CAS SciFinder

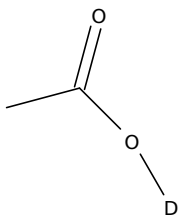
Task History

Initiating Search

February 21, 2025, 7:15 PM

Substances:

Filtered By:



Structure Match: **Substructure**

Search Tasks

Task	Search Type	View
Returned Substance Results + Filters (2,557)	Substances	View Results
Exported: Retrieved Related Reaction Results + Filters (295)	Reactions	View Results

Filtered By:

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

Catalyst: **[(2,3,5,6-η)-Bicyclo[2.2.1]hepta-2,5-diene](triphenylethenyl)(triphenylphosphine)rhodium, (η^2-Ethene)[*N*,*N*'-(1,2-dimethyl-1,2-ethanediylidene)bis[2,3,4,5,6-pentafluorobenzenamine-κ*N*]](2,2,2-trifluoroacetato-κ*O*)rhodium, [(3a,4,5,6,6a-η)-(13c*R*)-3,7-Dihydro-2,8-dimethoxy-3a*H*-cyclopenta[6,7]cycloocta[2,1-*a*:3,4-*a*']dinaphthalen-3a-yl]bis(η^2-ethene)rhodium, (η^5-2,4-Cyclopentadien-1-yl)diiodorhodium, Bis[(1,2,3,4,5-η)-1,3-bis(ethoxycarbonyl)-2,4,5-trimethyl-2,4-cyclopentadien-1-yl]di-μ-chlorodichlorodirhodium, Bis[(1,2,5,6-η)-1,5-cyclooctadiene]di-μ-hydroxydirhodium, Bis[2,6-bis(1-methylethyl)phenyl (2,3,5,6-η)-(1*R*,4*R*,7*R*)-5-methyl-7-(1-methylethyl)bicyclo[2.2.2]octa-2,5-diene-2-carboxylate]di-μ-chlorodirhodium, Bis[(3a,4,5,6,6a-η)-(13b*R*)-3,7-dihydro-2,8-dimethoxy-3a*H*-cyclopenta[6,7]cycloocta[2,1-*a*:3,4-*a*']dinaphthalen-3a-yl]di-μ-iododiiodorhodium, Bis(acetato-κ*O*)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]rhodium, Bis[μ-(acetato-κ*O*:κ*O*')]bis[(1,2,5,6-η)-1,5-cyclooctadiene]dirhodium, Bis[μ-(acetato-κ*O*:κ*O*')]bis(acetato-κ*O*)bis[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]dirhodium,**

Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Dicarbonylrhodium acetylacetonate, Di-μ-chlorobis[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]dirhodium, Di-μ-chlorobis[(1,2,5,6-η)-1,5-cyclooctadiene]dirhodium, Di-μ-chlorodichlorobis[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]dirhodate(2-), Di-μ-chlorodichlorobis[(3a,4,5,6,6a-η)-(13b*R*)-3,7-dihydro-2,8-dimethoxy-3a*H*-cyclopenta[6,7]cycloocta[2,1-*a*:3,4-*a*']dinaphthalen-3a-yl]dirhodium, Di-μ-chlorodichlorobis[(3a,4,5,6,6a-η)-(13b*R*)-5-(1,1-dimethylethyl)-3,7-dihydro-2,8-dimethoxy-3a*H*-cyclopenta[6,7]cycloocta[2,1-*a*:3,4-*a*']dinaphthalen-3a-yl]dirhodium, Di-μ-chlorodichlorobis[(3a,4,5,6,6a-η)-(3a*R*,13b*R*)-3,7-dihydro-2,8-bis(methylenemethyl)-3a*H*-cyclopenta[6,7]cycloocta[2,1-*a*:3,4-*a*']dinaphthalen-3a-yl]dirhodium, Di-μ-chlorodichlorobis(η^5-2,4-cyclopentadien-1-yl)dirhodium, Dirhodium tetraacetate, Rhodium(1+), bis[(1,2,5,6-η)-1,5-cyclooctadiene]-, tetrafluoroborate(1-) (1:1), Rhodium(1+), bis[(1,2,5,6-η)-1,5-cyclooctadiene]-, tetrakis[3,5-bis(trifluoromethyl)phenyl]borate(1-) (1:1), Rhodium(1+), bis(acetonitrile)[(1,2,5,6-η)-1,5-cyclooctadiene]-, tetrafluoroborate(1-) (1:1), Rhodium(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), Rhodium, bis[μ-[1-[2,6-bis(1-methylethyl)phenyl]-2-(diphenylphosphino-κ*P*)-1*H*-imidazole-κ*N*^{3}]]-μ-carbonyldichlorodi-, (*Rh*-*Rh*), Rhodium, tetracarbonyldi-μ-chlorodi-, Rhodium, tetrakis[μ-[α-(1,1-dimethylethyl)-1,3-dihydro-1,3-dioxo-2*H*-isoindole-2-acetato-κ*O*^{2}:κ*O*$^{2'}$]]di-, (*Rh*-*Rh*), stereoisomer, Rhodium, tetrakis[μ-(α,α-diphenylbenzeneacetato-κ*O*:κ*O*')]di-, (*Rh*-*Rh*), Rhodium trichloride, Rhodium trichloride trihydrate, Tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]rhodium(2+)

Document Type: Journal

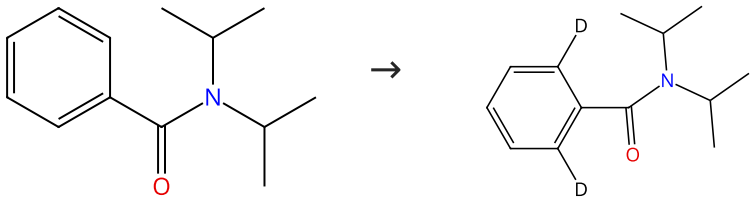
Language: English

CAS SciFinder

Reactions (194)

View in CAS SciFinder

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



Suppliers (57) Supplier (1)

31-116-CAS-19505012 Steps: **1** Yield: **99%**

1.1 **Reagents:** Acetic acid-d_4, Copper diacetate monohydrate, Oxygen, Silver hexafluoroantimonate
Catalysts: (η^5-2,4-Cyclopentadien-1-yl)diiodorhodium
Solvents: Tetrahydrofuran; 6 h, 80 °C

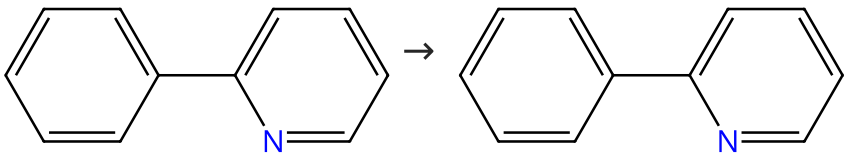
Experimental Protocols

Dual Effects of Cyclopentadienyl Ligands on Rh(III)-Catalyzed Dehydrogenative Arylation of Electron-Rich Alkenes

By: Lin, Weidong; et al

ACS Catalysis (2018), 8(9), 8070-8076.

Scheme 2 (2 Reactions) Steps: **1** Yield: **98%**



Suppliers (94)

31-614-CAS-30553997 Steps: **1** Yield: **98%**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Silver hexafluoroantimonate, Di-μ-chlorodichlorobis[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]dirhodate(2-)
Solvents: Acetic acid-d_4; 24 h, 60 °C; 60 °C → rt

1.2 **Reagents:** Sodium bicarbonate
Solvents: Dichloromethane, Water; rt

Experimental Protocols

Bronsted Acid Enhanced Rhodium-Catalyzed Conjugate Addition of Aryl C-H Bonds to α,β-Unsaturated Ketones under Mild Conditions

By: Yang, Lei; et al

Chemistry - A European Journal (2012), 18(31), 9511-9515, S9511/1-S9511/93.

31-614-CAS-25072964 Steps: **1**

1.1 **Catalysts:** Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: Acetic anhydride, Acetic acid-d; overnight, 80 °C

Experimental Protocols

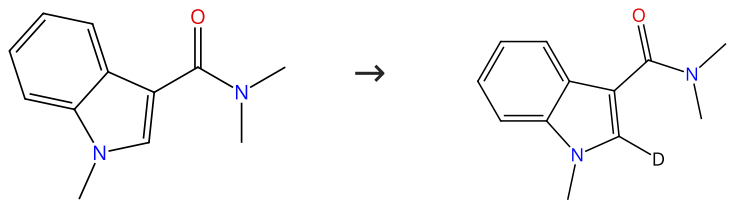
Rhodium(III)-Catalyzed Selective C-H Acetoxylation and Hydroxylation Reactions

By: Wu, Yunxiang; et al

Organic Letters (2017), 19(13), 3532-3535.

Scheme 3 (1 Reaction)

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



Suppliers (7)

31-116-CAS-20877099

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

1.1 **Reagents:** Silver acetate, Acetic acid-d_4
Catalysts: Di-μ-chlorobis[(1,2,5,6-η)-1,5-cyclooctadiene] dirhodium, Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 12 h, 100 °C

Experimental Protocols

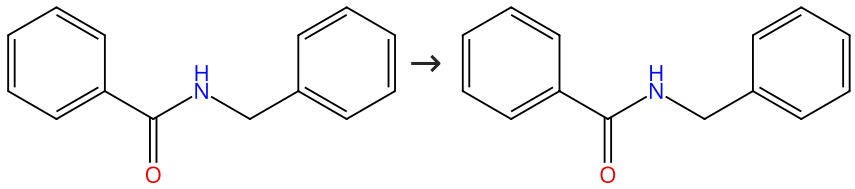
Rh^{III}-Catalyzed Synthesis of Cyclopenta[b]carbazoles via Cascade C-H/C-C Bond Cleavage and Cyclization Reactions: Using Amide as a Traceless Directing Group

By: Wang, Yanwei; et al

Organic Letters (2020), 22(1), 83-87.

Scheme 4 (1 Reaction)

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



Suppliers (84)

31-614-CAS-24765656

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

1.1 **Reagents:** Silver acetate, Acetic acid-d_4, Selenium
Catalysts: Rhodium(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: (Trifluoromethyl)benzene; 2 h, 80 °C

Experimental Protocols

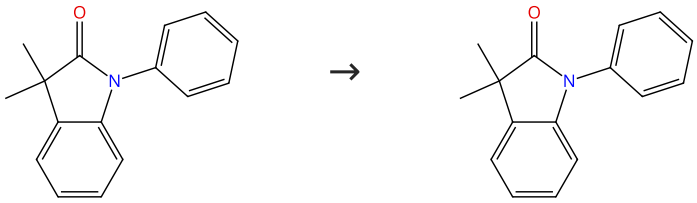
Synthesis of Benzoisoselenazolones via Rh(III)-Catalyzed Direct Annulative Selenation by Using Elemental Selenium

By: Xu-Xu, Qing-Feng; et al

Chemistry - A European Journal (2021), 27(71), 17952-17959.

Scheme 5 (1 Reaction)

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



Suppliers (4)

31-614-CAS-27876697

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

1.1 **Reagents:** Silver acetate, Acetic acid-*d*
Catalysts: Rhodium(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; 12 h, 130 °C

Highly Efficient Rhodium-Catalyzed Oxindole-Directed Oxidative Heck-Type Reaction of N-Aryloxindoles with Alkenes

By: Li, Wei-Huan; et al

Asian Journal of Organic Chemistry (2018), 7(12), 2448-2451.

