; rt → 90 °C

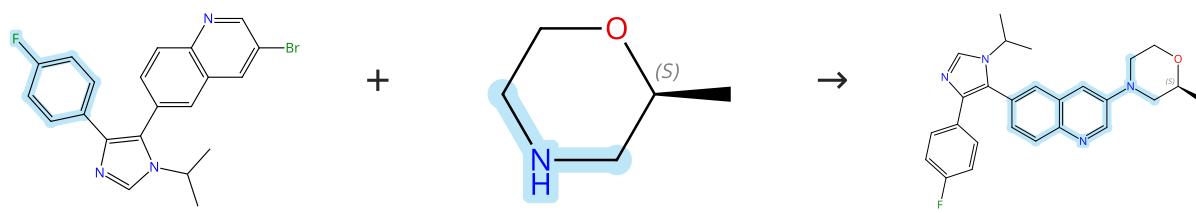
Experimental Protocols

Discovery of 2-Ethoxy-5-isobutyramido-N-1-substituted Benzamide Derivatives as Selective Kv2.1 Inhibitors with *In Vivo* Neuroprotective Effects

By: Zhou, Jie; et al

Journal of Medicinal Chemistry (2024), 67(1), 213-233.

Scheme 425 (1 Reaction)

[Suppliers \(64\)](#)

31-614-CAS-39722158

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, 2'-(Dicyclohexylphosphino)-*N,N*-dimethyl[1,1'-biphenyl]-2-amine

Solvents: Toluene; 18 h, 100 °C

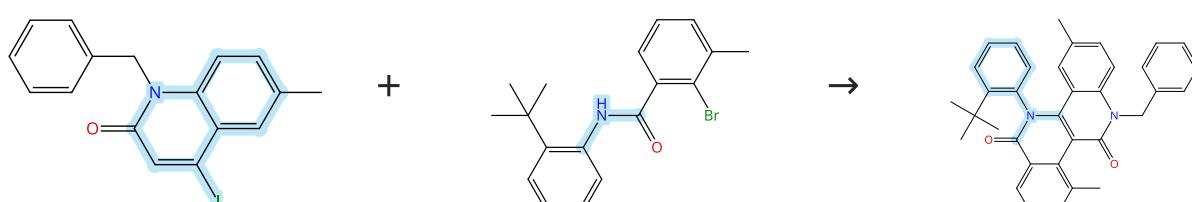
Experimental Protocols

Fragment growth-based discovery of novel TNIK inhibitors for the treatment of colorectal cancer

By: Teng, Yixin; et al

European Journal of Medicinal Chemistry (2024), 268, 116240.

Scheme 426 (1 Reaction)

[Supplier \(1\)](#)

31-614-CAS-39194482

Steps: 1 Yield: 78%

1.1 Reagents: Potassium carbonate

Catalysts: Palladium diacetate, Ethyl (1*S*,4*R*)-bicyclo[2.2.1]hept-2-ene-2-carboxylate

Solvents: Tetrahydrofuran; 5 min, rt; 48 h, 80 °C

Experimental Protocols

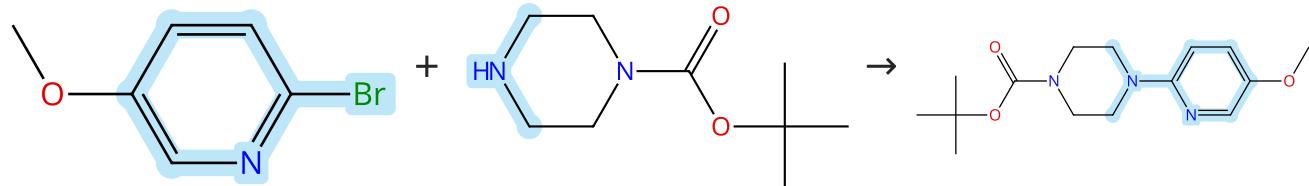
Asymmetric Two-Component Alkenyl Catellani Reaction for the Construction of C-N Axial Chirality

By: Wu, Chenggui; et al

Chinese Journal of Chemistry (2024), 42(7), 699-704.

Scheme 427 (1 Reaction)

Steps: 1 Yield: 78%



Suppliers (84)

Suppliers (112)

Supplier (1)

31-614-CAS-39925911

Steps: 1 Yield: 78%

1.1 Reagents: Cesium carbonate

Catalysts: Tris(dibenzylideneacetone)dipalladium, 1,1'-(9,9-Dimethyl-9*H*-xanthene-4,5-diy)bis[1,1-diphenylphosphine]

Solvents: Tetrahydrofuran; 10 h, 70 °C

Experimental Protocols

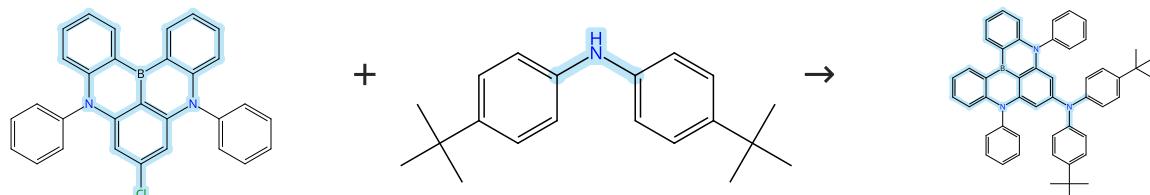
Design, synthesis, and biological evaluation of piperazine derivatives as pan-PPARs agonists for the treatment of liver fibrosis

By: Sun, Gang; et al

European Journal of Medicinal Chemistry (2024), 269, 116344.

Scheme 428 (1 Reaction)

Steps: 1 Yield: 78%



Suppliers (55)

31-614-CAS-41860665

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl

Solvents: Toluene; 8 h, 110 °C

Experimental Protocols

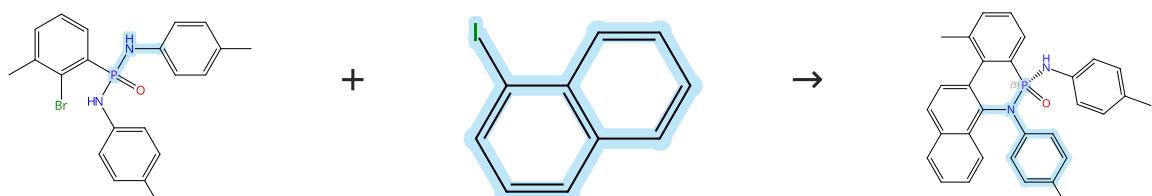
Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

Scheme 429 (1 Reaction)

Steps: 1 Yield: 78%



Suppliers (87)

Absolute stereochemistry shown

31-614-CAS-42232683

Steps: 1 Yield: 78%

1.1 Reagents: Potassium carbonate

Catalysts: Palladium diacetate, Tris(2-furyl)phosphine, Bicyclo[2.2.1]hept-2-ene-2-carboxylic acid, methyl ester, (1*R*,4*R*)-

Solvents: Acetonitrile; 12 h, 100 °C

Experimental Protocols

**Solvent-Controlled Enantiodivergent Construction of P(V)-Stereogenic Molecules via Palladium-Catalyzed Annulation of Prochiral N-Aryl Phosphonamides with Aromatic Iodides**

By: Tian, Qingyu; et al

Angewandte Chemie, International Edition (2024), 63(41), e202409366.

Scheme 430 (1 Reaction)



Suppliers (85)

31-614-CAS-39924765

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, BINAP

Solvents: Toluene; 100 °C

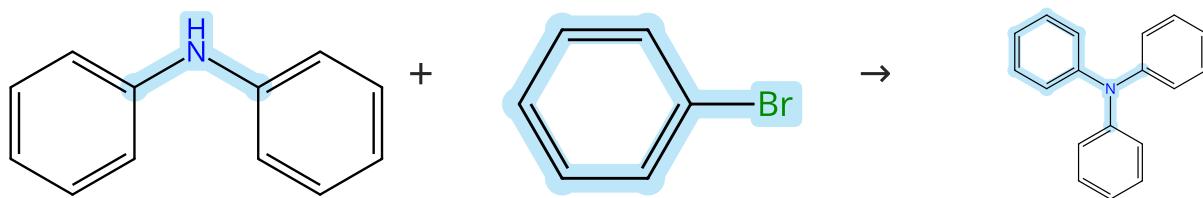
Experimental Protocols

**Discovery and Characterization of a New Class of C5aR1 Antagonists Showing In Vivo Activity**

By: Hubler, Francis; et al

Journal of Medicinal Chemistry (2024), 67(5), 4100-4119.

Scheme 431 (1 Reaction)



Suppliers (98)

Suppliers (71)

Suppliers (88)

31-614-CAS-38638303

Steps: 1 Yield: 78%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tri-*tert*-butylphosphine, Tris(dibenzylideneacetone) dipalladium

Solvents: Toluene; overnight, reflux

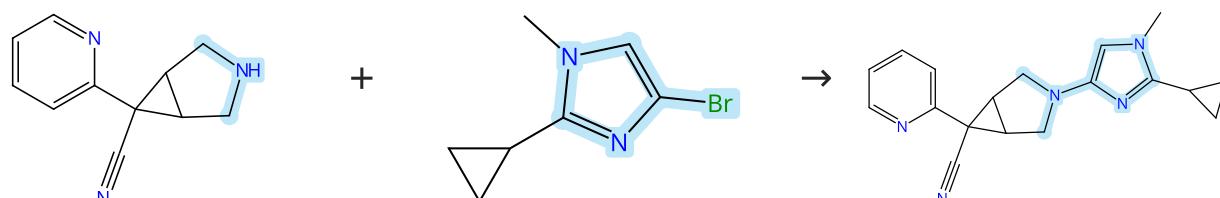
Experimental Protocols

**Naphthyl Substituted Impurities Induce Efficient Room Temperature Phosphorescence**

By: Qiao, Weiguo; et al

Angewandte Chemie, International Edition (2023), 62(50), e202315911.

Scheme 432 (1 Reaction)



Suppliers (2)

Suppliers (9)

31-614-CAS-35422626

Steps: 1 Yield: 77%

## 1.1 Reagents: Sodium trimethylsilanolate

**Catalysts:** Palladium, bromo[dicyclohexyl[3-(1,1-dimethylethoxy)-6-methoxy-2',6'-bis(1-methylethyl)[1,1'-biphenyl]-2-yl- $\kappa C^1$ ]phosphine- $\kappa P$ [4-[[2-(trimethylsilyl)ethoxy]carbonyl]phenyl], (*SP*-4-2)

**Solvents:** Tetrahydrofuran; 3 h, 70 °C

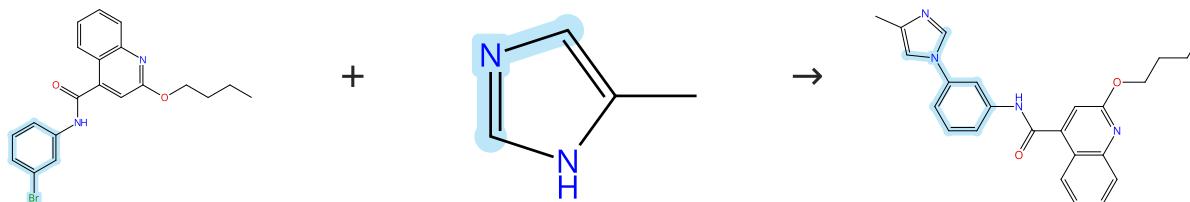
## Experimental Protocols

## Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteraryl Halides with Aliphatic Amines

By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

Scheme 433 (1 Reaction)



31-614-CAS-41986266

Steps: 1 Yield: 77%

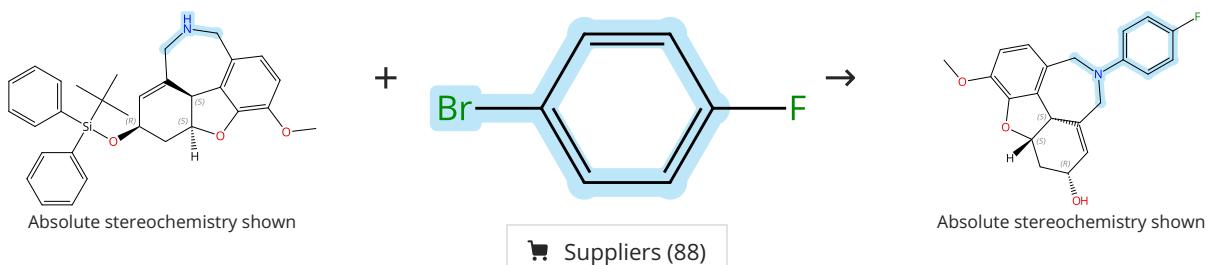
1.1 Catalysts: Tris(dibenzylideneacetone)dipalladium, Di-*tert*-butyl(2',4',6'-triisopropyl-3,4,5,6-tetramethylbiphenyl-2-yl)phosphine; 24 h, 120 °C

## Development of Tailless Homologue Receptor (TLX) Agonist Chemical Tools

By: Hank, Emily C.; et al

Journal of Medicinal Chemistry (2024), 67(18), 16598-16611.

