CAS SciFinder

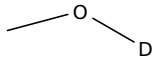
Task History

Initiating Search

February 24, 2025, 11:35 AM

Substances:

Filtered By:



Structure Match: **Substructure**

Search Tasks

Task	Search Type	View
Returned Substance Results + Filters (12,936)	Substances	View Results
Exported: Retrieved Related Reaction Results + Filters (314)	Reactions	View Results

Filtered By:

Substance Role: **Reactant, Reagent, Solvent**

Catalyst: **Carbonyl(η^5-2,4-cyclopentadien-1-yl)diiodocobalt, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobaltate(1-), Cobalt, Cobalt(2+), (η^6-benzene)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, hexafluorophosphate(1-) (1:2), Cobalt(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, bis[tetrafluoroborate(1-)], Cobalt(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, (*OC*-6-11)-hexafluoroantimonate(1-) (1:2), Cobaltate(1-), dibromo[2-(diethylamino)-*N*-(8-quinolinyl-κ*N*)acetamidato-κ*N*]-, hydrogen (1:1), Cobalt, bis[[2,3-butanedione di(oximato-κ*N*)](1-)]chloro(pyridine)-, (*OC*-6-42)-, Cobalt bis(tetrafluoroborate) hexahydrate, Cobalt chloride ($CoCl_2$), Cobalt diacetate, Cobalt dibromide, Cobalt dichloride hexahydrate, Cobalt(II) acetylacetonate, Cobalt iodide (CoI_2), Cobalt, [*N*-[[2-(hydroxy-**

κ*O*)phenyl]methylene]-2-methylalaninato(2-)-κ*N*,κ*O*](methanol)(2-methylalaninato-κ*N*,κ*O*)-, Cobalt nitrate hexahydrate, Cobalt phthalocyanine, Dibromo[1,2-di(methoxy-κ*O*)ethane]cobalt, Dicarbonyl(η^5-cyclopentadienyl)cobalt, Dichloro[2-(diphenylphosphino-κ*P*)-*N*-[2-(diphenylphosphino-κ*P*)ethyl]ethanamine-κ*N*]cobalt, Dicobalt octacarbonyl, Di-μ-iododiiodobis[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]dicobalt, (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κ*N*)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κ*N*^{1})cobalt, (*SP*-4-1)-[2-(Dicyclohexylphosphino-κ*P*)-*N*-[2-(dicyclohexylphosphino-κ*P*)ethyl]ethanaminato-κ*N*][(trimethylsilyl)methyl]cobalt, (*SP*-4-2)-[10-[4-[10,15,20-Tris(2,4,6-trimethylphenyl)-21*H*,23*H*-porphin-5-yl-κ*N*^{21},κ*N*^{22},κ*N*^{23},κ*N*^{24}]phenoxy]-1-decanolato(2-)]cobalt, (*SP*-4-2)-[[2,2'-[(1,1,2,2-Tetramethyl-1,2-ethanediyl)bis[(nitrilo-κ*N*)methylidyne]]bis[4,6-bis(1,1-dimethylethyl)phenolato-κ*O*]](2-)]cobalt, (*SP*-4-2)-[[2,2'-[1,2-Phenylenebis[(nitrilo-κ*N*)methylidyne]]bis[4,6-bis(1,1-dimethylethyl)phenolato-κ*O*]](2-)]cobalt, (*SP*-4-2)-[[2,2'-[(1*S*,2*S*)-1,2-Cyclohexanediylbis[(nitrilo-κ*N*)methylidyne]]bis[4,6-bis(1,1-dimethylethyl)phenolato-κ*O*]](2-)]cobalt, (*SP*-5-13)-[2-[Bis(1,1-dimethylethyl)phosphino-κ*P*]-*N*-[2-[bis(1,1-dimethylethyl)phosphino-κ*P*]ethyl]ethanamine-κ*N*]dichlorocobalt, (*SP*-5-52)-Methyl[10-[4-[10,15,20-tris(2,4,6-trimethylphenyl)-21*H*,23*H*-porphin-5-yl-κ*N*^{21},κ*N*^{22},κ*N*^{23},κ*N*^{24}]phenoxy]-1-decanolato(2-)]cobalt, (*TB*-5-33)-Dibromo[4,4'-[(2,6-pyridinediyl-κ*N*)bis(methylene)]bis[morpholine-κ*N*^{4}]]cobalt

Document Type: Journal

Language: English

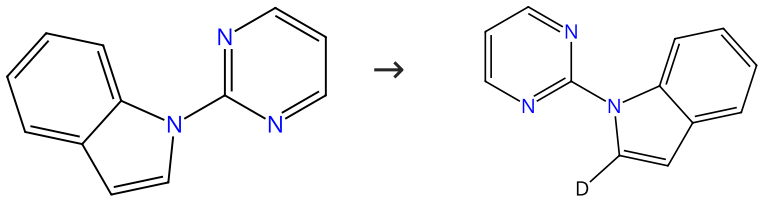
CAS SciFinder

Reactions (151)

View in CAS SciFinder

Scheme 1 (3 Reactions)

Steps: **1** Yield: **98-99%**



Suppliers (59)

Suppliers (3)

31-116-CAS-18308324

Steps: **1** Yield: **99%**

1.1 **Reagents:** Methanol-*d*
Catalysts: Silver acetate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethanol; 2 h, 100 °C

Co(III)-Catalyzed C-H Activation: A Site-Selective Conjugate Addition of Maleimide to Indole at the C-2 Position

By: Muniraj, Nachimuthu; et al

ACS Omega (2017), 2(8), 4470-4479.

31-116-CAS-17314465

Steps: **1** Yield: **98%**

1.1 **Catalysts:** Sodium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethanol, Methanol-d_4; 6 h, 30 °C

Experimental Protocols

C-H Alkylations of (Hetero)Arenes by Maleimides and Maleate Esters through Cobalt(III) Catalysis

By: Zhang, Zhao; et al

Organic Letters (2017), 19(12), 3315-3318.

31-116-CAS-2872349

Steps: **1**

1.1 **Reagents:** Methanol-d_4
Catalysts: Potassium acetate, Cobalt(2+), (η^6-benzene)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, hexafluorophosphate(1-) (1:2)
Solvents: 1,2-Dichloroethane; 12 h, 100 °C

Experimental Protocols

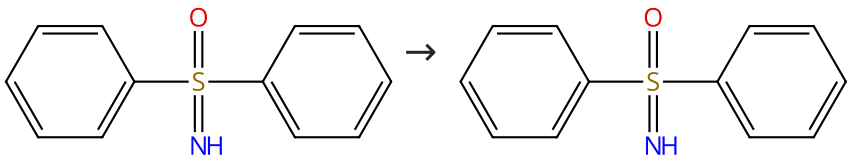
Cp^*Co^{III}-Catalyzed C_2-selective addition of indoles to imines

By: Yoshino, Tatsuhiko; et al

Chemistry - A European Journal (2013), 19(28), 9142-9146.

Scheme 2 (1 Reaction)

Steps: **1** Yield: **99%**



Suppliers (46)

Supplier (1)

31-614-CAS-32274663 Steps: **1** Yield: **99%**

1.1 **Catalysts:** Silver triflate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt, 2776898-28-1
Solvents: 2-Propan-*1,1,1,2,3,3,3-d*$_7$-ol-*d*; 10 min, rt

1.2 20 h, 30 °C

1.3 **Reagents:** Ethylenediaminetetraacetic acid
Solvents: Water

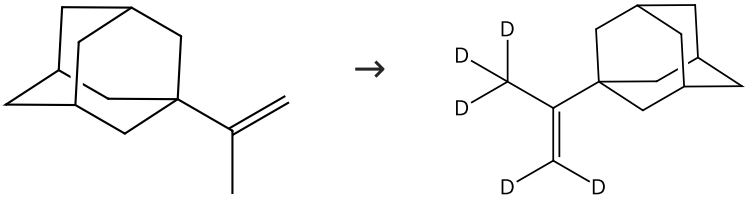
Experimental Protocols

Cobalt(III)/Chiral Carboxylic Acid-Catalyzed Enantioselective Synthesis of Benzothiadiazine-1-oxides via C-H Activation

By: Hirata, Yuki; et al

Angewandte Chemie, International Edition (2022), 61(28), e202205341.

Scheme 3 (1 Reaction) Steps: **1** Yield: **99%**



Suppliers (11)

31-614-CAS-37018490 Steps: **1** Yield: **99%**

1.1 **Reagents:** Methanol-*d*$_4$
Catalysts: Diisopropylethylamine, (*SP*-4-2)-[[2,2'-[(1*S*,2*S*)-1,2-Cyclohexanediylbis[(nitrilo-κ*N*)methylidyne]]bis[4,6-bis(1,1-dimethylethyl)phenolato-κ*O*]](2-)]cobalt, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κ*N*)phenyl-κ*C*]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1)
Solvents: Acetonitrile; 5 h, rt

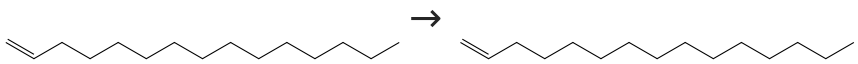
Experimental Protocols

Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 4 (1 Reaction) Steps: **1** Yield: **98%**



Suppliers (71)

31-614-CAS-25265782 Steps: **1** Yield: **98%**

1.1 **Reagents:** Methanol-*d*$_4$
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 20 h, 120 °C

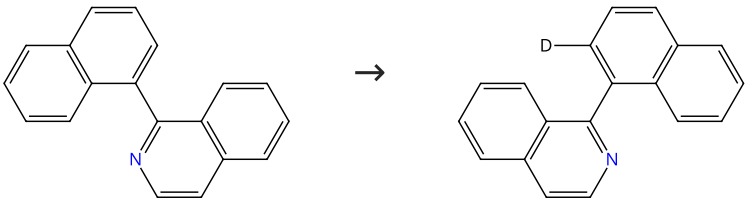
Experimental Protocols

Full Selectivity Control in Cobalt(III)-Catalyzed C-H Alkylations by Switching of the C-H Activation Mechanism

By: Zell, Daniel; et al

Angewandte Chemie, International Edition (2017), 56(35), 10378-10382.

Scheme 5 (1 Reaction) Steps: **1** Yield: **98%**



Suppliers (8)

31-614-CAS-35668657	Steps: **1** Yield: **98%**
1.1 **Reagents:** Methanol-d_4, Tempo **Catalysts:** Silver tetrafluoroborate, Cobalt iodide (CoI_2), Bis (dichloro(η^6-*p*-cymene)ruthenium) **Solvents:** 1,2-Dichloroethane; 30 min, 110 °C	
Experimental Protocols	

Ruthenium(II)-Catalyzed Sterically Hindered C-H Acyloxylation to Synthesize Biaryl Isoquinoline Derivatives via Peresters

By: Liu, Hao; et al

Journal of Organic Chemistry (2023), 88(5), 3148-3158.

Scheme 6 (1 Reaction) Steps: **1** Yield: **97%**

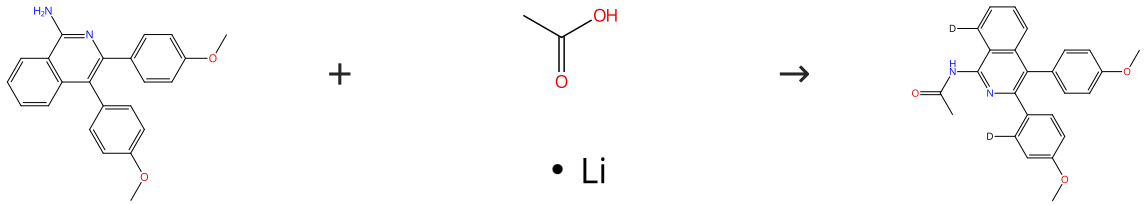
31-116-CAS-18904568	Steps: **1** Yield: **97%**
1.1 **Reagents:** Methanol-d_4 **Catalysts:** Propanoic acid, 2,2-dimethyl-, silver(1+) salt (1:1), Silver hexafluorophosphate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt **Solvents:** 1,2-Dichloroethane; 24 h, 70 °C	
Experimental Protocols	

$Cp^*Co(III)$-catalyzed ortho C-H amidation of 2-pyridinyl ferrocenes with 1,4,2-dioxazol-5-ones

By: Wang, Shao-Bo; et al

Journal of Catalysis (2018), 361, 393-397.

Scheme 7 (1 Reaction) Steps: **1** Yield: **97%**



Suppliers (69)

31-116-CAS-17158059	Steps: **1** Yield: **97%**
1.1 **Reagents:** 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d* **Catalysts:** Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt; 12 h, 90 °C	
Experimental Protocols	

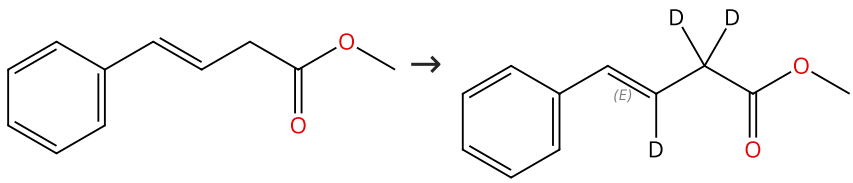
Cobalt(III)-Catalyzed Oxadiazole-Directed C-H Activation for the Synthesis of 1-Aminoisoquinolines

By: Yang, Fan; et al

Organic Letters (2017), 19(11), 2885-2888.

Scheme 8 (1 Reaction)

Steps: **1** Yield: **97%**



Suppliers (8)

Double bond geometry shown

31-614-CAS-37018565

Steps: **1** Yield: **97%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κN)phenyl-κC]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κN)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

Experimental Protocols

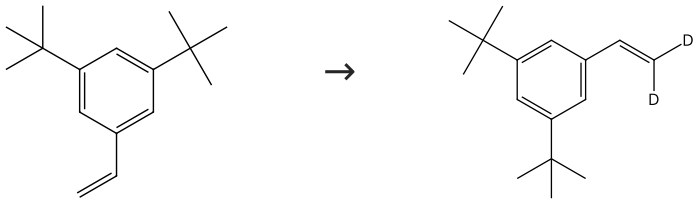
Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 9 (1 Reaction)

Steps: **1** Yield: **96%**



Suppliers (19)

31-614-CAS-37018557

Steps: **1** Yield: **96%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κN)phenyl-κC]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κN)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

Experimental Protocols

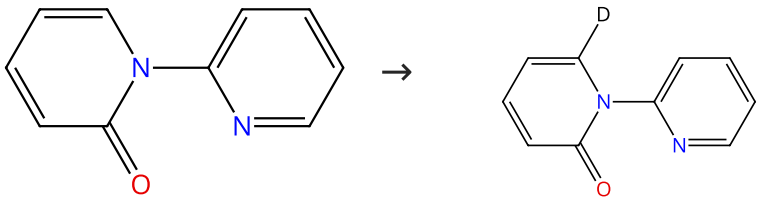
Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 10 (3 Reactions)

Steps: **1** Yield: **96%**



Suppliers (8)

31-614-CAS-42766530 Steps: **1** Yield: **96%**

1.1 **Reagents:** Pivalic acid
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d*; 20 h, 100 °C

Experimental Protocols

Hydroxyl-Assisted and Co(III)-Catalyzed Redox-Neutral C-H Activation/Directing Group Migration of 2- Pyridones with Propargyl Alcohols: Synthesis of Tetrasubstituted Alkenes

By: Zhu, Yue-Lu; et al

Journal of Organic Chemistry (2024), 89(23), 17281-17290.

31-614-CAS-38968998 Steps: **1**

1.1 **Reagents:** Acetic acid, 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d*
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt; 20 h, 100 °C

Experimental Protocols

Co(III)-Catalyzed C6-Selective C-H Activation/Pyridine Migration of 2-Pyridones with Propiolates

By: Zhu, Yue-Lu; et al

Organic Letters (2024), 26(1), 12-17.

31-116-CAS-23852068 Steps: **1**

1.1 **Reagents:** Pivalic acid, Methanol-d_4
Catalysts: Dicarbonyl(η^5-cyclopentadienyl)cobalt, Silver hexafluoroantimonate
Solvents: 2,2,2-Trifluoroethanol; 30 min, 60 °C

Experimental Protocols

Cobalt(III)-Catalyzed C-6 Alkenylation of 2-Pyridones by Using Terminal Alkyne with High Regioselectivity

By: Mohanty, Smruti Ranjan; et al

Journal of Organic Chemistry (2021), 86(14), 9444-9454.

Scheme 11 (1 Reaction) Steps: **1** Yield: **95%**

31-116-CAS-19890564 Steps: **1** Yield: **95%**

1.1 **Reagents:** Methanol-d_4
Catalysts: (α*R*)-α-(Benzoylamino)-4-hydroxybenzeneacetic acid, Cobalt(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, (*OC*-6-11)-hexafluoroantimonate(1-) (1:2); 17 h, 25 °C; 17 h, 25 °C

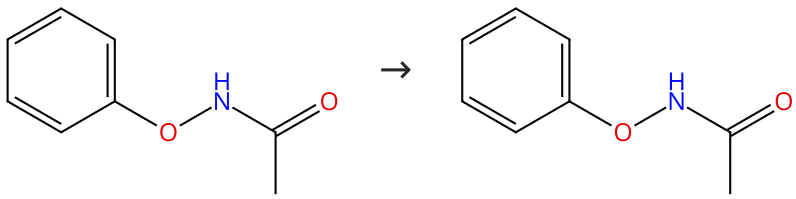
Experimental Protocols

Cp*Co(III)/MPAA-Catalyzed Enantioselective Amidation of Ferrocenes Directed by Thioamides under Mild Conditions

By: Liu, Yan-Hua; et al

Organic Letters (2019), 21(6), 1895-1899.

Scheme 12 (1 Reaction) Steps: **1** Yield: **94%**



Suppliers (11)

31-614-CAS-26367152 Steps: **1** Yield: **94%**

1.1 **Reagents:** Cesium acetate, Tripotassium phosphate, 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d*
Catalysts: Carbonyl(η^5-2,4-cyclopentadien-1-yl)diiodocobalt, Silver hexafluoroantimonate; 24 h, 40 °C

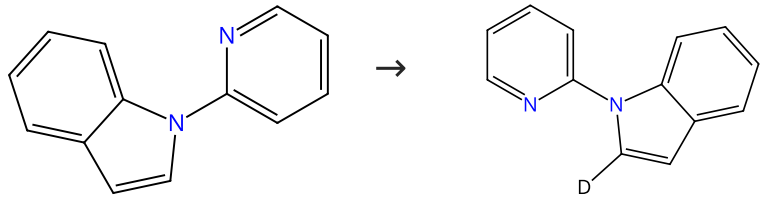
Cobalt(III)-Catalyzed Intermolecular Carboamination of Propiolates and Bicyclic Alkenes via Non- Annulative Redox-Neutral Coupling

By: Zhu, Yuelu; et al

Organic Letters (2019), 21(15), 5884-5888.

Scheme 13 (1 Reaction)

Steps: **1** Yield: **93%**



Suppliers (36)

31-614-CAS-33997611

Steps: **1** Yield: **93%**

1.1 **Reagents:** Cupric acetate, Methanol-d_4
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2-Methyl-2-butanol; 6 h, rt

Experimental Protocols

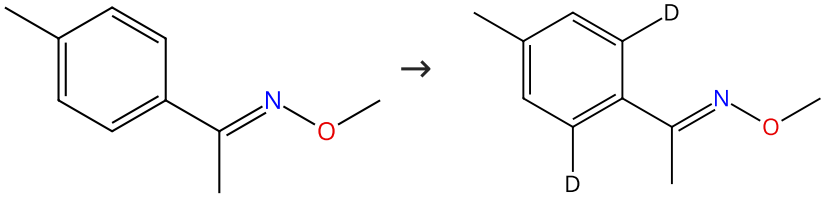
Cp*Co^{III}-catalyzed C2-alkylation of indole derivatives with substituted cyclopropanols

By: Ramachandran, Kuppan; et al

Chemical Communications (Cambridge, United Kingdom) (2022), 58(75), 10536-10539.

Scheme 14 (1 Reaction)

Steps: **1** Yield: **93%**



Suppliers (4)

31-116-CAS-18008329

Steps: **1** Yield: **93%**

1.1 **Reagents:** 2,2,2-Trifluoroethan-*1,1-d*$_2$-ol-*d*
Catalysts: Dicarbonyl(η^5-cyclopentadienyl)cobalt, (*OC*-6-11)-Hexafluoroantimonate(1-); 24 h, 100 °C

Experimental Protocols

Cobalt(III)-catalyzed 1,4-addition of C-H bonds of oximes to maleimides

By: Chen, Xiangxiang; et al

Organic Chemistry Frontiers (2018), 5(2), 184-188.

Scheme 15 (1 Reaction)

Steps: **1** Yield: **92%**

31-116-CAS-17158058

Steps: **1** Yield: **92%**

1.1 **Reagents:** 2,2,2-Trifluoroethan-*1,1-d*$_2$-ol-*d*
Catalysts: Lithium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt; 12 h, 90 °C

Experimental Protocols

Cobalt(III)-Catalyzed Oxadiazole-Directed C-H Activation for the Synthesis of 1-Aminoisoquinolines

By: Yang, Fan; et al

Organic Letters (2017), 19(11), 2885-2888.

Scheme 16 (1 Reaction)

Steps: **1** Yield: **92%**

31-116-CAS-21505516

Steps: **1** Yield: **92%**

1.1 **Reagents:** Methanol-d_4
Catalysts: 1-Adamantanecarboxylic acid, Cobalt(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, (*OC*-6-11)-hexafluoroantimonate(1-) (1:2)
Solvents: 1,2-Dichloroethane; 12 h, 80 °C

Experimental Protocols

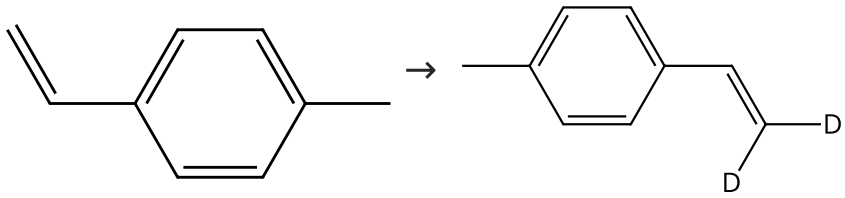
Thiocarbonyl-enabled ferrocene C-H nitrogenation by cobalt(III) catalysis: thermal and mechanochemical

By: Yetra, Santhivardhana Reddy; et al

Beilstein Journal of Organic Chemistry (2018), 14, 1546-1553.

Scheme 17 (1 Reaction)

Steps: **1** Yield: **90%**



Suppliers (69)

Supplier (1)

31-614-CAS-37018534

Steps: **1** Yield: **90%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κN)phenyl-κC]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κN)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

Experimental Protocols

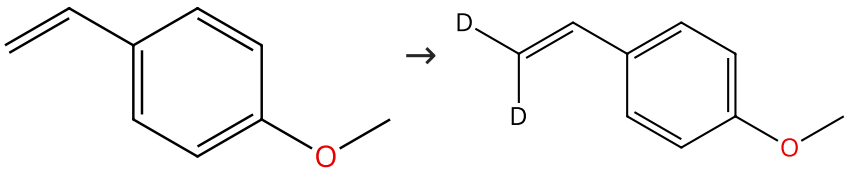
Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 18 (1 Reaction)

Steps: **1** Yield: **90%**



Suppliers (88)

31-614-CAS-37018555

Steps: **1** Yield: **90%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κN)phenyl-κC]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κN)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

Experimental Protocols

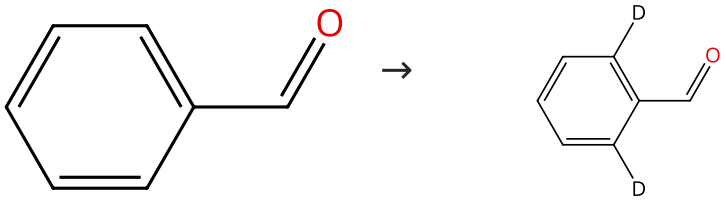
Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 19 (1 Reaction)

Steps: **1** Yield: **88%**



Suppliers (80)

31-116-CAS-23016834

Steps: **1** Yield: **88%**

1.1 **Reagents:** Oxygen, 2,2,2-Trifluoroethan-*1,1-d*$_2$-ol-*d*
Catalysts: Cobalt diacetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], [1,1,1-Trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*]methanesulfonamidato-κ*O*]silver; 24 h, 100 °C

Experimental Protocols

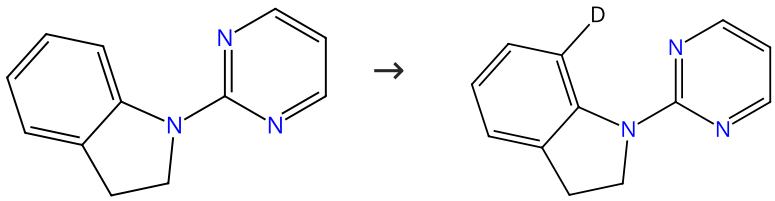
Controllable Tandem [3+2] Cyclization of Aromatic Aldehydes with Maleimides: Rhodium(III)-Catalyzed Divergent Synthesis of Indane-Fused Pyrrolidine-2,5-dione

By: Li, Xin-Ran; et al

Organic Letters (2020), 22(22), 8808-8813.