Scheme 6 (12 Reactions)

Steps: **1** Yield: **90-98%**

Suppliers (69)

Supplier (1)

31-614-CAS-23995355

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

1.1 **Reagents:** Cupric acetate, Acetic acid-*d*, Water-d_2
Catalysts: Rhodium(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); 60 h, 100 °C

Experimental Protocols

Rh^{III}-Catalyzed Direct Heteroarylation of $C(sp^3)$-H and $C(sp^2)$-H Bonds in Heterocycles with N-Heteroaromatic Boronates

By: Wang, Huai-Wei; et al

Organic Letters (2021), 23(18), 7177-7182.

31-116-CAS-20936903

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

1.1 **Reagents:** Acetic acid-*d*, Oxygen
Catalysts: Cupric acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: Water-d_2; 20 h, 100 °C

Palladium(II)-catalyzed oxidative $C(sp^3)$-P bond formation via $C(sp^3)$-H bond activation

By: Chen, Lijin; et al

Chemical Communications (Cambridge, United Kingdom) (2019), 55(91), 13693-13696.

31-116-CAS-16993017

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

1.1 **Reagents:** Cupric acetate, Acetic acid-*d*, Oxygen
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: Water-d_2; 20 h, 100 °C

Experimental Protocols

Cp*Rh(III)-catalyzed $C(sp^3)$-H alkylation of 8-methylquinolines in aqueous media

By: Kim, Saegun; et al

Chemical Communications (Cambridge, United Kingdom) (2017), 53(21), 3006-3009.

31-116-CAS-20305785

Steps: **1** Yield: **95%**

1.1 **Reagents:** Acetic acid-d_4, Water-d_2
Catalysts: Cupric acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]; rt; 20 h, 100 °C

Rh(III)-Catalyzed straightforward arylation of 8-methyl/formylquinolines using diazo compounds

By: Ghosh, Bidhan; et al

Chemical Communications (Cambridge, United Kingdom) (2019), 55(48), 6886-6889.

31-614-CAS-43092720

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

1.1 **Reagents:** Cupric acetate, Acetic acid-*d*, Water-d_2
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]; 20 h, 100 °C

Experimental Protocols

Palladium catalyzed $C(sp^3)$-H alkylation of 8-methylquinolines with aziridines: access to functionalized γ-quinolinylpropylamines

By: Sahoo, Anita; et al

Chemical Communications (Cambridge, United Kingdom) (2024), 60(99), 14818-14821.

31-614-CAS-36225712

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

1.1 **Reagents:** Acetic acid-*d*, Water-d_2
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 0.5 h, 80 °C; 80 °C → rt

1.2 **Reagents:** Ethyl acetate, Sodium hydroxide
Solvents: Water

Experimental Protocols

Rh(III)-Catalyzed Alkylation of 8-Methylquinolines with Oxabenzonorbornadienes

By: Sarthi; et al

Organic Letters (2023), 25(15), 2627-2631.

31-614-CAS-40420491 Steps: **1**

1.1 **Reagents:** Acetic acid-*d*, 2,6-Bis(trifluoromethyl)benzoic acid
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: Toluene; 24 h, 120 °C

Experimental Protocols

Rhodium-catalyzed three-component C(sp^3)/C(sp^2)-H activation enabled by a two-fold directing group strategy

By: Hou, Fu-Cheng; et al

Chemical Communications (Cambridge, United Kingdom) (2024), 60(43), 5634-5637.

31-614-CAS-34344493 Steps: **1**

1.1 **Reagents:** Cupric acetate, Acetic acid-*d*, Water-d_2
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 1,2-Dichlorobenzene; 36 h, 110 °C

Experimental Protocols

Palladium-Catalyzed C(sp^3)-H Biarylation of 8-Methyl Quinolines with Cyclic Diaryliodonium Salts to Access Functio nalized Biaryls and Fluorene Derivatives

By: Maurya, Naveen Kumar; et al

Journal of Organic Chemistry (2022), 87(21), 13744-13749.

31-614-CAS-24142159 Steps: **1**

1.1 **Reagents:** Cupric acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: Water-d_2; rt; 20 h, 100 °C

Experimental Protocols

Cp*Rh(III)-Catalyzed Regioselective C(sp^3)-H Electrophilic Trifluoromethylthiolation of 8-Methylquinolines

By: Sumit; et al

Journal of Organic Chemistry (2021), 86(19), 13754-13761.

31-116-CAS-20966839 Steps: **1**

1.1 **Reagents:** Cupric acetate, Acetic acid-d_4, Oxygen
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: Water-d_2; rt; 20 h, 100 °C

Experimental Protocols

Cp*Rh(III)-Catalyzed Regioselective C(sp^3)-H Methylation of 8-Methylquinolines with Organoborons

By: Kumar, Rakesh; et al

Organic Letters (2020), 22(1), 305-309.

31-116-CAS-19684830 Steps: **1**

1.1 **Reagents:** Acetic acid-d_4, Methanol-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 1,2-Dichloroethane; 24 h, 70 °C

Experimental Protocols

Cp*Co^{III}-Catalyzed Alkylation of Primary and Secondary C (sp^3) -H Bonds of 8-Alkylquinolines with Maleimides

By: Kumar, Rakesh; et al

Journal of Organic Chemistry (2019), 84(3), 1542-1552.

31-116-CAS-16095938 Steps: **1**

1.1 **Reagents:** Acetic acid-*d*, Methanol-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; rt; 24 h, 70 °C

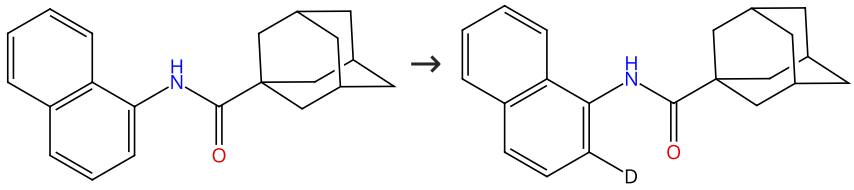
Experimental Protocols

Rhodium(III)-Catalyzed C(sp^3)-H Alkylation of 8-Methylqu inolines with Maleimides

By: Han, Sangil; et al

Organic Letters (2016), 18(18), 4666-4669.

Scheme 7 (1 Reaction) Steps: **1** Yield: **96%**



Suppliers (11)

31-116-CAS-16050667 Steps: **1** Yield: **96%**

1.1 **Reagents:** Cupric acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: Dimethylformamide; 12 h, 110 °C

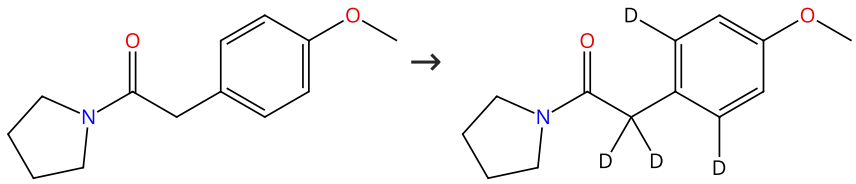
Experimental Protocols

Rhodium-Catalyzed Oxidative Benzannulation of N-Adamantyl-1-naphthylamines with Internal Alkynes via Dual C-H Bond Activation: Synthesis of Substituted Anthracenes

By: Zhang, Xuan; et al

Organic Letters (2016), 18(17), 4246-4249.

Scheme 8 (1 Reaction) Steps: **1** Yield: **96%**



Suppliers (10)

31-116-CAS-20493707 Steps: **1** Yield: **96%**

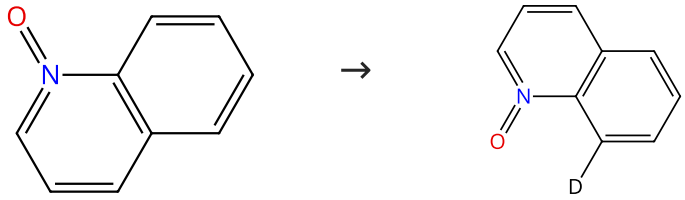
1.1 **Reagents:** Acetic acid-d_4
Catalysts: Rhodium(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, (*OC*-6-11)-hexafluoro antimonate(1-) (1:2)
Solvents: 1,2-Dichloroethane; 6 h, 120 °C

Rhodium(III)-Catalyzed Redox-Neutral Weak O-Coordinating Vinylation and Allylation of Arylacetamides with Allylic Acetates

By: Jambu, Subramanian; et al

Organic Letters (2019), 21(14), 5655-5659.

Scheme 9 (7 Reactions) Steps: **1** Yield: **73-96%**



Suppliers (57) Supplier (1)

31-116-CAS-18628817 Steps: **1** Yield: **96%**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Rhodium(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: 1,4-Dioxane; 5 h, 50 °C

Experimental Protocols

Heterobicyclic Core Retained Hydroarylations through C-H Activation: Synthesis of Epibatidine Analogues

By: Li, Deng-Yuan; et al

Organic Letters (2018), 20(7), 2028-2032.

31-116-CAS-19730049 Steps: **1** Yield: **87%**

1.1 **Reagents:** Pivalic acid, Acetic acid-d_4, Silver hexafluoro antimonate
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 1,2-Dichloroethane; 36 h, 110 °C

Experimental Protocols

Rh^{III}-Catalyzed Straightforward Synthesis of Benzophenanthroline and Benzophenanthrolinone Derivatives using Anthranils

By: Biswas, Aniruddha; et al

Chemistry - A European Journal (2019), 25(12), 3000-3004.

31-116-CAS-19180775 Steps: **1** Yield: **73%**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Pivalic acid, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 1 h, 80 °C

Experimental Protocols

Rh^{III}-Catalyzed Direct C8-Arylation of Quinoline N-Oxides using Diazonaphthalen-2(1H)-ones: A Practical Approach towards 8-aza BINOL

By: Ghosh, Bidhan; et al

Chemistry - An Asian Journal (2018), 13(17), 2388-2392.

31-614-CAS-37231271 Steps: **1**

1.1 **Reagents:** Pivalic acid, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 36 h, 100 °C

Experimental Protocols

Construction of unsymmetrical heterobiaryls via the Cp*Rh(III)-catalyzed C-H/C-H coupling of heteroarenes

By: Parmar, Diksha; et al

Chemical Communications (Cambridge, United Kingdom) (2023), 59(63), 9646-9649.

31-614-CAS-24074649 Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 12 h, 60 °C

Experimental Protocols

Installation of Diverse Succinimides at C-8 Position of Quinoline N-Oxides via Rhodium(III)-Catalyzed C-H Functionalization

By: Nale, Sagar D.; et al

ChemistrySelect (2021), 6(32), 8244-8248.

31-116-CAS-27015048 Steps: **1**

1.1 **Reagents:** Methanol-d_4, Acetic acid-d_4
Catalysts: Silver acetate, Silver hexafluoroantimonate, Di-μ-chlorobis[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]dirhodium
Solvents: 1,2-Dichloroethane; 6 h, 80 °C

Experimental Protocols

Rh(III)-Catalyzed Regioselective C8-Alkylation of Quinoline N-Oxides with Maleimides and Acrylates

By: Thakur, Ankita; et al

Journal of Organic Chemistry (2021), 86(9), 6612-6621.