Scheme 434 (1 Reaction)



31-614-CAS-36363951

Steps: 1 Yield: 77%

1.1 Catalysts: Palladium diacetate, BINAP  
Solvents: Toluene; 4 h, rt1.2 Reagents: Potassium *tert*-butoxide  
Solvents: Toluene; 24 h, 110 °C

## 1.3 Reagents: Water

1.4 Reagents: Hydrochloric acid  
Solvents: Methanol, Water; rt; overnight, 35 °C1.5 Reagents: Ammonium hydroxide  
Solvents: Water; pH 10

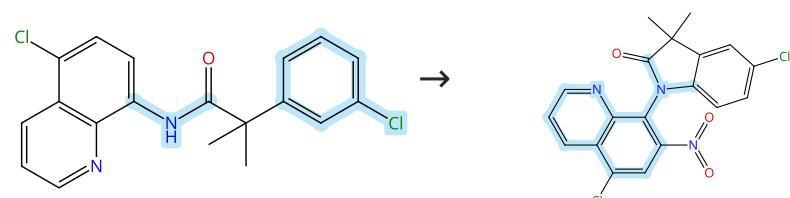
## Palladium-Catalyzed Synthesis, Acetylcholinesterase Inhibition, and Neuroprotective Activities of N-Aryl Galantamine Analogues

By: Zhang, Yang; et al

Journal of Natural Products (2023), 86(4), 939-946.

## Experimental Protocols

Scheme 435 (1 Reaction)



31-614-CAS-34978842

Steps: 1 Yield: 77%

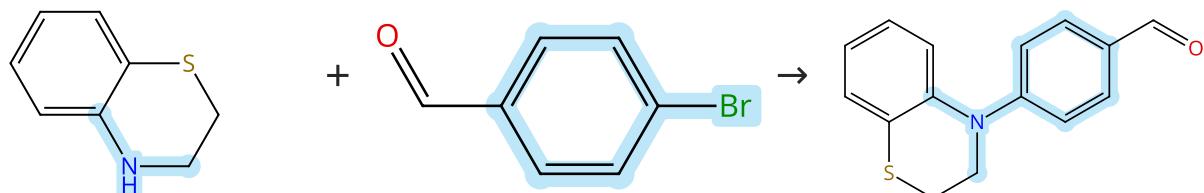
Palladium-catalyzed intramolecular C-H amination using aluminum nitrate as the oxidant

By: Jia, Kai; et al

Organic Chemistry Frontiers (2023), 10(1), 109-114.

Experimental Protocols

Scheme 436 (1 Reaction)



Suppliers (67)

Suppliers (89)

31-614-CAS-36398811

Steps: 1 Yield: 77%

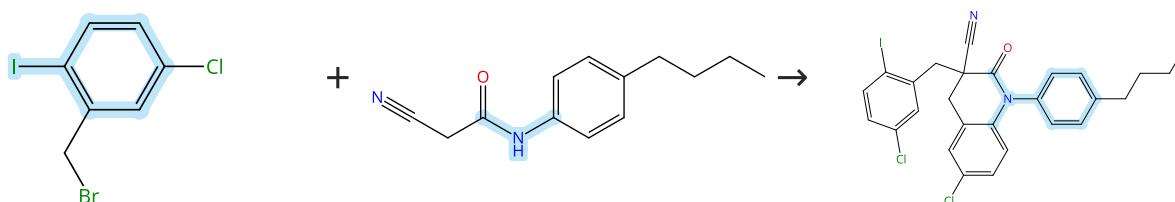
Discovery of N-substituted oseltamivir derivatives as novel neuraminidase inhibitors with improved drug resistance profiles and favorable drug-like properties

By: Jia, Ruifang; et al

European Journal of Medicinal Chemistry (2023), 252, 115275.

Experimental Protocols

Scheme 437 (1 Reaction)



Suppliers (42)

Suppliers (37)

31-614-CAS-39519114

Steps: 1 Yield: 77%

Synthesis of highly functionalized dihydroquinolinones via a tandem benzylation/intramolecular C-N coupling strategy

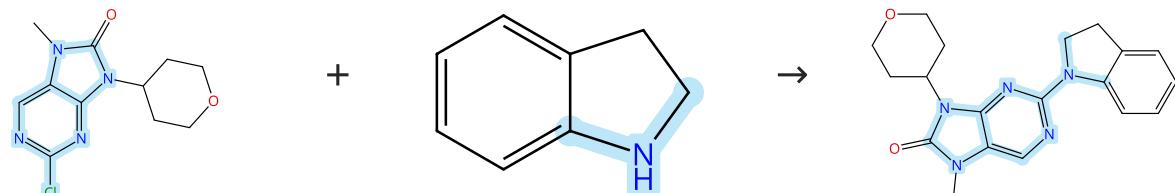
By: Gao, Pei-Sen; et al

Tetrahedron (2024), 155, 133865.

1.1 Reagents: Cesium carbonate  
Solvents: 1,4-Dioxane; 1 h, 110 °C1.2 Catalysts: Palladium diacetate, 1,1'-(9,9-Dimethyl-9H-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]  
Solvents: 1,4-Dioxane; 10 h, 110 °C1.3 Reagents: Ammonium chloride  
Solvents: Water

Experimental Protocols

Scheme 438 (1 Reaction)



Suppliers (32)

Suppliers (93)

31-614-CAS-38999224

Steps: 1 Yield: 77%

**1.1 Reagents:** Cesium carbonate  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, Dicyclohexyl[3,6-dimethoxy-2',4',6'-tris(1-methylethyl)[1,1'-biphenyl]-2-yl]phosphine  
**Solvents:** 1,4-Dioxane; overnight, 100 °C

**Discovery, Optimization, and Evaluation of Potent and Selective DNA-PK Inhibitors in Combination with Chemotherapy or Radiotherapy for the Treatment of Malignancies**

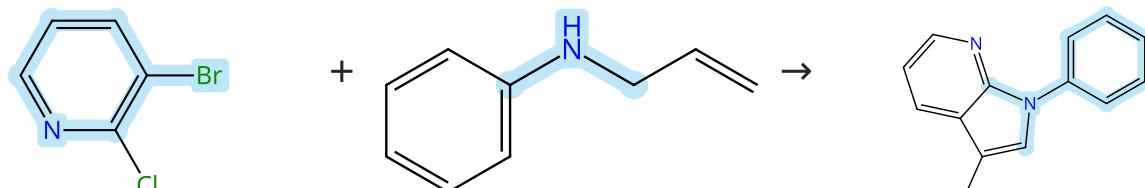
By: Liu, Kongjun; et al

Journal of Medicinal Chemistry (2024), 67(1), 245-271.

Experimental Protocols

**Scheme 439 (1 Reaction)**

Steps: 1 Yield: 77%



Suppliers (98)

Suppliers (63)

Suppliers (2)

31-614-CAS-38970010

Steps: 1 Yield: 77%

**1.1 Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium, [7,9-bis[2,6-bis(1-methylethyl)phenyl]-7,9-dihydro-8*H*-acenaphth[1,2-*d*]imidazol-8-ylidene]bromo[2-(4,5-dihydro-4,4-dimethyl-2-oxazolyl- $\kappa\beta$ )-1-naphthalenyl- $\kappa\text{C}$ ]-, (*SP*-4-4)-  
**Solvents:** 1,4-Dioxane; 24 h, 100 °C

**A General Protocol toward Synthesis of 3-Methylindoles Using Acenaphthoimidazolydene-Ligated Oxazoline Palladacycle**

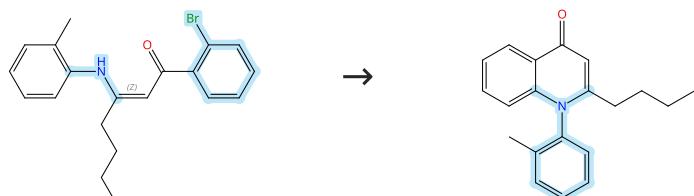
By: Fan, Ruqian; et al

Organic Letters (2024), 26(1), 22-28.

Experimental Protocols

**Scheme 440 (1 Reaction)**

Steps: 1 Yield: 77%



Double bond geometry shown

31-614-CAS-40129294

Steps: 1 Yield: 77%

**1.1 Reagents:** Potassium carbonate, Sodium hydroxide  
**Catalysts:** Palladium diacetate, (-)-BINAP  
**Solvents:** Toluene, 1,4-Dioxane; 18 h, 60 °C

**Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers**

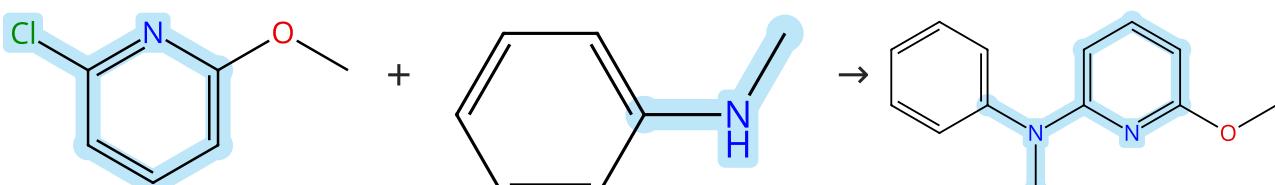
By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

Experimental Protocols

**Scheme 441 (1 Reaction)**

Steps: 1 Yield: 77%



Suppliers (90)

Suppliers (69)

Suppliers (3)

31-614-CAS-42014411

Steps: 1 Yield: 77%

1.1 **Catalysts:** Phenylboronic acid, Palladium diacetate, 1*H*-Indole, 3-(dicyclohexylphosphino)-1-methyl-2-(2,3,4-trimethoxyphenyl)-  
**Solvents:** Dichloromethane; rt

1.2 **Reagents:** Sodium *tert*-butoxide  
**Solvents:** Toluene; rt; 24 h, 135 °C; 135 °C → rt

1.3 **Solvents:** Water; rt

Experimental Protocols

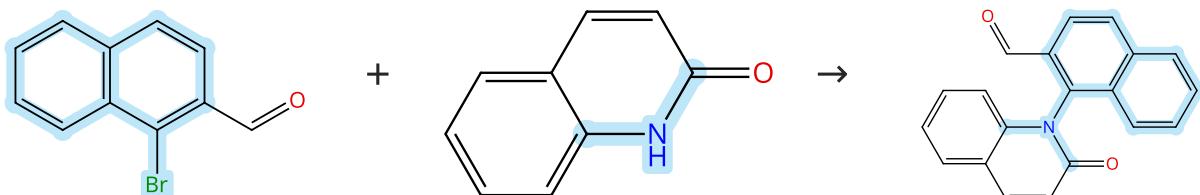
**Application of indole-based monophosphine in ppm level Pd-catalyzed C-N bond formation**

By: Li, Cheuk Long; et al

Journal of Organometallic Chemistry (2024), 1011, 123124.

Scheme 442 (1 Reaction)

Steps: 1 Yield: 77%



Suppliers (71)

Suppliers (83)

31-614-CAS-41335316

Steps: 1 Yield: 77%

1.1 **Catalysts:** Palladium, tris[μ-[(1,2-η;4,5-η)-(1*E*,4*E*)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2*R*)-1-[(1*R*)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene  
**Solvents:** *tert*-Butyl methyl ether; 30 min, rt

1.2 **Reagents:** Tripotassium phosphate; 36 h, 90 °C

Experimental Protocols

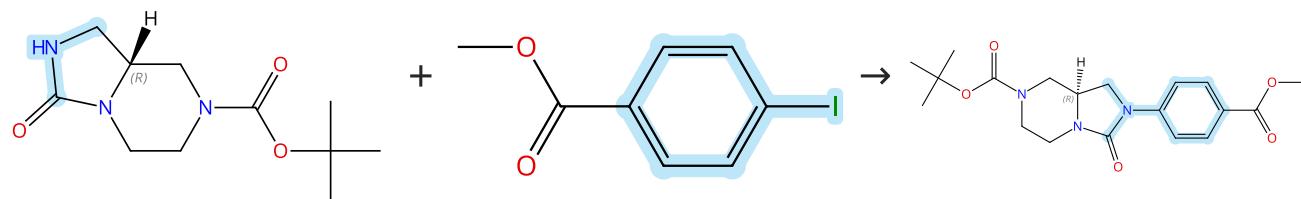
**Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination**

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

Scheme 443 (1 Reaction)

Steps: 1 Yield: 77%



Absolute stereochemistry shown

Suppliers (42)

Suppliers (93)

Absolute stereochemistry shown

Supplier (1)

31-614-CAS-40593935

Steps: 1 Yield: 77%

1.1 **Reagents:** Cesium carbonate  
**Catalysts:** Palladium diacetate, 1,1'-(9,9-Dimethyl-9*H*-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]  
**Solvents:** 1,4-Dioxane; 5 min, rt; overnight, 90 °C

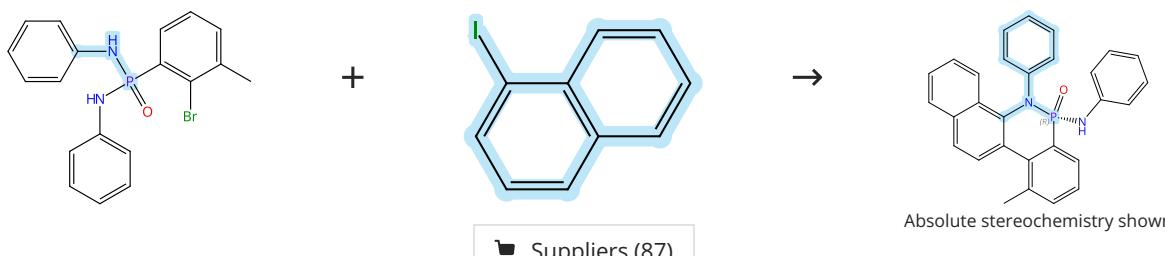
Experimental Protocols

**Discovery of Linvencovir (RG7907), a Hepatitis B Virus Core Protein Allosteric Modulator, for the Treatment of Chronic HBV Infection**

By: Zhang, Weixing; et al

Journal of Medicinal Chemistry (2023), 66(6), 4253-4270.