Scheme 20 (1 Reaction)

Steps: **1** Yield: **87%**



Suppliers (10)

31-116-CAS-21878743

Steps: **1** Yield: **87%**

1.1 **Reagents:** Methanol-*d*$_4$, Silver hexafluoroantimonate
Catalysts: Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 10 h, 60 °C

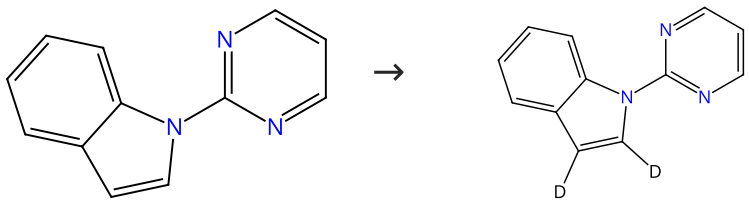
Cp*Co(III)-Catalyzed C-7 C-C Coupling of Indolines with Aziridines: Merging C-H Activation and Ring Opening

By: De, Pinaki Bhusan; et al

Journal of Organic Chemistry (2020), 85(7), 4785-4794.

Scheme 21 (1 Reaction)

Steps: **1** Yield: **87%**



Suppliers (59)

31-116-CAS-16939130

Steps: **1** Yield: **87%**

1.1 **Reagents:** Methanol-*d*$_4$, 3-(1,1-Dimethylethyl)-1,2-heptadiene
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 20 h, 100 °C

Experimental Protocols

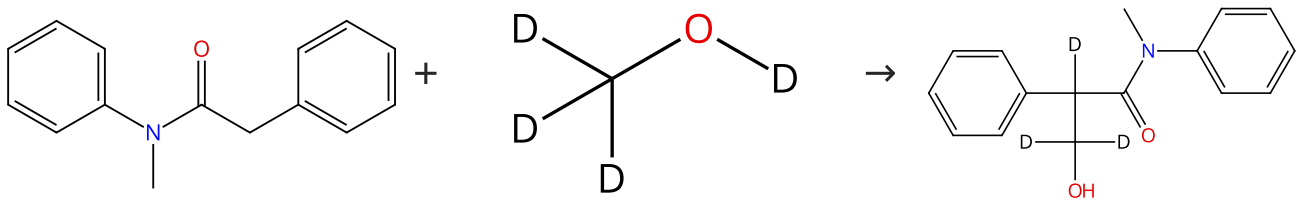
Cobalt(III)-Catalyzed Hydroarylation of Allenes via C-H Activation

By: Nakanowatari, Sachiyo; et al

ACS Catalysis (2017), 7(4), 2511-2515.

Scheme 22 (1 Reaction)

Steps: **1** Yield: **87%**



Suppliers (16)

Suppliers (246)

31-614-CAS-31176863

Steps: **1** Yield: **87%**

1.1 **Reagents:** *tert*-Butyl hydroperoxide, Cesium carbonate
Catalysts: Cobalt chloride ($CoCl_2$)
Solvents: Water; 24 h, 65 °C; rt

1.2 **Reagents:** Ammonium chloride
Solvents: Water; rt

Experimental Protocols

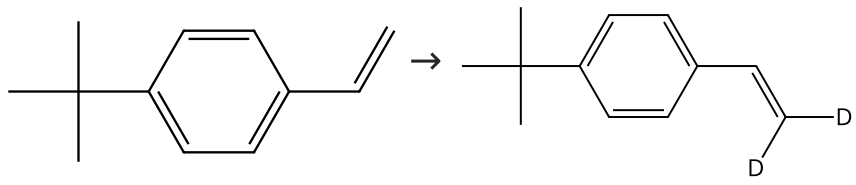
Cobalt-catalyzed direct α-hydroxymethylation of amides with methanol as a C1 source

By: Ma, Ben; et al

Chemical Communications (Cambridge, United Kingdom) (2022), 58(9), 1382-1385.

Scheme 23 (1 Reaction)

Steps: **1** Yield: **86%**



Suppliers (60)

Supplier (1)

31-614-CAS-37018535

Steps: **1** Yield: **86%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κN)phenyl-κC]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κN)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

Experimental Protocols

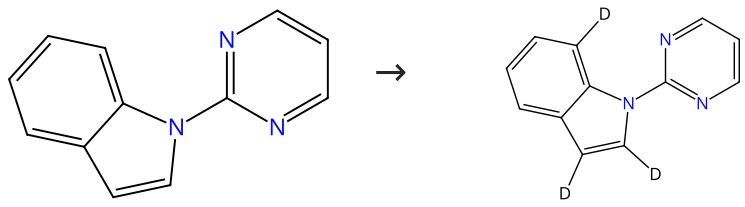
Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 24 (2 Reactions)

Steps: **1** Yield: **86%**



Suppliers (59)

31-614-CAS-36672404

Steps: **1** Yield: **86%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Benzoic acid, Cobalt(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, (*OC*-6-11)-hexafluoroantimonate(1-) (1:2)
Solvents: 2,2,2-Trifluoroethanol; 24 h, 60 °C

Experimental Protocols

Co(III)-Catalyzed three-component assembling of N-(2-pyrimidyl)indoles with dienes and formaldehyde

By: Prusty, Priyambada; et al

Chemical Communications (Cambridge, United Kingdom) (2023), 59(47), 7216-7219.

31-614-CAS-23955648 Steps: 1

1.1 **Reagents:** Acetic acid, Silver hexafluorophosphate
Catalysts: Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethanol-*d*; 1 h, 100 °C

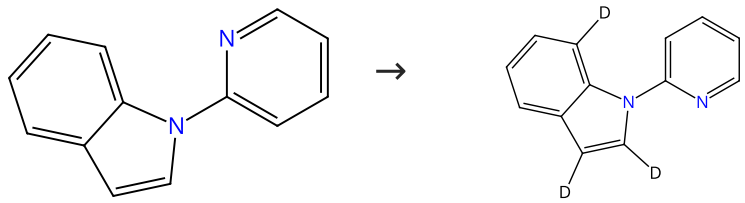
Experimental Protocols

Co^{III}-Catalyzed C-H Alkenylation and Allylation with Cyclopropenes via Sequential C-H/C-C Bond Activation

By: Kim, Ye Lim; et al

Organic Letters (2021), 23(17), 6674-6679.

Scheme 25 (1 Reaction) Steps: **1** Yield: **86%**



Suppliers (36)

31-614-CAS-24225370 Steps: **1** Yield: **86%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Sodium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 4 h, rt

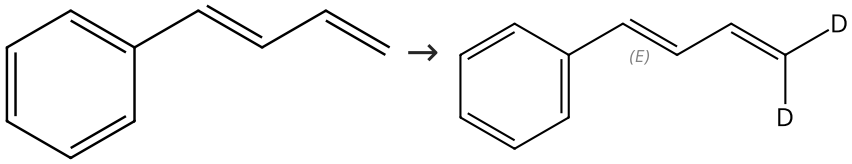
Experimental Protocols

Cobalt-catalyzed multisubstituted allylation of the chelation-assisted C-H bond of (hetero)arenes with cyclopropenes

By: Ramachandran, Kuppan; et al

Chemical Science (2021), 12(40), 13442-13449.

Scheme 26 (1 Reaction) Steps: **1** Yield: **85%**



Suppliers (27)

Double bond geometry shown

31-614-CAS-37018568 Steps: **1** Yield: **85%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κ*N*)phenyl-κ*C*]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κ*N*)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

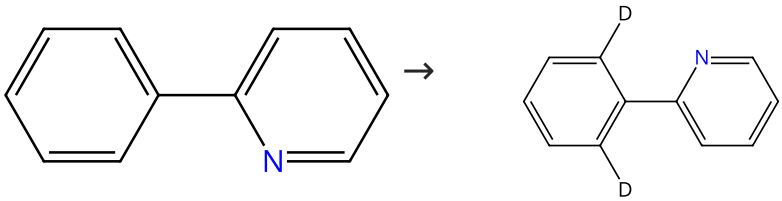
Experimental Protocols

Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 27 (5 Reactions) Steps: **1** Yield: **7-84%**



Suppliers (93)

Supplier (1)

31-116-CAS-19332362 Steps: **1** Yield: **84%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Cobalt(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, (*OC*-6-11)-hexafluoroantimonate(1-) (1:2)
Solvents: 1,2-Dichloroethane; 12 h, 120 °C

Experimental Protocols

Cp*Co(III)-Catalyzed C-H Acylmethylation of Arenes by Employing Sulfoxonium Ylides as Carbene Precursors

By: Ji, Shuying; et al

Organic Letters (2018), 20(18), 5981-5984.

31-116-CAS-8011727 Steps: **1** Yield: **63%**

1.1 **Reagents:** Methanol-d_4, Oxygen
Catalysts: Cobalt(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, (*OC*-6-11)-hexafluoroantimonate(1-) (1:2)
Solvents: 1,2-Dichloroethane; 12 h, 80 °C

Experimental Protocols

Cationic Cobalt(III)-Catalyzed Aryl and Alkenyl C-H Amidation: A Mild Protocol for the Modification of Purine Derivatives

By: Liang, Yujie; et al

Chemistry - A European Journal (2015), 21(46), 16395-16399.

31-116-CAS-5433620 Steps: **1** Yield: **49%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Silver acetate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 24 h, 130 °C; cooled

Experimental Protocols

Cobalt-Catalyzed Oxidative Annulation of Nitrogen-Containing Arenes with Alkynes: An Atom-Economical Route to Heterocyclic Quaternary Ammonium Salts

By: Prakash, Sekar; et al

Angewandte Chemie, International Edition (2016), 55(5), 1844-1848.

31-116-CAS-16123077 Steps: **1** Yield: **7%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Cupric acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 24 h, 90 °C

Experimental Protocols

A [4 + 1] Cyclative Capture Access to Indolizines via Cobalt(III)-Catalyzed Csp^2-H Bond Functionalization

By: Chen, Xun; et al

Organic Letters (2016), 18(18), 4742-4745.

31-116-CAS-7049696 Steps: **1**

1.1 **Reagents:** Methanol-d_4, Silver hexafluoroantimonate
Catalysts: Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: Acetone; 16 h, 60 °C

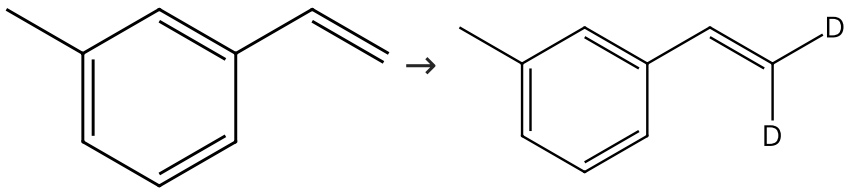
Experimental Protocols

Cobalt(III)-Catalyzed C-H Amidation of Arenes using Acetoxycarbamates as Convenient Amino Sources under Mild Conditions

By: Patel, Pitambar; et al

ACS Catalysis (2015), 5(2), 853-858.

Scheme 28 (1 Reaction) Steps: **1** Yield: **83%**



Suppliers (66)

31-614-CAS-37018554 Steps: **1** Yield: **83%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κ*N*^{1},κ*N*$^{1'}$]bis[2-(2-pyridinyl-κ*N*)phenyl-κ*C*]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κ*N*)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κ*N*^{1})cobalt
Solvents: Dimethylformamide; 36 h, rt

Experimental Protocols

Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 29 (1 Reaction) Steps: **1** Yield: **83%**

Suppliers (60)

31-614-CAS-37018556 Steps: **1** Yield: **83%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κ*N*^{1},κ*N*$^{1'}$]bis[2-(2-pyridinyl-κ*N*)phenyl-κ*C*]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κ*N*)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κ*N*^{1})cobalt
Solvents: Dimethylformamide; 36 h, rt

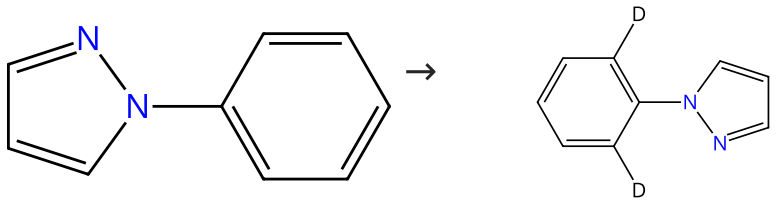
Experimental Protocols

Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 30 (1 Reaction) Steps: **1** Yield: **82%**



Suppliers (90)

31-116-CAS-12676964 Steps: **1** Yield: **82%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Propanoic acid, 2,2-dimethyl-, silver(1+) salt (1:1), Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 16 h, 70 °C

Experimental Protocols

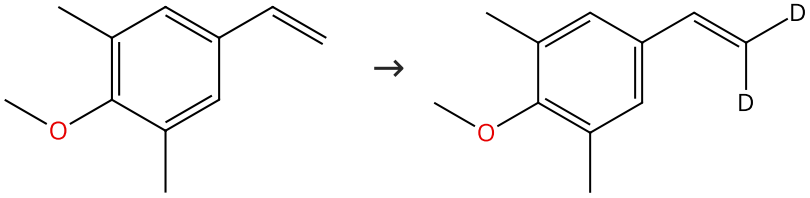
Cobalt(III)-Catalyzed Aryl and Alkenyl C-H Aminocarbonylation with Isocyanates and Acyl Azides

By: Li, Jie; et al

Angewandte Chemie, International Edition (2015), 54(29), 8551-8554.

Scheme 31 (1 Reaction)

Steps: **1** Yield: **82%**



Suppliers (10)

31-614-CAS-37018558

Steps: **1** Yield: **82%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κN)phenyl-κC]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κN)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

Experimental Protocols

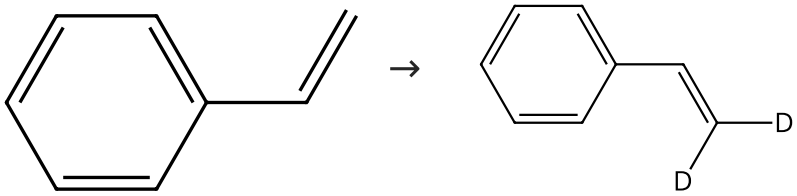
Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 32 (1 Reaction)

Steps: **1** Yield: **81%**



Suppliers (120)

Suppliers (20)

31-614-CAS-37018536

Steps: **1** Yield: **81%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κN)phenyl-κC]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κN)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

Experimental Protocols

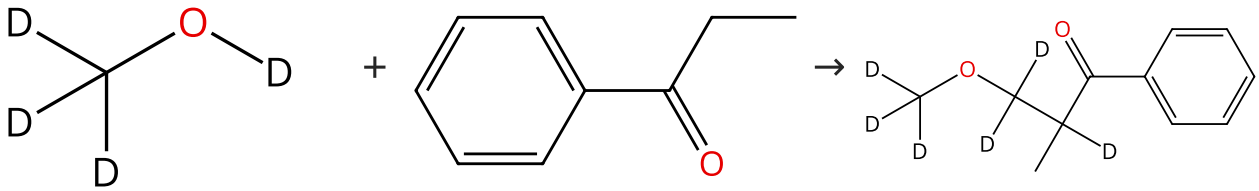
Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 33 (1 Reaction)

Steps: **1** Yield: **81%**



Suppliers (246)

Suppliers (72)

31-614-CAS-24934791

Steps: **1** Yield: **81%**

1.1 **Reagents:** *tert*-Butyl hydroperoxide, Cesium carbonate
Catalysts: Cobalt chloride ($CoCl_2$)
Solvents: Water; 1 h, 65 °C

Experimental Protocols

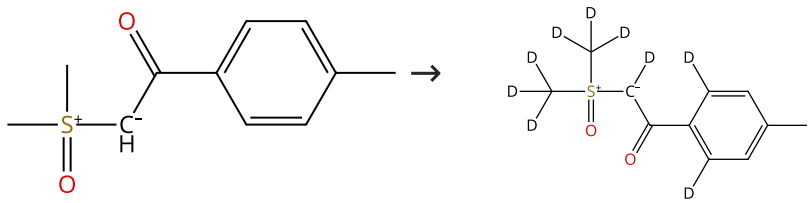
Cobalt-Catalyzed α-Methoxymethylation and Aminomethylation of Ketones with Methanol as a C1 Source

By: Yang, Jingya; et al

Organic Letters (2018), 20(21), 6774-6779.

Scheme 34 (1 Reaction)

Steps: **1** Yield: **80%**



Supplier (1)

31-614-CAS-31533944

Steps: **1** Yield: **80%**

1.1 **Reagents:** Sodium bicarbonate, Methanol-d_4
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: Dichloromethane; 3 h, 100 °C

Experimental Protocols

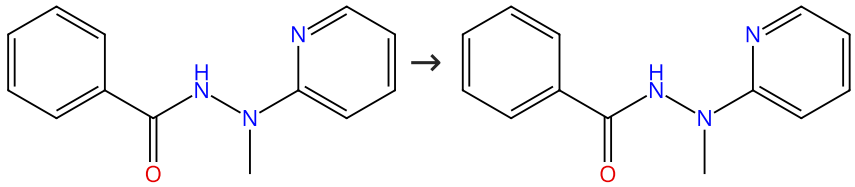
Cobalt(III)-Catalyzed Chemo- and Regioselective [4 + 2]-Annulation of Aromatic Sulfoxonium Ylides with 1,3-Diynes

By: Yadav, Suresh Kumar; et al

Journal of Organic Chemistry (2022), 87(6), 4134-4153.

Scheme 35 (1 Reaction)

Steps: **1** Yield: **80%**



31-614-CAS-30944280

Steps: **1** Yield: **80%**

1.1 **Reagents:** Propanoic acid, 2,2-dimethyl-, sodium salt (1:1)
Catalysts: Cobalt diacetate
Solvents: Methanol-d_4, Dichloroethane; 5 h, 110 °C

Experimental Protocols

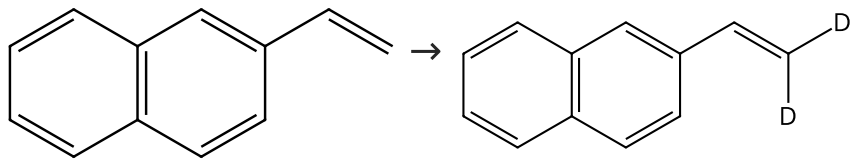
A 2-(1-methylhydrazinyl)pyridine-directed C-H functiona lization/spirocyclization cascade: facile access to spirosuc cinimide derivatives

By: Zhao, Hua; et al

Chemical Communications (Cambridge, United Kingdom) (2018), 54(39), 4927-4930.

Scheme 36 (1 Reaction)

Steps: **1** Yield: **80%**



Suppliers (74)

31-614-CAS-37018551

Steps: **1** Yield: **80%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κN)phenyl-κC]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κN)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

Experimental Protocols

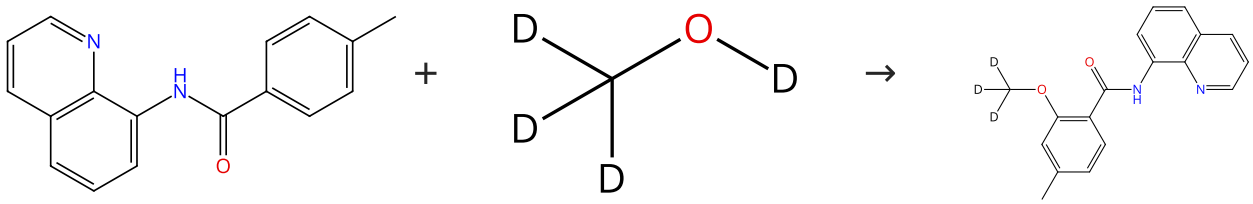
Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 37 (2 Reactions)

Steps: **1** Yield: **65-78%**



Suppliers (8)

Suppliers (246)

31-100-CAS-21333265

Steps: **1** Yield: **78%**

1.1 **Reagents:** Silver carbonate, Potassium carbonate
Catalysts: Cobalt diacetate; 24 h, 80 °C

Experimental Protocols

Diastereoselective [3+2] Annulation of Aromatic/Vinylic Amides with Bicyclic Alkenes through Cobalt-Catalyzed C-H Activation and Intramolecular Nucleophilic Addition

By: Gandeepan, Parthasarathy; et al

Angewandte Chemie, International Edition (2016), 55(13), 4308-4311.

31-100-CAS-21211360

Steps: **1** Yield: **65%**

1.1 **Reagents:** Silver oxide (Ag_2O)
Catalysts: Cobalt diacetate, Pivalic acid
Solvents: Chlorobenzene; 5 min, rt; 24 h, 100 °C

Experimental Protocols

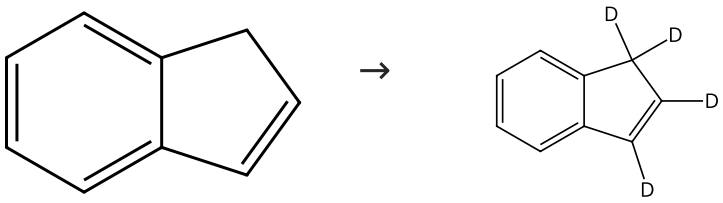
Cobalt-catalyzed C-H olefination of aromatics with unacti vated alkenes

By: Manoharan, Ramasamy; et al

Chemical Communications (Cambridge, United Kingdom) (2016), 52(69), 10533-10536.

Scheme 38 (1 Reaction)

Steps: **1** Yield: **77%**



Suppliers (109)

31-614-CAS-37018559

Steps: **1** Yield: **77%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κN)phenyl-κC]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κN)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

Experimental Protocols

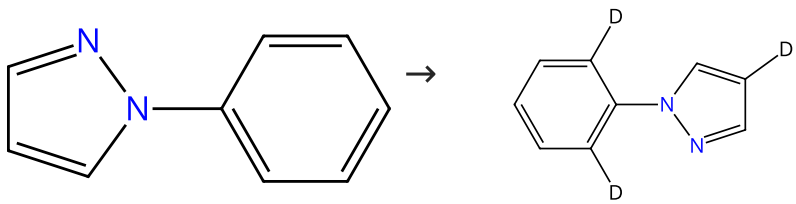
Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 39 (1 Reaction)

Steps: **1** Yield: **76%**



Suppliers (90)

31-116-CAS-16939131 Steps: **1** Yield: **76%**

1.1 **Reagents:** Methanol-d_4, 3-(1,1-Dimethylethyl)-1,2-heptadiene
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,4-Dioxane; 20 h, 120 °C

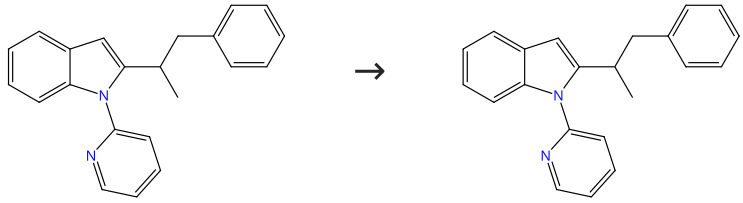
Experimental Protocols

Cobalt(III)-Catalyzed Hydroarylation of Allenes via C-H Activation

By: Nakanowatari, Sachiyo; et al

ACS Catalysis (2017), 7(4), 2511-2515.

Scheme 40 (1 Reaction) Steps: **1** Yield: **76%**



31-614-CAS-31010969 Steps: **1** Yield: **76%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 20 h, 120 °C

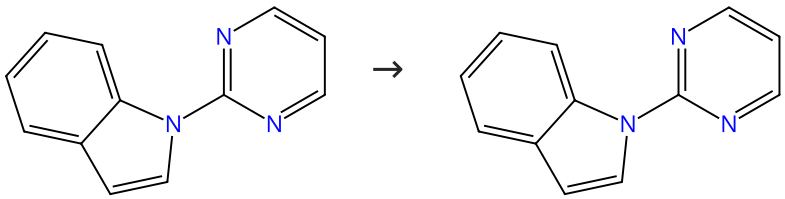
Experimental Protocols

Full Selectivity Control in Cobalt(III)-Catalyzed C-H Alkylations by Switching of the C-H Activation Mechanism

By: Zell, Daniel; et al

Angewandte Chemie, International Edition (2017), 56(35), 10378-10382.

Scheme 41 (2 Reactions) Steps: **1** Yield: **76%**



Suppliers (59)

31-614-CAS-28165860 Steps: **1** Yield: **76%**

1.1 **Reagents:** Potassium acetate
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane, Methanol-d_4; 35 h, 80 °C; 3 d, 90 °C

Experimental Protocols

Cobalt-Catalyzed C-H Thiolation through Dehydrogenative Cross-Coupling

By: Gensch, Tobias; et al

Angewandte Chemie, International Edition (2016), 55(37), 11287-11291.