31-116-CAS-13851178 Steps: **1**

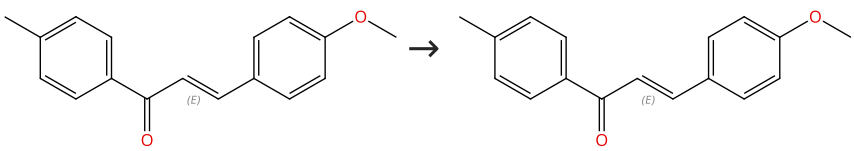
1.1 **Reagents:** Acetic acid-d_4, Bis(4-methylphenyl)acetylene
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,4-Dioxane; 5 h, 110 °C

Rhodium(III)-Catalyzed C-C and C-O Coupling of Quinoline N-Oxides with Alkynes: Combination of C-H Activation with O-Atom Transfer

By: Zhang, Xueyun; et al

Angewandte Chemie, International Edition (2014), 53(40), 10794-10798.

Scheme 10 (1 Reaction) Steps: **1** Yield: **96%**



Double bond geometry shown

Double bond geometry shown

Suppliers (36)

31-614-CAS-34167374 Steps: **1** Yield: **96%**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Cupric acetate, Rhodium(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; 5 min, rt; 6 h, 100 °C

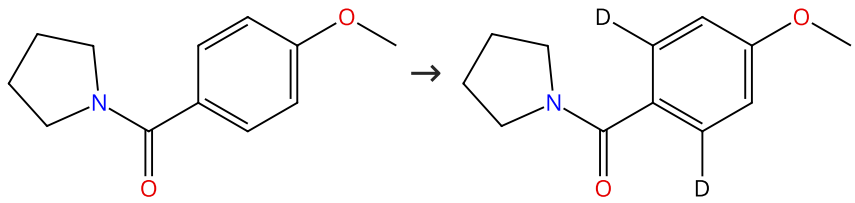
Rh(III)-Catalyzed Enone Carbonyl/Ketone-Directed Aerobic C-H Olefination of Aromatics with Unactivated Olefins

By: Shambhavi, Chikkabagilu Nagaraju; et al

Journal of Organic Chemistry (2022), 87(19), 13236-13258.

Scheme 11 (1 Reaction)

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



Suppliers (17)

31-116-CAS-23484663

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

1.1 **Reagents:** Acetic acid-*d*, Oxygen
Catalysts: Rhodium(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: Tetrahydrofuran; 5 min, rt; 6 h, 110 °C

Experimental Protocols

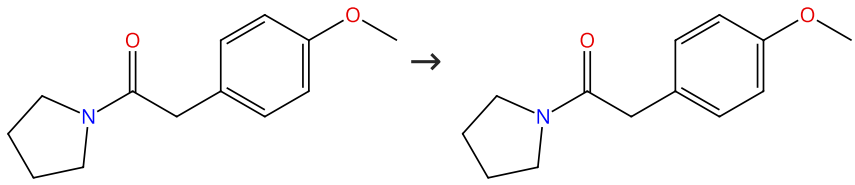
Aerobic Oxidative C-H Olefination of Arylamides with Unactivated Olefins via a Rh(III)-Catalyzed C-H Activation

By: Jambu, Subramanian; et al

Organic Letters (2021), 23(8), 2964-2970.

Scheme 12 (1 Reaction)

Steps: **1** Yield: **95%**



Suppliers (10)

31-614-CAS-25075781

Steps: **1** Yield: **95%**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Rhodium(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; 5 min, rt; 6 h, 100 °C

Experimental Protocols

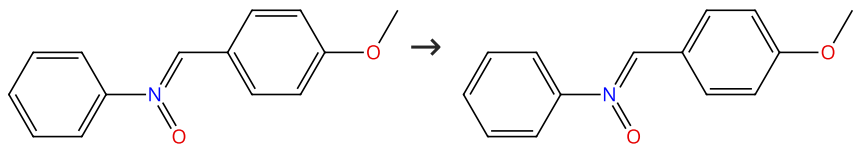
Aerobic Oxidative Alkenylation of Weak O-Coordinating Arylacetamides with Alkenes via a Rh(III)-Catalyzed C-H Activation

By: Jambu, Subramanian; et al

Organic Letters (2019), 21(5), 1320-1324.

Scheme 13 (1 Reaction)

Steps: **1** Yield: **95%**



Suppliers (16)

31-614-CAS-29573292

Steps: **1** Yield: **95%**

1.1 **Reagents:** Cupric acetate
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane, Ethylene glycol diethyl ether; 30 min, rt

1.2 **Reagents:** Acetic acid-*d*; 2 h, 100 °C

Experimental Protocols

Rhodium-Catalyzed C-H Annulation of Nitrones with Alkynes: A Regiospecific Route to Unsymmetrical 2,3-Diaryl-Substituted Indoles

By: Yan, Hao; et al

Angewandte Chemie, International Edition (2015), 54(36), 10613-10617.

Scheme 14 (1 Reaction)

Steps: **1** Yield: **94%**

31-116-CAS-16912855

Steps: **1** Yield: **94%**

1.1 **Catalysts:** Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: Acetic acid-*d*$_4$, Methanol-*d*; 5 h, 100 °C

Experimental Protocols

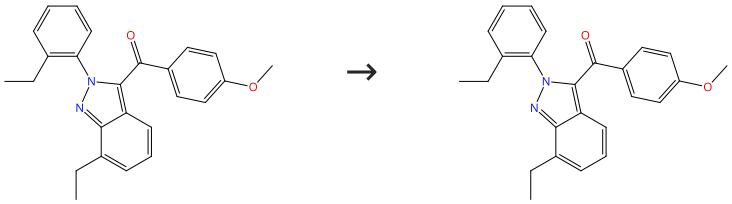
N-Doped Cationic PAHs by Rh(III)-Catalyzed Double C-H Activation and Annulation of 2-Arylbenzimidazoles with Alkynes

By: Villar, Jose M.; et al

Organic Letters (2017), 19(7), 1702-1705.

Scheme 15 (1 Reaction)

Steps: **1** Yield: **94%**



31-614-CAS-25803841

Steps: **1** Yield: **94%**

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Silver acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 9 h, 100 °C

Experimental Protocols

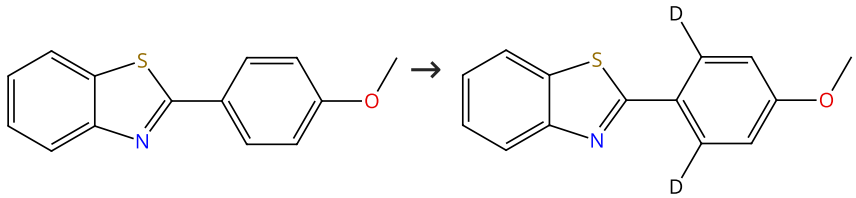
Access to 3-Acyl-(2H)-indazoles via Rh(III)-Catalyzed C-H Addition and Cyclization of Azobenzenes with α-Keto Aldehydes

By: Jeong, Taejoo; et al

Organic Letters (2016), 18(2), 232-235.

Scheme 16 (1 Reaction)

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



Suppliers (61)

31-614-CAS-42986873

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

1.1 **Reagents:** Acetic acid-*d*$_4$
Catalysts: Silver acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 3 h, 110 °C

1.2 **Reagents:** Water

Experimental Protocols

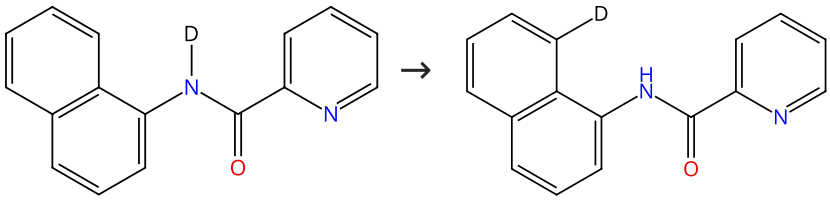
Maleimide-Dependent Rh(III)-Catalyzed Site-Selective Mono and Dual C-H Functionalization of 2-Arylbenzo[d]thiazole and Oxazole Derivatives

By: Kumari, Vidya; et al

Journal of Organic Chemistry (2024), 89(24), 18003-18018.

Scheme 17 (1 Reaction)

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



31-116-CAS-19290504

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

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Bis[μ-(acetato-κ*O*:κ*O*′)]bis[(1,2,5,6-η)-1,5-cyclooctadiene]dirhodium
Solvents: Toluene; 24 h, 160 °C

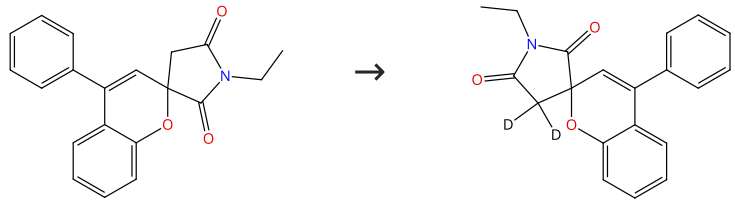
Rhodium(I)-Catalyzed C8-Alkylation of 1-Naphthylamide Derivatives with Alkenes through a Bidentate Picolinamide Chelation System

By: Rej, Supriya; et al

ACS Catalysis (2018), 8(7), 6699-6706.

Scheme 18 (1 Reaction)

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



31-116-CAS-24350654

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

1.1 **Reagents:** Cupric acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: Acetonitrile; 16 h, 100 °C

Experimental Protocols

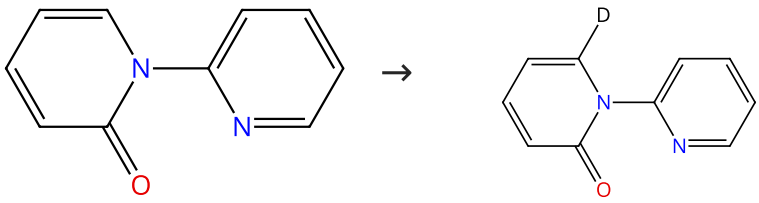
Rhodium(III)-catalyzed [5+1] annulation of 2-alkenylphenols with maleimides: access to highly functionalized spirocyclic skeletons

By: Kumar, Anil; et al

Chemical Communications (Cambridge, United Kingdom) (2021), 57(66), 8194-8197.

Scheme 19 (4 Reactions)

Steps: **1** Yield: **52-92%**



Suppliers (8)

31-614-CAS-31566653

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

1.1 **Reagents:** Sodium acetate, Phenylacetylene, Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]; 4 h, 100 °C

Experimental Protocols

Rhodium(III)-Catalyzed Regioselective C-H Annulation and Alkenylation of 2-Pyridones with Terminal Alkynes

By: Li, Jiajie; et al

Advanced Synthesis & Catalysis (2022), 364(7), 1264-1270.

31-116-CAS-22212557

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

1.1 **Reagents:** Acetic acid-d_4, Iodobenzene diacetate
Catalysts: Rhodium(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; 30 min, 40 °C

Pyridine-directed Rh-catalyzed C6-selective C-H acetoxylation of 2-pyridones

By: Hazra, Sunit; et al

Heterocycles (2020), 101(1), 223-234.