Scheme 444 (1 Reaction)



31-614-CAS-42232628

Steps: 1 Yield: 77%

- 1.1 Reagents: Sodium *tert*-butoxide  
 Catalysts: Palladium diacetate, Tris(2-furyl)phosphine, Bicyclo[2.2.1]hept-2-ene-2-carboxylic acid, methyl ester, (*1R,4R*)-  
 Solvents: Toluene; 12 h, 100 °C

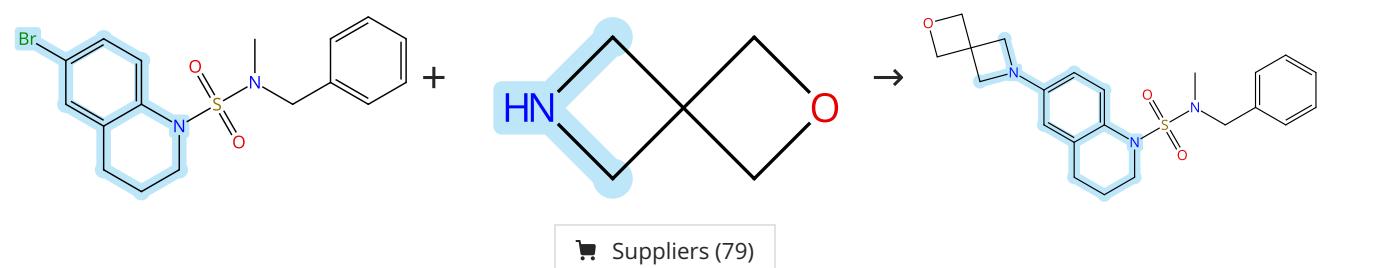
Experimental Protocols

Solvent-Controlled Enantiodivergent Construction of P(V)-Stereogenic Molecules via Palladium-Catalyzed Annulation of Prochiral N-Aryl Phosphonamides with Aromatic Iodides

By: Tian, Qingyu; et al

Angewandte Chemie, International Edition (2024), 63(41), e202409366.

Scheme 445 (1 Reaction)



31-614-CAS-43475751

Steps: 1 Yield: 77%

- 1.1 Reagents: Cesium carbonate  
 Catalysts: Palladium diacetate, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine  
 Solvents: 1,4-Dioxane; 6 h, 100 °C

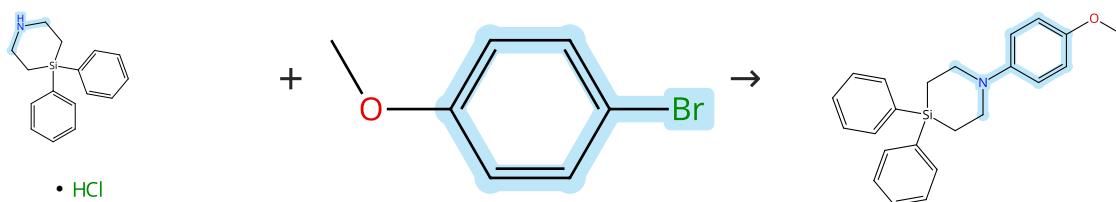
Experimental Protocols

Discovery of Novel N-Sulfonamide-tetrahydroquinolines as Potent Retinoic Acid Receptor-Related Orphan Receptor *yt* (R OR<sub>yt</sub>) Inverse Agonists for the Treatment of Psoriasis

By: Lv, Lunan; et al

Journal of Medicinal Chemistry (2024), 67(23), 21400-21420.

Scheme 446 (1 Reaction)



31-614-CAS-39736397

Steps: 1 Yield: 77%

- 1.1 Reagents: Sodium *tert*-butoxide  
 Catalysts: Bis(*tri-tert*-butylphosphine)palladium  
 Solvents: Toluene; 12 h, 80 °C

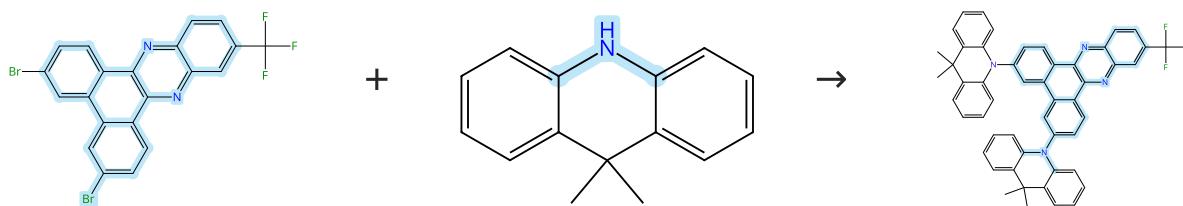
Experimental Protocols

Controllable Si-C Bond Formation from Trihydrosilanes En Route to Synthesis of 1,4-Azasilinanes with Diverse Silyl Functionalities

By: Guo, Jiawei; et al

Organic Letters (2023), 25(40), 7428-7433.

Scheme 447 (1 Reaction)



Suppliers (68)

31-614-CAS-43376633

Steps: 1 Yield: 77%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos

Solvents: Toluene; 30 min, 130 °C

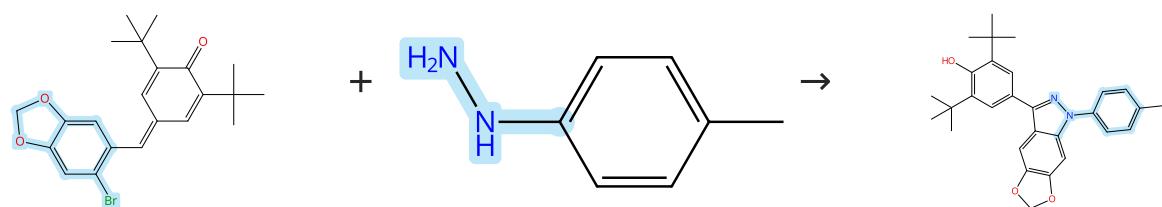
Experimental Protocols

**Microwave-Assisted Buchwald-Hartwig Double Amination: A Rapid and Promising Approach for the Synthesis of TADF Compounds**

By: Mohd Jamel, Nor Shafiq; et al

ACS Omega (2024), 9(51), 50446-50457.

Scheme 448 (1 Reaction)



Suppliers (55)

31-614-CAS-38947684

Steps: 1 Yield: 77%

1.1 Reagents: Potassium *tert*-butoxide

Catalysts: Palladium diacetate, 1,3-Bis(diphenylphosphino)propane

Solvents: Toluene; 15 h, 110 °C

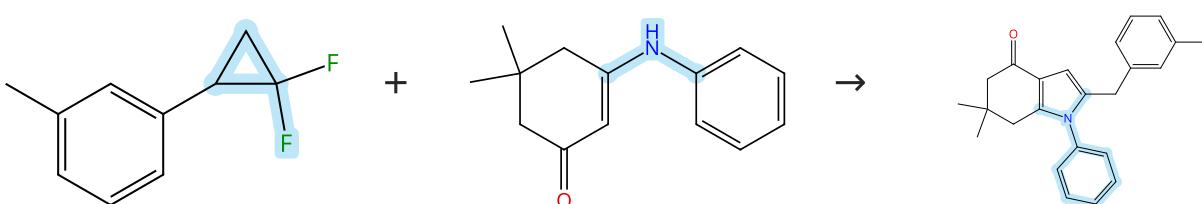
Experimental Protocols

**Synthesis and Photophysical Properties of 3-Substituted-1*H*-Indazoles: A Pd-Catalyzed Double C-N Bond Formation Strategy via 1,6-Conjugate Addition**

By: Kayastha, Nasib; et al

Journal of Organic Chemistry (2024), 89(1), 402-413.

Scheme 449 (1 Reaction)



Suppliers (37)

31-614-CAS-39213716

Steps: 1 Yield: 77%

1.1 Reagents: Monosodium phosphate

Catalysts: Tris(dibenzylideneacetone)dipalladium, X-Phos

Solvents: Tetrahydrofuran; 12 h, 65 °C; 65 °C → rt

1.2 Reagents: Cesium carbonate

Solvents: Ethanol; 12 h, 80 °C

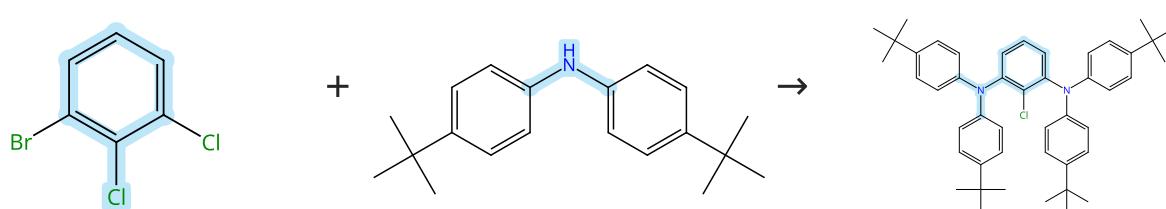
Experimental Protocols

**Ligand-controlled regioselective cascade C-C/C-F cleavage/annulation of gem-DFCPs: a divergent synthesis of pyrroles**

By: Wu, Tian-Shu; et al

Organic Chemistry Frontiers (2024), 11(4), 1057-1061.

Scheme 450 (1 Reaction)



Suppliers (77)

Suppliers (55)

Suppliers (5)

31-614-CAS-41275827

Steps: 1 Yield: 77%

## 1.1 Reagents:

Sodium *tert*-butoxide  
Catalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate  
Solvents: Toluene; 18 h, 90 °C

**Building a photocatalyst library of MR-TADF compounds with tunable excited-state redox potentials**

By: Hammerling, Lea; et al

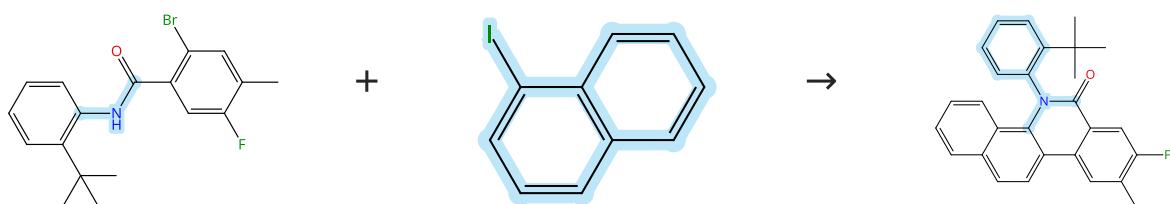
Chem Catalysis (2024), 4(8), 101061.

## 1.2 Reagents:

Water

Experimental Protocols

Scheme 451 (1 Reaction)



Suppliers (87)

31-614-CAS-41071042

Steps: 1 Yield: 77%

## 1.1 Reagents:

Norbornene, Silver sulfate  
Catalysts: Tris(dibenzylideneacetone)dipalladium, (4*S*,4'*S*)-4,4',5,5'-Tetrahydro-4,4'-bis(1-methylethyl)-1,1'-bis[3-(trifluoromethyl)phenyl]-2,2'-bi-1*H*-imidazole  
Solvents: Toluene, Water; 36 h, 80 °C

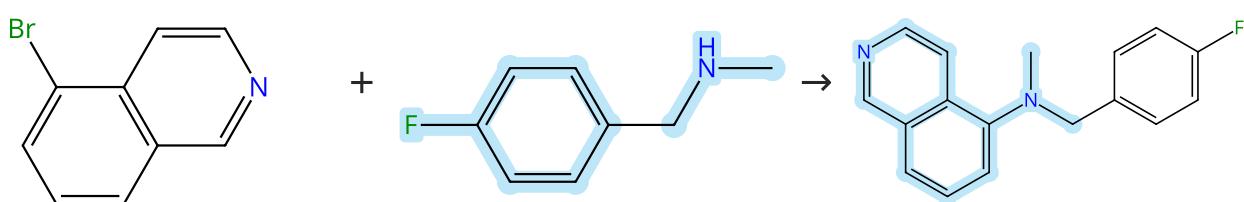
**Chiral dinitrogen ligand enabled asymmetric Pd/norbornene cooperative catalysis toward the assembly of C–N axially chiral scaffolds**

By: Jin, Liang; et al

Nature Communications (2024), 15(1), 4908.