31-614-CAS-27394577 Steps: **1**

1.1 **Reagents:** Silica gel, pptd., cryst.-free
Catalysts: Silver acetate, Cobalt(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, (*OC*-6-11)-hexafluoroantimonate(1-) (1:2)
Solvents: Methanol-d_4; 30 min, rt

Experimental Protocols

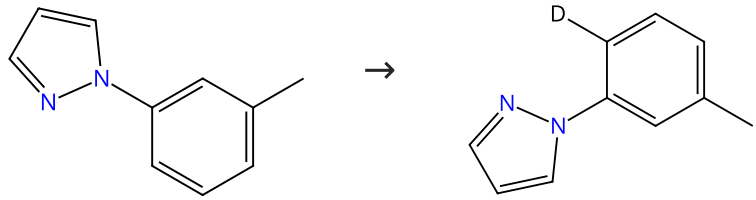
Cobalt(III)-Catalyzed Fast and Solvent-Free C-H Allylation of Indoles Using Mechanochemistry

By: Jiang, Xinpeng; et al

Journal of Organic Chemistry (2017), 82(19), 10665-10672.

Scheme 42 (2 Reactions)

Steps: **1** Yield: **76%**



Suppliers (44)

31-116-CAS-17370486

Steps: **1** Yield: **76%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Propanoic acid, 2,2-dimethyl-, silver(1+) salt (1:1), Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: (Trifluoromethyl)benzene; 14 h, 80 °C

Experimental Protocols

Dehydrative Cp*Co(III)-Catalyzed C-H Bond Allenylation

By: Sen, Malay; et al

Organic Letters (2017), 19(14), 3699-3702.

31-116-CAS-17979269

Steps: **1**

1.1 **Reagents:** 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d*
Catalysts: Propanoic acid, 2,2-dimethyl-, sodium salt (1:1), Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt; 2 h, 80 °C

Experimental Protocols

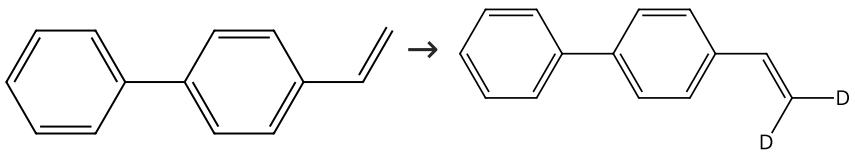
Isolation of Cp*Co^{III}-Alkenyl Intermediate in Efficient Cobalt-Catalyzed C-H Alkenylation with Alkynes

By: Sen, Malay; et al

Chemistry - A European Journal (2018), 24(2), 342-346.

Scheme 43 (1 Reaction)

Steps: **1** Yield: **73%**



Suppliers (74)

Supplier (1)

31-614-CAS-37018552

Steps: **1** Yield: **73%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κ*N*^{1},κ*N*$^{1'}$]bis[2-(2-pyridinyl-κ*N*)phenyl-κ*C*]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κ*N*)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κ*N*^{1})cobalt
Solvents: Dimethylformamide; 36 h, rt

Experimental Protocols

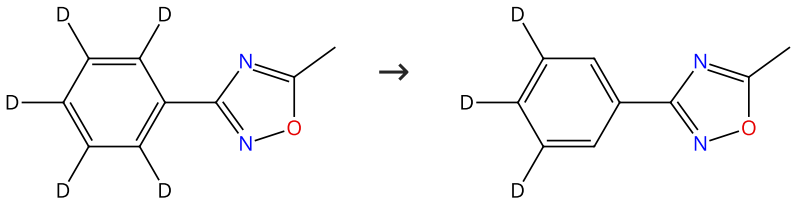
Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 44 (1 Reaction)

Steps: **1** Yield: **72%**



31-614-CAS-29118567 Steps: **1** Yield: **72%**

1.1 **Reagents:** 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d*
Catalysts: Lithium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt; 12 h, 90 °C

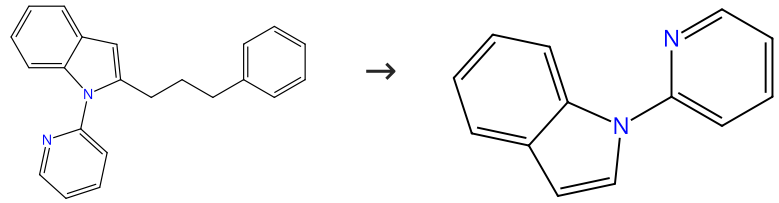
Experimental Protocols

Cobalt(III)-Catalyzed Oxadiazole-Directed C-H Activation for the Synthesis of 1-Aminoisoquinolines

By: Yang, Fan; et al

Organic Letters (2017), 19(11), 2885-2888.

Scheme 45 (1 Reaction) Steps: **1** Yield: **69%**



31-614-CAS-25836758 Steps: **1** Yield: **69%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 20 h, 120 °C

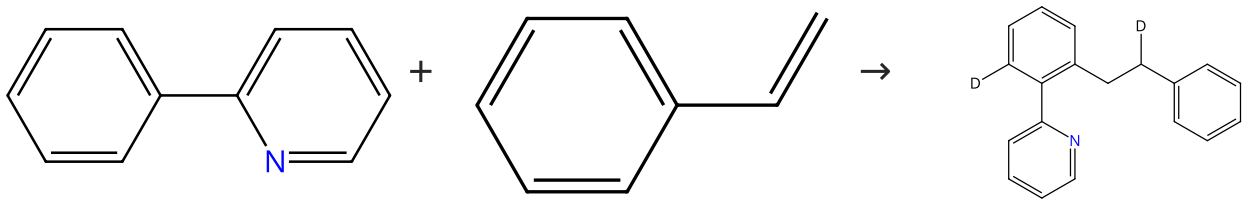
Experimental Protocols

Full Selectivity Control in Cobalt(III)-Catalyzed C-H Alkylations by Switching of the C-H Activation Mechanism

By: Zell, Daniel; et al

Angewandte Chemie, International Edition (2017), 56(35), 10378-10382.

Scheme 46 (1 Reaction) Steps: **1** Yield: **67%**



Suppliers (93) Suppliers (120)

31-085-CAS-22402489 Steps: **1** Yield: **67%**

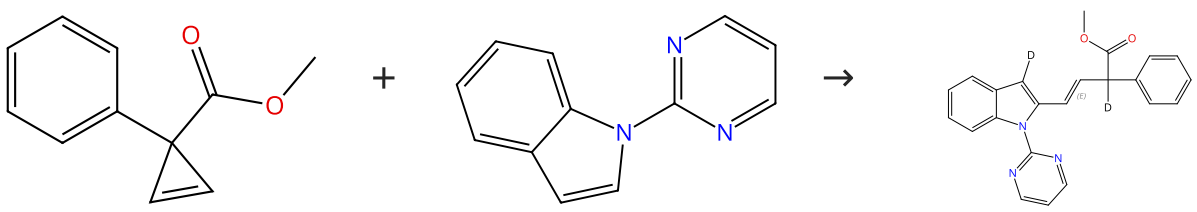
1.1 **Reagents:** Pivalic acid
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethanol-*d*; 24 h, 100 °C

Cobalt-Catalyzed Direct C(sp^2)-H Alkylation with Unactivated Alkenes

By: Kim, Ye Lim; et al

European Journal of Organic Chemistry (2020), 2020(26), 4026-4030.

Scheme 47 (1 Reaction) Steps: **1** Yield: **67%**



Suppliers (5) Suppliers (59)

Double bond geometry shown

31-614-CAS-23955660 Steps: **1** Yield: **67%**

1.1 **Reagents:** Acetic acid, Silver hexafluorophosphate
Catalysts: Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethanol-*d*; 12 h, 100 °C

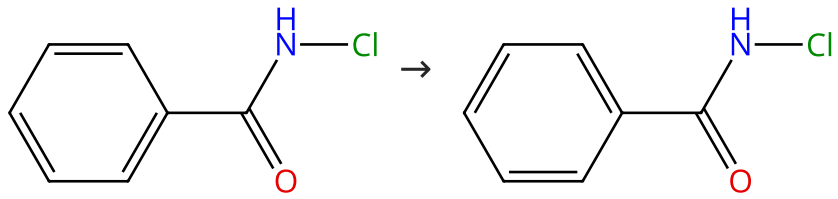
Experimental Protocols

Co^{III}-Catalyzed C-H Alkenylation and Allylation with Cyclopr openes via Sequential C-H/C-C Bond Activation

By: Kim, Ye Lim; et al

Organic Letters (2021), 23(17), 6674-6679.

Scheme 48 (1 Reaction) Steps: **1** Yield: **64%**



Suppliers (5)

31-614-CAS-37083809 Steps: **1** Yield: **64%**

1.1 **Reagents:** Sodium acetate, Methanol-d_4
Catalysts: Silver acetate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethanol; 12 h, 30 °C

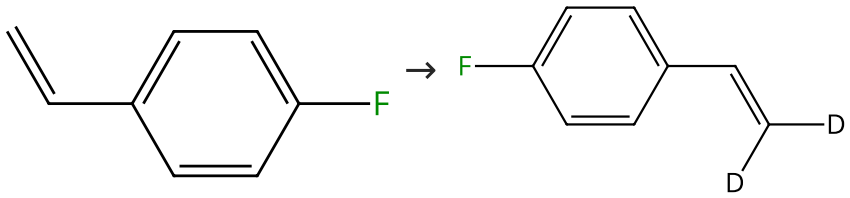
Experimental Protocols

Harnessing Vinyl Acetate as an Acetylene Equivalent in Redox-Neutral Cp*Co(III)-Catalyzed C-H Activation/Annulation for the Synthesis of Isoquinolones and Pyridones

By: Rana, Tamanna; et al

ACS Omega (2023), 8(28), 25262-25271.

Scheme 49 (1 Reaction) Steps: **1** Yield: **63%**



Suppliers (85)

31-614-CAS-37018533 Steps: **1** Yield: **63%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κ*N*)phenyl-κ*C*]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κ*N*)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

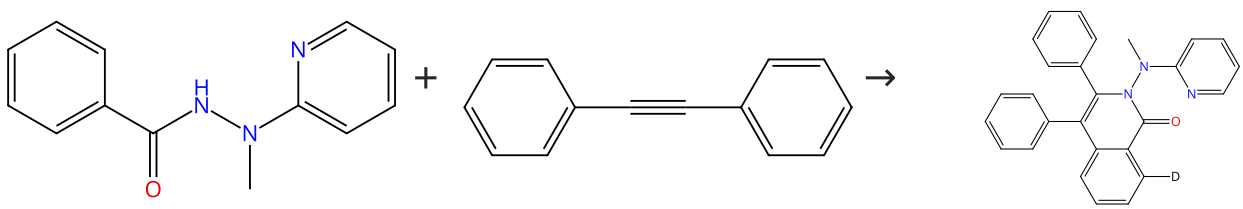
Experimental Protocols

Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 50 (1 Reaction) Steps: **1** Yield: **58%**



Suppliers (88)

31-116-CAS-18336290 Steps: **1** Yield: **58%**

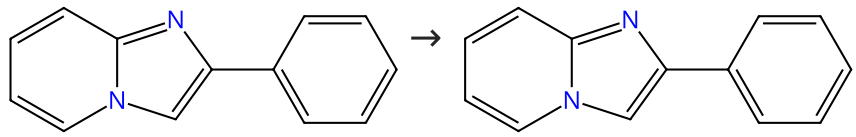
1.1 **Reagents:** Tetrabutylammonium iodide, Sodium carbonate, Methanol-d_4, Manganese triacetate, Oxygen
Catalysts: Cobalt diacetate
Solvents: 1,1,1,3,3,3-Hexafluoro-2-propanol; 14 h, 100 °C

2-(1-Methylhydrazinyl)pyridine as a reductively removable directing group in a cobalt-catalyzed C(sp^2)-H bond alkenylation/annulation cascade

By: Zhai, Shengxian; et al

Chemical Communications (Cambridge, United Kingdom) (2018), 54(1), 98-101.

Scheme 51 (1 Reaction) Steps: **1** Yield: **55%**



Suppliers (83)

31-614-CAS-43339092 Steps: **1** Yield: **55%**

1.1 **Reagents:** Sodium acetate, Methanol-d_4, Silver hexafluoroantimonate
Catalysts: Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 5 h, 140 °C

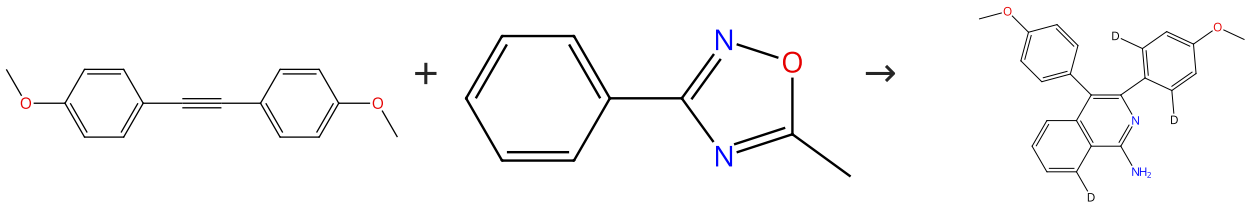
Experimental Protocols

Cp*Co(III)-catalyzed C-H amidation of 2-arylimidazo[1,2-α]pyridines with dioxazolones

By: Yu, Yongqi; et al

Tetrahedron (2025), 171, 134420.

Scheme 52 (1 Reaction) Steps: **1** Yield: **54%**



Suppliers (57) Suppliers (52)

31-116-CAS-17158056 Steps: **1** Yield: **54%**

1.1 **Reagents:** 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d*
Catalysts: Lithium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt; 5 h, 90 °C

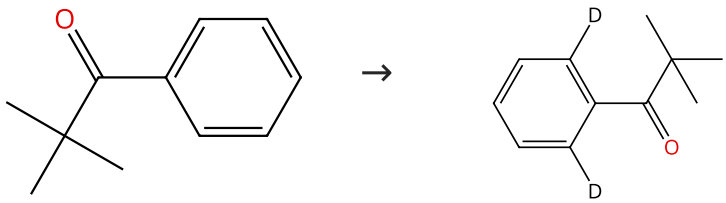
Experimental Protocols

Cobalt(III)-Catalyzed Oxadiazole-Directed C-H Activation for the Synthesis of 1-Aminoisoquinolines

By: Yang, Fan; et al

Organic Letters (2017), 19(11), 2885-2888.

Scheme 53 (1 Reaction) Steps: **1** Yield: **53%**



Suppliers (67)

31-116-CAS-18849828 Steps: **1** Yield: **53%**

1.1 **Catalysts:** Sodium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; rt

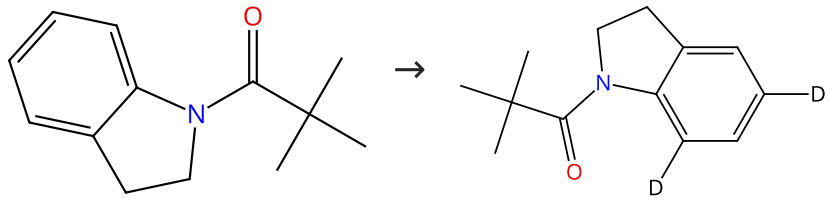
1.2 **Reagents:** 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d*
Solvents: 1,2-Dichloroethane; rt; 8 h, 120 °C

Cp*Co(III)-Catalyzed C-H Alkylation with Maleimides Using Weakly Coordinating Carbonyl Directing Groups

By: Mandal, Rajib; et al

Organic Letters (2018), 20(10), 2835-2838.

Scheme 54 (1 Reaction) Steps: **1** Yield: **51%**



Suppliers (10)

31-614-CAS-25602793 Steps: **1** Yield: **51%**

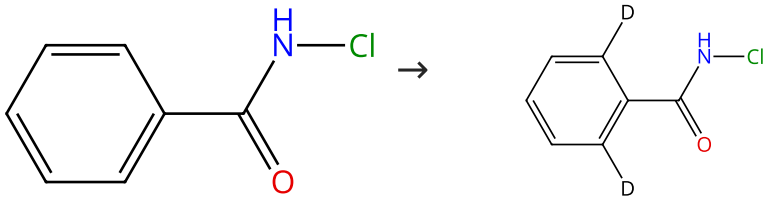
1.1 **Reagents:** Methanol-d_4
Catalysts: Lithium carbonate (Li_2CO_3), Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt, Zinc triflate
Solvents: 2,2,2-Trifluoroethanol; 24 h, 80 °C

Cobalt Catalyzed Hydroarylation of Michael Acceptors with Indolines Directed by a Weakly Coordinating Functional Group

By: Banjare, Shyam Kumar; et al

Organic Letters (2019), 21(11), 4049-4053.

Scheme 55 (2 Reactions) Steps: **1** Yield: **45%**



Suppliers (5)

31-116-CAS-17816132 Steps: **1** Yield: **45%**

1.1 **Reagents:** Potassium acetate
Catalysts: Silver acetate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d*; 36 h, rt

Experimental Protocols

Direct Access to Cobaltacycles via C-H Activation: N-Chloroamide-Enabled Room-Temperature Synthesis of Heterocycles

By: Yu, Xiaolong; et al

Organic Letters (2017), 19(19), 5348-5351.

31-614-CAS-32110574 Steps: **1**

1.1 **Reagents:** Sodium acetate, Methanol-d_4
Catalysts: Silver acetate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethanol; 24 h, rt

Experimental Protocols

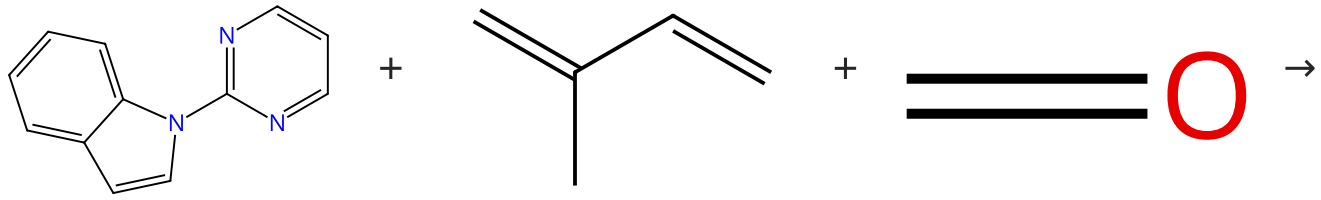
Cobalt(III)-Catalyzed C-H Activation/Annulation Cascade Reaction of N -Chlorobenzamides with 2-Acetylenic Ketones at Room Temperature

By: Wu, Zhouping; et al

Synthesis (2022), 54(14), 3289-3297.

Scheme 56 (1 Reaction)

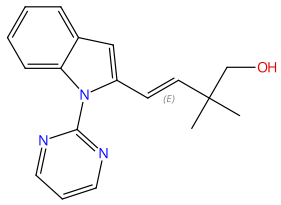
Steps: **1** Yield: **45%**



Suppliers (59)

Suppliers (53)

Suppliers (206)



Double bond geometry shown

31-614-CAS-36672401

Steps: **1** Yield: **45%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Benzoic acid, Cobalt(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, (*OC*-6-11)-hexafluoroantimonate(1-) (1:2)
Solvents: 2,2,2-Trifluoroethanol; 5 min, rt; 24 h, 60 °C

Experimental Protocols

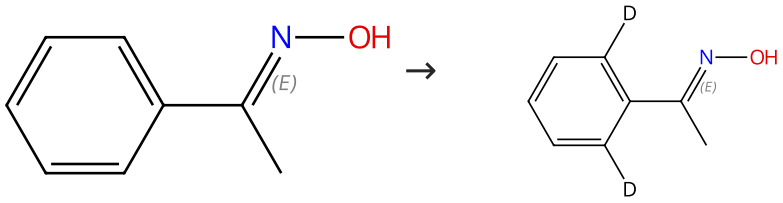
Co(III)-Catalyzed three-component assembling of N-(2-pyrimidyl)indoles with dienes and formaldehyde

By: Prusty, Priyambada; et al

Chemical Communications (Cambridge, United Kingdom) (2023), 59(47), 7216-7219.

Scheme 57 (1 Reaction)

Steps: **1** Yield: **44%**



Double bond geometry shown

Double bond geometry shown

Suppliers (17)

31-116-CAS-12330051

Steps: **1** Yield: **44%**

1.1 **Reagents:** Sodium acetate, Methanol-d_4
Catalysts: Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethanol; 14 h, 80 °C

Experimental Protocols

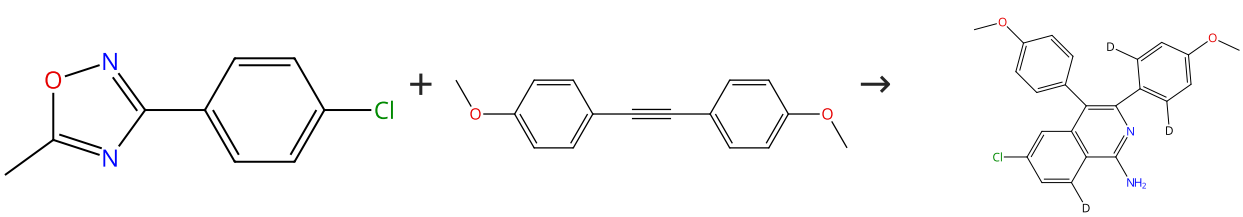
Cobalt(III)-Catalyzed Dehydrative [4+2] Annulation of Oxime with Alkyne by C-H and N-OH Activation

By: Sen, Malay; et al

Chemistry - A European Journal (2015), 21(44), 15529-15533.

Scheme 58 (1 Reaction)

Steps: **1** Yield: **41%**



Suppliers (42)

Suppliers (57)

31-116-CAS-17158057 Steps: **1** Yield: **41%**

1.1 **Reagents:** 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d*
Catalysts: Lithium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt; 5 h, 90 °C

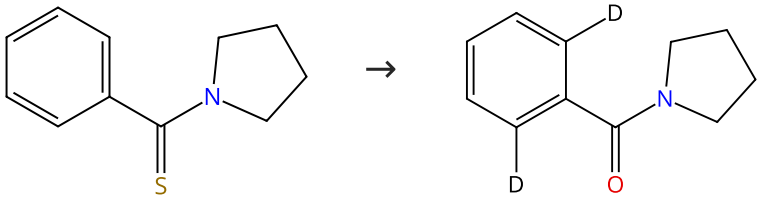
Experimental Protocols

Cobalt(III)-Catalyzed Oxadiazole-Directed C-H Activation for the Synthesis of 1-Aminoisoquinolines

By: Yang, Fan; et al

Organic Letters (2017), 19(11), 2885-2888.

Scheme 59 (1 Reaction) Steps: **1** Yield: **36%**



Suppliers (11)

31-614-CAS-25053265 Steps: **1** Yield: **36%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Sodium benzoate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 12 h, 40 °C

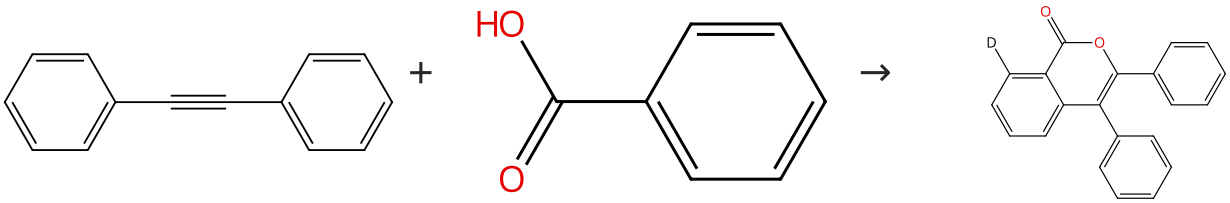
Experimental Protocols

Cobalt(III)-catalyzed C-H amidation of N,N-dialkyl thioben zamides by sulfur coordination

By: Gao, Pengpeng; et al

Organic & Biomolecular Chemistry (2021), 19(47), 10332-10336.

Scheme 60 (1 Reaction) Steps: **1** Yield: **32%**



Suppliers (88) Suppliers (192)

31-116-CAS-17050262 Steps: **1** Yield: **32%**

1.1 **Reagents:** Sodium acetate, Copper oxide (Cu O), 2,2,2-Trifluor oethan-*1,1*-d_2-ol-*d*
Catalysts: Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt; 24 h, 80 °C

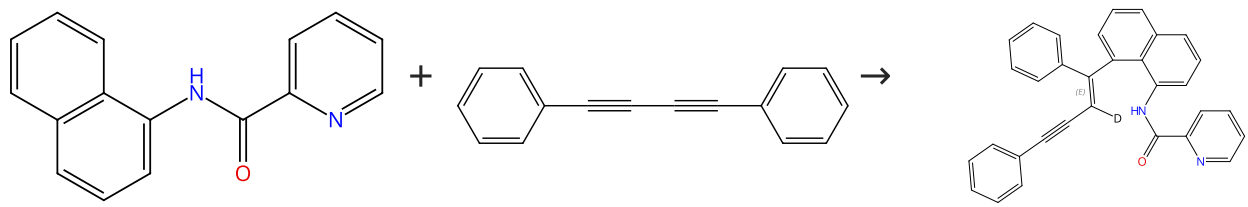
Experimental Protocols

Cp*Co(III)-Catalyzed Annulation of Carboxylic Acids with Alkynes

By: Mandal, Rajib; et al

Organic Letters (2017), 19(10), 2544-2547.