31-116-CAS-16271998 Steps: **1** Yield: **52%**

1.1 **Reagents:** Acetic acid-d_4, Silver oxide (Ag_2O)
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 20 h, 40 °C

Rhodium(III)-catalyzed site-selective C-H alkylation and arylation of pyridones using organoboron reagents

By: Peng, Panfeng; et al

Organic Letters (2016), 18(20), 5376-5379.

31-116-CAS-20234583 Steps: **1**

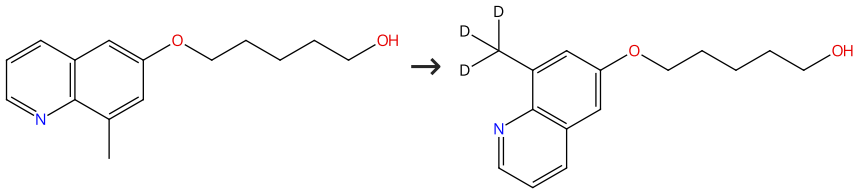
1.1 **Reagents:** Cupric acetate, Acetic acid-d_4, Cyclohexyl acrylate
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,1,1,3,3,3-Hexafluoro-2-propanol; 1 h, 50 °C

Solvent-Controlled Rhodium-Catalyzed C6-Selective C-H Alkenylation and Alkylation of 2- Pyridones with Acrylates

By: Hazra, Sunit; et al

Asian Journal of Organic Chemistry (2019), 8(7), 1097-1101.

Scheme 20 (1 Reaction) Steps: **1** Yield: **90%**



31-614-CAS-25051375 Steps: **1** Yield: **90%**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Cupric acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: Water-d_2; rt; 20 h, 100 °C

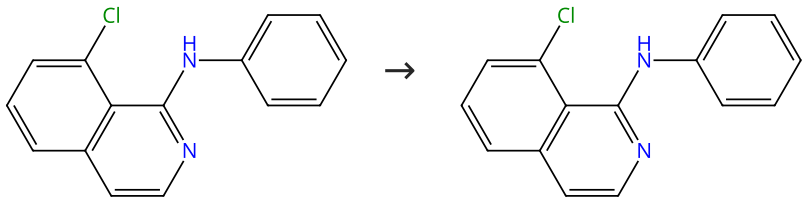
Experimental Protocols

Rh(III)-Catalyzed mild straightforward synthesis of quinoline-braced cyclophane macrocycles via migratory insertion

By: Ghosh, Bidhan; et al

Chemical Communications (Cambridge, United Kingdom) (2021), 57(97), 13134-13137.

Scheme 21 (1 Reaction) Steps: **1** Yield: **89%**



31-614-CAS-24841676 Steps: **1** Yield: **89%**

1.1 **Reagents:** Acetic acid-*d*, Silver tetrafluoroborate
Catalysts: Silver hexafluoroantimonate, Bis[(3a,4,5,6,6a-η)-(13b*R*)-3,7-dihydro-2,8-dimethoxy-3a*H*-cyclopenta[6,7] cycloocta[2,1-*a*:3,4-*a*']dinaphthalen-3a-yl]di-μ-iododiiod orhodium
Solvents: Ethyl acetate; 18 h, 25 °C

Experimental Protocols

Rhodium-Catalyzed Atroposelective Construction of Indoles via C-H Bond Activation

By: Sun, Lincong; et al

Angewandte Chemie, International Edition (2021), 60(15), 8391-8395.

Scheme 22 (1 Reaction) Steps: **1** Yield: **88%**

31-614-CAS-30375387 Steps: **1** Yield: **88%**

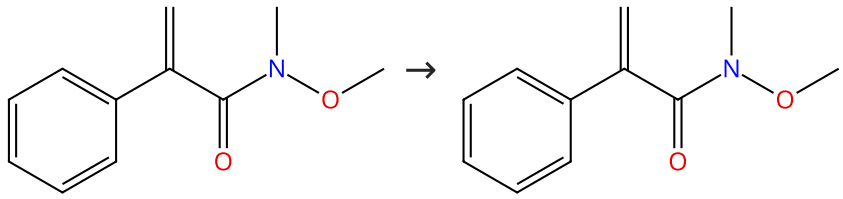
1.1 **Reagents:** Acetic acid-*d*, Copper(II) acetylacetonate
Catalysts: Rhodium(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, (*OC*-6-11)-hexafluoroantimonate(1-) (1:2)
Solvents: 1,2-Dichloroethane; 2 h, 130 °C

Efficient synthesis of N-butadiene substituted oxindole derivatives

By: Li, Chao; et al

Organic Chemistry Frontiers (2018), 5(23), 3460-3463.

Scheme 23 (1 Reaction) Steps: **1** Yield: **87%**



Suppliers (2)

31-614-CAS-25566579 Steps: **1** Yield: **87%**

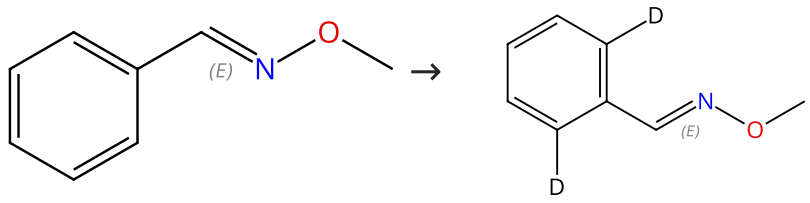
1.1 **Reagents:** Acetic acid-*d*
Catalysts: Cupric acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 2 h, rt → 120 °C

Weinreb amide directed cross- coupling reaction between electron-deficient alkenes catalyzed by a rhodium catalyst

By: Li, Feifei; et al

Organic & Biomolecular Chemistry (2017), 15(5), 1236-1244.

Scheme 24 (1 Reaction) Steps: **1** Yield: **85%**



Double bond geometry shown

Double bond geometry shown

Suppliers (5)

31-614-CAS-24639314 Steps: **1** Yield: **85%**

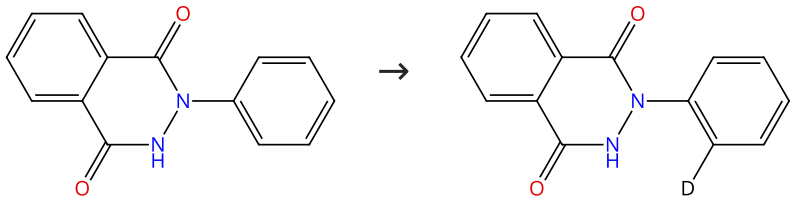
1.1 **Reagents:** Sodium acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 1 h, 100 °C

A Short Total Synthesis of Benzophenanthridine Alkaloids via a Rhodium(III)-Catalyzed C-H Ring-Opening Reaction

By: Aravindan, Narasingan; et al

Journal of Organic Chemistry (2021), 86(21), 14826-14843.

Scheme 25 (1 Reaction) Steps: **1** Yield: **85%**



Suppliers (38)

31-116-CAS-22974023 Steps: **1** Yield: **85%**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: Methanol-d_4; 20 h, 80 °C

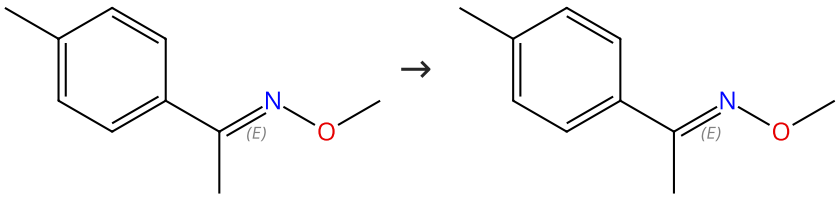
Experimental Protocols

Direct Integration of Phthalazinone and Succinimide Scaffolds via Rh(III)-Catalyzed C-H Functionalization

By: Cho, Yong Sun; et al

Asian Journal of Organic Chemistry (2021), 10(1), 202-209.

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



Double bond geometry shown

Double bond geometry shown

Suppliers (3)

31-614-CAS-31253799 Steps: **1** Yield: **85%**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Rhodium(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; 15 h, 80 °C

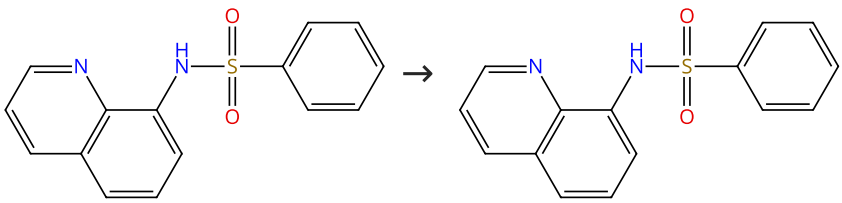
Experimental Protocols

Rhodium(III)-Catalyzed Diastereoselective Ring-Opening of 7-Azabenzonorbornadienes with Aromatic Ketoximes: Synthesis of Benzophenanthridine Derivatives

By: Vinayagam, Varathan; et al

Journal of Organic Chemistry (2019), 84(23), 15590-15604.

Scheme 27 (1 Reaction) Steps: **1** Yield: **84%**



Suppliers (34)

31-614-CAS-26992457 Steps: **1** Yield: **84%**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Bis[μ-(acetato-κ*O*:κ*O*')]bis[(1,2,5,6-η)-1,5-cyclooctadiene]dirhodium
Solvents: Toluene; 5 h, 160 °C

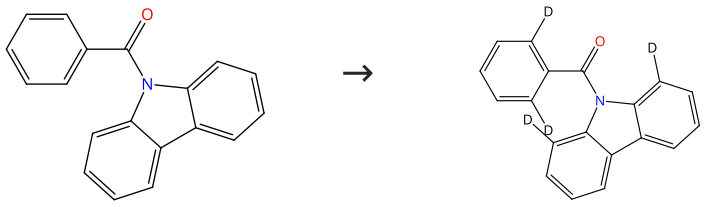
Experimental Protocols

Rhodium(I)-catalyzed mono-selective C-H alkylation of benzenesulfonamides with terminal alkenes

By: Rej, Supriya; et al

Chemical Communications (Cambridge, United Kingdom) (2019), 55(71), 10503-10506.

Scheme 28 (1 Reaction) Steps: **1** Yield: **84%**



Suppliers (70)

31-116-CAS-23744326 Steps: **1** Yield: **84%**

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Silver phosphate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 24 h, 120 °C

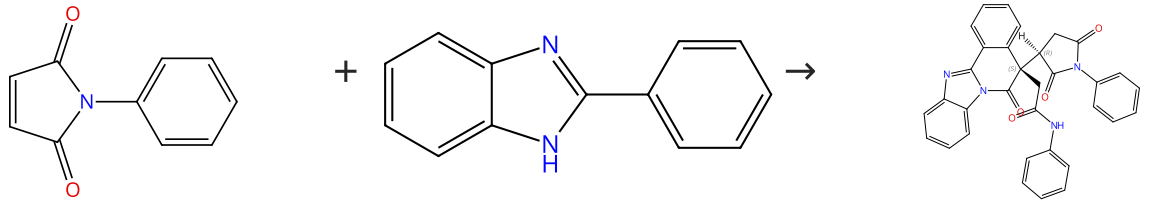
Experimental Protocols

Synthesis of Indenones through Rhodium(III)-catalyzed [3+2] Annulation Utilizing a Recyclable Carbazolyl Leaving Group

By: Ochiai, Shiho; et al

Chemistry Letters (2021), 50(4), 585-588.