Experimental Protocols

Scheme 452 (1 Reaction)



Suppliers (98)

Suppliers (76)

31-614-CAS-43159485

Steps: 1 Yield: 77%

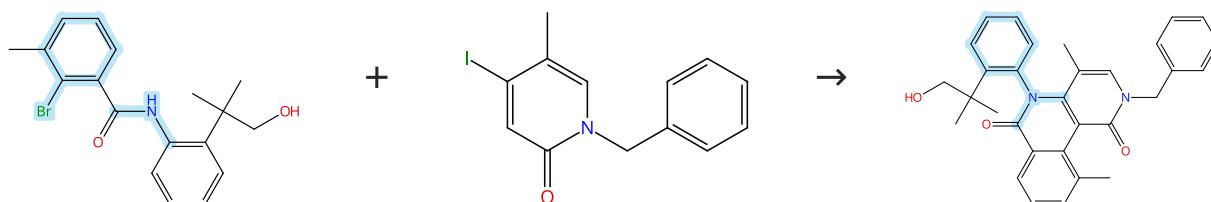
**Ruthenium-Catalyzed Carbocycle-Selective Hydrogenation of Fused Heteroarenes**

By: Luo, Chenguang; et al

Journal of the American Chemical Society (2024), 146(51), 35043-35056.

Experimental Protocols

Scheme 453 (1 Reaction)



31-614-CAS-39194520

Steps: 1 Yield: 77%

1.1 Reagents: Potassium carbonate

Catalysts: Palladium diacetate, Tris(2-furyl)phosphine, Ethyl (1*S*,4*R*)-bicyclo[2.2.1]hept-2-ene-2-carboxylate

Solvents: Tetrahydrofuran; 5 min, rt; 48 h, 90 °C

**Asymmetric Two-Component Alkenyl Catellani Reaction for the Construction of C-N Axial Chirality**

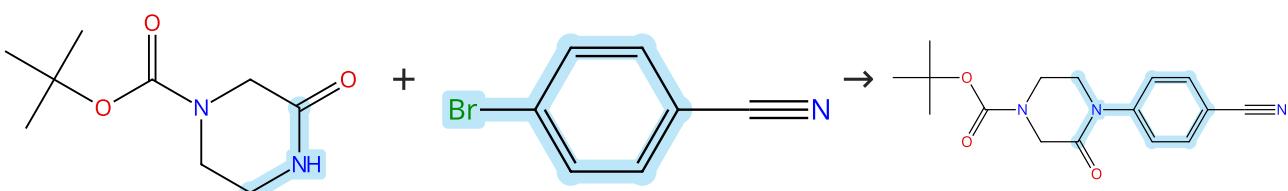
By: Wu, Chenggui; et al

Chinese Journal of Chemistry (2024), 42(7), 699-704.

Experimental Protocols

Scheme 454 (1 Reaction)

Steps: 1 Yield: 77%



Suppliers (94)

Suppliers (93)

Supplier (1)

31-614-CAS-38701049

Steps: 1 Yield: 77%

1.1 Reagents: Cesium carbonate

Catalysts: Palladium diacetate, 1,1'-(9,9-Dimethyl-9*H*-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]

Solvents: 1,4-Dioxane; 16 h, 90 °C; 90 °C → rt

1.2 Reagents: Water; rt

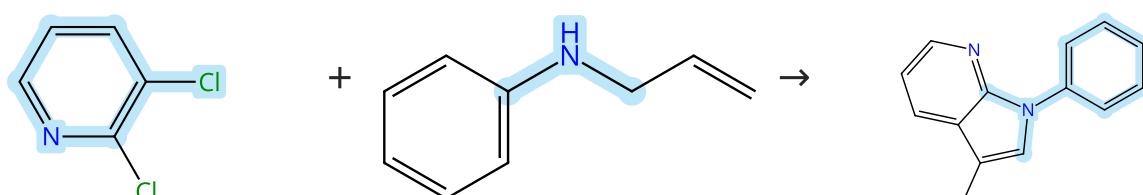
**Discovery of (2*S*)-N-(6-cyano-5-(trifluoromethyl)pyridin-3-yl)-3-(6-(4-cyanophenyl)-3,6-diazabicyclo[3.1.1]heptan-3-yl)-2-hydroxy-2-methylpropanamide as a Highly Potent and Selective Topical Androgen Receptor Antagonist for Androgenetic Alopecia Treatment**

By: Zhang, Wenqiang; et al

Journal of Medicinal Chemistry (2024), 67(1), 322-348.

Scheme 455 (1 Reaction)

Steps: 1 Yield: 77%



Suppliers (91)

Suppliers (63)

Suppliers (2)

31-614-CAS-38969990

Steps: 1 Yield: 77%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Palladium, [7,9-bis[2,6-bis(1-methylethyl)phenyl]-7,9-dihydro-8*H*-acenaphth[1,2-*d*]imidazol-8-ylidene]bromo[2-(4,5-dihydro-4,4-dimethyl-2-oxazolyl-*kN*<sup>3</sup>)-1-naphthalenyl-*kC*]-, (*SP*-4-4)-

Solvents: 1,4-Dioxane; 24 h, 100 °C

**A General Protocol toward Synthesis of 3-Methylindoles Using Acenaphthoimidazolidene-Ligated Oxazoline Palladacycle**

By: Fan, Ruojian; et al

Organic Letters (2024), 26(1), 22-28.

Experimental Protocols

**Scheme 456 (1 Reaction)**

Steps: 1 Yield: 77%



31-614-CAS-36215336

Steps: 1 Yield: 77%

## 1.1 Reagents: Potassium carbonate

Catalysts: Palladium diacetate, Ferrocene, 1-(diphenylphosphino)-2-[(1*S*)-1-[(diphenylphosphino)propylamino]ethyl]-, (1*S*)-

Solvents: Toluene; 20 h, 80 °C

**Synthesis of N-Substituted 4-Quinolones via Palladium-Catalyzed Enantioselective C-N Coupling and Base-Promoted Reactions**

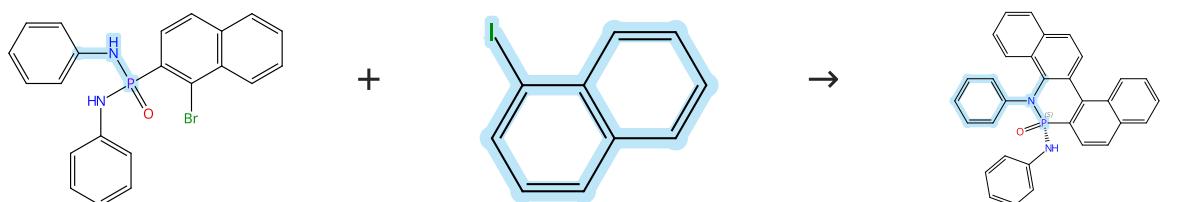
By: Pu, Xiaoyun; et al

Advanced Synthesis &amp; Catalysis (2023), 365(8), 1152-1157.

## Experimental Protocols

**Scheme 457 (1 Reaction)**

Steps: 1 Yield: 77%



Suppliers (87)

Absolute stereochemistry shown

31-614-CAS-42232677

Steps: 1 Yield: 77%

## 1.1 Reagents: Potassium carbonate

Catalysts: Palladium diacetate, Tris(2-furyl)phosphine, Bicyclo[2.2.1]hept-2-ene-2-carboxylic acid, methyl ester, (1*R*,4*R*)-

Solvents: Acetonitrile; 12 h, 100 °C

## Experimental Protocols

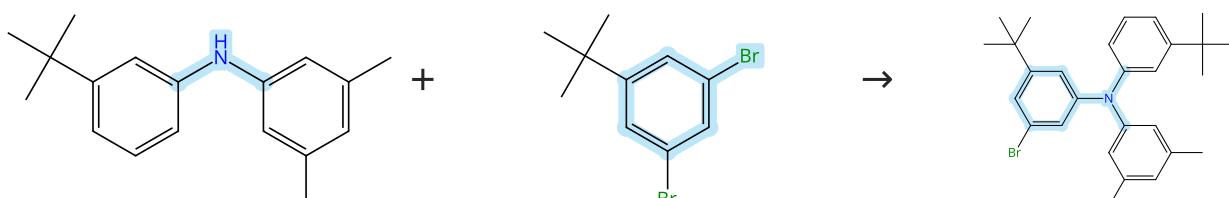
**Solvent-Controlled Enantiodivergent Construction of P(V)-Stereogenic Molecules via Palladium-Catalyzed Annulation of Prochiral N-Aryl Phosphonamides with Aromatic Iodides**

By: Tian, Qingyu; et al

Angewandte Chemie, International Edition (2024), 63(41), e202409366.

**Scheme 458 (1 Reaction)**

Steps: 1 Yield: 76%



Suppliers (77)

31-614-CAS-41372516

Steps: 1 Yield: 76%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, BINAP

Solvents: Toluene; 18 h, 90 °C

## Experimental Protocols

**"Core-Shell" Wave Function Modulation in Organic Narrowband Emitters**

By: Hayakawa, Masahiro; et al

Journal of the American Chemical Society (2024), 146(27), 18331-18340.

Scheme 459 (1 Reaction)



Suppliers (25)

31-614-CAS-39949679

Steps: 1 Yield: 76%

- 1.1 **Reagents:** Cesium carbonate  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, X-Phos  
**Solvents:** Toluene; 10 h, 110 °C
- 1.2 **Reagents:** Sodium hydroxide  
**Solvents:** Methanol, Tetrahydrofuran; 6 h, 60 °C; 60 °C → rt
- 1.3 **Reagents:** Hydrochloric acid  
**Solvents:** Water; pH 5

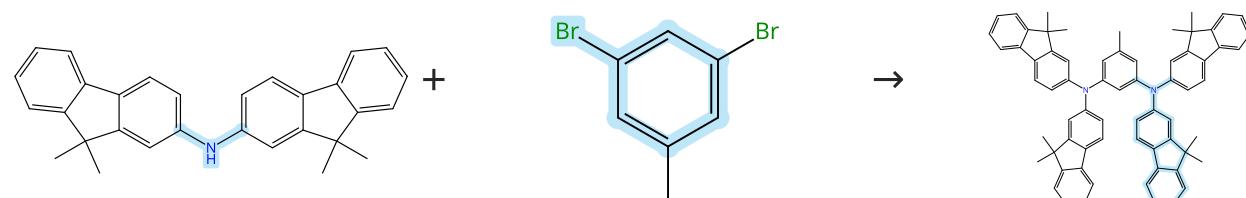
**Discovery and Optimization of Novel Nonbile Acid FXR Agonists as Preclinical Candidates for the Treatment of Inflammatory Bowel Disease**

By: Li, Yuan; et al

Journal of Medicinal Chemistry (2024), 67(7), 5642-5661.

Experimental Protocols

Scheme 460 (1 Reaction)



Suppliers (57)

Suppliers (81)

31-614-CAS-41860532

Steps: 1 Yield: 76%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate  
**Solvents:** Toluene; overnight, 110 °C

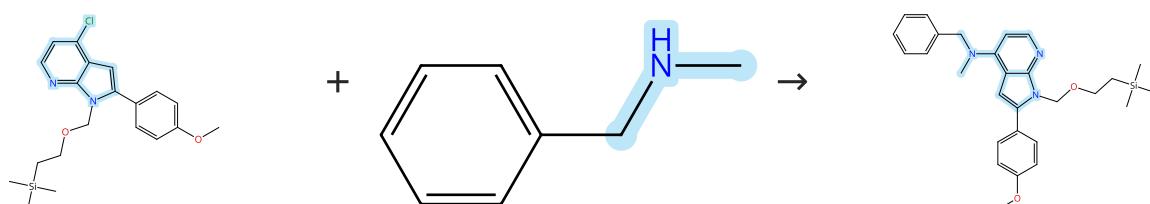
**Orienting Group Directed Cascade Borylation for Efficient One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters**

By: Wu, Lin; et al

Angewandte Chemie, International Edition (2024), 63(18), e202402020.

Experimental Protocols

Scheme 461 (1 Reaction)



Suppliers (81)

31-614-CAS-42383743

Steps: 1 Yield: 76%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine  
**Solvents:** *tert*-Butanol; 1 h, 85 °C

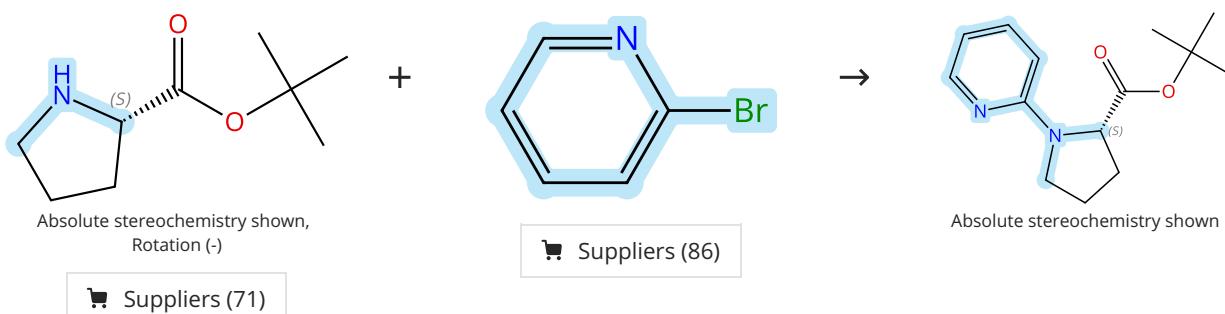
**Synthetic Routes to 2-aryl-1*H*-pyrrolo[2,3-*b*]pyridin-4-amines: Cross-Coupling and Challenges in SEM-Deprotection**

By: Merugu, Srinivas Reddy; et al

Molecules (2024), 29(19), 4743.