Scheme 61 (1 Reaction) Steps: **1** Yield: **21%**



Suppliers (21) Suppliers (64)

Double bond geometry shown

31-251-CAS-22898132 Steps: **1** Yield: **21%**

1.1 **Reagents:** Potassium acetate, Methanol-d_4
Catalysts: Cobalt diacetate
Solvents: 2,2,2-Trifluoroethanol; 4 h, rt → 100 °C

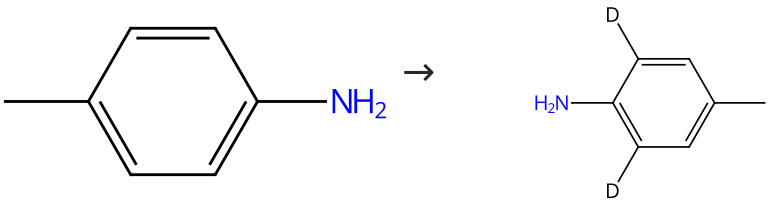
Experimental Protocols

Cobalt(II)-catalyzed hydroarylation of 1,3-diynes and internal alkynes with picolinamides promoted by alcohol

By: Gao, Yuan; et al

Chemical Communications (Cambridge, United Kingdom) (2020), 56(91), 14231-14234.

Scheme 62 (1 Reaction) Steps: **1**



Suppliers (77)

31-116-CAS-17887526 Steps: **1**

1.1 **Reagents:** Trifluoroacetic acid-d, Methanol-d_4
Catalysts: Carbonyl(η^5-2,4-cyclopentadien-1-yl)diiodocobalt, [1,1,1-Trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*]methane sulfonamidato-κ*O*]silver; 2 h, 120 °C

1.2 **Reagents:** Sodium bicarbonate
Solvents: Water

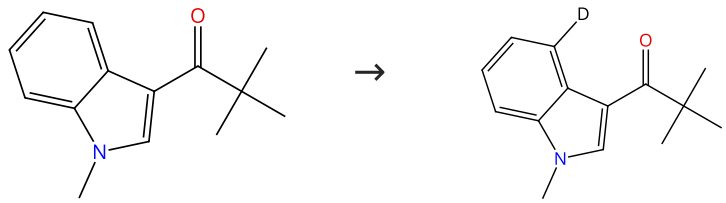
Experimental Protocols

The one-pot synthesis of quinolines via Co(III)-catalyzed C-H activation/carbonylation/cyclization of anilines

By: Xu, Xuefeng; et al

Organic & Biomolecular Chemistry (2017), 15(43), 9061-9065.

Scheme 63 (1 Reaction) Steps: **1**



Suppliers (32)

31-614-CAS-39678592 Steps: **1**

1.1 **Reagents:** Cupric acetate, Methanol-d_4
Catalysts: Silver tetrafluoroborate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethanol; 12 h, 80 °C

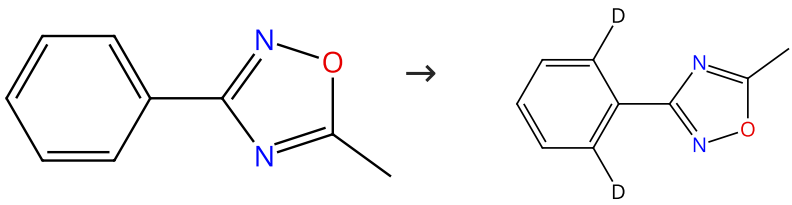
Experimental Protocols

Expanding the Scope of Alkynes in C-H Activation: Weak Chelation-Assisted Cobalt-Catalyzed Synthesis of Indole C(4)-Acrylophenone via C-O Bond Cleavage of Propargylic Ethers

By: Mahulkar, Pranav Shridhar; et al

Organic Letters (2024), 26(10), 2091-2096.

Scheme 64 (1 Reaction) Steps: **1**



Suppliers (52)

31-116-CAS-17158054 Steps: **1**

1.1 **Reagents:** 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d*
Catalysts: Lithium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt; 5 h, 90 °C

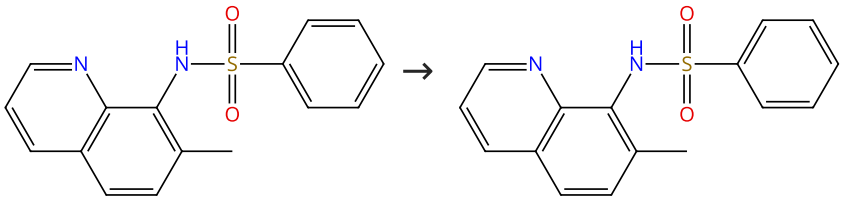
Experimental Protocols

Cobalt(III)-Catalyzed Oxadiazole-Directed C-H Activation for the Synthesis of 1-Aminoisoquinolines

By: Yang, Fan; et al

Organic Letters (2017), 19(11), 2885-2888.

Scheme 65 (1 Reaction) Steps: **1**



Suppliers (2)

31-614-CAS-36994799 Steps: **1**

1.1 **Reagents:** Methanol-d_4, Manganese triacetate, Propanoic acid, 2,2-dimethyl-, sodium salt (1:1)
Catalysts: Cobalt diacetate, 2-[(4*S*)-4,5-Dihydro-4-phenyl-2-oxazolyl]-4,6-bis(1,1-dimethylethyl)phenol; 2 h, 100 °C

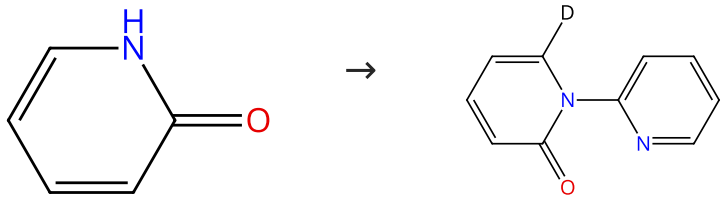
Experimental Protocols

Cobalt-catalyzed enantioselective C-H/N-H annulation of aryl sulfonamides with allenes or alkynes: facile access to C-N axially chiral sultams

By: Si, Xiao-Ju; et al

Chemical Science (2023), 14(26), 7291-7303.

Scheme 66 (1 Reaction) Steps: **1**



Suppliers (151)

31-116-CAS-19998948 Steps: **1**

1.1 **Reagents:** Potassium acetate, Methanol-d_4
Catalysts: Carbonyl(η^5-2,4-cyclopentadien-1-yl)diiodocobalt, Silver hexafluoroantimonate
Solvents: Dichloromethane; 12 h, 90 °C

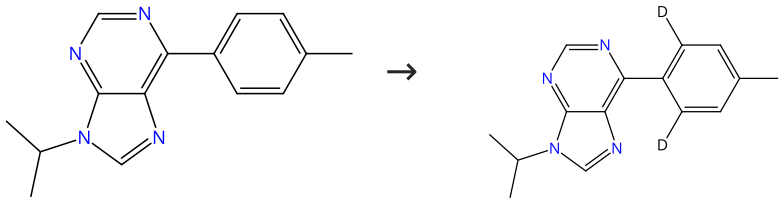
Experimental Protocols

Cobalt(III)-catalyzed site-selective C-H amidation of pyridones and isoquinolones

By: Gao, Feng; et al

RSC Advances (2018), 8(57), 32659-32663.

Scheme 67 (1 Reaction) Steps: **1**



Supplier (1)

31-116-CAS-9926277 Steps: **1**

1.1 **Reagents:** Methanol-d_4
Catalysts: Silver acetate, Di-μ-iododiiodobis[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]dicobalt, [1,1,1-Trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*]methanesulfonamidato-κ*O*]silver
Solvents: 1,2-Dichloroethane; 12 h, 80 °C

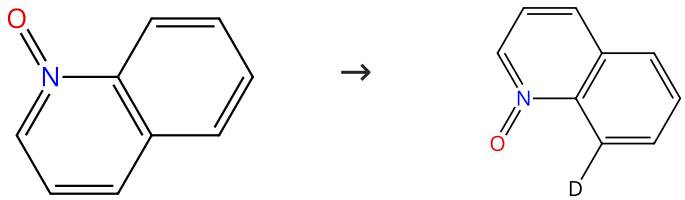
Experimental Protocols

Cobalt(III)-catalyzed C-H halogenation of 6-arylpurines: facile entry into arylated, sulfenylated and alkoxylated 6-arylpurines

By: Pawar, Amit B.; et al

Organic & Biomolecular Chemistry (2016), 14(12), 3275-3283.

Scheme 68 (1 Reaction) Steps: **1**



Suppliers (56) Supplier (1)

31-614-CAS-37053174 Steps: **1**

1.1 **Reagents:** Methanol-d_4
Catalysts: Acetic acid-d_4, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobaltate(1-)
Solvents: 2-Propan-*2-d*-ol-*d*, 1,1,1,3,3,3-hexafluoro-; 6 h, 50 °C

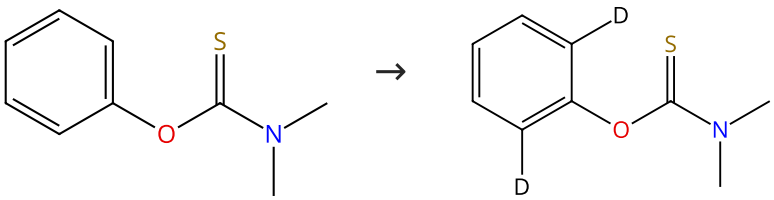
Experimental Protocols

Co(III)-Catalyzed C-H Amidation of Nitrogen-Containing Heterocycles with Dioxazolones under Mild Conditions

By: Dhiman, Ankit Kumar; et al

Journal of Organic Chemistry (2020), 85(14), 9244-9254.

Scheme 69 (1 Reaction) Steps: **1**



Suppliers (6)

31-116-CAS-21797757 Steps: **1**

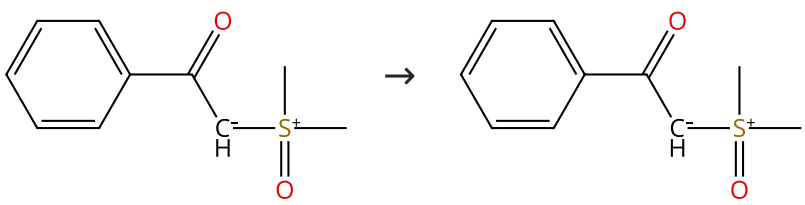
1.1 **Reagents:** Methanol-d_4
Catalysts: Potassium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,1,2,2-Tetrachloroethane; 3 h, 100 °C

Carbamates: A Directing Group for Selective C- H Amidation and Alkylation under Cp*Co(III) Catalysis

By: Bera, Sourav Sekhar; et al

Organic Letters (2020), 22(7), 2615-2620.

Scheme 70 (1 Reaction) Steps: **1**



Suppliers (38)

31-614-CAS-27933760 Steps: **1**

1.1 **Reagents:** Methanol-d_4, Silver triflate
Catalysts: Potassium acetate, Carbonyl(η^5-2,4-cyclopentadien-1-yl)diiodocobalt
Solvents: 1,2-Dichloroethane; 1 h, 140 °C

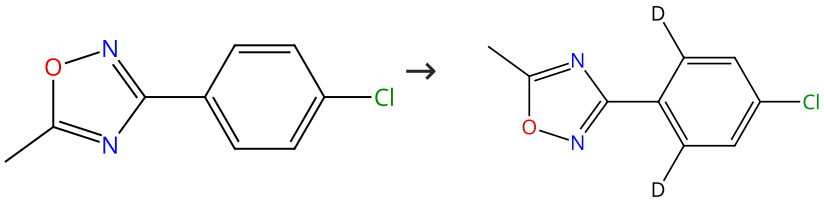
Experimental Protocols

Synthesis of 1-naphthols via Cp*Co(III)-catalyzed C-H activation and cyclization of sulfoxonium ylides with alkynes

By: Yu, Yongqi; et al

Organic Chemistry Frontiers (2019), 6(23), 3868-3873.

Scheme 71 (1 Reaction) Steps: **1**



Suppliers (42)

31-116-CAS-17158055 Steps: **1**

1.1 **Reagents:** 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d*
Catalysts: Lithium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt; 5 h, 90 °C

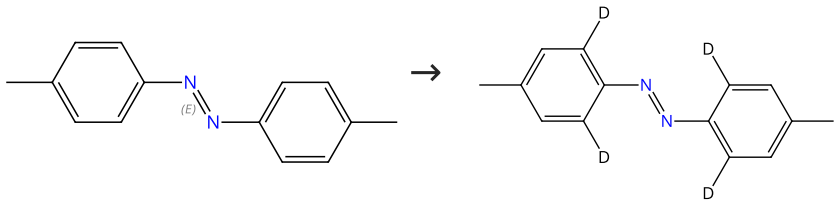
Experimental Protocols

Cobalt(III)-Catalyzed Oxadiazole-Directed C-H Activation for the Synthesis of 1-Aminoisoquinolines

By: Yang, Fan; et al

Organic Letters (2017), 19(11), 2885-2888.

Scheme 72 (1 Reaction) Steps: **1**



Double bond geometry shown

Supplier (1)

Suppliers (21)

31-116-CAS-17032192 Steps: **1**

1.1 **Reagents:** Acetic acid, Methanol-*d*
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethanol; 2 h, 110 °C

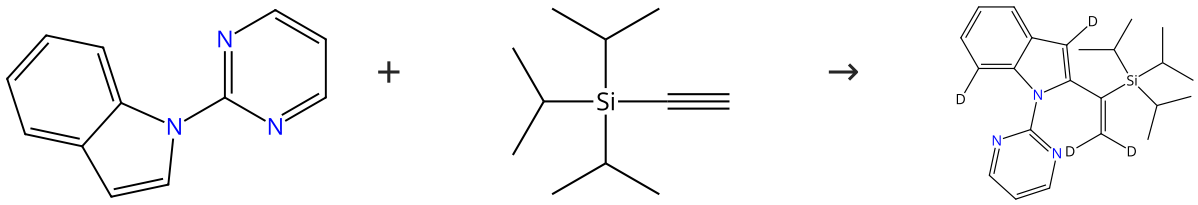
Experimental Protocols

Cp*Co(III)-catalyzed ortho-amidation of azobenzenes with dioxazolones

By: Borah, Gongutri; et al

Organic & Biomolecular Chemistry (2017), 15(18), 3854-3859.

Scheme 73 (1 Reaction) Steps: **1**



Suppliers (59)

Suppliers (89)

31-116-CAS-18442776 Steps: 1

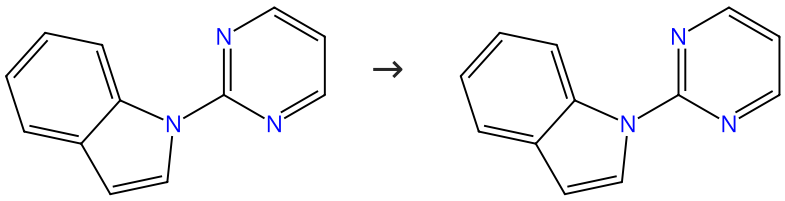
1.1 **Reagents:** Propanoic acid-*d*, 2,2-dimethyl-
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d*; 12 h, rt

Cp*Co^{III}-Catalyzed Branch-Selective Hydroarylation of Alkynes via C-H Activation: Efficient Access to α-gem-Vinylindoles

By: Zhou, Xukai; et al

ACS Catalysis (2017), 7(10), 7296-7304.

Scheme 74 (1 Reaction) Steps: **1**



Suppliers (59)

31-614-CAS-29195720 Steps: 1

1.1 **Reagents:** Quinone, Cupric acetate, Methanol-d_4
Catalysts: Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt, Indium triflate
Solvents: 1,4-Dioxane; 5 h, 60 °C

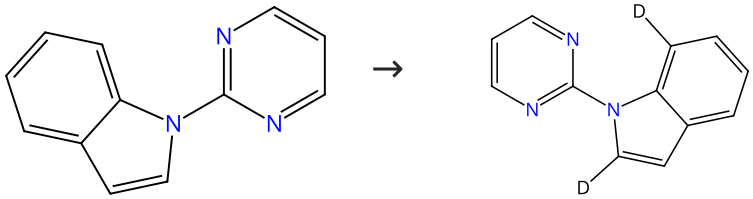
Experimental Protocols

Cobalt-Catalyzed C-H Thiolation through Dehydrogenative Cross-Coupling

By: Gensch, Tobias; et al

Angewandte Chemie, International Edition (2016), 55(37), 11287-11291.

Scheme 75 (1 Reaction) Steps: **1**



Suppliers (59)

31-116-CAS-22487418 Steps: 1

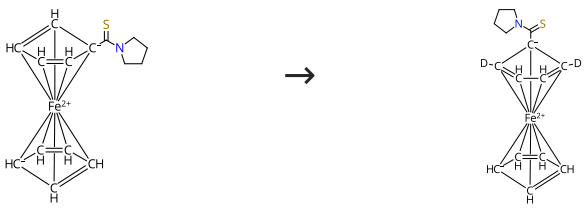
1.1 **Reagents:** Methanol-d_4
Catalysts: Potassium acetate, Carbonyl(η^5-2,4-cyclopentadien-1-yl)diiodocobalt, Silver hexafluoroantimonate
Solvents: 2,2,2-Trifluoroethanol; 16 h, 100 °C

Co(III)-catalyzed reaction between 3-diazoindolin-2-imines and 1-pyrimidinylindoles for the synthesis of 2,3'-biindoles

By: Li, Zhenmin; et al

Tetrahedron (2020), 76(31-32), 131371.

Scheme 76 (1 Reaction) Steps: **1**



31-614-CAS-35435304 Steps: 1

1.1 **Reagents:** Methanol-d_4
Catalysts: Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt, [1,1,1-Trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*]methanesulfonamidato-κ*O*]silver
Solvents: Tetrahydrofuran; 24 h, 60 °C

Experimental Protocols

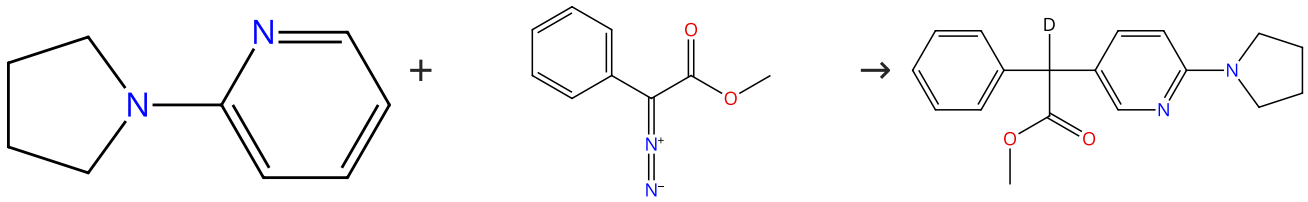
Thioamide-Directed Cp*Co(III)-Catalyzed C-H Allylation of Ferrocenes

By: Zhang, Zhuo-Zhuo; et al

Organic Letters (2021), 23(7), 2626-2631.

Scheme 77 (1 Reaction)

Steps: **1**



Suppliers (46)

Suppliers (35)

31-136-CAS-20029335

Steps: **1**

1.1 **Reagents:** Methanol-*d*
Catalysts: Cupric acetate, Cobalt dibromide
Solvents: Tetrahydrofuran; 12 h, 80 °C

Experimental Protocols

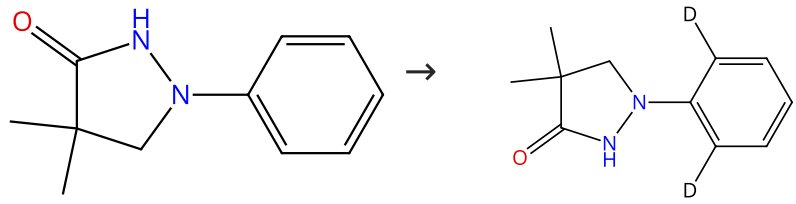
Co(II)-Catalyzed Regioselective Pyridine C-H Coupling with Diazoacetates

By: Xie, Haisheng; et al

Organic Letters (2019), 21(9), 3427-3430.

Scheme 78 (1 Reaction)

Steps: **1**



Suppliers (25)

31-614-CAS-31788997

Steps: **1**

1.1 **Catalysts:** Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt, Propanoic acid, 2,2-dimethyl-, sodium salt, hydrate (1:1:?)
Solvents: Methanol-d_4; 40 °C

Experimental Protocols

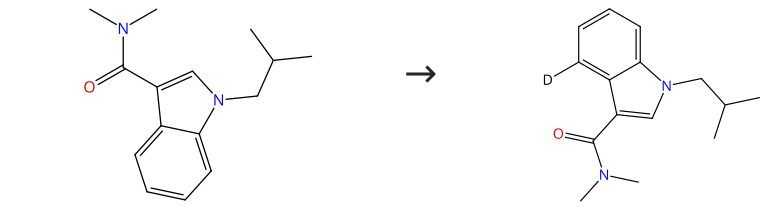
Catalyst-Controlled C-H Transformation of Pyrazolidinones with 1,3-Diynes for Highly Selective Synthesis of Functio nalized Bisindoles and Indoles

By: Luo, Yi; et al

Journal of Organic Chemistry (2022), 87(9), 5577-5591.

Scheme 79 (1 Reaction)

Steps: **1**



31-614-CAS-39300315

Steps: **1**

1.1 **Reagents:** Silver carbonate, Methanol-d_4, Water-d_2
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: Dichloromethane; 12 h, 80 °C

Experimental Protocols

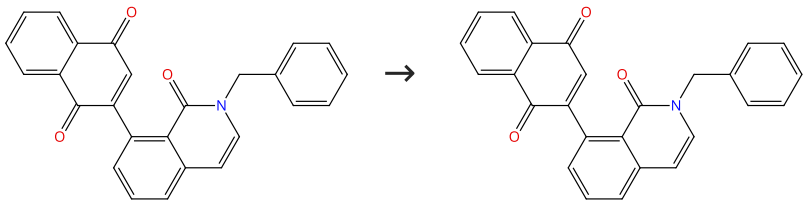
Weak-Chelation Assisted Regioselective Indole C(4)-Alkynylation via Six-Membered Cobaltacycle Intermediate

By: Joshi, Sofaya; et al

Advanced Synthesis & Catalysis (2024), 366(6), 1341-1347.

Scheme 80 (1 Reaction)

Steps: **1**



31-614-CAS-40572663

Steps: **1**

1.1 **Reagents:** Methanol-d_4
Catalysts: Cupric acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 4 h, 60 °C

Experimental Protocols

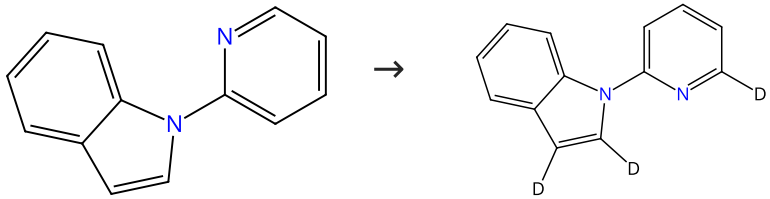
Co(III)-Catalyzed Regioselective Functionalization of Isoquinolones with Naphthoquinones

By: Sharma, Tamanna; et al

Organic Letters (2024), 26(23), 5027-5031.

Scheme 81 (1 Reaction)

Steps: **1**



Suppliers (36)

31-116-CAS-16304803

Steps: **1**

1.1 **Reagents:** Methanol-d_4, Copper diacetate monohydrate, Silver tetrafluoroborate
Catalysts: Silver acetate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 2 h, 135 °C

Experimental Protocols

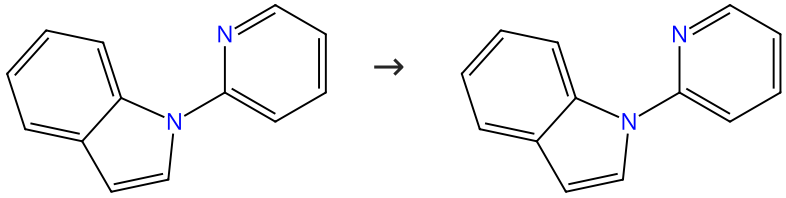
Cp*Co^{III}-Catalyzed Synthesis of Pyrido[2',1':2,3]pyrimido[1,6-a]indol-5-iums via Tandem C-H Activation and Subsequent Annulation from 1-(Pyridin-2-yl)-1H-indoles and Internal Alkynes

By: Yang, Yuhan; et al

Journal of Organic Chemistry (2016), 81(22), 11335-11345.