Scheme 29 (1 Reaction) Steps: **1** Yield: **84%**



Suppliers (98) Suppliers (78)

Relative stereochemistry shown

31-614-CAS-27796183 Steps: **1** Yield: **84%**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 12 h, 100 °C

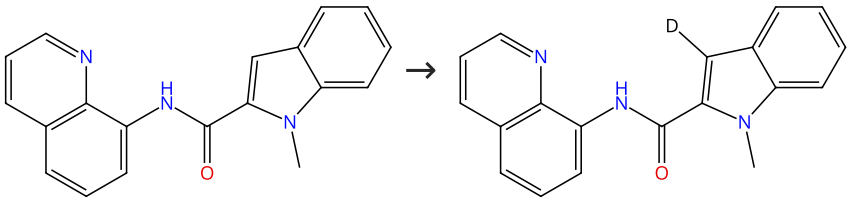
Experimental Protocols

Chemoselective Installation of Diverse Succinimides on Fused Benzimidazoles via Rhodium-Catalyzed C-H Activation/Annulation: Chemosensor for Heavy Metals

By: Aslam, Mohammad; et al

Organic Letters (2021), 23(16), 6206-6211.

Scheme 30 (1 Reaction) Steps: **1** Yield: **83%**



Supplier (1)

31-614-CAS-31492412 Steps: **1** Yield: **83%**

1.1 **Reagents:** Methanol-d_4, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 30 h, 80 °C

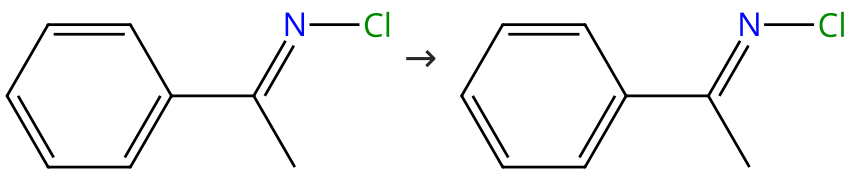
Experimental Protocols

Co(II)-Catalyzed C-H/N-H Annulation of Cyclic Alkenes with Indole-2-carboxamides at Room Temperature: One-Step Access to β-Carboline-1-one Derivatives

By: Das Adhikari, Gopal Krushna; et al

Journal of Organic Chemistry (2022), 87(6), 4438-4448.

Scheme 31 (1 Reaction) Steps: **1** Yield: **82%**



Suppliers (2)

31-614-CAS-25605655 Steps: **1** Yield: **82%**

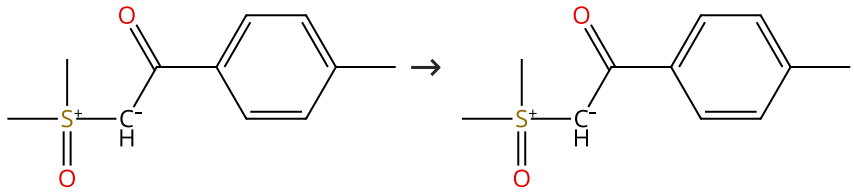
1.1 **Reagents:** Sodium acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver tetrafluoroborate
Solvents: 1,2-Dichloroethane; 12 h, 80 °C

Rh(III)-Catalyzed Coupling of N-Chloroimines with α-Diazo-α-phosphonoacetates for the Synthesis of 2H-Isoindoles

By: Qi, Bing; et al

Organic Letters (2019), 21(17), 6860-6863.

Scheme 32 (1 Reaction) Steps: **1** Yield: **80%**



Supplier (1)

31-614-CAS-33758038 Steps: **1** Yield: **80%**

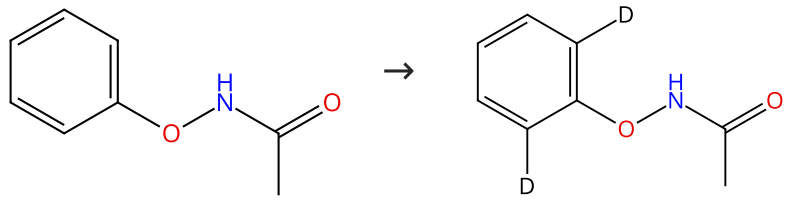
1.1 **Reagents:** Acetic acid-d_4
Catalysts: Silver acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver tetrafluoroborate
Solvents: 2,2,2-Trifluoroethanol; 5 h, 90 °C

Rhodium(III)-Catalyzed Redox-Neutral [4 + 1]-Annulation of Unactivated Alkenes with Sulfoxonium Ylides

By: Sihag, Pinki; et al

Journal of Organic Chemistry (2022), 87(16), 11073-11089.

Scheme 33 (1 Reaction) Steps: **1** Yield: **80%**



Suppliers (11)

31-116-CAS-17730622 Steps: **1** Yield: **80%**

1.1 **Reagents:** Silver acetate, Acetic acid-d_4
Catalysts: Rhodium(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: Dichloromethane, Water-d_2; 3 h, 60 °C

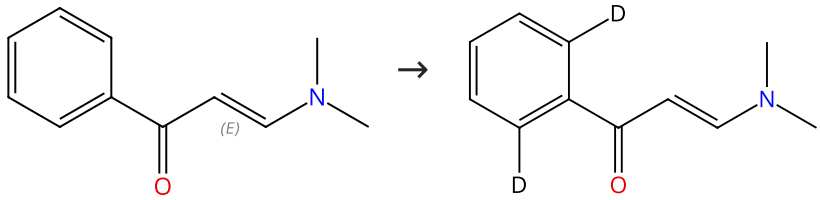
Experimental Protocols

Synthesis of 3-Arylbenzofuran-2-ylphosphines via Rhodium-Catalyzed Redox-Neutral C-H Activation and Their Applications in Palladium-Catalyzed Cross-Coupling of Aryl Chlorides

By: Wang, Huanan; et al

Journal of Organic Chemistry (2017), 82(18), 9560-9569.

Scheme 34 (1 Reaction) Steps: **1** Yield: **76%**



Double bond geometry shown

Suppliers (49)

31-614-CAS-34876443 Steps: **1** Yield: **76%**

1.1 **Reagents:** Sodium acetate, Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 2,2,2-Trifluoroethanol; 16 h, 80 °C

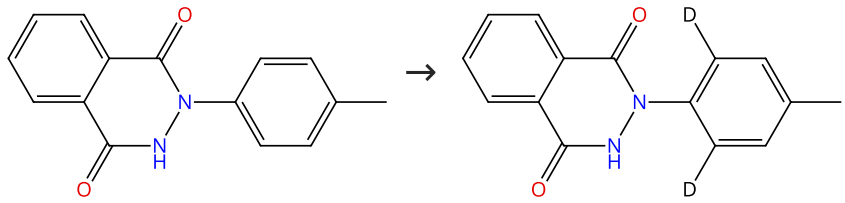
Experimental Protocols

Rh(III)-catalyzed C-H/C-C bond annulation of enaminones with iodonium ylides to form isocoumarins

By: Yang, Zi; et al

Chemical Communications (Cambridge, United Kingdom) (2022), 58(97), 13483-13486.

Scheme 35 (1 Reaction) Steps: **1** Yield: **75%**



Suppliers (3)

31-614-CAS-24060273 Steps: **1** Yield: **75%**

1.1 **Reagents:** Silver acetate, Acetic acid-d_4, Methanol-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 1,2-Dichloroethane; 12 h, 120 °C

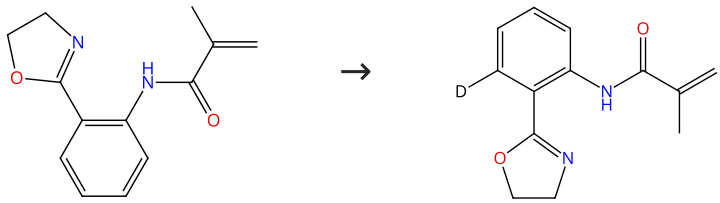
Experimental Protocols

Rhodium-Catalyzed Spirocyclization of Maleimide with N-Aryl-2,3-dihydrophthalazine-1,4-dione to Access Pentacyclic Spiro-Succinimides

By: Karishma, Pidiyara; et al

Asian Journal of Organic Chemistry (2021), 10(10), 2580-2590.

Scheme 36 (1 Reaction) Steps: **1** Yield: **70%**



31-116-CAS-23455322 Steps: **1** Yield: **70%**

1.1 **Reagents:** Adipic acid, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], [1,1,1-Trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*] methanesulfonamidato-κ*O*]silver
Solvents: 1,4-Dioxane; 10 h, 60 °C

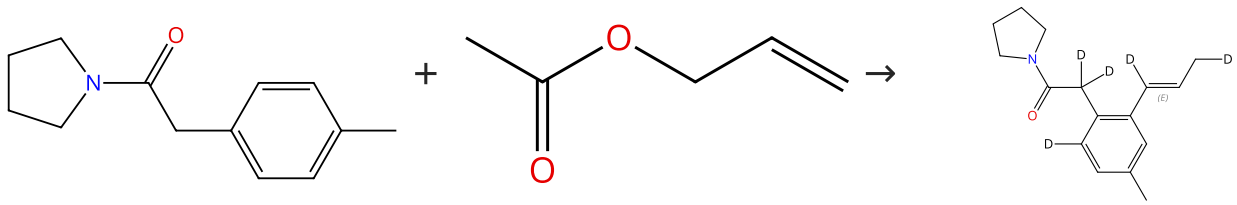
Experimental Protocols

Rhodium(III)-catalyzed chemodivergent annulations between phenyloxazoles and diazos via C-H activation

By: Zhang, Xueguo; et al

Chinese Chemical Letters (2021), 32(2), 695-699.

Scheme 37 (1 Reaction) Steps: **1** Yield: **70%**



Suppliers (15) Suppliers (50)

Double bond geometry shown

31-085-CAS-20493708 Steps: **1** Yield: **70%**

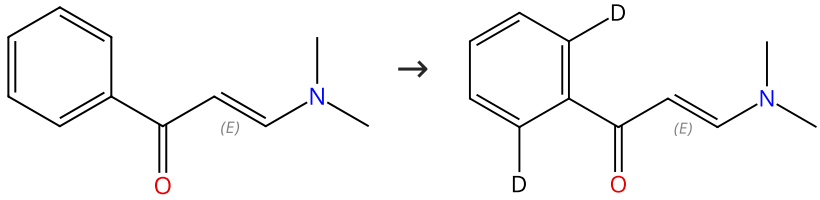
1.1 **Reagents:** Acetic acid-d_4
Catalysts: Rhodium(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, (*OC*-6-11)-hexafluoro antimonate(1-) (1:2)
Solvents: 1,2-Dichloroethane; 16 h, 120 °C

Rhodium(III)-Catalyzed Redox-Neutral Weak O-Coordinating Vinylation and Allylation of Arylacetamides with Allylic Acetates

By: Jambu, Subramanian; et al

Organic Letters (2019), 21(14), 5655-5659.