Experimental Protocols

Scheme 462 (1 Reaction)



31-614-CAS-39567736

Steps: 1 Yield: 76%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium, BINAP

Solvents: 1,4-Dioxane; overnight, 80 °C

Experimental Protocols

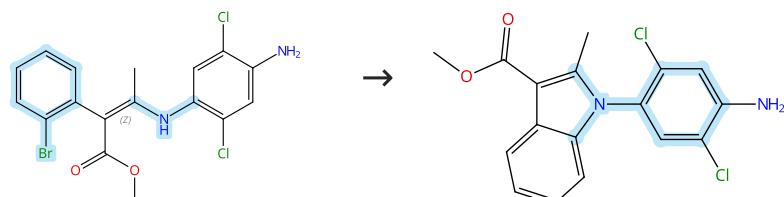
Copper-catalyzed direct  $\alpha$ -peroxidation of nitrogen heterocycles

By: Gerard, Phideline; et al

ARKIVOC (Gainesville, FL, United States) (2024), (5), 202312154.

Scheme 463 (1 Reaction)

Steps: 1 Yield: 76%



31-614-CAS-40129213

Steps: 1 Yield: 76%

Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers

By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

1.1 Catalysts: Palladium diacetate, (-)-BINAP

Solvents: Toluene; 20 min, rt

1.2 Reagents: Cesium carbonate

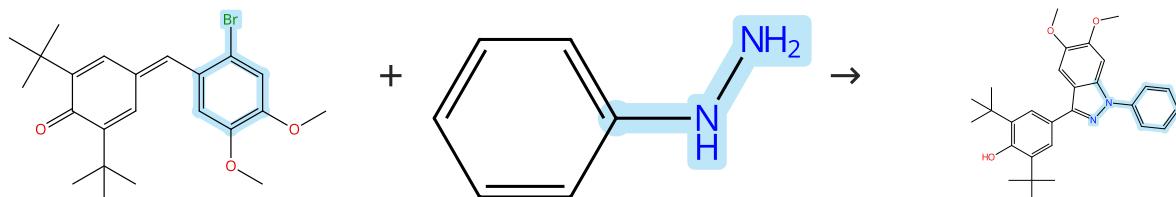
Solvents: Toluene; 5 min, rt

1.3 5 min, rt; 18 h, 60 °C

Experimental Protocols

Scheme 464 (1 Reaction)

Steps: 1 Yield: 76%



31-614-CAS-38947677

Steps: 1 Yield: 76%

Synthesis and Photophysical Properties of 3-Substituted-1H-Indazoles: A Pd-Catalyzed Double C-N Bond Formation Strategy via 1,6-Conjugate Addition

By: Kayastha, Nasib; et al

Journal of Organic Chemistry (2024), 89(1), 402-413.

1.1 Reagents: Potassium *tert*-butoxide

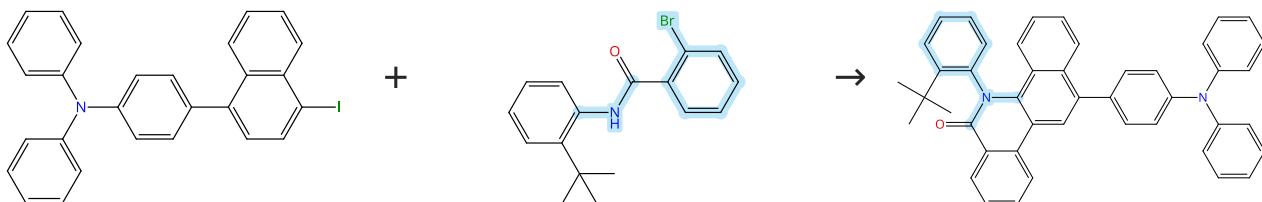
Catalysts: Palladium diacetate, 1,3-Bis(diphenylphosphino)propane

Solvents: Toluene; 15 h, 110 °C

Experimental Protocols

**Scheme 465 (1 Reaction)**

Steps: 1 Yield: 76%



Suppliers (5)

31-614-CAS-41071021

Steps: 1 Yield: 76%

1.1 Reagents: Norbornene, Silver sulfate

Catalysts: Tris(dibenzylideneacetone)dipalladium, (4S,4'S)-4,4',5,5'-Tetrahydro-4,4'-bis(1-methylethyl)-1,1'-bis[3-(trifluoromethyl)phenyl]-2,2'-bi-1H-imidazole

Solvents: Toluene, Water; 36 h, 80 °C

Chiral dinitrogen ligand enabled asymmetric Pd/norbornene cooperative catalysis toward the assembly of C-N axially chiral scaffolds

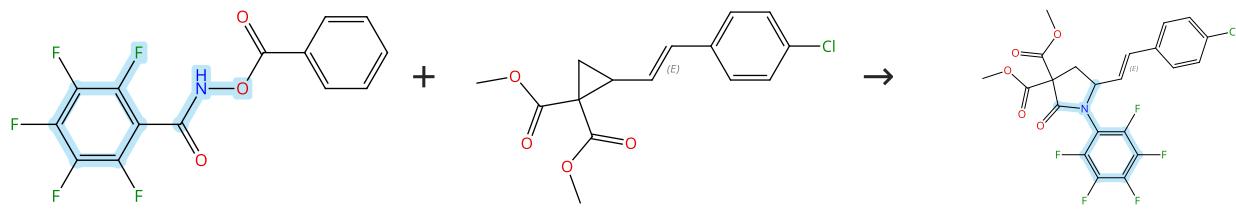
By: Jin, Liang; et al

Nature Communications (2024), 15(1), 4908.

Experimental Protocols

**Scheme 466 (1 Reaction)**

Steps: 1 Yield: 76%



Double bond geometry shown

Double bond geometry shown

31-614-CAS-36837158

Steps: 1 Yield: 76%

[3+2] Cycloaddition of Vinyl Cyclopropane and Hydroxylamines via Isocyanate Intermediate to γ-Lactams

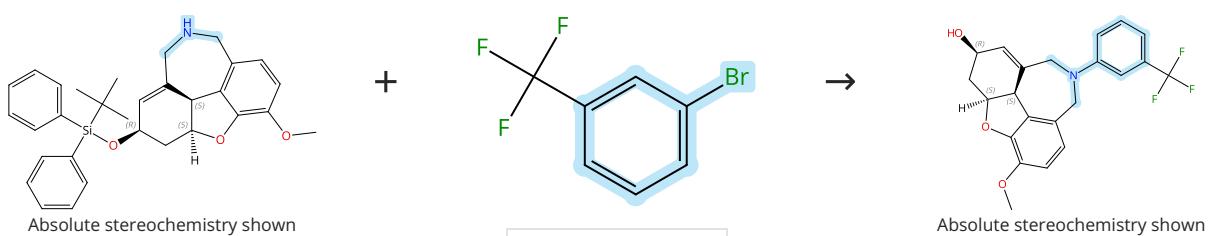
By: Huang, Xiaobing; et al

Chinese Journal of Chemistry (2023), 41(16), 1937-1942.

Experimental Protocols

**Scheme 467 (1 Reaction)**

Steps: 1 Yield: 76%



Suppliers (85)

Absolute stereochemistry shown

31-614-CAS-36363949

Steps: 1 Yield: 76%

1.1 **Catalysts:** Palladium diacetate, BINAP  
**Solvents:** Toluene; 4 h, rt

1.2 **Reagents:** Potassium *tert*-butoxide  
**Solvents:** Toluene; 24 h, 110 °C

1.3 **Reagents:** Water

1.4 **Reagents:** Hydrochloric acid  
**Solvents:** Methanol, Water; rt; overnight, 35 °C

1.5 **Reagents:** Ammonium hydroxide  
**Solvents:** Water; pH 10

Experimental Protocols

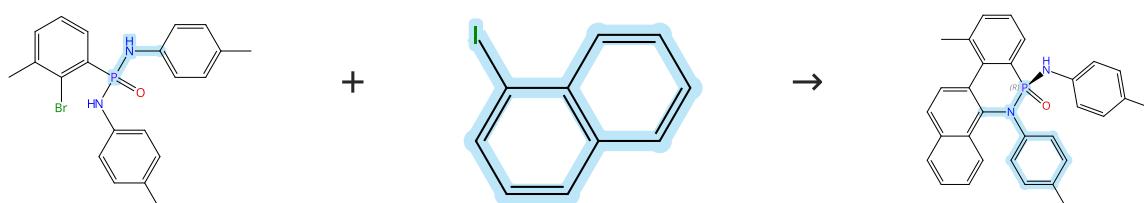
**Palladium-Catalyzed Synthesis, Acetylcholinesterase Inhibition, and Neuroprotective Activities of N-Aryl Galantamine Analogues**

By: Zhang, Yang; et al

Journal of Natural Products (2023), 86(4), 939-946.

**Scheme 468 (1 Reaction)**

Steps: 1 Yield: 76%



Suppliers (87)

Absolute stereochemistry shown

31-614-CAS-42232639

Steps: 1 Yield: 76%

1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, Tris(2-furyl)phosphine, Bicyclo[2.2.1]hept-2-ene-2-carboxylic acid, methyl ester, (1*R*,4*R*)-  
**Solvents:** Toluene; 12 h, 100 °C

Experimental Protocols

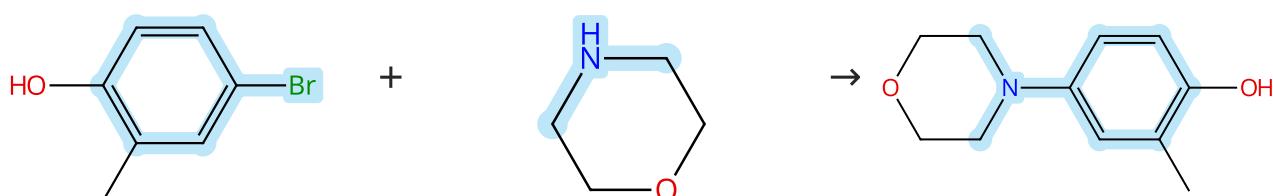
**Solvent-Controlled Enantiodivergent Construction of P(V)-Stereogenic Molecules via Palladium-Catalyzed Annulation of Prochiral N-Aryl Phosphonamides with Aromatic Iodides**

By: Tian, Qingyu; et al

Angewandte Chemie, International Edition (2024), 63(41), e202409366.

**Scheme 469 (1 Reaction)**

Steps: 1 Yield: 76%



Suppliers (80)

Suppliers (83)

Suppliers (8)

31-614-CAS-40984014

Steps: 1 Yield: 76%

1.1 **Reagents:** Lithium bis(trimethylsilyl)amide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2'-(Dicyclohexylphosphino)-*N,N*-dimethyl[1,1'-biphenyl]-2-amine  
**Solvents:** Tetrahydrofuran; 0 °C; 30 min, 0 °C → rt; rt → 65 °C; 4 h, 65 °C; 65 °C → rt

1.2 **Reagents:** Hydrochloric acid  
**Solvents:** Water; 5 min, rt

1.3 **Reagents:** Sodium bicarbonate  
**Solvents:** Water; neutralized

Experimental Protocols

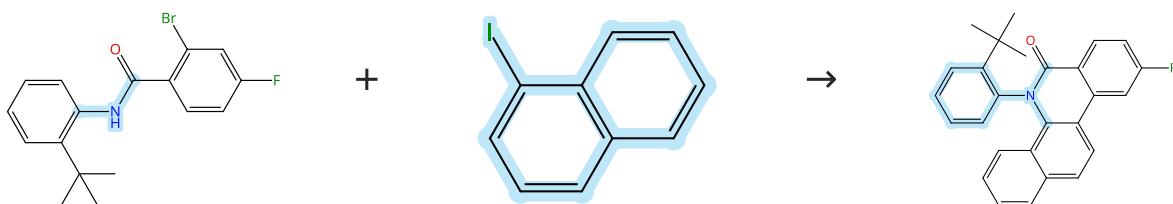
**Amination of Phenols and Halophenols via Pyridinium-Iridium Dual Photocatalysis**

By: Carson, Matthew C.; et al

ACS Catalysis (2024), 14(16), 12173-12180.