Scheme 82 (1 Reaction)

Steps: **1**



Suppliers (36)

31-614-CAS-25224378

Steps: **1**

1.1 **Reagents:** Methanol-d_4
Catalysts: Cuprous acetate, Carbonyl(η^5-2,4-cyclopentadien-1-yl)diiodocobalt
Solvents: 1,1,1,3,3,3-Hexafluoro-2-propanol; 2 h, 110 °C

Experimental Protocols

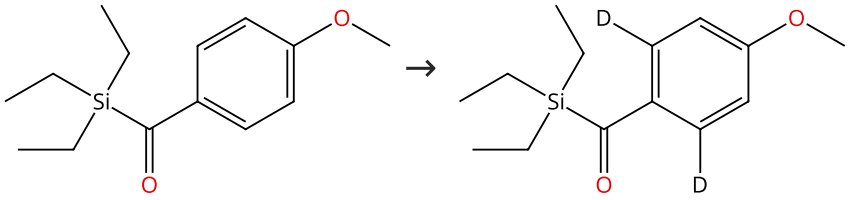
Cp*Co(III)-Catalyzed Regioselective Synthesis of Cyclopenta[b]carbazoles via Dual C(sp^2)-H Functionalization of 1-(Pyridin-2-yl)-indoles with Diynes

By: Li, Qiuyun; et al

Organic Letters (2018), 20(24), 7884-7887.

Scheme 83 (1 Reaction)

Steps: **1**



Supplier (1)

31-614-CAS-35692663

Steps: **1**

1.1 **Catalysts:** Sodium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 5 min, rt

1.2 **Reagents:** Methanol-d_4; 16 h, 80 °C

Experimental Protocols

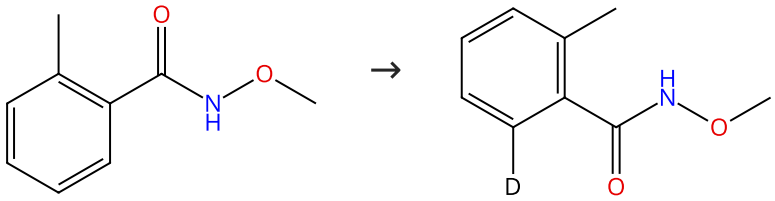
Cobalt-catalyzed acyl silane directed ortho C-H functionalization of benzoyl silanes

By: Atkin, Liselle; et al

Chemical Communications (Cambridge, United Kingdom) (2022), 58(90), 12604-12607.

Scheme 84 (1 Reaction)

Steps: **1**



Suppliers (8)

31-116-CAS-20709573

Steps: **1**

1.1 **Reagents:** Zinc acetate, Methanol-d_4
Catalysts: Carbonyl(η^5-2,4-cyclopentadien-1-yl)diiodocobalt, [1,1,1-Trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*]methane sulfonamidato-κ*O*]silver
Solvents: 1,2-Dichloroethane; rt → 120 °C; overnight, 120 °C

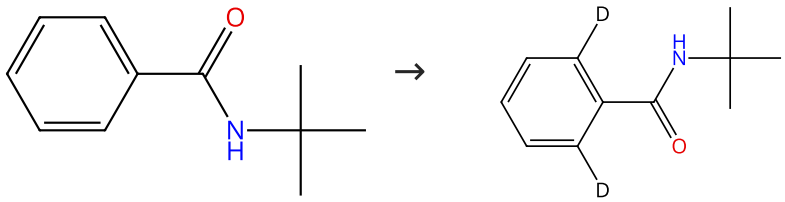
Cp*Co^{III}-catalyzed formal [4+2] cycloaddition of benzamides to afford quinazolinone derivatives

By: Yang, Jingshu; et al

Chemical Communications (Cambridge, United Kingdom) (2019), 55(92), 13840-13843.

Scheme 85 (1 Reaction)

Steps: **1**



Suppliers (55)

31-116-CAS-16530063

Steps: **1**

1.1 **Reagents:** Methanol-d_4
Catalysts: Cupric acetate, Silver tetrafluoroborate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 16 h, 120 °C

Experimental Protocols

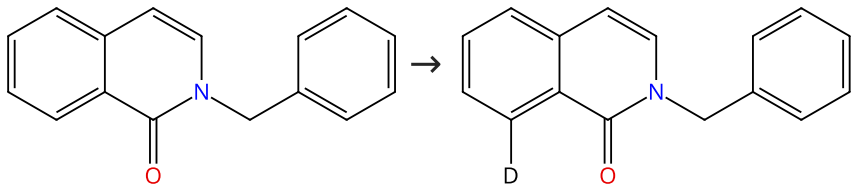
Cp*Co^{III}-Catalyzed syn-Selective C-H Hydroarylation of Alkynes Using Benzamides: An Approach Toward Highly Conjugated Organic Frameworks

By: Bera, Sourav Sekhar; et al

Journal of Organic Chemistry (2017), 82(1), 420-430.

Scheme 86 (1 Reaction)

Steps: **1**



Suppliers (4)

31-614-CAS-40420002

Steps: **1**

1.1 **Reagents:** Methanol-d_4, Copper oxide (Cu_2O), Silver hexafluoroantimonate
Catalysts: Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 3 h, 120 °C

Experimental Protocols

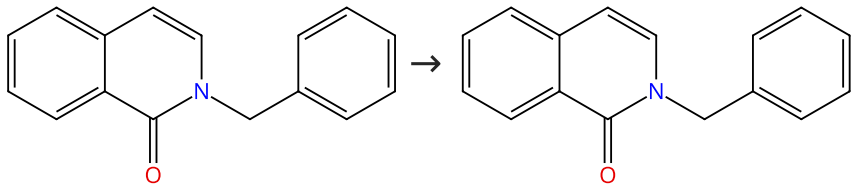
Inherent directing group-enabled Co(III)-catalyzed C-H allylation/vinylation of isoquinolones

By: Sachin; et al

Chemical Communications (Cambridge, United Kingdom) (2024), 60(43), 5626-5629.

Scheme 87 (1 Reaction)

Steps: **1**



Suppliers (4)

31-614-CAS-40572662

Steps: **1**

1.1 **Reagents:** Methanol-d_4
Catalysts: Cupric acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 4 h, 60 °C

Experimental Protocols

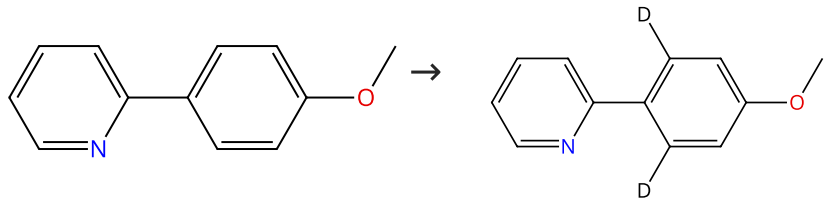
Co(III)-Catalyzed Regioselective Functionalization of Isoquinolones with Naphthoquinones

By: Sharma, Tamanna; et al

Organic Letters (2024), 26(23), 5027-5031.

Scheme 88 (1 Reaction)

Steps: **1**



Suppliers (65)

31-116-CAS-7061920

Steps: **1**

1.1 **Reagents:** Methanol-*d*
Catalysts: Silver acetate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt, [1,1,1-Trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*]methanesulfonamidato-κ*O*]silver
Solvents: 1,2-Dichloroethane; 12 h, 120 °C

Experimental Protocols

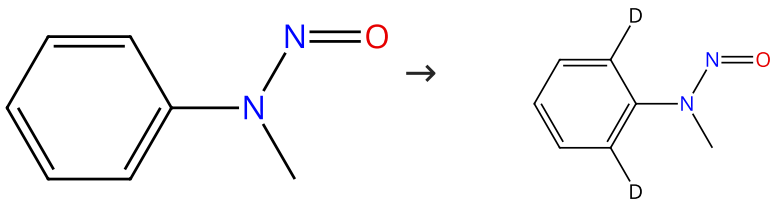
Cobalt-Catalyzed C-H Cyanation of (Hetero)arenes and 6-Arylpurines with N-Cyanosuccinimide as a New Cyanating Agent

By: Pawar, Amit B.; et al

Organic Letters (2015), 17(3), 660-663.

Scheme 89 (1 Reaction)

Steps: **1**



Suppliers (75)

31-116-CAS-19292167

Steps: **1**

1.1 **Reagents:** Methanol-*d*
Catalysts: Zinc acetate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 24 h, 120 °C

Experimental Protocols

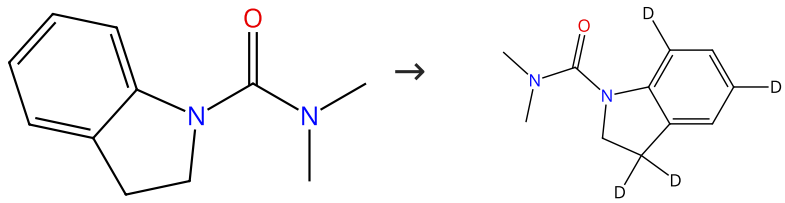
Co(III)-Catalyzed Coupling-Cyclization of Aryl C-H Bonds with α-Diazoketones Involving Wolff Rearrangement

By: Hu, Xinwei; et al

ACS Catalysis (2018), 8(2), 1308-1312.

Scheme 90 (1 Reaction)

Steps: **1**



Suppliers (5)

31-116-CAS-23752969

Steps: **1**

1.1 **Catalysts:** Silver triflate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d*; 1 - 2 min, rt

1.2 **Catalysts:** Zinc triflate
Solvents: 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d*; 12 h, 110 °C

Experimental Protocols

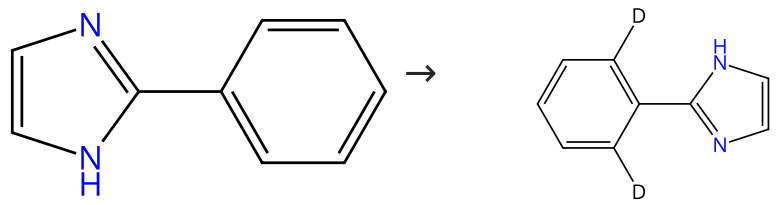
Cp*Co^{III}-Catalyzed C(7)-H Bond Annulation of Indolines with Alkynes

By: Mandal, Rajib; et al

Journal of Organic Chemistry (2021), 86(14), 9407-9417.

Scheme 91 (1 Reaction)

Steps: **1**



Suppliers (94)

31-614-CAS-32738886

Steps: **1**

1.1 **Reagents:** Methanol-d_4
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; overnight, 120 °C

Experimental Protocols

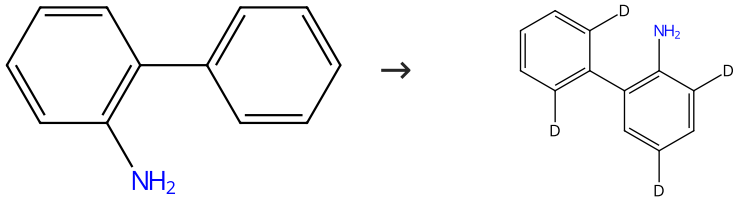
Cp*Co^{III}-catalyzed formal [4 + 2] cycload dition of 2-phenyl-1H-imidazoles to afford imidazo[1,2-c]quinazoline derivatives

By: Wu, Deyu; et al

Organic & Biomolecular Chemistry (2022), 20(24), 4993-4998.

Scheme 92 (1 Reaction)

Steps: **1**



Suppliers (70)

31-614-CAS-37740370

Steps: **1**

1.1 **Reagents:** Methanol-d_4
Catalysts: Methyl 1-adamantanecarboxylate, Dicarbonyl(η^5-cyclopentadienyl)cobalt, Silver hexafluoroantimonate
Solvents: (Trifluoromethyl)benzene; 3 h, 100 °C

Experimental Protocols

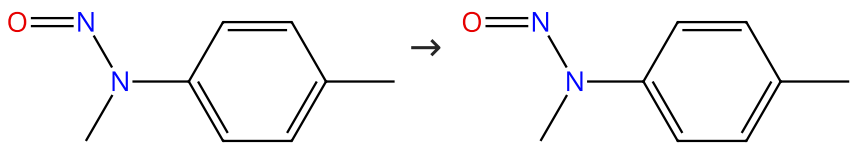
Cobalt(III)-Catalyzed Free-Amine-Directed Site-Selective Allylation in 2-Aminobiaryls with Vinyl Cyclopropanes

By: Chowdhury, Deepan; et al

ACS Catalysis (2023), 13(19), 12543-12552.

Scheme 93 (1 Reaction)

Steps: **1**



Suppliers (11)

31-614-CAS-29258020

Steps: **1**

1.1 **Reagents:** Cupric acetate, Methanol-d_4
Catalysts: Cobalt(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, (*OC*-6-11)-hexafluoroantimonate(1-) (1:2)
Solvents: 1,2-Dichloroethane; 24 h, 80 °C

Experimental Protocols

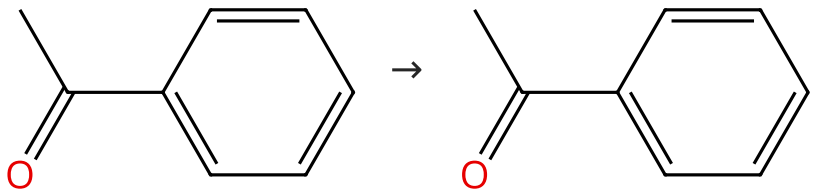
Cationic Cobalt(III) Catalyzed Indole Synthesis: The Regioselective Intermolecular Cyclization of N-Nitrosoanilines and Alkynes

By: Liang, Yujie; et al

Angewandte Chemie, International Edition (2016), 55(12), 4035-4039.

Scheme 94 (1 Reaction)

Steps: **1**



Suppliers (109)

31-614-CAS-29091271

Steps: **1**

1.1 **Reagents:** Diphenylacetylene, Methanol-d_4
Catalysts: Potassium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 5 h, 130 °C

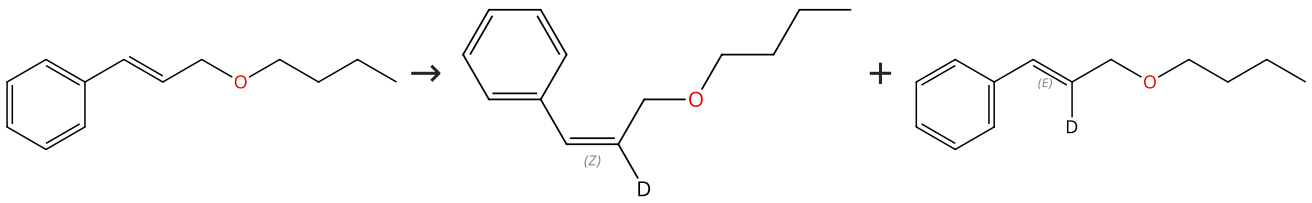
Synthesis of Benzofulvenes via Cp*Co(III)-Catalyzed C-H Activation and Carbocyclization of Aromatic Ketones with Internal Alkynes

By: Yu, Yongqi; et al

Journal of Organic Chemistry (2019), 84(11), 7449-7458.

Scheme 95 (1 Reaction)

Steps: **1** Yield: **89%**



Double bond geometry shown

Double bond geometry shown

31-614-CAS-37018566

Steps: **1** Yield: **89%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κN)phenyl-κC]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κN)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

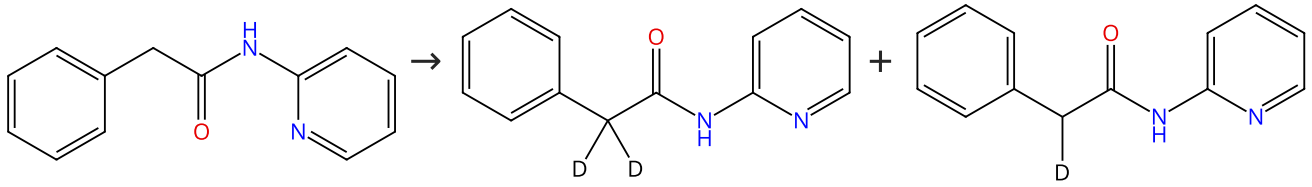
Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 96 (1 Reaction)

Steps: **1** Yield: **86%**



Suppliers (14)

31-614-CAS-40744083

Steps: **1** Yield: **86%**

1.1 **Reagents:** Sodium acetate, Silver acetate
Catalysts: 1-Adamantanecarboxylic acid, Cobalt chloride (CoCl_2), X-Phos
Solvents: Methanol-d_4, 1,1,1,3,3,3-Hexafluoro-2-propanol; 12 h, 50 °C

Experimental Protocols

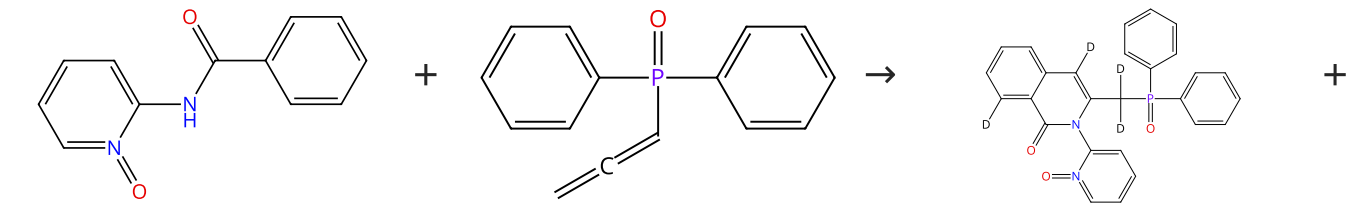
Cobalt Catalyzed α-Hydroxylation of Arylacetic Acid Equivalents with Dioxygen

By: Shinde, Rupali Dasharath; et al

Journal of Organic Chemistry (2024), 89(13), 9666-9671.

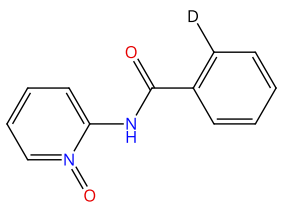
Scheme 97 (1 Reaction)

Steps: **1** Yield: **82%**



Suppliers (8)

Suppliers (4)



31-116-CAS-19509096 Steps: **1** Yield: **82%**

1.1 **Reagents:** Methanol-d_4, Propanoic acid, 2,2-dimethyl-, sodium salt (1:1)
Catalysts: Cobalt diacetate; 6 h, 40 °C

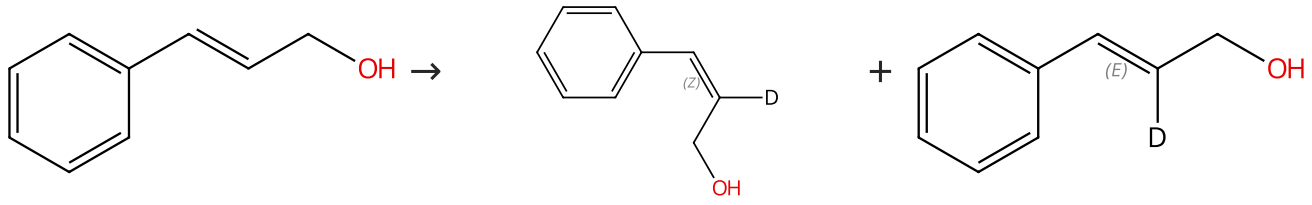
Experimental Protocols

Electrooxidative Allene Annulations by Mild Cobalt-Catalyzed C-H Activation

By: Meyer, Tjark H.; et al

ACS Catalysis (2018), 8(10), 9140-9147.

Scheme 98 (1 Reaction) Steps: **1** Yield: **79%**



Suppliers (95)

Double bond geometry shown

Double bond geometry shown

Supplier (1)

31-614-CAS-37018563 Steps: **1** Yield: **79%**

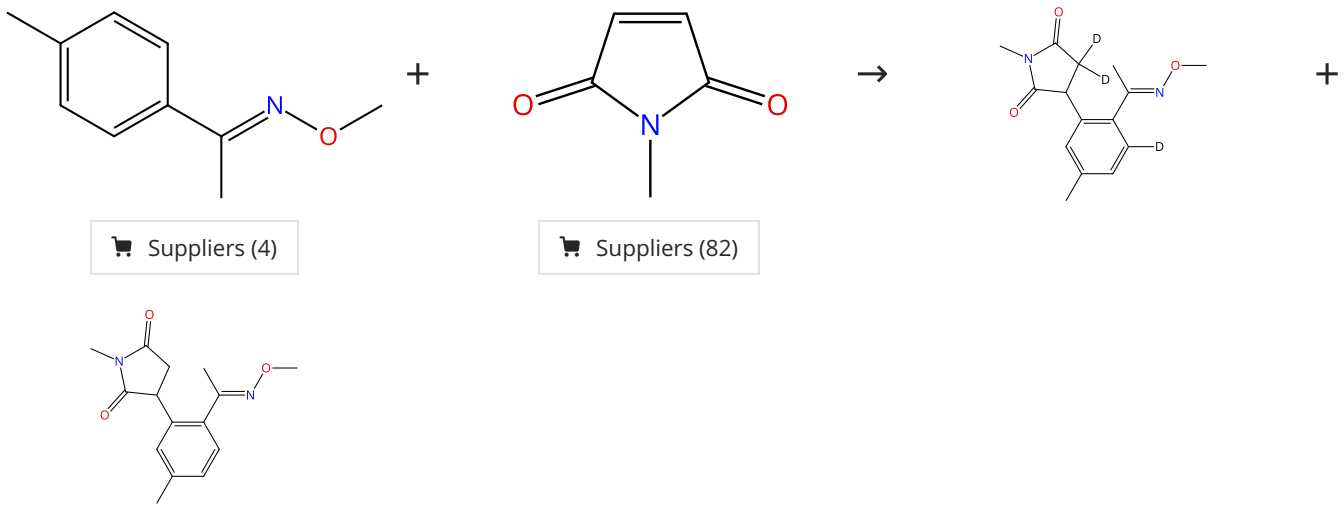
1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κN)phenyl-κC]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κN)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 99 (1 Reaction) Steps: **1** Yield: **79%**



Suppliers (4)

Suppliers (82)

31-085-CAS-18011068 Steps: **1** Yield: **79%**

1.1 **Reagents:** 2,2,2-Trifluoroethan-*1*,*1*-d_2-ol-*d*
Catalysts: Dicarbonyl(η^5-cyclopentadienyl)cobalt, (*OC*-6-11)-Hexafluoroantimonate(1-); 24 h, 100 °C

Experimental Protocols

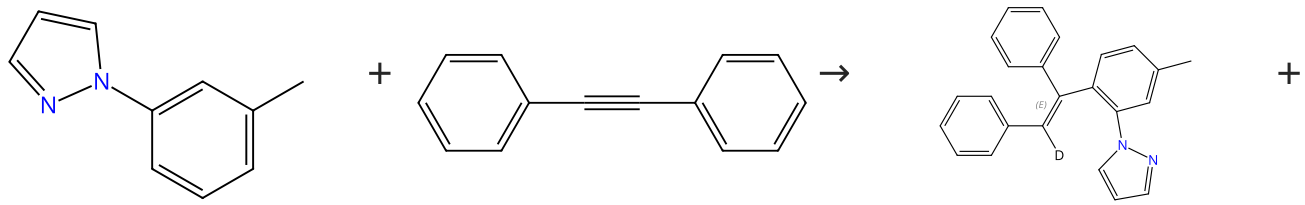
Cobalt(III)-catalyzed 1,4-addition of C-H bonds of oximes to maleimides

By: Chen, Xiangxiang; et al

Organic Chemistry Frontiers (2018), 5(2), 184-188.

Scheme 100 (1 Reaction)

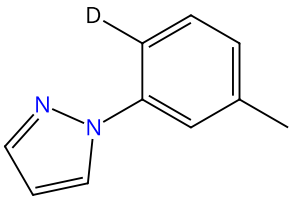
Steps: **1** Yield: **78%**



Suppliers (44)

Suppliers (88)

Double bond geometry shown



31-116-CAS-17979271

Steps: **1** Yield: **78%**

1.1 **Reagents:** 2,2,2-Trifluoroethan-*1,1*-d_2-ol-*d*
Catalysts: Propanoic acid, 2,2-dimethyl-, sodium salt (1:1), Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt; 2 h, 80 °C

Experimental Protocols

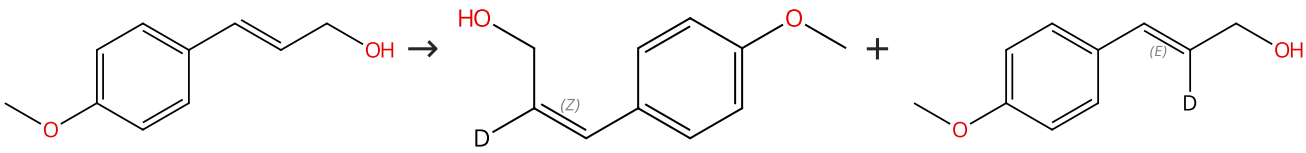
Isolation of Cp*Co^{III}-Alkenyl Intermediate in Efficient Cobalt-Catalyzed C-H Alkenylation with Alkynes

By: Sen, Malay; et al

Chemistry - A European Journal (2018), 24(2), 342-346.