Scheme 38 (1 Reaction) Steps: **1** Yield: **68%**



Double bond geometry shown

Double bond geometry shown

Suppliers (49)

31-116-CAS-19407701 Steps: **1** Yield: **68%**

1.1 **Reagents:** Potassium acetate, Cupric acetate, Acetic acid-*d*, Lithium hydroxide
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 1,2-Dichloroethane; 72 h, 125 °C

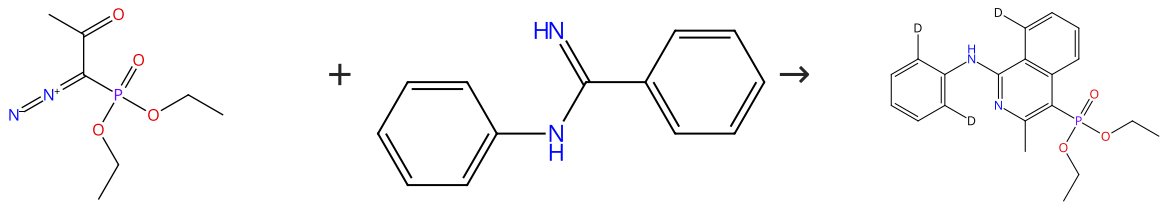
Experimental Protocols

Synthesis of Polyaromatic Rings: Rh(III)-Catalyzed [5 + 1] Annulation of Enaminones with Vinyl Esters through C-H Bond Functionalization

By: Liang, Gaohui; et al

Organic Letters (2018), 20(22), 7326-7331.

Scheme 39 (1 Reaction) Steps: **1** Yield: **63%**



Suppliers (21)

Suppliers (63)

31-116-CAS-21935651 Steps: **1** Yield: **63%**

1.1 **Reagents:** Acetic acid-*d*, Cesium acetate, [1,1,1-Trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*]methanesulfonamidato-κ*O*] silver
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 1,2-Dichloroethane; 14 h, 100 °C

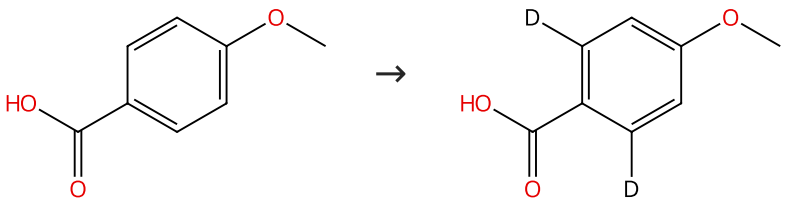
Experimental Protocols

Highly selective C-H bond activation of N-arylbenzimidamide and divergent couplings with diazophosphonate compounds: a catalyst-controlled selective synthetic strategy for 3-phosphorylindoles and 4-phosphorylisoquinolines

By: Yang, Qiaolan; et al

Organic Chemistry Frontiers (2019), 6(3), 393-398.

Scheme 40 (1 Reaction) Steps: **1** Yield: **62%**



Suppliers (116)

Supplier (1)

31-116-CAS-22410308 Steps: **1** Yield: **62%**

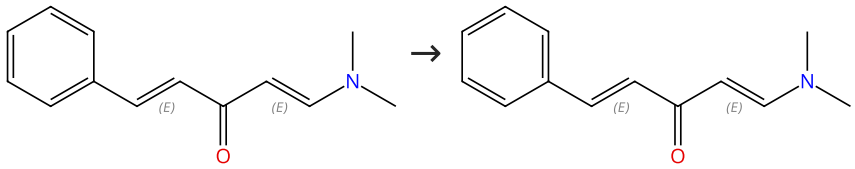
1.1 **Reagents:** Acetic acid-d_4, Disodium phosphate
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver oxide (Ag_2O)
Solvents: Dimethylformamide; 12 h, rt

Rhodium(III)-Catalyzed C-H Olefination of Aromatic/Vinyl Acids with Unactivated Olefins at Room Temper ature

By: Jambu, Subramanian; et al

Organic Letters (2020), 22(13), 5057-5062.

Scheme 41 (2 Reactions) Steps: **1** Yield: **60%**



Double bond geometry shown

Double bond geometry shown

Suppliers (32)

31-614-CAS-26907100 Steps: **1** Yield: **60%**

1.1 **Reagents:** Zinc acetate, Silver acetate, Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 12 h, 60 °C

Experimental Protocols

Regioselective Formal [4 + 2] Cycload ditions of Enaminones with Diazocarbonyls through Rh^{III}-Catalyzed C-H Bond Functionalization

By: Zhou, Shuguang; et al

Organic Letters (2018), 20(13), 3975-3979.

31-614-CAS-25584233 Steps: **1**

1.1 **Reagents:** Acetic acid-d_4, Copper diacetate monohydrate
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 12 h, 80 °C

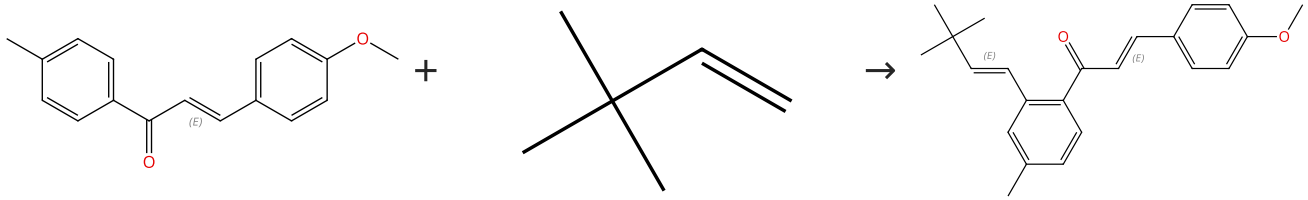
Experimental Protocols

Rh(III)-Catalyzed Enaminone-Directed Alkenyl C-H Activation for the Synthesis of Salicylaldehydes

By: Qi, Bing; et al

Organic Letters (2018), 20(13), 3996-3999.

Scheme 42 (1 Reaction) Steps: **1** Yield: **58%**



Double bond geometry shown

Suppliers (51)

Double bond geometry shown

Suppliers (36)

31-614-CAS-34167370 Steps: **1** Yield: **58%**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Cupric acetate, Rhodium(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; 5 min, rt; 12 h, 100 °C

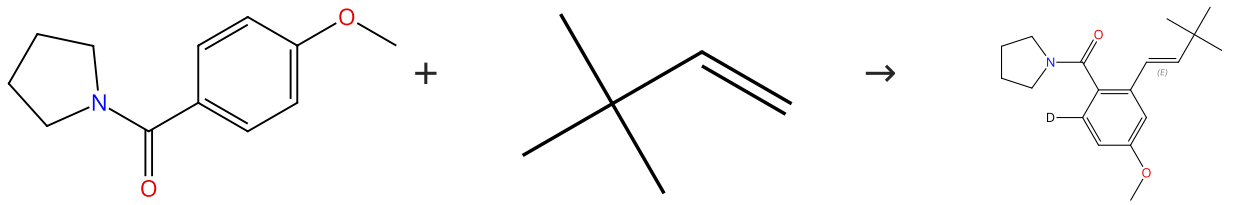
Rh(III)-Catalyzed Enone Carbonyl/Ketone-Directed Aerobic C-H Olefination of Aromatics with Unactivated Olefins

By: Shambhavi, Chikkabagilu Nagaraju; et al

Journal of Organic Chemistry (2022), 87(19), 13236-13258.

Scheme 43 (1 Reaction)

Steps: **1** Yield: **58%**



Suppliers (17)

Suppliers (51)

Double bond geometry shown

31-116-CAS-23486452

Steps: **1** Yield: **58%**

1.1 **Reagents:** Acetic acid-*d*, Oxygen
Catalysts: Rhodium(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: Tetrahydrofuran; 5 min, rt; 6 h, 110 °C

Experimental Protocols

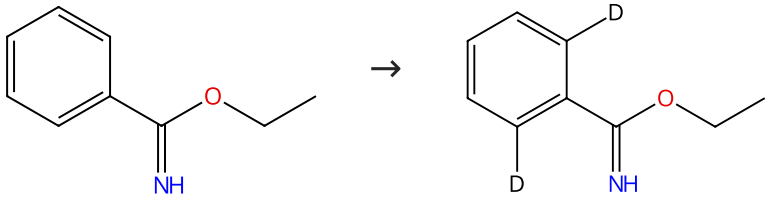
Aerobic Oxidative C-H Olefination of Arylamides with Unacti vated Olefins via a Rh(III)-Catalyzed C-H Activation

By: Jambu, Subramanian; et al

Organic Letters (2021), 23(8), 2964-2970.

Scheme 44 (1 Reaction)

Steps: **1** Yield: **56%**



Suppliers (20)

31-116-CAS-22481556

Steps: **1** Yield: **56%**

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver tetrafluoroborate
Solvents: 1,2-Dichloroethane; 30 min, 120 °C

Experimental Protocols

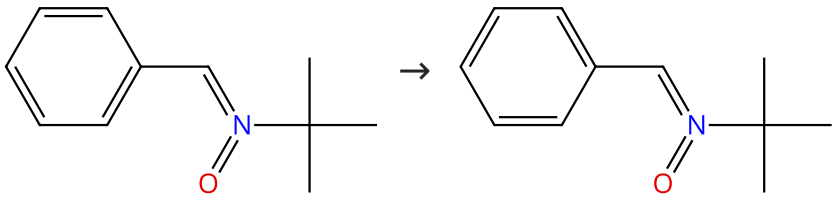
Rh^{III}-Catalyzed one-pot cascade synthesis of quinaz olines with N-alkoxyamide as an amidating reagent

By: Xu, Hui-Bei; et al

Organic Chemistry Frontiers (2020), 7(10), 1230-1234.

Scheme 45 (1 Reaction)

Steps: **1** Yield: **54%**



Suppliers (82)

31-614-CAS-27218676

Steps: **1** Yield: **54%**

1.1 **Reagents:** Acetic acid-d_4, Oxygen
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 1 atm, rt; 7 h, 1 atm, 60 °C

Experimental Protocols

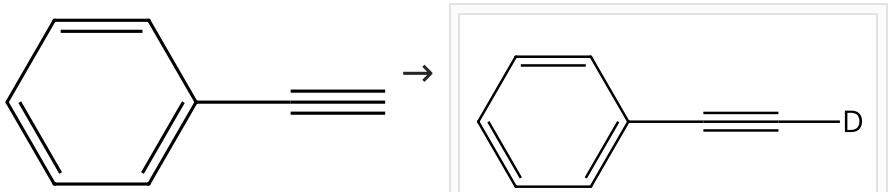
Reactivity of Morita-Baylis-Hillman Adducts in C-H Functiona lization of (Hetero)aryl Nitrones: Access to Bridged Cycles and Carbazoles

By: Pandey, Ashok Kumar; et al

Organic Letters (2018), 20(15), 4632-4636.