Scheme 470 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (2)

Suppliers (87)

31-614-CAS-41071036

Steps: 1 Yield: 76%

## 1.1 Reagents:

Norbornene, Silver sulfate  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, (4S,4'S)-4,4',5,5'-Tetrahydro-4,4'-bis(1-methylethyl)-1,1'-bis[3-(trifluoromethyl)phenyl]-2,2'-bi-1*H*-imidazole  
**Solvents:** Toluene, Water; 36 h, 80 °C

Chiral dinitrogen ligand enabled asymmetric Pd/norbornene cooperative catalysis toward the assembly of C–N axially chiral scaffolds

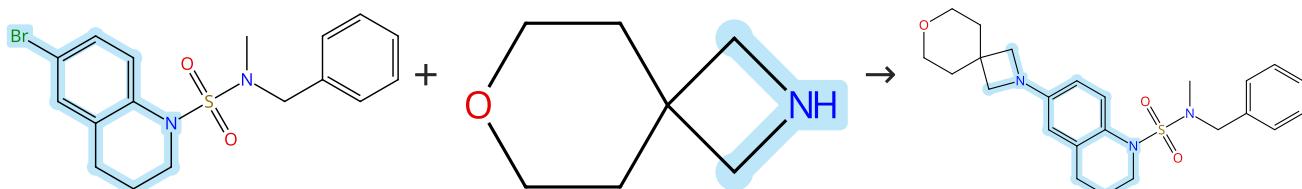
By: Jin, Liang; et al

Nature Communications (2024), 15(1), 4908.

## Experimental Protocols

Scheme 471 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (66)

31-614-CAS-43475746

Steps: 1 Yield: 76%

## 1.1 Reagents:

Cesium carbonate  
**Catalysts:** Palladium diacetate, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine  
**Solvents:** 1,4-Dioxane; 6 h, 100 °C

Discovery of Novel N-Sulfonamide-tetrahydroquinolines as Potent Retinoic Acid Receptor-Related Orphan Receptor *yt* (R OR<sub>yt</sub>) Inverse Agonists for the Treatment of Psoriasis

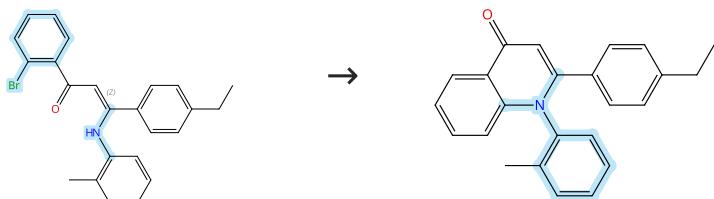
By: Lv, Lunan; et al

Journal of Medicinal Chemistry (2024), 67(23), 21400-21420.

## Experimental Protocols

Scheme 472 (1 Reaction)

Steps: 1 Yield: 76%



Double bond geometry shown

31-614-CAS-40129274

Steps: 1 Yield: 76%

## 1.1 Reagents:

Potassium carbonate, Sodium hydroxide  
**Catalysts:** Palladium diacetate, (-)-BINAP  
**Solvents:** Toluene, 1,4-Dioxane; 18 h, 40 °C

Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N–C Atropisomers

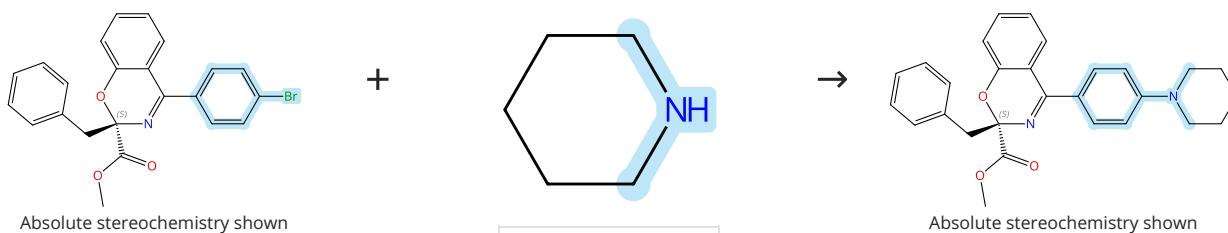
By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

## Experimental Protocols

Scheme 473 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (50)

31-614-CAS-40423736

Steps: 1 Yield: 76%

Enantioconvergent  $6\pi$  Electrocyclization Enabled by Photoredox Racemization

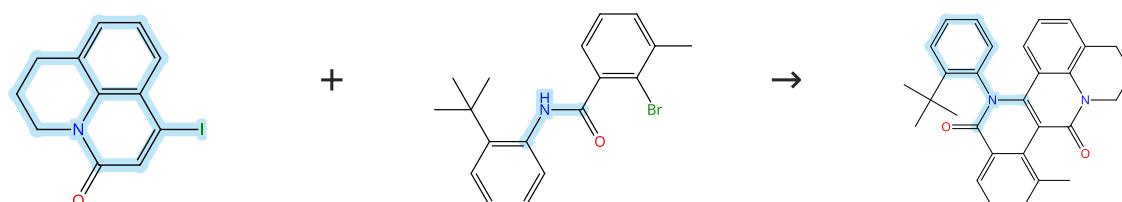
By: Ricko, Sebastijan; et al

Journal of the American Chemical Society (2023), 145(38), 20913-20926.

Experimental Protocols

Scheme 474 (1 Reaction)

Steps: 1 Yield: 76%



Supplier (1)

31-614-CAS-39194497

Steps: 1 Yield: 76%

Asymmetric Two-Component Alkenyl Catellani Reaction for the Construction of C-N Axial Chirality

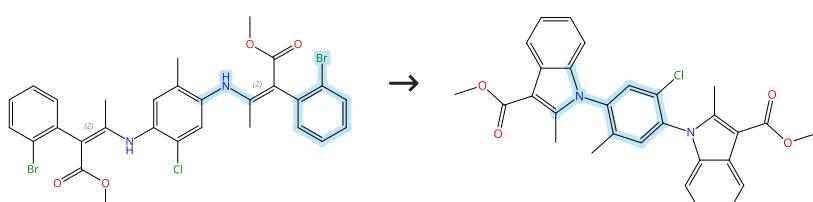
By: Wu, Chenggui; et al

Chinese Journal of Chemistry (2024), 42(7), 699-704.

Experimental Protocols

Scheme 475 (1 Reaction)

Steps: 1 Yield: 76%



31-614-CAS-40129231

Steps: 1 Yield: 76%

Pd-Catalyzed Asymmetric Amination of Enamines: Expedient Synthesis of Structurally Diverse N-C Atropisomers

By: Zhang, Peng; et al

ACS Catalysis (2023), 13(11), 7680-7690.

1.1 Catalysts: Palladium diacetate, (-)-BINAP  
Solvents: Toluene; 20 min, rt

1.2 Reagents: Cesium carbonate

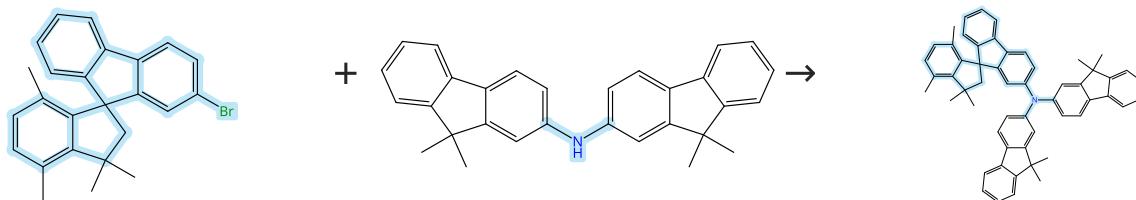
Solvents: Toluene; 5 min, rt

1.3 5 min, rt; 18 h, 60 °C

Experimental Protocols

Scheme 476 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (57)

31-614-CAS-39557553

Steps: 1 Yield: 76%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, 4-[Bis(1,1-dimethyl ethyl)phosphino]-*N,N*-dimethylbenzenamine

Solvents: Toluene; 16 h, reflux

Experimental Protocols

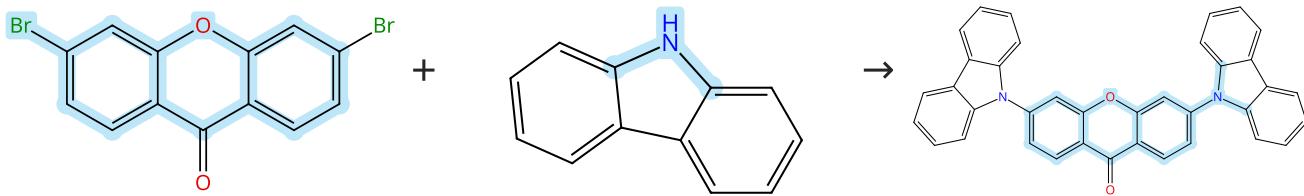
**A Scalable and Chromatography-Free Synthesis of N,N-Bis(9,9-dimethyl-9H-fluoren-2-yl)-3',3',4',7'-tetramethyl-2',3'-dihydrospiro[fluorene-9,1'-indene]-2-amine, a new Hole Transport Material for Organic Solar Cells**

By: Aeschi, Yves; et al

Helvetica Chimica Acta (2024), 107(3), e202300220.

Scheme 477 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (7)

Suppliers (109)

31-614-CAS-36112935

Steps: 1 Yield: 76%

1.1 Reagents: Sodium *tert*-butoxideCatalysts: Tris(dibenzylideneacetone)dipalladium, Tri-*tert*-butylphosphonium tetrafluoroborate

Solvents: Toluene; 8 h, rt → 120 °C

Experimental Protocols

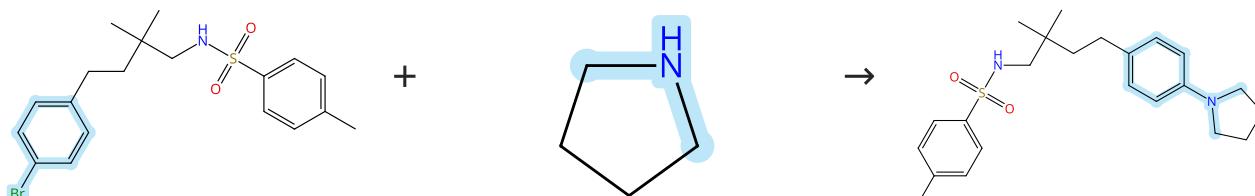
**Towards efficient blue delayed-fluorescence molecules by modulating torsion angle between electron donor and acceptor**

By: Chen, Jinke; et al

CCS Chemistry (2023), 5(3), 598-606.

Scheme 478 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (74)

31-614-CAS-43502202

Steps: 1 Yield: 76%

**Hexafluoroisopropanol-assisted selective intramolecular synthesis of heterocycles by single-electron transfer**

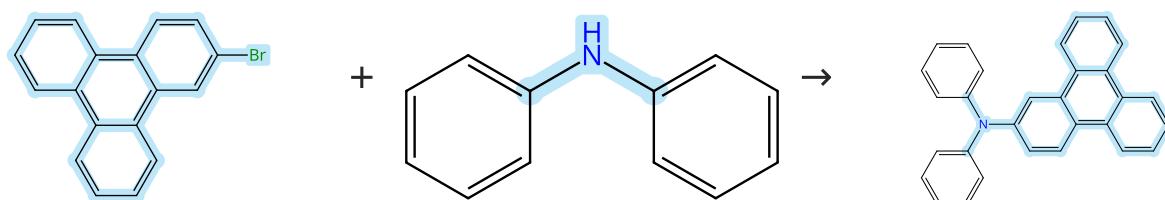
By: Xie, Jiale; et al

Nature Synthesis (2024), 3(8), 1021-1030.

Experimental Protocols

Scheme 479 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (75)

Suppliers (98)

31-614-CAS-42543086

Steps: 1 Yield: 76%

1.1 Reagents: Sodium *tert*-butoxide

Catalysts: 1,1-Bis(diphenylphosphino)ferrocene, Tris(dibenzylideneacetone)dipalladium

Solvents: Toluene; rt → 80 °C; 6 h, reflux

In Situ Reversible and Robust Mechano-Responsive Ultralong Phosphorescence of Polyurethane Elastomer

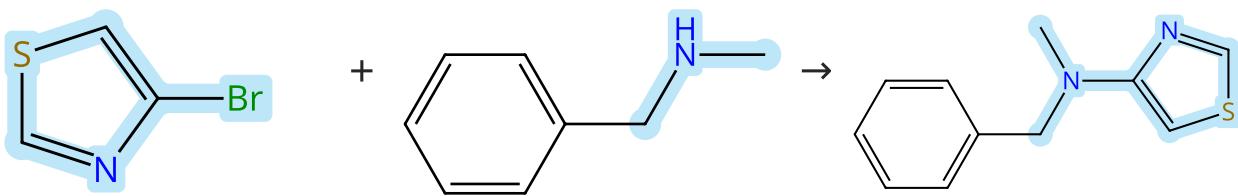
By: Chen, Jinzheng; et al

Advanced Materials (Weinheim, Germany) (2024), 36(50), 2409642.