Scheme 101 (1 Reaction)

Steps: **1** Yield: **75%**



Suppliers (57)

Double bond geometry shown

Double bond geometry shown

31-614-CAS-37018564

Steps: **1** Yield: **75%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κ*N*)phenyl-κ*C*]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κ*N*)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

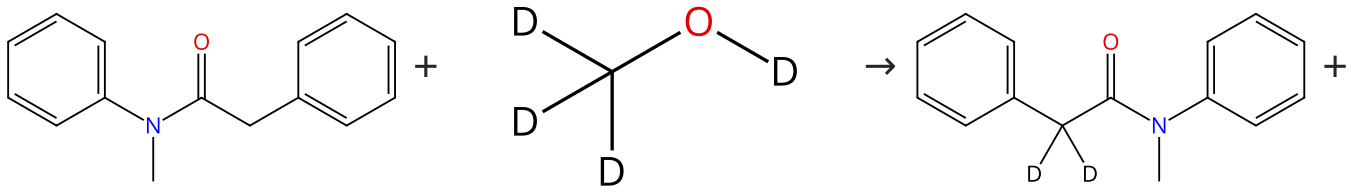
Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

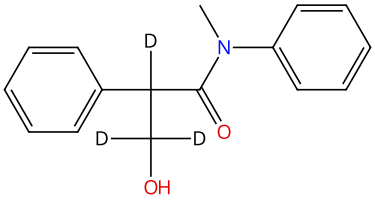
Scheme 102 (1 Reaction)

Steps: **1** Yield: **75%**



Suppliers (16)

Suppliers (246)



31-614-CAS-31176857

Steps: **1** Yield: **75%**

1.1 **Reagents:** *tert*-Butyl hydroperoxide, Cesium carbonate
Catalysts: Cobalt chloride ($CoCl_2$)
Solvents: Water; 18 h, 65 °C; rt

1.2 **Reagents:** Ammonium chloride
Solvents: Water; rt

Experimental Protocols

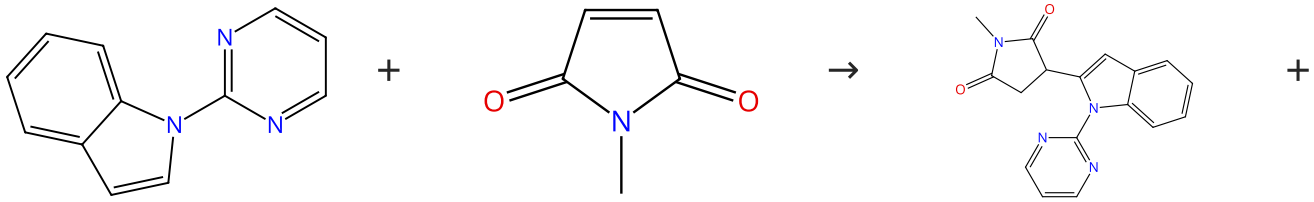
Cobalt-catalyzed direct α-hydroxymethylation of amides with methanol as a C1 source

By: Ma, Ben; et al

Chemical Communications (Cambridge, United Kingdom) (2022), 58(9), 1382-1385.

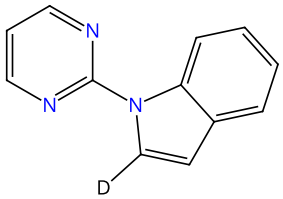
Scheme 103 (1 Reaction)

Steps: **1** Yield: **74%**



Suppliers (59)

Suppliers (82)



Suppliers (3)

31-085-CAS-17314464

Steps: **1** Yield: **74%**

1.1 **Catalysts:** Sodium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethanol, Methanol-d_4; 6 h, 30 °C

Experimental Protocols

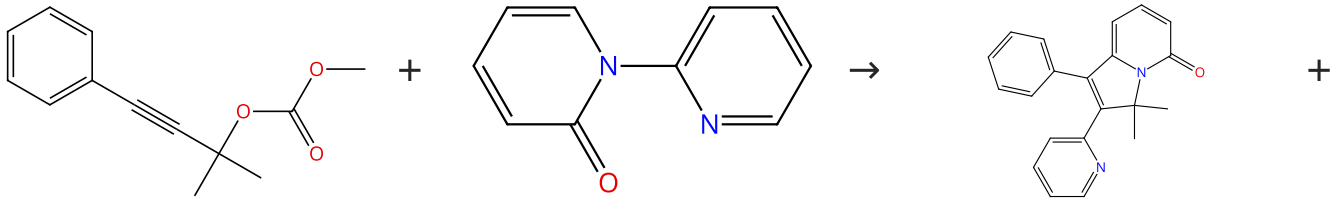
C-H Alkylations of (Hetero)Arenes by Maleimides and Maleate Esters through Cobalt(III) Catalysis

By: Zhang, Zhao; et al

Organic Letters (2017), 19(12), 3315-3318.

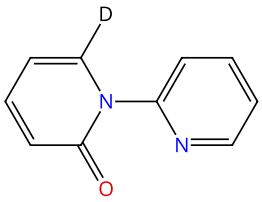
Scheme 104 (1 Reaction)

Steps: **1** Yield: **73%**



Suppliers (2)

Suppliers (8)



31-041-CAS-21951111

Steps: **1** Yield: **73%**

1.1 **Reagents:** 2,2,2-Trifluoroethan-*1,1-d*$_2$-ol-*d*
Catalysts: Acetic acid-*d*$_4$, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt; 10 h, 90 °C

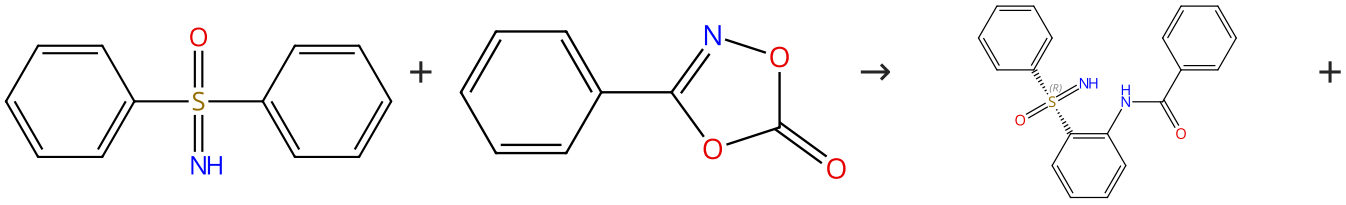
Domino C-H Activation/Directing Group Migration/Alkyne Annulation: Unique Selectivity by d^6-Cobalt(III) Catalysts

By: Zhu, Cuiju; et al

ACS Catalysis (2020), 10(7), 4444-4450.

Scheme 105 (1 Reaction)

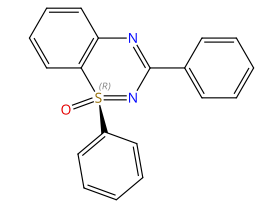
Steps: **1** Yield: **72%**



Suppliers (46)

Suppliers (41)

Absolute stereochemistry shown, Rotation (+)



Absolute stereochemistry shown, Rotation (+)

31-614-CAS-32274666

Steps: **1** Yield: **72%**

1.1 **Catalysts:** Silver triflate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt, 2776898-28-1
Solvents: 2-Propan-*1,1,1,2,3,3,3-d*$_7$-ol-*d*; 10 min, rt

1.2 20 h, 30 °C

1.3 **Reagents:** Ethylenediaminetetraacetic acid
Solvents: Water

Experimental Protocols

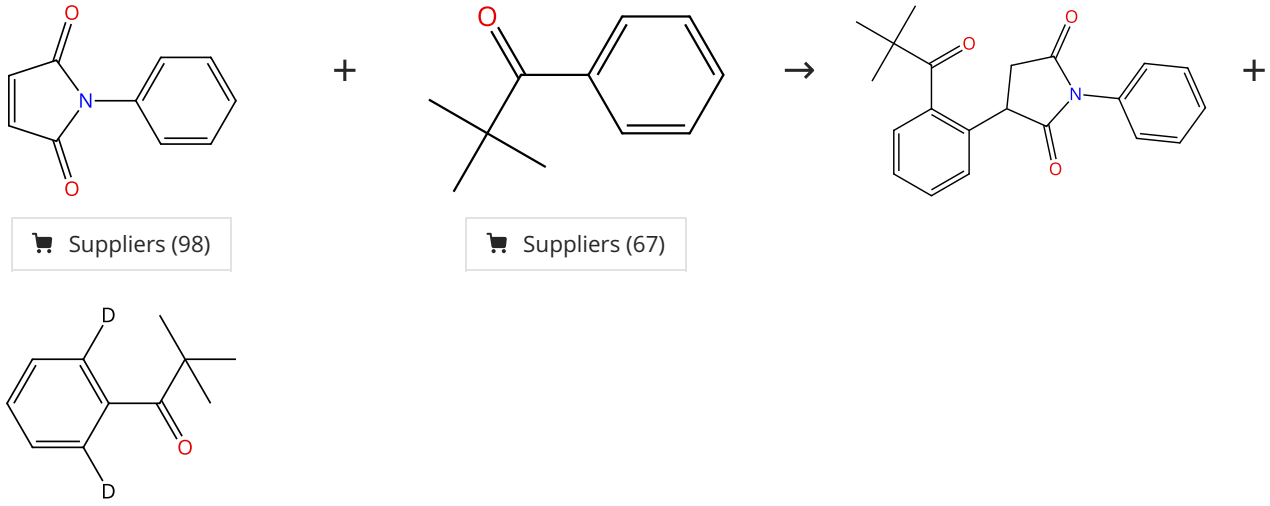
Cobalt(III)/Chiral Carboxylic Acid-Catalyzed Enantioselective Synthesis of Benzothiadiazine-1-oxides via C-H Activation

By: Hirata, Yuki; et al

Angewandte Chemie, International Edition (2022), 61(28), e202205341.

Scheme 106 (1 Reaction)

Steps: **1** Yield: **72%**



Suppliers (98)

Suppliers (67)

31-085-CAS-18849829

Steps: **1** Yield: **72%**

1.1 **Catalysts:** Sodium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; rt

1.2 **Reagents:** 2,2,2-Trifluoroethan-*1,1-d*$_2$-ol-*d*
Solvents: 1,2-Dichloroethane; rt; 8 h, 120 °C

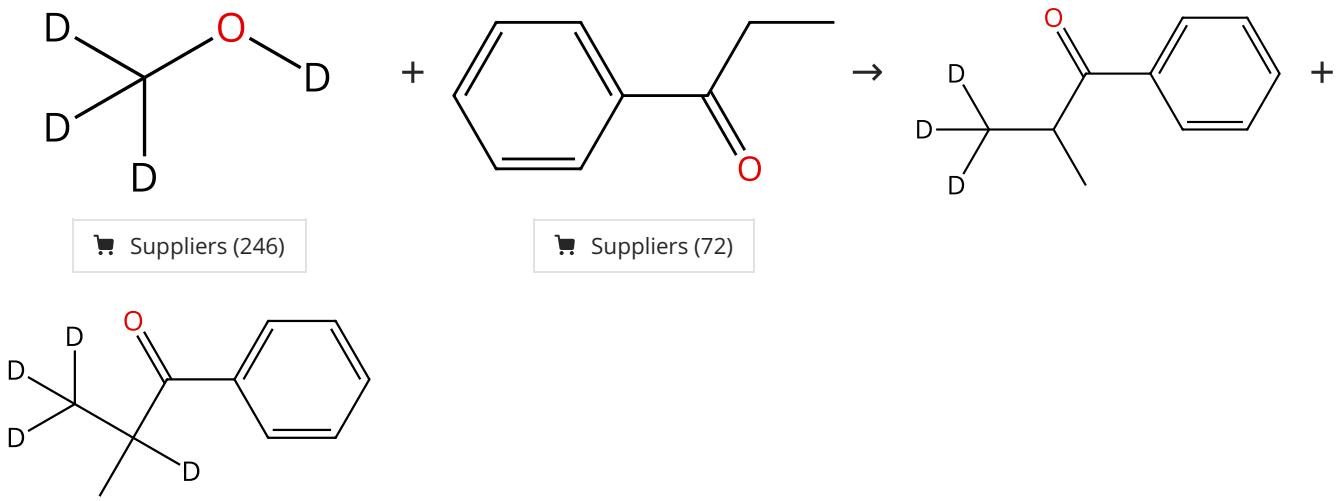
Cp*Co(III)-Catalyzed C-H Alkylation with Maleimides Using Weakly Coordinating Carbonyl Directing Groups

By: Mandal, Rajib; et al

Organic Letters (2018), 20(10), 2835-2838.

Scheme 107 (1 Reaction)

Steps: **1** Yield: **69%**



Suppliers (246)

Suppliers (72)

31-116-CAS-17822370

Steps: **1** Yield: **69%**

1.1 **Reagents:** Potassium carbonate
Catalysts: Triphenylphosphine, Cobalt bis(tetrafluoroborate) hexahydrate
Solvents: Methanol-*d*$_4$; 24 h, 100 °C

Experimental Protocols

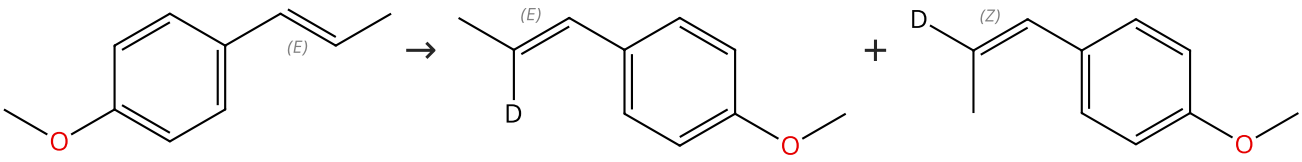
Methylation of C(sp^3)-H/C(sp^2)-H Bonds with Methanol Catalyzed by Cobalt System

By: Liu, Zhenghui; et al

Organic Letters (2017), 19(19), 5228-5231.

Scheme 108 (1 Reaction)

Steps: **1** Yield: **66%**



Double bond geometry shown

Double bond geometry shown

Double bond geometry shown

Suppliers (103)

31-614-CAS-37018562

Steps: **1** Yield: **66%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κ*N*^{1},κ*N*$^{1'}$]bis[2-(2-pyridinyl-κ*N*)phenyl-κ*C*]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κ*N*)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κ*N*^{1})cobalt
Solvents: Dimethylformamide; 36 h, rt

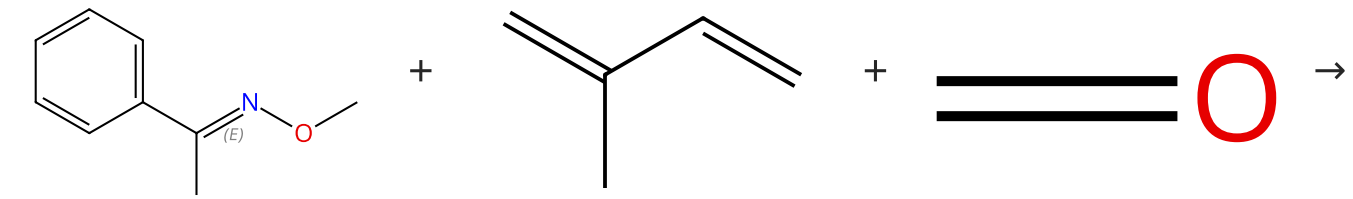
Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 109 (1 Reaction)

Steps: **1** Yield: **65%**

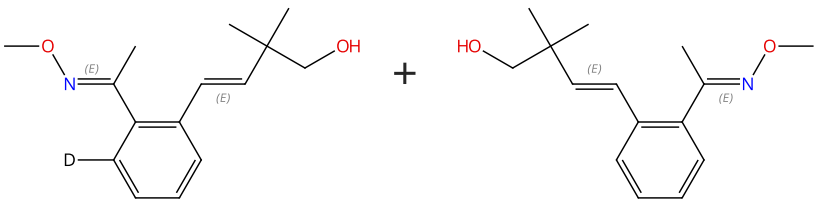


Double bond geometry shown

Suppliers (7)

Suppliers (53)

Suppliers (206)



Double bond geometry shown

Double bond geometry shown

31-614-CAS-41716256

Steps: **1** Yield: **65%**

1.1 **Reagents:** Acetic acid, Methanol-d_4
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethanol; 5 min, rt; 20 h, 60 °C

Experimental Protocols

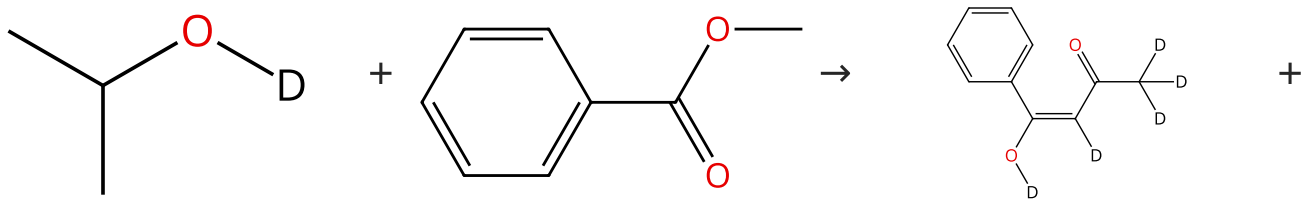
Cobalt-catalyzed three-component assembly of aromatic oximes with substituted dienes and formaldehyde

By: Prusty, Priyambada; et al

Chemical Communications (Cambridge, United Kingdom) (2024), 60(76), 10540-10543.

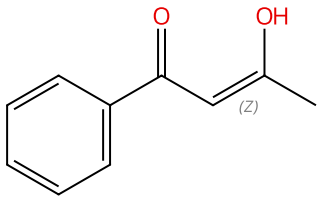
Scheme 110 (1 Reaction)

Steps: **1** Yield: **65%**



Suppliers (25)

Suppliers (92)



Double bond geometry shown

Suppliers (2)

31-614-CAS-41299585

Steps: **1** Yield: **65%**

1.1 **Reagents:** Potassium *tert*-butoxide
Catalysts: Cobalt chloride ($CoCl_2$), 1*H*-Indazol-3-amine, *N*-[bis(1-methylethyl)phosphino]-1-(2-pyridinyl)-
Solvents: Tetrahydrofuran; 24 h, 110 °C

1.2 **Reagents:** Water

Experimental Protocols

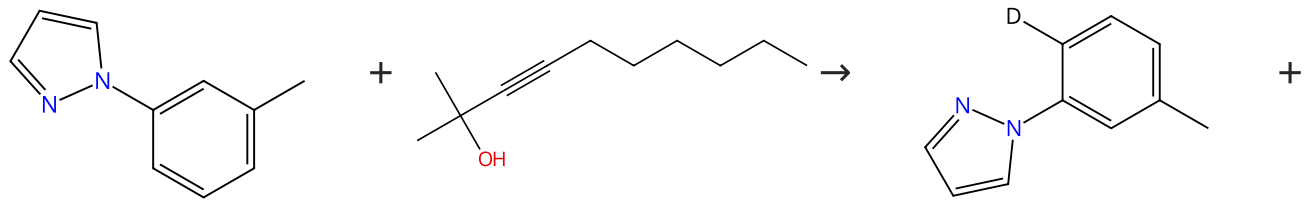
Co-Catalyzed Dehydrogenation Claisen Condensation of Secondary Alcohols with Esters†

By: Gao, Shuo; et al

Chinese Journal of Chemistry (2024), 42(22), 2818-2824.

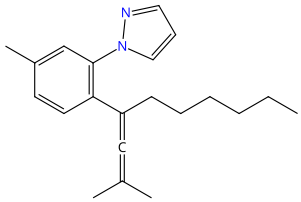
Scheme 111 (1 Reaction)

Steps: **1** Yield: **65%**



Suppliers (44)

Suppliers (2)



31-116-CAS-17370487

Steps: **1** Yield: **65%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Propanoic acid, 2,2-dimethyl-, silver(1+) salt (1:1), Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: (Trifluoromethyl)benzene; 14 h, 80 °C

Experimental Protocols

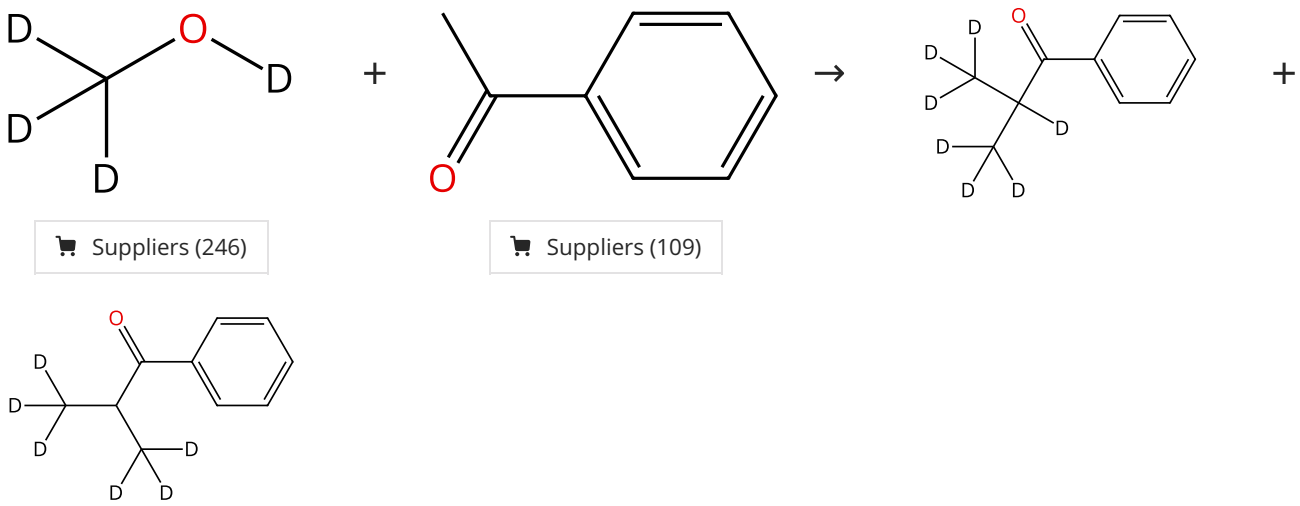
Dehydrative Cp*Co(III)-Catalyzed C-H Bond Allenylation

By: Sen, Malay; et al

Organic Letters (2017), 19(14), 3699-3702.

Scheme 112 (1 Reaction)

Steps: **1** Yield: **64%**



Suppliers (246)

Suppliers (109)

31-116-CAS-17822368

Steps: **1** Yield: **64%**

1.1 **Reagents:** Potassium carbonate
Catalysts: Triphenylphosphine, Cobalt bis(tetrafluoroborate) hexahydrate
Solvents: Methanol-d_4; 24 h, 100 °C

Experimental Protocols

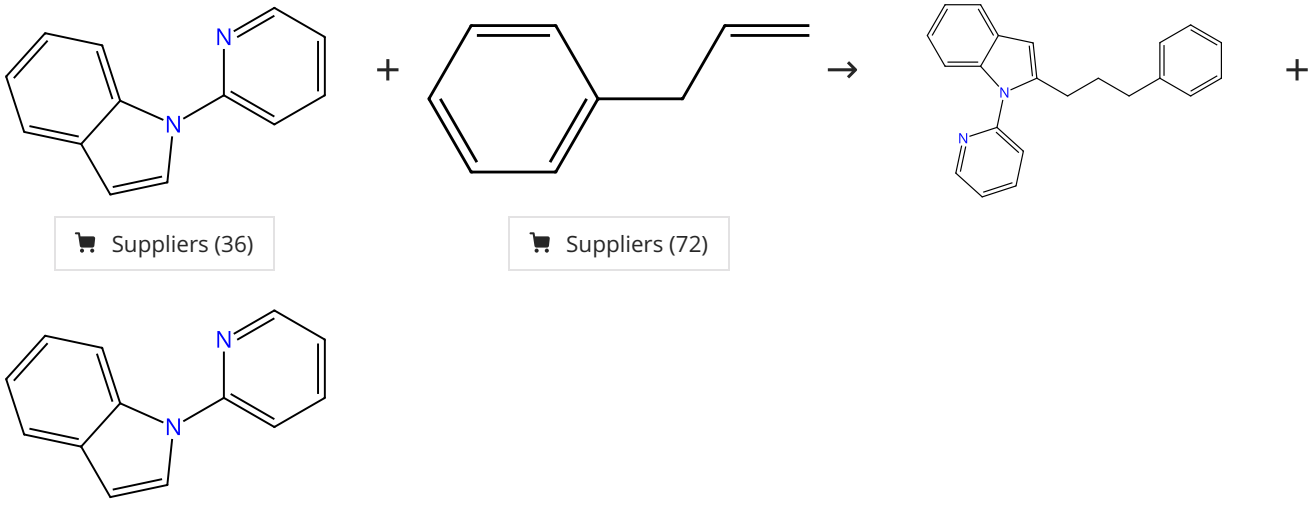
Methylation of C(sp^3)-H/C(sp^2)-H Bonds with Methanol Catalyzed by Cobalt System

By: Liu, Zhenghui; et al

Organic Letters (2017), 19(19), 5228-5231.