Scheme 46 (1 Reaction)

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



Suppliers (73)

31-614-CAS-25396908

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

1.1 **Catalysts:** Triphenylphosphine, [(2,3,5,6-η)-Bicyclo[2.2.1]hepta-2,5-diene](triphenylethenyl)(triphenylphosphine)rhodium
Solvents: Toluene; 1 h, 30 °C

1.2 **Reagents:** Acetic acid-*d*; 10 min, rt

Experimental Protocols

Characterization of the Polymerization Catalyst [(2,5-norbornadiene)Rh{C(Ph):CPh$_2$}(PPh$_3$)] and Identification of the End Structures of Poly(phenylacetylenes) Obtained by Polymerization Using This Catalyst

By: Kumazawa, Shohei; et al

Organometallics (2012), 31(19), 6834-6842.

Scheme 47 (1 Reaction)

Steps: **1** Yield: **50%**

Double bond geometry shown

Double bond geometry shown

31-117-CAS-14707811

Steps: **1** Yield: **50%**

1.1 **Reagents:** Cupric acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 24 h, 120 °C

1.2 **Reagents:** Ammonia
Solvents: Water; 5 min

Experimental Protocols

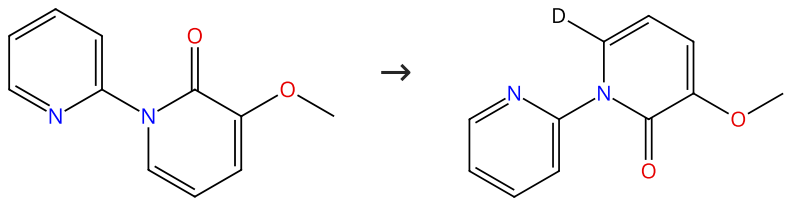
Rh(III)-catalyzed regioselective hydroarylation of alkynes via directed C-H functionalization of pyridines

By: Qian, Zhen-Chao; et al

Organic & Biomolecular Chemistry (2014), 12(22), 3594-3597.

Scheme 48 (1 Reaction)

Steps: **1** Yield: **50%**



31-116-CAS-13531404

Steps: **1** Yield: **50%**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: Acetic acid-d_4; 12 h, 80 °C

Experimental Protocols

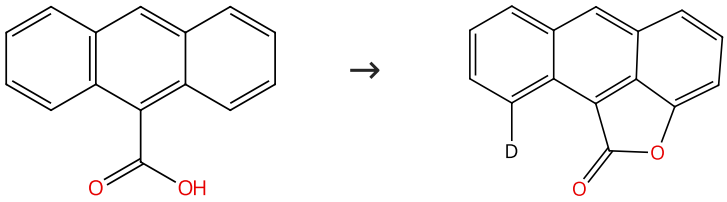
Formal Gold- and Rhodium-Catalyzed Regiodivergent C-H Alkynylation of 2-Pyridones

By: Li, Yunyun; et al

Journal of Organic Chemistry (2016), 81(2), 715-722.

Scheme 49 (1 Reaction)

Steps: **1** Yield: **50%**



Suppliers (111)

31-614-CAS-36774506

Steps: **1** Yield: **50%**

1.1 **Reagents:** Silver acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 1,2-Dichlorobenzene; 15 h, 140 °C

Experimental Protocols

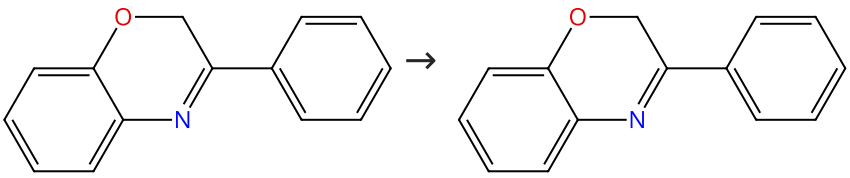
Synthesis of Fused Lactones through Transition-Metal-Catalyzed peri C-H Functionalization

By: Nishida, Ayako; et al

Asian Journal of Organic Chemistry (2023), 12(5), e202300136.

Scheme 50 (1 Reaction)

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



Suppliers (10)

31-614-CAS-26143020

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

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Cupric acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: Acetonitrile; 30 h, 100 °C

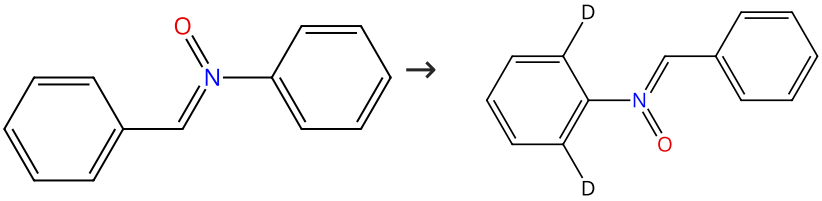
Rhodium-Catalyzed Spiro Indenyl Benzoxazine Synthesis via C-H Activation/Annulation of 3-Aryl-2H-Benzo[b][1,4]oxazines and Alkynes

By: Tan, Heng; et al

European Journal of Organic Chemistry (2020), 2020(29), 4542-4546.

Scheme 51 (1 Reaction)

Steps: **1** Yield: **47%**



Suppliers (25)

31-614-CAS-35850508

Steps: **1** Yield: **47%**

1.1 **Reagents:** Silver acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,4-Dioxane; 2 h, rt

1.2 **Reagents:** Water; rt

Experimental Protocols

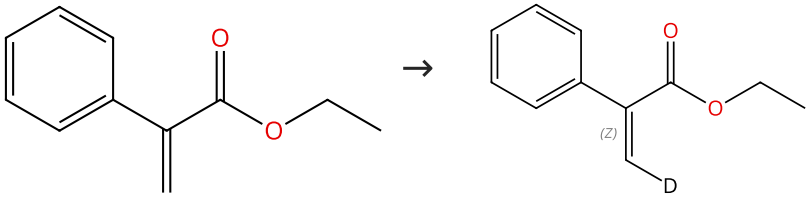
Rh(III)-Catalyzed Spiroannulation Reaction of N-Aryl Nitrones with 2-Diazo-1,3-indandiones: Synthesis of Spirocyclic Indole-N-oxides and Their 1,3-Dipolar Cycloaddition with Maleimides

By: Guo, Shenghai; et al

Journal of Organic Chemistry (2023), 88(6), 3845-3858.

Scheme 52 (1 Reaction)

Steps: **1** Yield: **35%**



Suppliers (59)

Double bond geometry shown

31-116-CAS-8801173

Steps: **1** Yield: **35%**

1.1 **Reagents:** Cupric acetate, Acetic acid-d_4
Catalysts: Di-μ-chlorodichlorobis(η^5-2,4-cyclopentadien-1-yl) dirhodium, Silver hexafluoroantimonate
Solvents: Acetone-d_6; 1 h, rt → 110 °C

Experimental Protocols

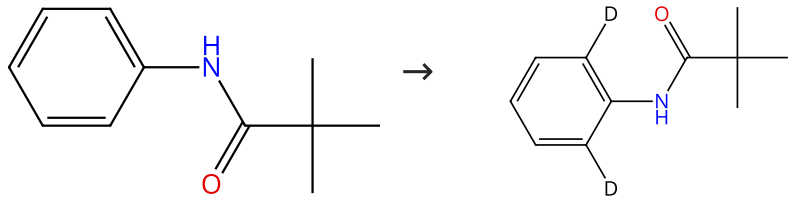
Ester-directed selective olefination of acrylates by rhodium catalysis

By: Feng, Ruokun; et al

Advanced Synthesis & Catalysis (2014), 356(7), 1501-1508.

Scheme 53 (2 Reactions)

Steps: **1** Yield: **35%**



Suppliers (78)

31-116-CAS-18998648

Steps: **1** Yield: **35%**

1.1 **Reagents:** Silver carbonate, Trifluoroacetic acid-*d*, Water-d_2
Catalysts: Copper fluoride (CuF_2), Rhodium trichloride
Solvents: Toluene; 2 h, 150 °C; cooled

Oxidative C-H/C-H Cross-Coupling Reactions between N-Acylanilines and Benzamides Enabled by a Cp*- Free $RhCl_3$/TFA Catalytic System

By: Shi, Yang; et al

Angewandte Chemie, International Edition (2018), 57(29), 9108-9112.

31-116-CAS-20224330

Steps: **1**

1.1 **Reagents:** Acetic acid-*d*, Oxygen, 2-(2,6-Dimethylphenoxy) pyridine
Catalysts: Di-μ-chlorobis[(1,2,5,6-η)-1,5-cyclooctadiene] dirhodium, (*T*-4)-Bis[1,1,1-trifluoro-*N*-[(trifluoromethyl) sulfonyl-κ*O*]methanesulfonamidato-κ*O*]zinc
Solvents: Chlorobenzene; 5 h, 140 °C

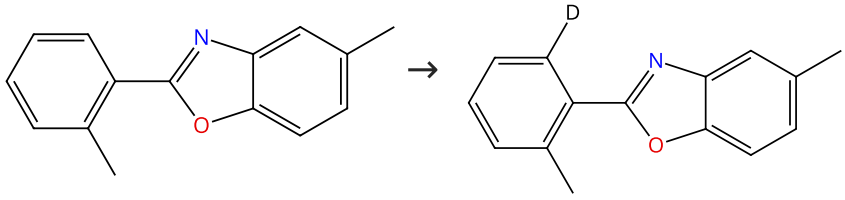
Highly Regio- and Chemoselective Oxidative C-H/C-H Cross-Couplings of Anilines and Phenols Enabled by a Co- Oxidant-Free Rh(I)/Zn(NTf_2)$_2$/Air Catalytic System

By: Zhang, Luoqiang; et al

ACS Catalysis (2019), 9(6), 5358-5364.

Scheme 54 (2 Reactions)

Steps: **1** Yield: **34%**



Suppliers (11)

31-116-CAS-16412296 Steps: **1** Yield: **34%**

1.1 **Reagents:** Sodium acetate, Cupric acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 1,2-Dichloroethane; 3 h, 90 °C; 90 °C → rt

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

Experimental Protocols

Synthesis of o-Alkenylated 2-Arylbenzoxazoles via Rh-Catalyzed Oxidative Olefination of 2-Arylbenzoxazoles: Scope Investigation, Structural Features, and Mechanism Studies

By: Zhou, Quan; et al

Journal of Organic Chemistry (2016), 81(24), 12169-12180.

31-116-CAS-20456614 Steps: **1**

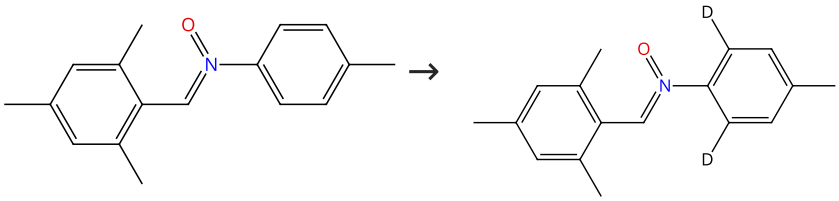
1.1 **Reagents:** Acetic acid-d_4
Catalysts: Rhodium(2+), tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]-, (*OC*-6-11)-hexafluoro antimonate(1-) (1:2)
Solvents: 1,2-Dichloroethane; -196 °C; -196 °C → rt; 18 h, 60 °C

Transition metal catalyzed C7 and ortho- selective halogenation of 2-arylbenzo[d]oxazoles

By: Hong, Xi; et al

Organic Chemistry Frontiers (2019), 6(13), 2226-2233.