Experimental Protocols

Scheme 480 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (98)

Suppliers (81)

31-614-CAS-35422538

Steps: 1 Yield: 76%

Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteroaryl Halides with Aliphatic Amines

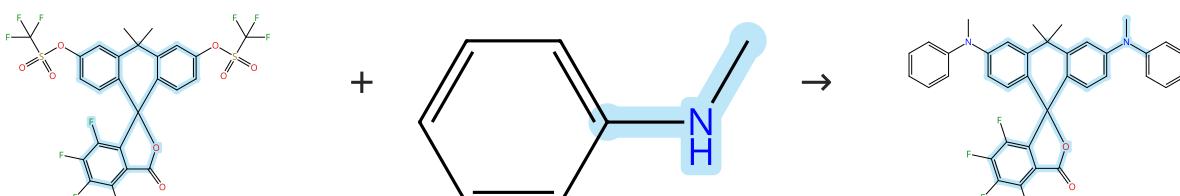
By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

Experimental Protocols

Scheme 481 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (69)

31-614-CAS-39355754

Steps: 1 Yield: 76%

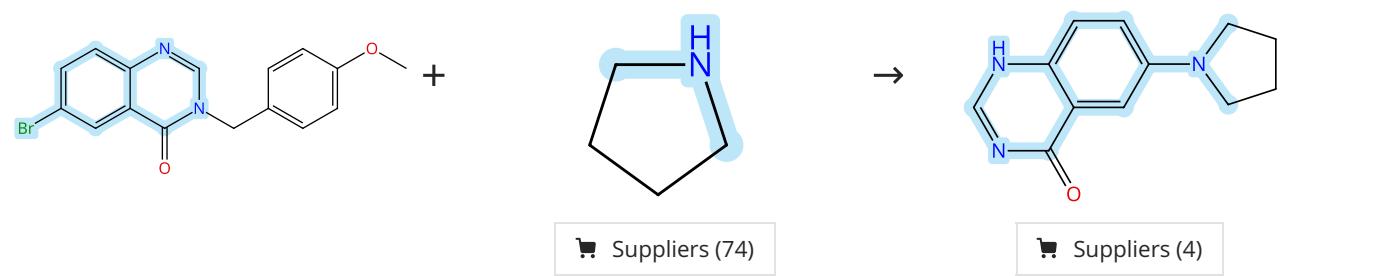
Optimized Red-Absorbing Dyes for Imaging and Sensing

By: Grimm, Jonathan B.; et al

Journal of the American Chemical Society (2023), 145(42), 23000-23013.

Experimental Protocols

Scheme 482 (1 Reaction)



31-614-CAS-38625314

Steps: 1 Yield: 76%

- 1.1 **Reagents:** Cesium carbonate  
**Catalysts:** Palladium diacetate, 1,1'-(9,9-Dimethyl-9H-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]  
**Solvents:** 1,4-Dioxane; overnight, rt → 90 °C
- 1.2 **Reagents:** Trifluoroacetic acid, Anisole  
**Solvents:** Water; 18 h, rt → 70 °C

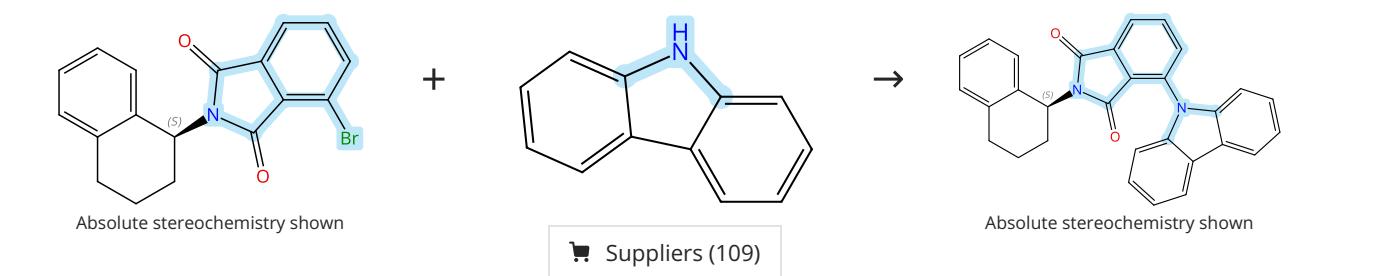
**Fragment-Based Screening Identifies New Quinazolinone-Based Inositol Hexakisphosphate Kinase (IP6K) Inhibitors**

By: Heitmann, Tyler; et al

ACS Medicinal Chemistry Letters (2023), 14(12), 1760-1766.

Experimental Protocols

Scheme 483 (1 Reaction)



31-614-CAS-35453398

Steps: 1 Yield: 76%

- 1.1 **Reagents:** Tripotassium phosphate  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine  
**Solvents:** Toluene; 24 h, 120 °C

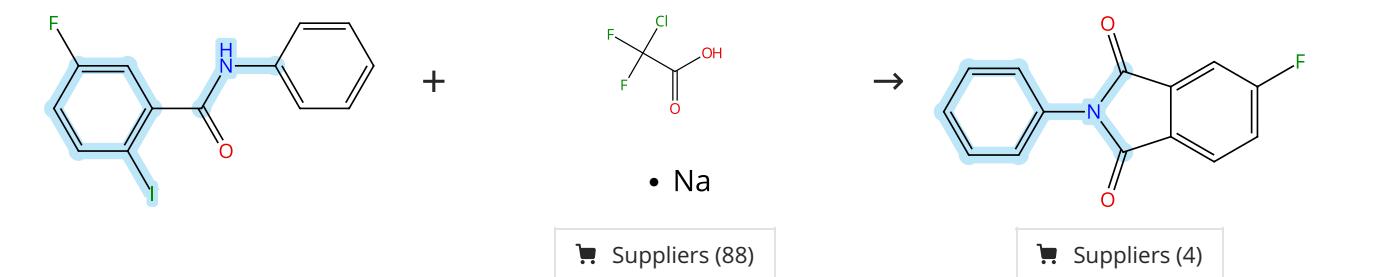
**Bright Organic Mechanoluminescence and Remarkable Mechanofluorochromism from Circularly Polarized TADF Enantiomers with Aggregation-Induced Emission Properties**

By: Zheng, Yitao; et al

Chemistry - A European Journal (2023), 29(5), e202202594.

Experimental Protocols

Scheme 484 (1 Reaction)



31-614-CAS-38558295

Steps: 1 Yield: 76%

- 1.1 **Reagents:** Potassium carbonate  
**Catalysts:** Palladium diacetate, Bis[2-(diphenylphosphino)phenyl] ether  
**Solvents:** Dimethylformamide; 5 h, 95 °C

**Synthesis of N-substituted phthalimides via Pd-catalyzed [4+1] cycloaddition reaction**

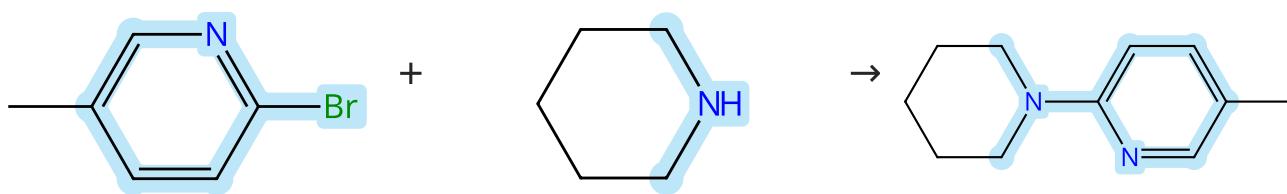
By: Hu, Chengxian; et al

Chemical Communications (Cambridge, United Kingdom) (2023), 59(100), 14839-14842.

Experimental Protocols

Scheme 485 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (102)

Suppliers (50)

Suppliers (3)

31-614-CAS-39524858

Steps: 1 Yield: 76%

- 1.1 **Reagents:** Sodium *tert*-butoxide  
**Catalysts:** Palladium diacetate, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
**Solvents:** Toluene; 1 h, 120 °C; 120 °C → rt
- 1.2 **Reagents:** Water; rt

**Metal-Free Directed Site-Selective Csp<sup>3</sup>-H Borylation of Saturated Cyclic Amines**

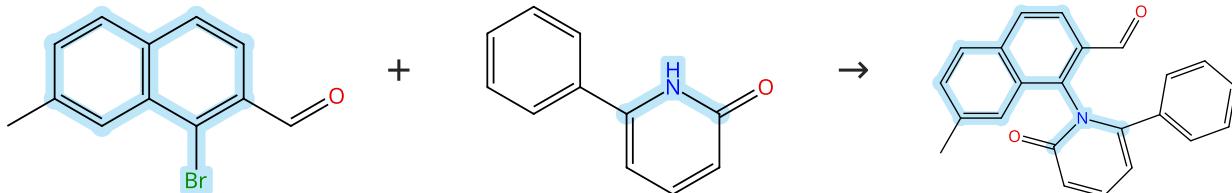
By: Kumar Someswara Ashwathappa, Puneeth; et al

Angewandte Chemie, International Edition (2023), 62(39), e202309295.

Experimental Protocols

Scheme 486 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (12)

Suppliers (65)

31-614-CAS-41335343

Steps: 1 Yield: 76%

- 1.1 **Catalysts:** Palladium, tris[μ-[(1,2-η;4,5-η)-(1*E*,4*E*)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2*R*)-1-[(1*R*)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene  
**Solvents:** Toluene; 30 min, rt
- 1.2 **Reagents:** Cesium carbonate; 36 h, 90 °C

**Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination**

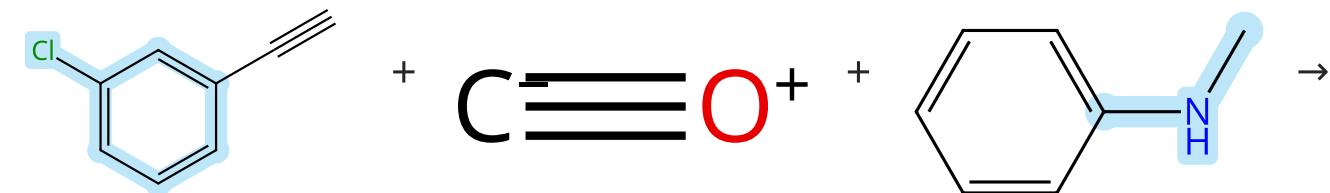
By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

Experimental Protocols

Scheme 487 (1 Reaction)

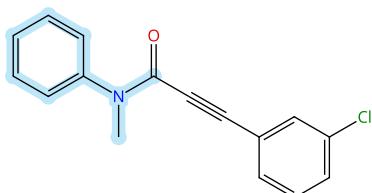
Steps: 1 Yield: 76%



Suppliers (87)

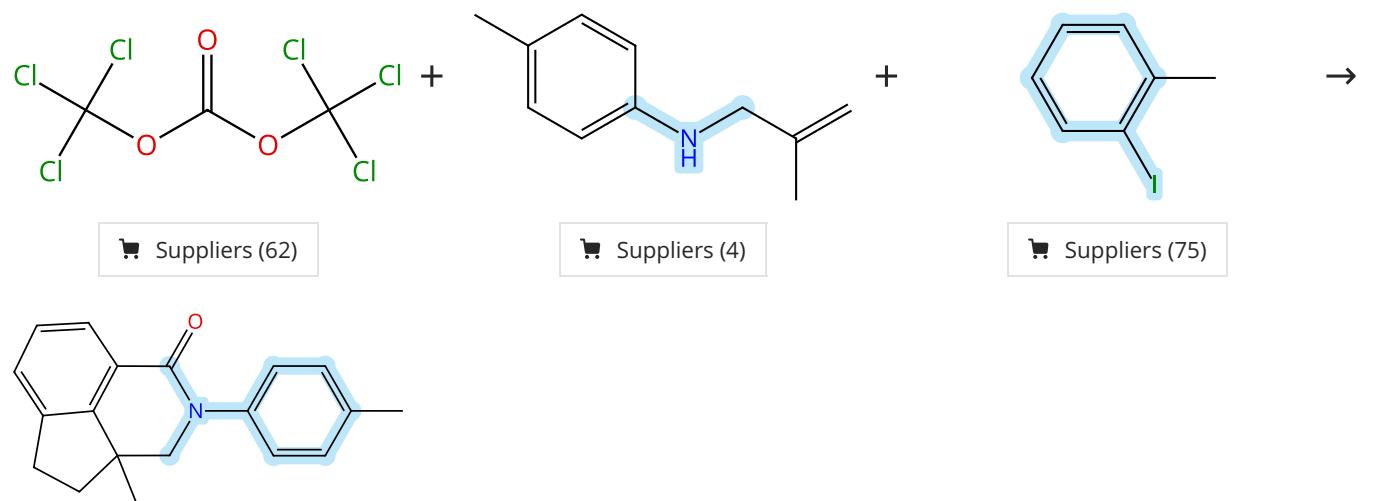
Suppliers (17)

Suppliers (69)



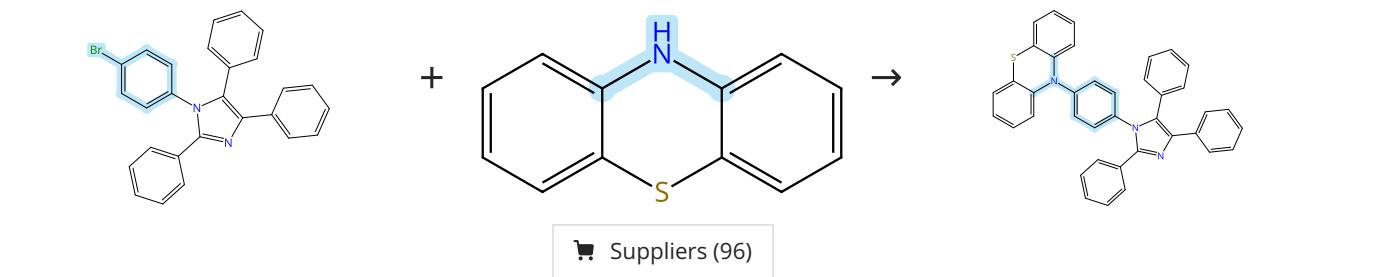
31-614-CAS-40820980	Steps: 1 Yield: 76%	A General and Highly Versatile Heterogeneous Pd-Catalyzed Oxidative Aminocarbonylation of Alkynes with Aromatic and Aliphatic Amines By: Arango-Daza, Juan Camilo; et al ChemSusChem (2024), 17(13), e202400331.
1.1 <b>Reagents:</b> Oxygen <b>Catalysts:</b> Tetrabutylammonium iodide, Palladium <b>Solvents:</b> Ethyl acetate; 16 h, 25 bar, 120 °C		
Experimental Protocols		