Scheme 113 (1 Reaction)

Steps: **1** Yield: **63%**



Suppliers (36)

Suppliers (72)

31-614-CAS-29410349

Steps: **1** Yield: **63%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 20 h, 120 °C

Experimental Protocols

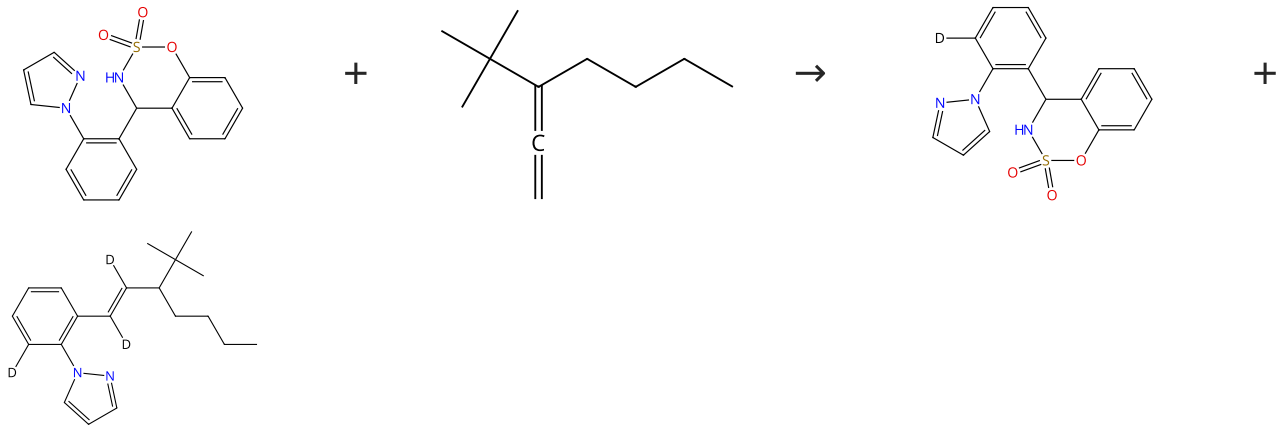
Full Selectivity Control in Cobalt(III)-Catalyzed C-H Alkylations by Switching of the C-H Activation Mechanism

By: Zell, Daniel; et al

Angewandte Chemie, International Edition (2017), 56(35), 10378-10382.

Scheme 114 (1 Reaction)

Steps: **1** Yield: **62%**



31-614-CAS-32330237

Steps: **1** Yield: **62%**

1.1 **Catalysts:** Cobalt(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, bis[tetrafluoroborate (1-)]
Solvents: 2-Propan-*2-d*-ol-*d*, 1,1,1,3,3,3-hexafluoro-; 4 h, 90 °C

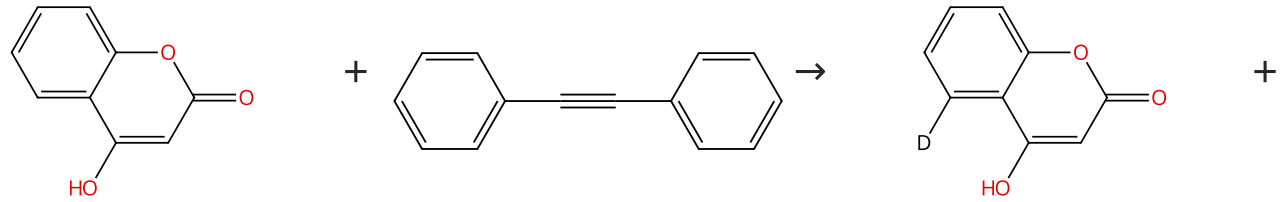
Cobalt-catalyzed divergent functionalization of N-sulfonyl amines via β-carbon elimination

By: Xu, Lun; et al

Science China: Chemistry (2022), 65(11), 2214-2218.

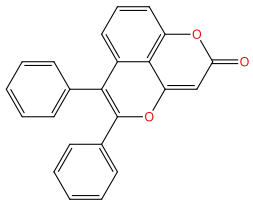
Scheme 115 (1 Reaction)

Steps: **1** Yield: **61%**



Suppliers (109)

Suppliers (88)



Suppliers (2)

31-116-CAS-19661880

Steps: **1** Yield: **61%**

1.1 **Reagents:** Sodium acetate, Copper oxide (Cu O), Oxygen, 2,2,2-Trifluoroethan-*1,1-d*$_2$-ol-*d*
Catalysts: Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt; 24 h, 80 °C

Experimental Protocols

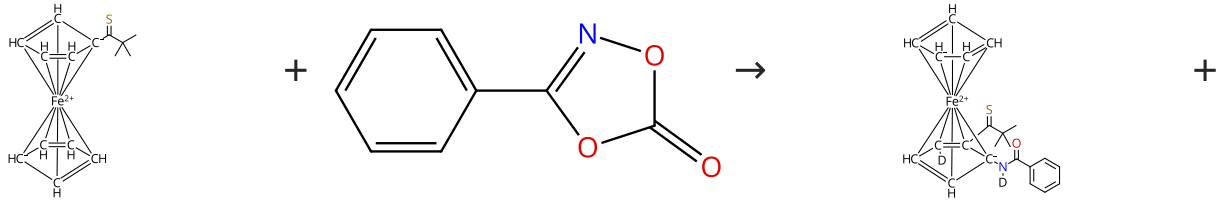
Cobalt-Catalyzed, Hydroxyl-Assisted C-H Bond Functionalization: Access to Diversely Substituted Polycyclic Pyrans

By: Dutta, Pratip K.; et al

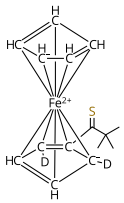
Journal of Organic Chemistry (2019), 84(3), 1176-1184.

Scheme 116 (1 Reaction)

Steps: **1** Yield: **60%**



Suppliers (41)



31-116-CAS-21505517

Steps: **1** Yield: **60%**

1.1 **Reagents:** Methanol-d_4
Catalysts: 1-Adamantanecarboxylic acid, Cobalt(2+), tris (acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopen tadien-1-yl]-, (*OC*-6-11)-hexafluoroantimonate(1-) (1:2)
Solvents: 1,2-Dichloroethane; 3 h, 80 °C

Experimental Protocols

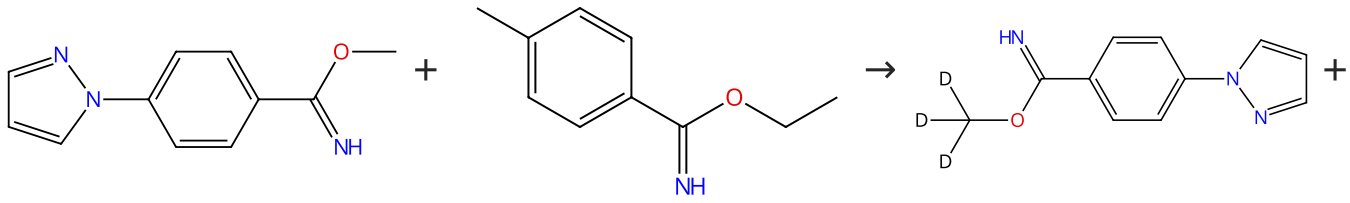
Thiocarbonyl-enabled ferrocene C-H nitrogenation by cobalt(II I) catalysis: thermal and mechanochemical

By: Yetra, Santhivardhana Reddy; et al

Beilstein Journal of Organic Chemistry (2018), 14, 1546-1553.

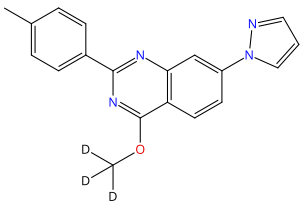
Scheme 117 (1 Reaction)

Steps: **1** Yield: **57%**



Supplier (1)

Suppliers (16)



31-116-CAS-16069411

Steps: **1** Yield: **57%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Cobalt(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, (*OC*-6-11)-hexafluoro antimonate(1-) (1:2)
Solvents: 1,2-Dichloroethane; 13 h, 100 °C

Experimental Protocols

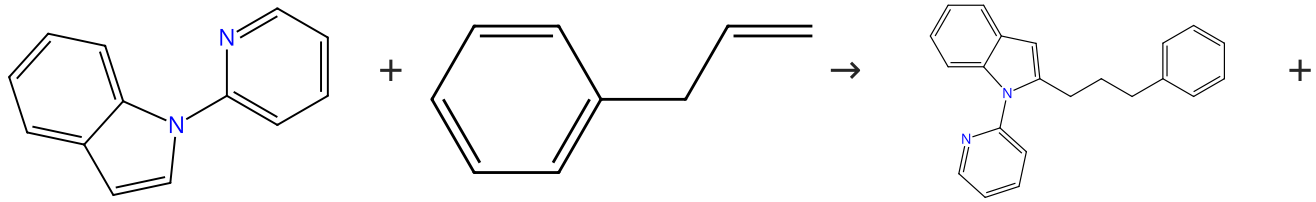
Overcoming the Limitations of C-H Activation with Strongly Coordinating N-Heterocycles by Cobalt Catalysis

By: Wang, Hui; et al

Angewandte Chemie, International Edition (2016), 55(35), 10386-10390.

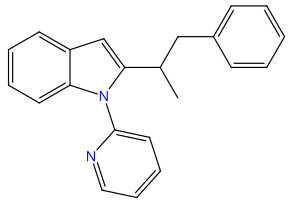
Scheme 118 (1 Reaction)

Steps: **1** Yield: **53%**



Suppliers (36)

Suppliers (72)



31-614-CAS-26782310

Steps: **1** Yield: **53%**

1.1 **Reagents:** Methanol-d_4
Catalysts: 1-Adamantanecarboxylic acid, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 20 h, 50 °C

Experimental Protocols

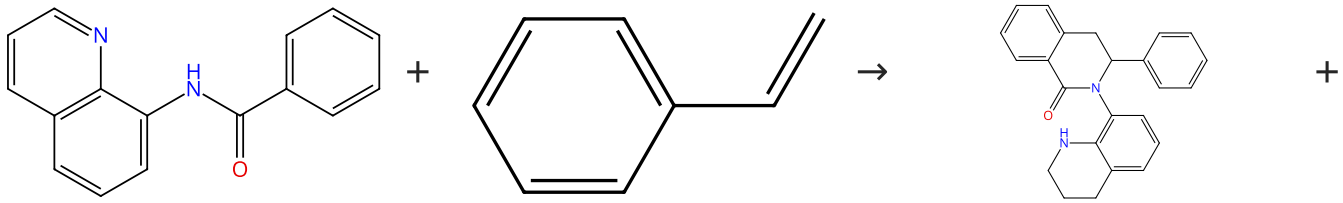
Full Selectivity Control in Cobalt(III)-Catalyzed C-H Alkylations by Switching of the C-H Activation Mechanism

By: Zell, Daniel; et al

Angewandte Chemie, International Edition (2017), 56(35), 10378-10382.

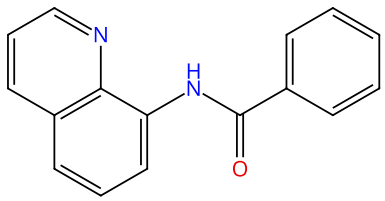
Scheme 119 (1 Reaction)

Steps: **1** Yield: **48%**



Suppliers (25)

Suppliers (120)



31-614-CAS-35327979

Steps: **1** Yield: **48%**

1.1 **Reagents:** Tetrabutylammonium tetrafluoroborate, Methanol-d_4, Propanoic acid, 2,2-dimethyl-, sodium salt (1:1)
Catalysts: Cobalt(II) acetylacetonate
Solvents: 2,2,2-Trifluoroethanol; 1.5 h, 60 °C

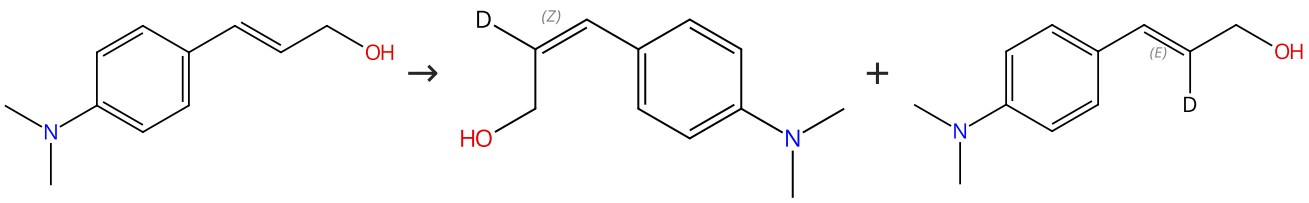
Synthesis of Complex Dihydroisoquinolin Derivatives via Cobalt-Electrocatalyzed C-H Activation

By: Huang, Yin-Hui; et al

Advanced Synthesis & Catalysis (2023), 365(1), 23-30.

Scheme 120 (1 Reaction)

Steps: **1** Yield: **46%**



Suppliers (6)

Double bond geometry shown

Double bond geometry shown

31-614-CAS-37018567

Steps: **1** Yield: **46%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κN)phenyl-κC]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κN)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

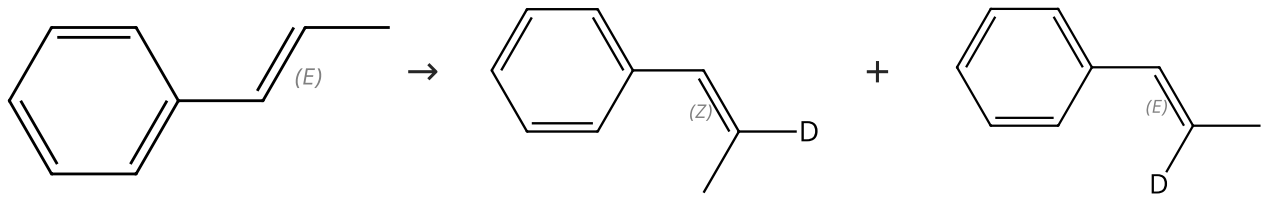
Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 121 (1 Reaction)

Steps: **1** Yield: **44%**



Double bond geometry shown

Double bond geometry shown

Double bond geometry shown

Suppliers (59)

Supplier (1)

31-614-CAS-37018561

Steps: **1** Yield: **44%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Diisopropylethylamine, Iridium(1+), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]bis[2-(2-pyridinyl-κN)phenyl-κC]-, (*OC*-6-33)-, hexafluorophosphate(1-) (1:1), (*OC*-6-42)-Chlorobis[[1,2-cyclohexanedione 1,2-di(oximato-κN)](1-)](*N*,*N*-dimethyl-4-pyridinamine-κN^1)cobalt
Solvents: Dimethylformamide; 36 h, rt

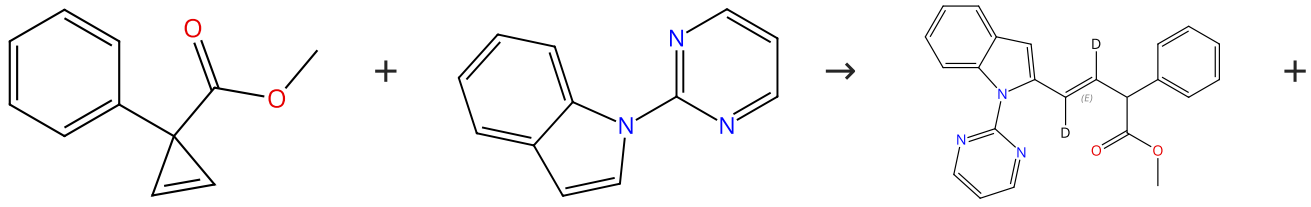
Visible light promoted direct deuteration of alkenes via Co(III)-H mediated H/D exchange

By: Jia, Zongbin; et al

CCS Chemistry (2023), 5(5), 1069-1076.

Scheme 122 (1 Reaction)

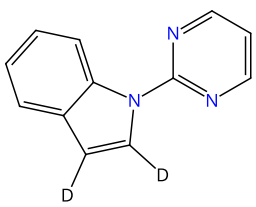
Steps: **1** Yield: **42%**



Suppliers (5)

Suppliers (59)

Double bond geometry shown



31-614-CAS-23955646 Steps: **1** Yield: **42%**

1.1 **Reagents:** Acetic acid, Silver hexafluorophosphate
Catalysts: Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethanol-*d*; 1 h, 100 °C

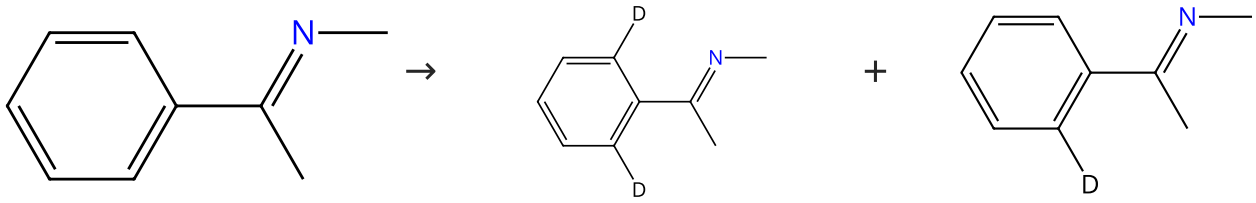
Experimental Protocols

Co^{III}-Catalyzed C-H Alkenylation and Allylation with Cyclopr openes via Sequential C-H/C-C Bond Activation

By: Kim, Ye Lim; et al

Organic Letters (2021), 23(17), 6674-6679.

Scheme 123 (1 Reaction) Steps: **1** Yield: **32%**



Suppliers (3)

31-116-CAS-2677070 Steps: **1** Yield: **32%**

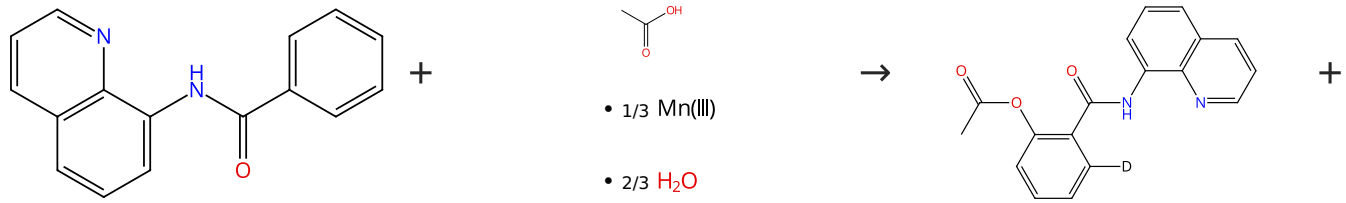
1.1 **Catalysts:** Tris(pentafluorophenyl)borane, Cesium acetate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethanol, Methanol-d_4; 10 min, 120 °C

Cooperative Lewis Acid/Cp*Co^{III} Catalyzed C-H Bond Activation for the Synthesis of Isoquinolin-3-ones

By: Kim, Ju Hyun; et al

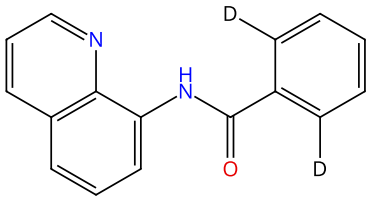
Angewandte Chemie, International Edition (2016), 55(18), 5577-5581.

Scheme 124 (1 Reaction) Steps: **1** Yield: **30%**



Suppliers (25)

Suppliers (64)



31-116-CAS-19467136 Steps: **1** Yield: **30%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Cobalt(II) acetylacetonate
Solvents: 1,2-Dichloroethane; 12 h, rt → 100 °C

Experimental Protocols

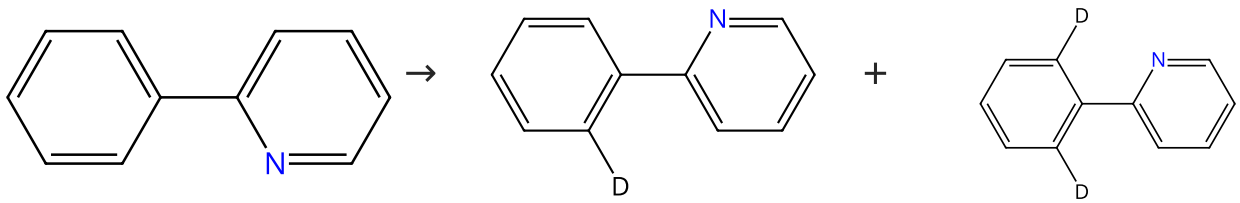
Cobalt-Catalyzed Directed sp^2 C-H Acetoxylation of Arenes Employing Mn(OAc)$_3$•2H$_2$O as Acetoxy Source

By: Sarkar, Writhabrata; et al

Advanced Synthesis & Catalysis (2018), 360(17), 3228-3232.

Scheme 125 (2 Reactions)

Steps: **1** Yield: **24%**



Suppliers (93)

Suppliers (6)

Supplier (1)

31-116-CAS-11362132

Steps: **1** Yield: **24%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Potassium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 2,2,2-Trifluoroethanol; 15 min, 80 °C

Experimental Protocols

Cobalt(III)-Catalyzed Directed C-H Coupling with Diazo Compounds: Straightforward Access towards Extended π-Systems

By: Zhao, Dongbing; et al

Angewandte Chemie, International Edition (2015), 54(15), 4508-4511.

31-116-CAS-16123076

Steps: **1**

1.1 **Reagents:** Methanol-d_4
Catalysts: Cupric acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 24 h, 110 °C

Experimental Protocols

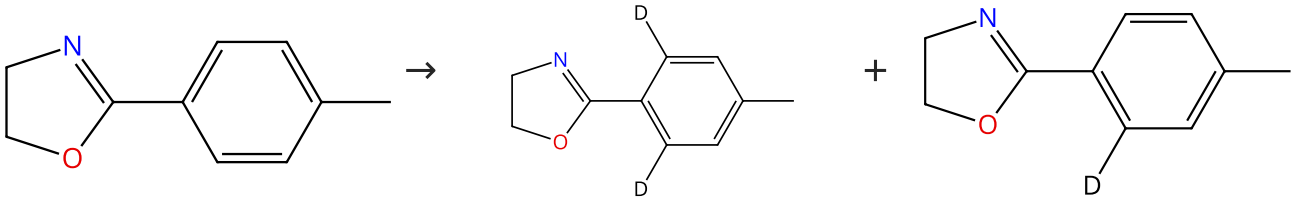
A [4 + 1] Cyclative Capture Access to Indoli zines via Cobalt(III)-Catalyzed Csp^2-H Bond Functionalization

By: Chen, Xun; et al

Organic Letters (2016), 18(18), 4742-4745.

Scheme 126 (1 Reaction)

Steps: **1**



Suppliers (11)

31-116-CAS-3463654

Steps: **1**

1.1 **Reagents:** Methanol-d_4
Catalysts: Sodium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 16 h, 100 °C

Experimental Protocols

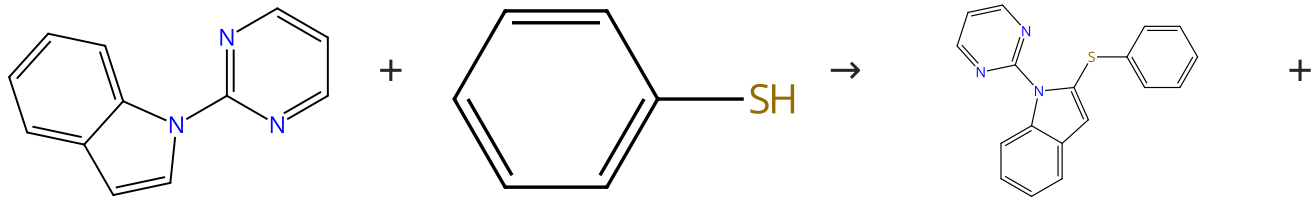
Oxazolinyl-Assisted C-H Amidation by Cobalt(III) Catalysis

By: Mei, Ruhuai; et al

ACS Catalysis (2016), 6(2), 793-797.

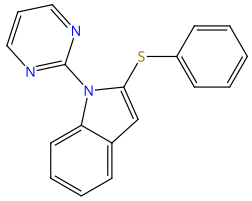
Scheme 127 (1 Reaction)

Steps: **1**



Suppliers (59)

Suppliers (46)



31-614-CAS-25029397

Steps: **1**

1.1 **Reagents:** Quinone, Cupric acetate, Methanol-d_4
Catalysts: Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt, Indium triflate
Solvents: 1,4-Dioxane; 5 h, 60 °C

Experimental Protocols

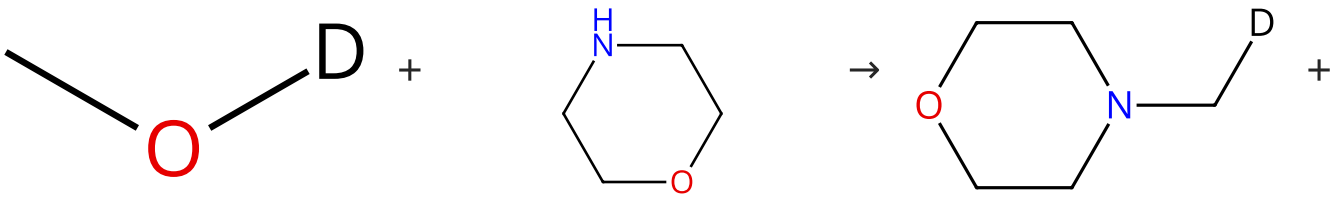
Cobalt-Catalyzed C-H Thiolation through Dehydrogenative Cross-Coupling

By: Gensch, Tobias; et al

Angewandte Chemie, International Edition (2016), 55(37), 11287-11291.