### Scheme 488 (1 Reaction)



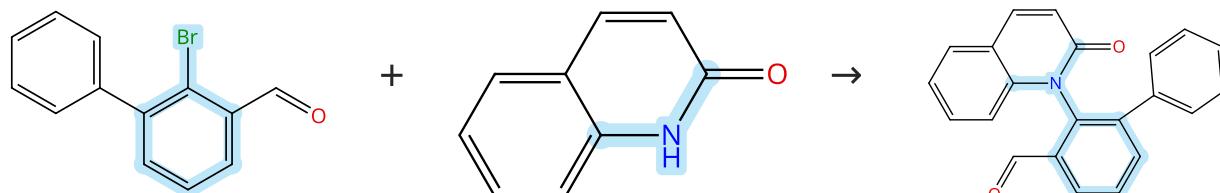
31-614-CAS-41478556	Steps: 1 Yield: 76%	Pd/NBE-Catalyzed One-Pot Modular Synthesis of Polycyclic Fused $\delta$ -Lactams and Investigation of Room-Temperature Phosphorescence By: Chen, Chen; et al ACS Catalysis (2024), 14(16), 12181-12191.
1.1 <b>Reagents:</b> Cesium carbonate <b>Catalysts:</b> Palladium diacetate, Tris(2-furyl)phosphine, <i>re/r</i> / (3 <i>aR,4S,7R,7aS</i> )-3 <i>a</i> ,4,7,7 <i>a</i> -Tetrahydro-2-(4-methoxyphenyl)-4, 7-methano-1 <i>H</i> -isoindole-1,3( <i>2H</i> )-dione <b>Solvents:</b> Toluene; 12 h, rt $\rightarrow$ 120 °C	Experimental Protocols	

### Scheme 489 (1 Reaction)



31-614-CAS-36015642	Steps: 1 Yield: 76%	Donor Influence on the Optoelectronic Properties of N-Substituted Tetraphenylimidazole Derivatives By: Matulaitis, Tomas; et al ChemistrySelect (2023), 8(9), e202300274.
1.1 <b>Reagents:</b> Sodium <i>tert</i> -butoxide <b>Catalysts:</b> Palladium diacetate, Tri- <i>tert</i> -butylphosphonium tetrafluoroborate <b>Solvents:</b> Toluene; 24 h, 110 °C		

Scheme 490 (1 Reaction)



Suppliers (83)

31-614-CAS-41335313

Steps: 1 Yield: 76%

- 1.1 **Catalysts:** Palladium, tris[ $\mu$ -[(1,2- $\eta$ ;4,5- $\eta$ )-(1E,4E)-1,5-diphenyl-1,4-pentadien-3-one]]di-, compd. with trichloromethane (1:1), (2R)-1-[(1R)-1-[Bis(1,1-dimethylethyl)phosphino]ethyl]-2-(di-2-furanylphosphino)ferrocene  
**Solvents:** *tert*-Butyl methyl ether; 30 min, rt  
1.2 **Reagents:** Tripotassium phosphate; 36 h, 90 °C

Experimental Protocols

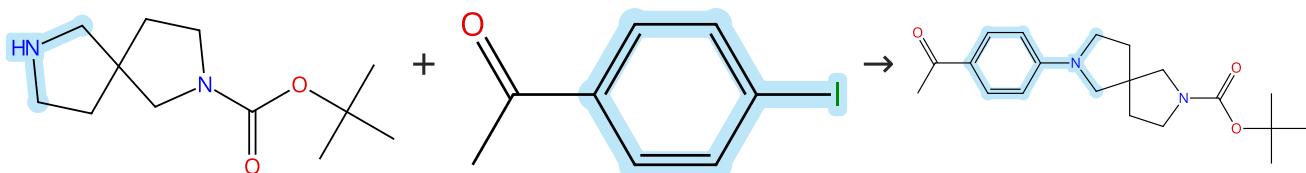
Intermolecular Buchwald-Hartwig Reactions for Enantioselective Synthesis of Diverse Atropisomers: Rerouting the C-N Forming Mechanism to Substrate Oxygen-Assisted Reductive Elimination

By: Wang, Wei; et al

Journal of the American Chemical Society (2024), 146(24), 16567-16580.

Scheme 491 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (79)

Suppliers (87)

31-614-CAS-37375291

Steps: 1 Yield: 76%

- 1.1 **Catalysts:** Tris(dibenzylideneacetone)dipalladium, 2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl  
**Solvents:** Toluene  
1.2 **Reagents:** Sodium *tert*-butoxide; 100 °C  
1.3 **Solvents:** Water; rt

Experimental Protocols

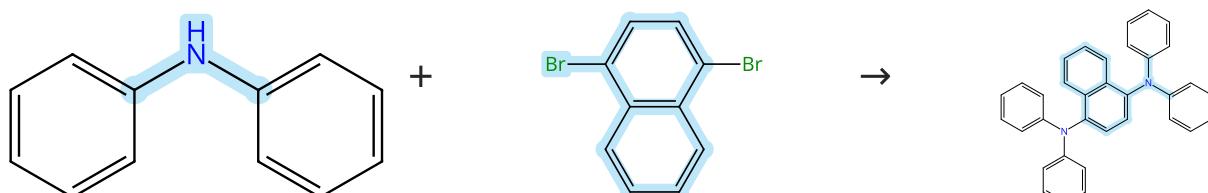
Discovery of AD258 as a Sigma Receptor Ligand with Potent Antialloodynic Activity

By: Dichiara, Maria; et al

Journal of Medicinal Chemistry (2023), 66(16), 11447-11463.

Scheme 492 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (98)

Suppliers (96)

Suppliers (5)

31-614-CAS-37289455

Steps: 1 Yield: 76%

- 1.1 **Reagents:** Lithium bis(trimethylsilyl)amide  
**Catalysts:** Tris(dibenzylideneacetone)dipalladium, [2',6'-Bis(1-methylethoxy)[1,1'-biphenyl]-2-yl]dicyclohexylphosphine  
**Solvents:** Toluene, 1,4-Dioxane; 24 h, 100 °C

Experimental Protocols

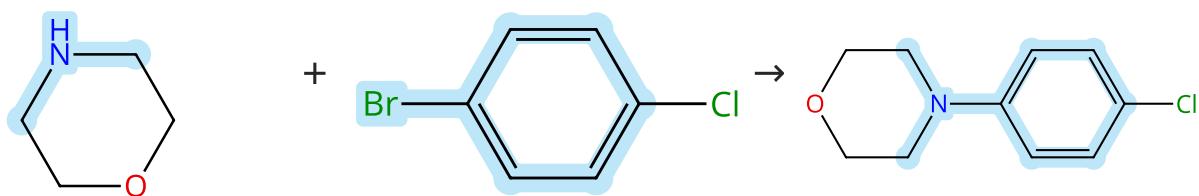
Transition metal-free photocatalytic radical annulation of 2-cyanoaryl acrylamides with difluoromethyl radicals to assemble 4-amino-quinolinone derivatives

By: Wu, Qiaoyan; et al

Green Chemistry (2023), 25(16), 6188-6193.

## Scheme 493 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (83)

Suppliers (79)

Suppliers (55)

31-614-CAS-36418637

Steps: 1 Yield: 76%

Modulating room temperature phosphorescence through intermolecular halogen bonding

1.1 Reagents: Potassium *tert*-butoxide

Catalysts: Tris(dibenzylideneacetone)dipalladium

Solvents: Toluene; 24 h, 110 °C

Experimental Protocols

By: Jiang, Dongyan; et al

Journal of Materials Chemistry C: Materials for Optical and Electronic Devices (2023), 11(12), 4203-4209.

## Scheme 494 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (105)

Suppliers (50)

Suppliers (3)

31-614-CAS-35422497

Steps: 1 Yield: 76%

Pd-Catalyzed Amination of Base-Sensitive Five-Membered Heteroaryl Halides with Aliphatic Amines

1.1 Reagents: Sodium trimethylsilanolate

Catalysts: Palladium, bromo[dicyclohexyl[3-(1,1-dimethylethoxy)-6-methoxy-2',6'-bis(1-methylethyl)[1,1'-biphenyl]-2-yl-κC<sup>1'</sup>]phosphine-κP][4-[[2-(trimethylsilyl)ethoxy]carbonyl]phenyl], (*SP*-4-2)-

Solvents: Tetrahydrofuran; 23 h, 90 °C

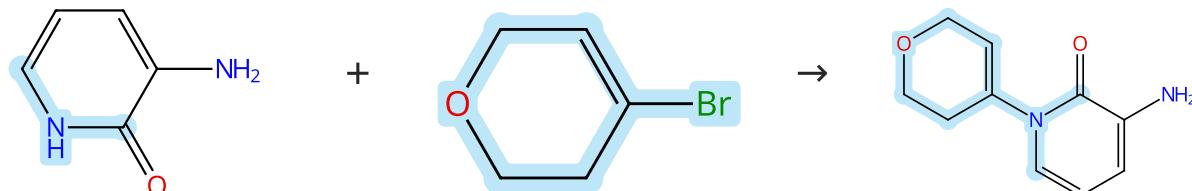
Experimental Protocols

By: Reichert, Elaine C.; et al

Journal of the American Chemical Society (2023), 145(6), 3323-3329.

## Scheme 495 (1 Reaction)

Steps: 1 Yield: 76%



Suppliers (96)

Suppliers (55)

31-614-CAS-37016369

Steps: 1 Yield: 76%

Discovery of a Potent and Selective Tyrosine Kinase 2 Inhibitor: TAK-279

1.1 Reagents: Sodium carbonate

Catalysts: Tris(dibenzylideneacetone)dipalladium, 1,1'-(9,9-Dimethyl-9H-xanthene-4,5-diyl)bis[1,1-diphenylphosphine]

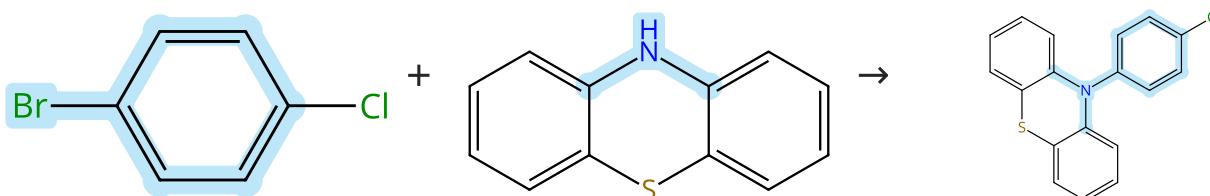
Solvents: 1,4-Dioxane; 4 h, 100 °C

Experimental Protocols

By: Leit, Silvana; et al

Journal of Medicinal Chemistry (2023), 66(15), 10495-10518.

Scheme 496 (1 Reaction)



Suppliers (79)

Suppliers (96)

Suppliers (2)

31-614-CAS-41247965

Steps: 1 Yield: 76%

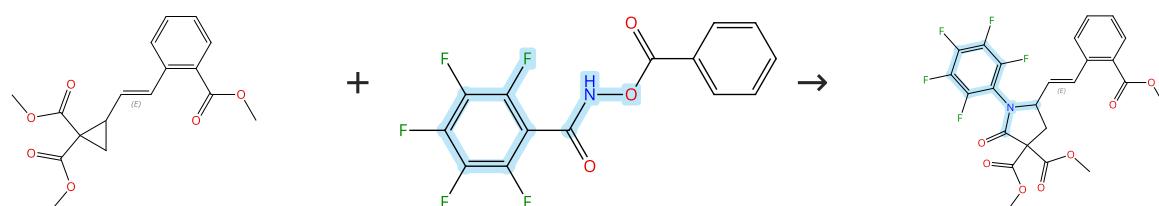
**Unlocking Twofold Oxidation in Phenothiazine Polymers for Application in Symmetric All-Organic Anionic Batteries**

By: Wessling, Robin; et al

ACS Applied Polymer Materials (2024), 6(14), 7956-7968.

Experimental Protocols

Scheme 497 (1 Reaction)



Double bond geometry shown

Double bond geometry shown

31-614-CAS-36837153

Steps: 1 Yield: 76%

**[3+2] Cycloaddition of Vinyl Cyclopropane and Hydroxy Iamines via Isocyanate Intermediate to  $\gamma$ -Lactams**

By: Huang, Xiaobing; et al

Chinese Journal of Chemistry (2023), 41(16), 1937-1942.

Experimental Protocols