Scheme 128 (1 Reaction)

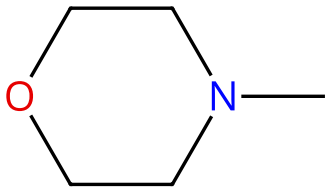
Steps: **1**



Suppliers (49)

Suppliers (96)

Supplier (1)



Suppliers (87)

31-032-CAS-17933669

Steps: **1**

1.1 **Reagents:** Tripotassium phosphate
Catalysts: Cobalt(II) acetylacetonate, Tris[2-(diphenylphosphino)ethyl]phosphine
Solvents: Methanol-*d*; 24 h, 140 °C

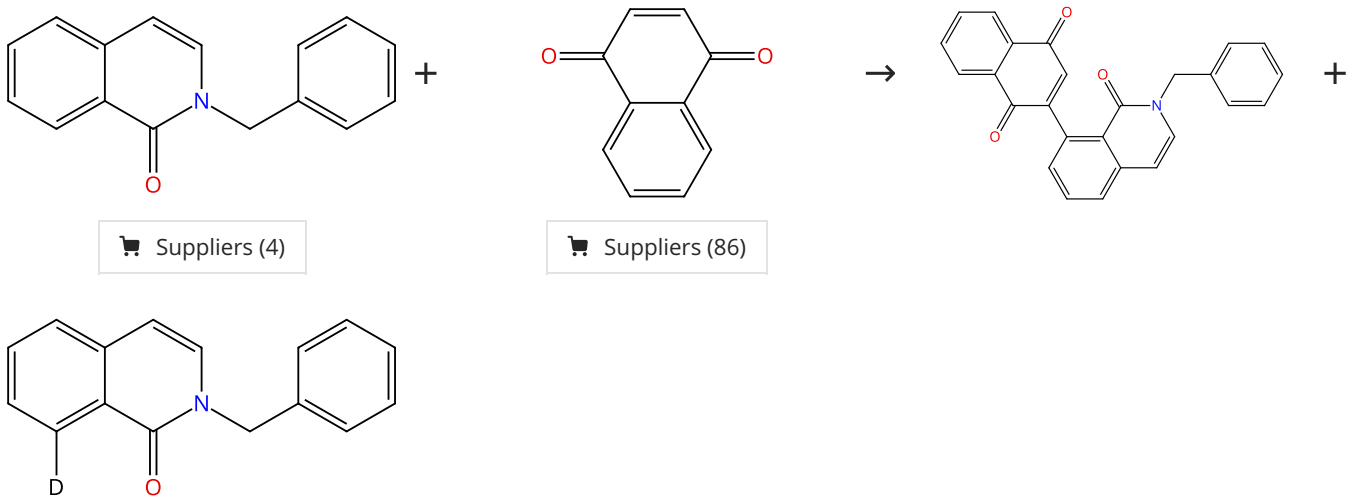
Efficient Cobalt-Catalyzed Methylation of Amines Using Methanol

By: Liu, Zhenghui; et al

Advanced Synthesis & Catalysis (2017), 359(24), 4278-4283.

Scheme 129 (1 Reaction)

Steps: **1**



Suppliers (4)

Suppliers (86)

31-614-CAS-40572659

Steps: **1**

1.1 **Reagents:** Methanol-d_4
Catalysts: Cupric acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 4 h, 60 °C

Experimental Protocols

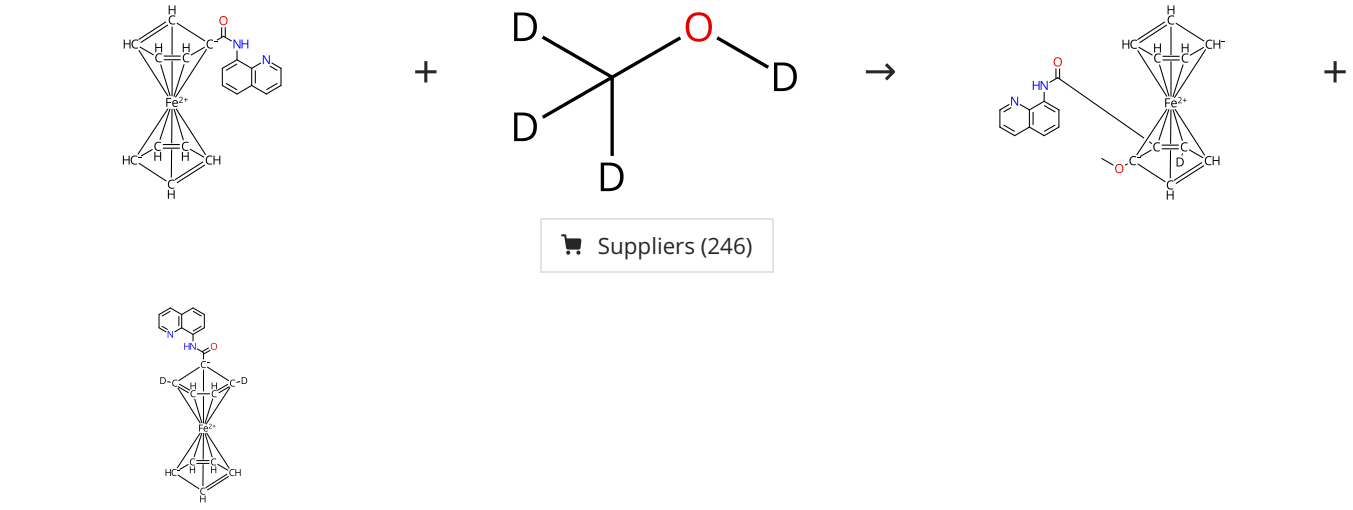
Co(III)-Catalyzed Regioselective Functionalization of Isoquinolones with Naphthoquinones

By: Sharma, Tamanna; et al

Organic Letters (2024), 26(23), 5027-5031.

Scheme 130 (1 Reaction)

Steps: **1**



Suppliers (246)

31-614-CAS-24128890

Steps: **1**

1.1 **Reagents:** Hexamethylenetetramine, Triethylamine, Silver carbonate
Catalysts: Cobalt(II) acetylacetonate; 18 h, 30 °C

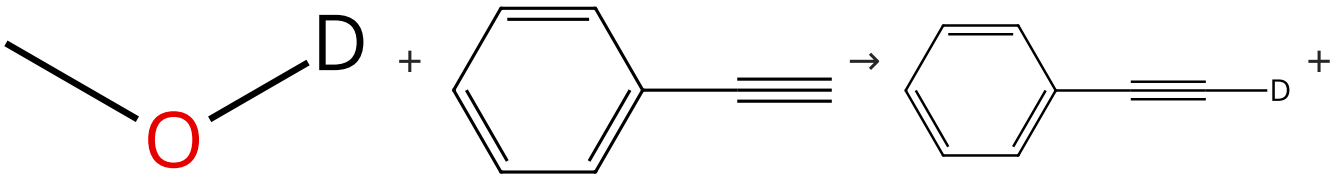
Experimental Protocols

Cobalt-Catalyzed C-H Alkoxylation of Ferrocenes with Alcohols under Mild Conditions

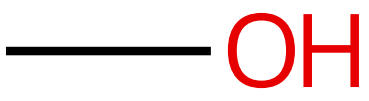
By: Zhang, Zhuo-Zhuo; et al

Advanced Synthesis & Catalysis (2021), 363(16), 3946-3951.

Scheme 131 (1 Reaction) Steps: **1**



Suppliers (49) Suppliers (72) Suppliers (11)



Suppliers (471)

31-614-CAS-39940787 Steps: **1**

1.1 **Catalysts:** Cobalt chloride ($CoCl_2$), 3,3'-Bis[(diphenylphosphino)methyl]-2,2'-bipyridine
Solvents: Methanol-*d*; 2 h, 120 °C

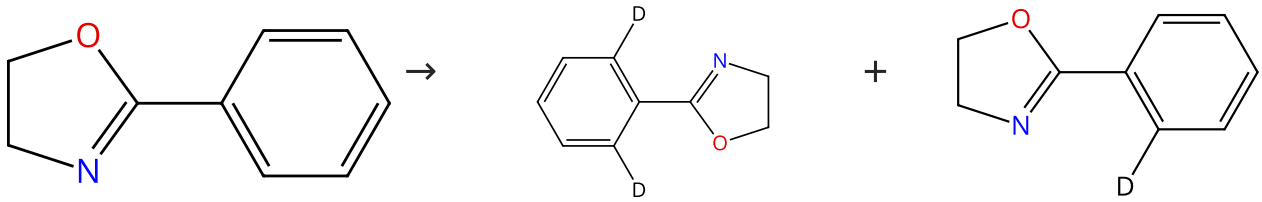
Experimental Protocols

Bifunctional diphosphine ligand-enabled cobalt catalyzed bis-alkoxycarbonylation of alkynes

By: Luo, Mingxue; et al

Journal of Catalysis (2024), 433, 115459.

Scheme 132 (1 Reaction) Steps: **1**



Suppliers (68)

31-116-CAS-2880695 Steps: **1**

1.1 **Reagents:** Methanol-d_4
Catalysts: Sodium acetate, Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 4 h, 100 °C

Experimental Protocols

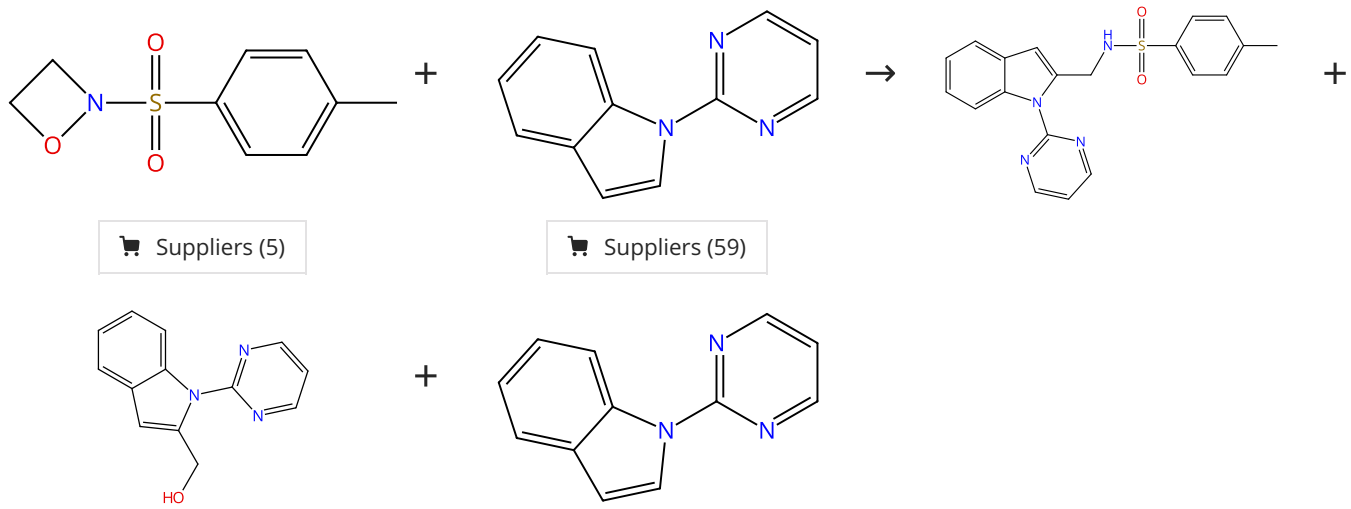
Oxazolinyl-Assisted C-H Amidation by Cobalt(III) Catalysis

By: Mei, Ruhuai; et al

ACS Catalysis (2016), 6(2), 793-797.

Scheme 133 (1 Reaction)

Steps: **1** Yield: **63%**



Suppliers (5)

Suppliers (59)

31-614-CAS-28662100

Steps: **1** Yield: **63%**

1.1 **Reagents:** Sodium bisulfite, Propanoic acid, 2,2-dimethyl-, cesium salt (1:1)
Catalysts: Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: (Trifluoromethyl)benzene, Methanol-d_4; 3 h, 60 °C; cooled

Experimental Protocols

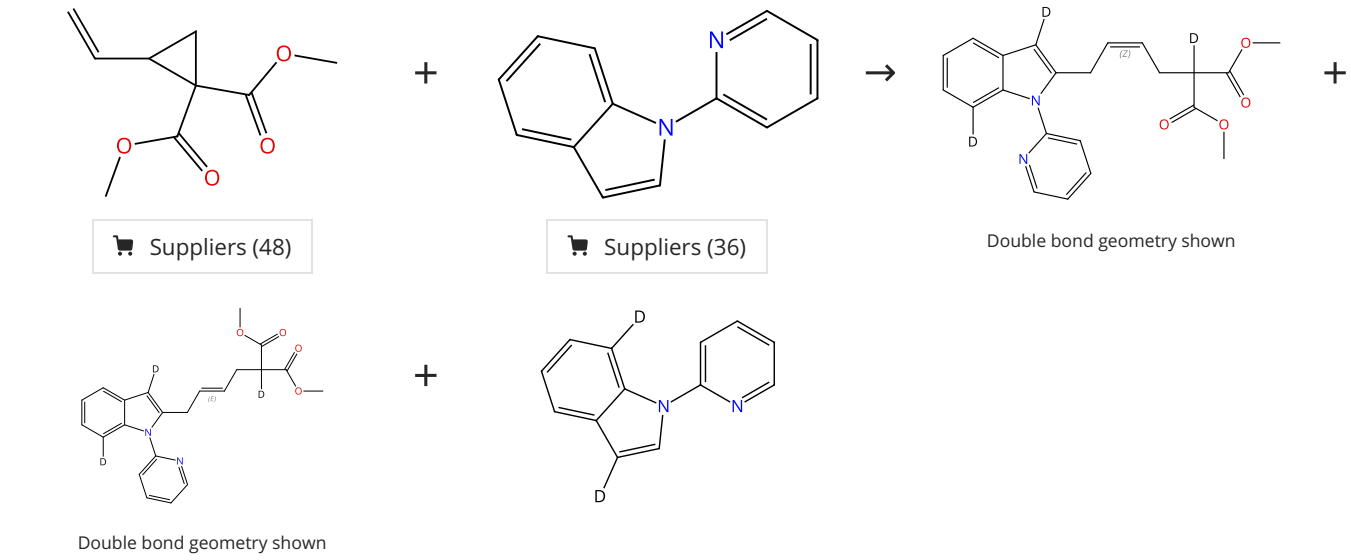
Cobalt-Catalyzed N-O and C-C Bond Cleavage in 1,2-Oxazetidines: Solvent-Controlled C-H Aminomethylation and Hydroxymethylation of Heteroarenes

By: Li, Song; et al

Organic Letters (2019), 21(6), 1602-1606.

Scheme 134 (1 Reaction)

Steps: **1** Yield: **62%**



Suppliers (48)

Suppliers (36)

Double bond geometry shown

Double bond geometry shown

31-116-CAS-15873242

Steps: **1** Yield: **62%**

1.1 **Reagents:** Methanol-d_4
Catalysts: Propanoic acid, 2,2-dimethyl-, sodium salt (1:1), Silver hexafluoroantimonate, Carbonyldiiodo[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]cobalt
Solvents: 1,2-Dichloroethane; 20 h, 50 °C

Experimental Protocols

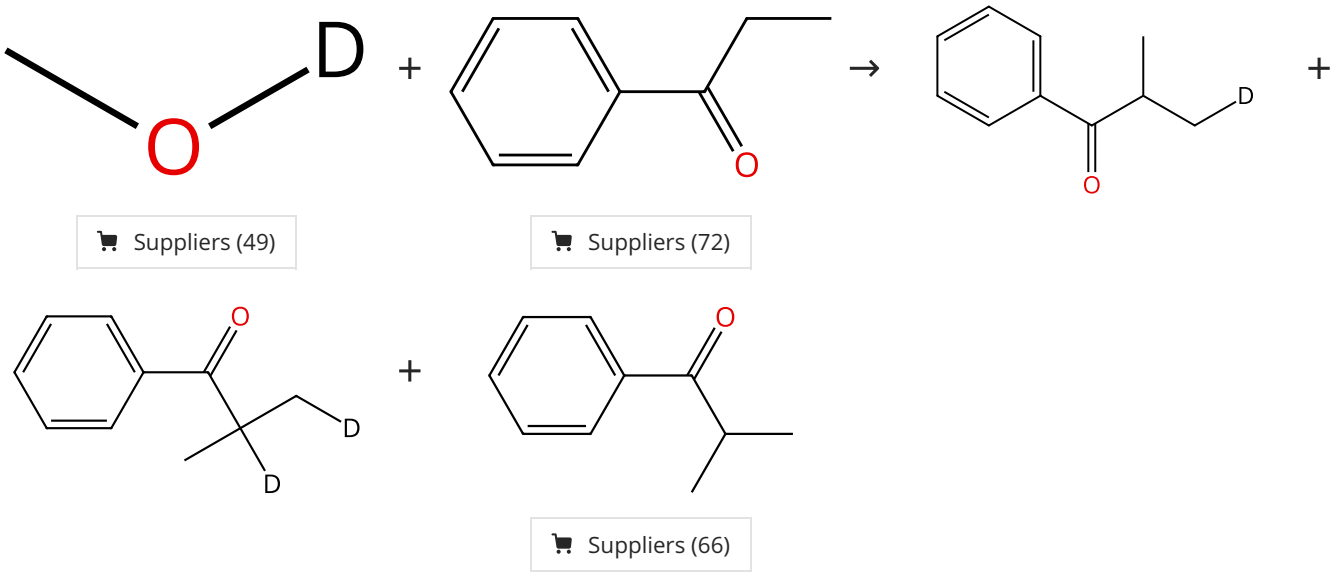
Mild C-H/C-C Activation by Z-Selective Cobalt Catalysis

By: Zell, Daniel; et al

Angewandte Chemie, International Edition (2016), 55(26), 7408-7412.

Scheme 135 (1 Reaction)

Steps: **1** Yield: **57%**



Suppliers (49)

Suppliers (72)

Suppliers (66)

31-116-CAS-17822371

Steps: **1** Yield: **57%**

1.1 **Reagents:** Potassium carbonate
Catalysts: Triphenylphosphine, Cobalt bis(tetrafluoroborate) hexahydrate
Solvents: Methanol-*d*; 24 h, 100 °C

Experimental Protocols

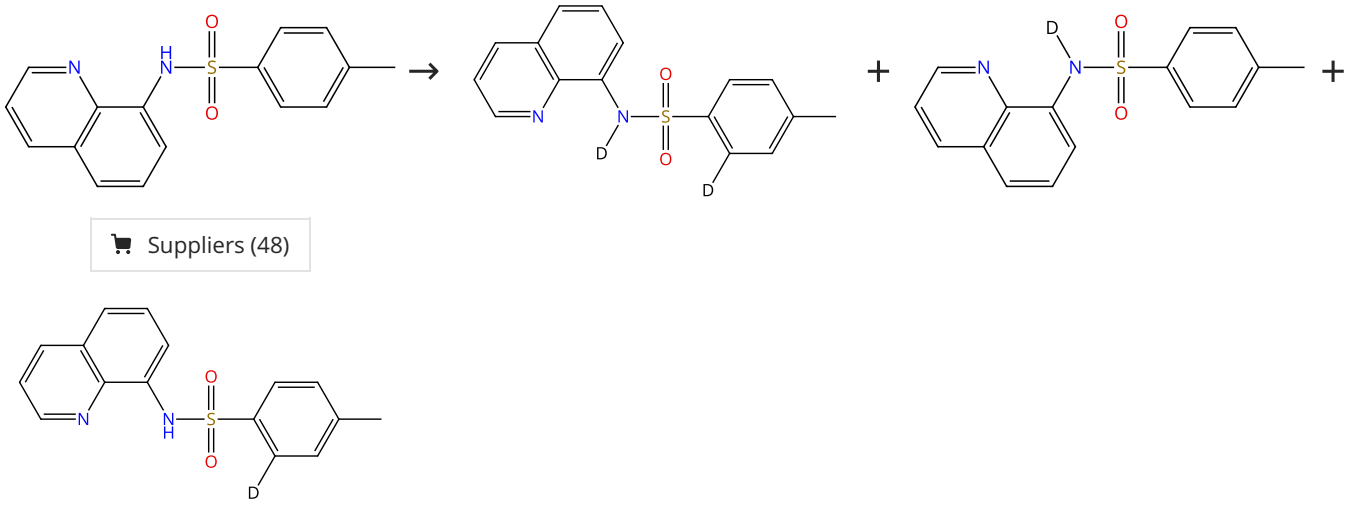
Methylation of C(sp^3)-H/C(sp^2)-H Bonds with Methanol Catalyzed by Cobalt System

By: Liu, Zhenghui; et al

Organic Letters (2017), 19(19), 5228-5231.

Scheme 136 (1 Reaction)

Steps: **1** Yield: **28%**



Suppliers (48)

31-116-CAS-9997707

Steps: **1** Yield: **28%**

1.1 **Reagents:** Manganese triacetate, Propanoic acid, 2,2-dimethyl-, sodium salt (1:1)
Catalysts: Cobalt diacetate
Solvents: Methanol-d_4; 16 h, 100 °C

Experimental Protocols

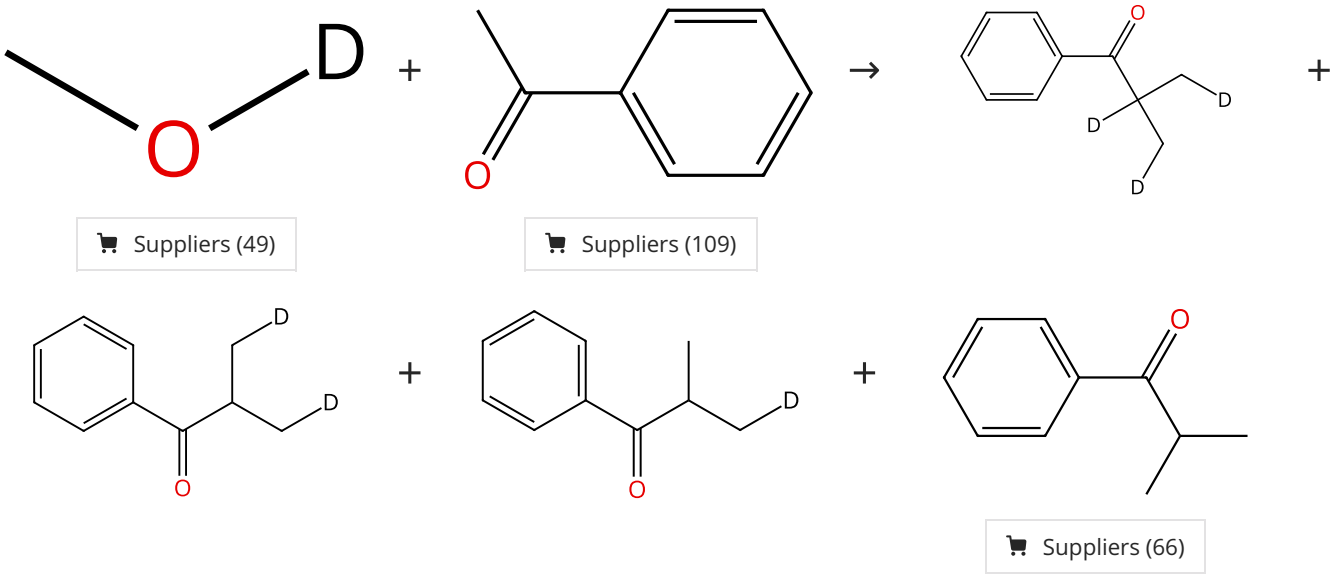
Regioselective Access to Sultam Motifs through Cobalt-Catalyzed Annulation of Aryl Sulfonamides and Alkynes using an 8-Aminoquinoline Directing Group

By: Planas, Oriol; et al

Advanced Synthesis & Catalysis (2015), 357(18), 4003-4012.

Scheme 137 (1 Reaction)

Steps: **1** Yield: **49%**



Suppliers (49)

Suppliers (109)

Suppliers (66)

31-116-CAS-17822369

Steps: **1** Yield: **49%**

1.1 **Reagents:** Potassium carbonate
Catalysts: Triphenylphosphine, Cobalt bis(tetrafluoroborate) hexahydrate
Solvents: Methanol-*d*; 24 h, 100 °C

Experimental Protocols

Methylation of C(sp^3)-H/C(sp^2)-H Bonds with Methanol Catalyzed by Cobalt System

By: Liu, Zhenghui; et al

Organic Letters (2017), 19(19), 5228-5231.