Scheme 55 (1 Reaction) Steps: **1** Yield: **27%**



31-116-CAS-6953210 Steps: **1** Yield: **27%**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]rhodium(2+)
Solvents: Methanol-d_4; 2 h, 80 °C

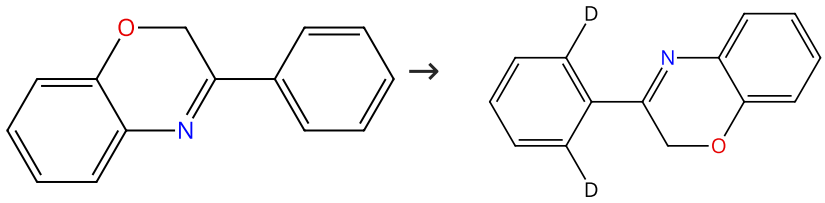
Experimental Protocols

Rhodium(III)-Catalyzed Redox-Neutral C-H Annulation of Arylnitrones and Alkynes for the Synthesis of Indole Derivatives

By: Zhou, Zhi; et al

Advanced Synthesis & Catalysis (2015), 357(13), 2944-2950.

Scheme 56 (1 Reaction) Steps: **1** Yield: **25%**



Suppliers (10)

31-614-CAS-37156326 Steps: **1** Yield: **25%**

1.1 **Reagents:** Sodium carbonate, Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], [1,1,1-Trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*] methanesulfonamidato-κ*O*]silver
Solvents: Ethyl acetate; 30 min, rt

Experimental Protocols

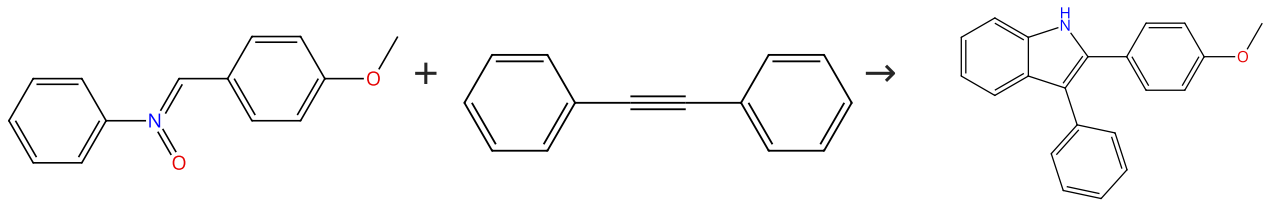
Efficient synthesis of spirooxazine-pyrans via rhodium-catalyzed [3+3] cascade spiroannulation of benzoxazines with 1-diazonaphthalen-2(1H)-ones

By: Huang, Junwei; et al

New Journal of Chemistry (2023), 47(30), 14430-14435.

Scheme 57 (1 Reaction)

Steps: **1** Yield: **25%**



Suppliers (16)

Suppliers (88)

31-614-CAS-24941390

Steps: **1** Yield: **25%**

1.1 **Reagents:** Cupric acetate
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane, Ethylene glycol diethyl ether; 30 min, rt

1.2 **Reagents:** Acetic acid-*d*; 5 h, 100 °C

Experimental Protocols

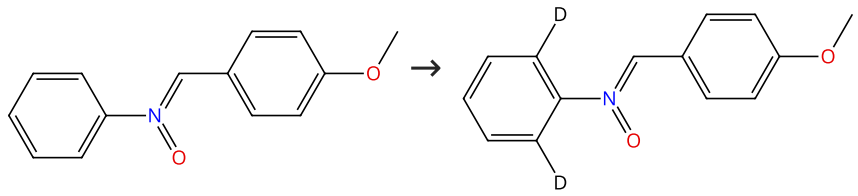
Rhodium-Catalyzed C-H Annulation of Nitrones with Alkynes: A Regiospecific Route to Unsymmetrical 2,3-Diaryl-Substituted Indoles

By: Yan, Hao; et al

Angewandte Chemie, International Edition (2015), 54(36), 10613-10617.

Scheme 58 (1 Reaction)

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



Suppliers (16)

31-116-CAS-1801371

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

1.1 **Reagents:** Silver acetate, Acetic acid-d_4
Catalysts: Rhodium(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; 2 h, rt

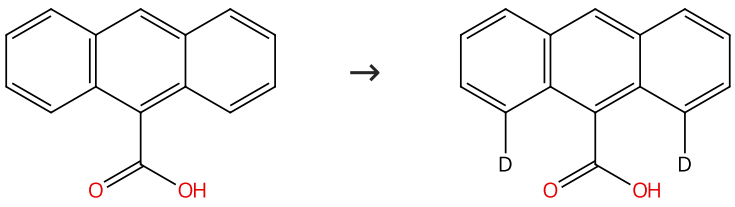
A [4+1] Cyclative Capture Approach to 3H-Indole-N-oxides at Room Temperature by Rhodium(III)-Catalyzed C-H Activation

By: Yang, Yaxi; et al

Angewandte Chemie, International Edition (2015), 54(51), 15400-15404.

Scheme 59 (1 Reaction)

Steps: **1** Yield: **22%**



Suppliers (111)

31-614-CAS-36774505

Steps: **1** Yield: **22%**

1.1 **Reagents:** Silver acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 1,2-Dichlorobenzene; 15 h, 100 °C

Experimental Protocols

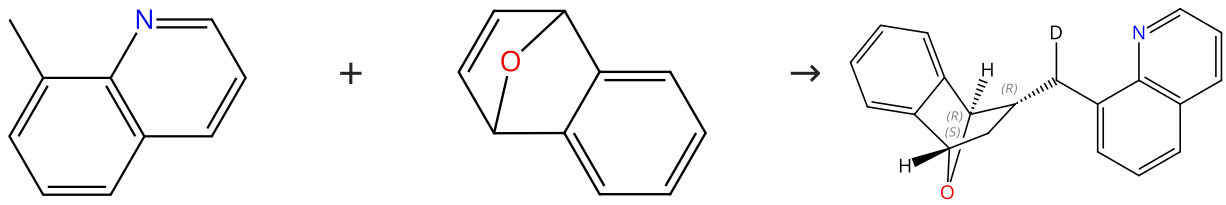
Synthesis of Fused Lactones through Transition-Metal-Catalyzed peri C-H Functionalization

By: Nishida, Ayako; et al

Asian Journal of Organic Chemistry (2023), 12(5), e202300136.

Scheme 60 (1 Reaction)

Steps: **1** Yield: **17%**



Suppliers (69)

Suppliers (71)

Relative stereochemistry shown

31-614-CAS-36225716

Steps: **1** Yield: **17%**

1.1 **Reagents:** Acetic acid-*d*, Water-d_2
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 0.5 h, 80 °C; 80 °C → rt

1.2 **Reagents:** Ethyl acetate, Sodium hydroxide
Solvents: Water

Experimental Protocols

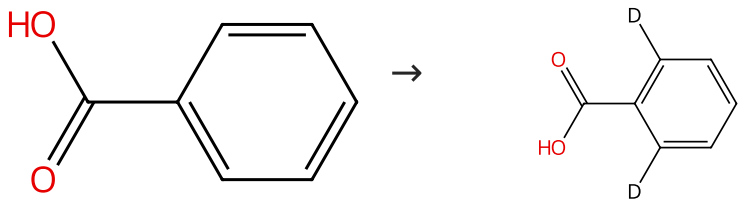
Rh(III)-Catalyzed Alkylation of 8-Methylquinolines with Oxabenzonorbornadienes

By: Sarthi; et al

Organic Letters (2023), 25(15), 2627-2631.

Scheme 61 (1 Reaction)

Steps: **1** Yield: **10%**



Suppliers (193)

Suppliers (6)

31-614-CAS-40653174

Steps: **1** Yield: **10%**

1.1 **Reagents:** Acetic acid-d_4, Silver oxide (Ag_2O)
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], [1,1,1-Trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*] methanesulfonamidato-κ*O*]silver
Solvents: Acetic acid, Acetonitrile; 24 h, 150 °C

Experimental Protocols

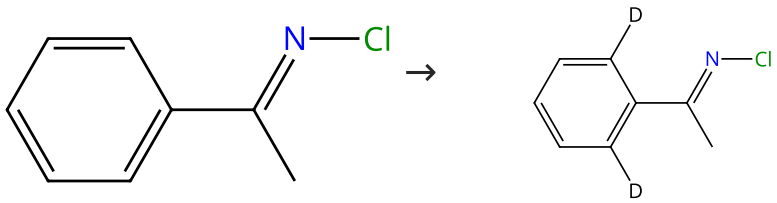
Oxidative Tandem Cyclization of Aromatic Acids with (Benzo) thiophenes: One-Pot Access to Planar Sulfur-Containing Polycyclic Heteroarenes for Lipid-Droplet-Targeted Probes

By: Li, Wan-Di; et al

Organic Letters (2024), 26(23), 4857-4862.

Scheme 62 (1 Reaction)

Steps: **1** Yield: **9%**



Suppliers (2)

31-116-CAS-21679019

Steps: **1** Yield: **9%**

1.1 **Reagents:** Sodium acetate, Acetic acid-d_4
Catalysts: Rhodium(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: Ethanol; 12 h, 60 °C

Experimental Protocols

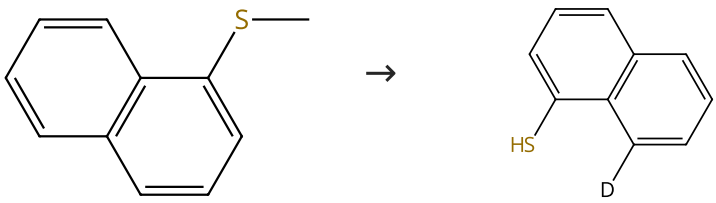
Rh(III)-catalyzed synthesis of isoquinolines using the N-Cl bond of N-chloroimines as an internal oxidant

By: Qi, Bing; et al

Tetrahedron Letters (2020), 61(16), 151771.

Scheme 63 (1 Reaction)

Steps: **1**



Suppliers (28)

31-116-CAS-19191940

Steps: **1**

1.1 **Reagents:** Diphenylacetylene, Acetic acid-d_4
Catalysts: Cupric acetate, Rhodium(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: Chlorobenzene; 30 min, 80 °C

Experimental Protocols

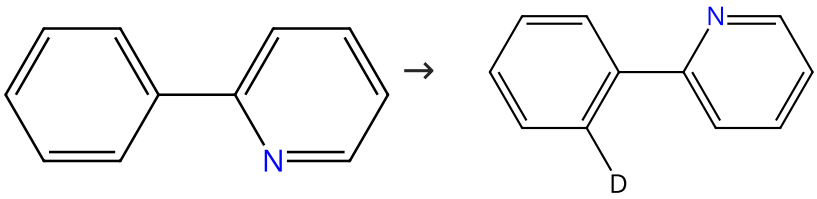
Rhodium-Catalyzed peri-Selective Direct Alkenylation of 1-(Methylthio)naphthalene

By: Shigeno, Masanori; et al

Asian Journal of Organic Chemistry (2018), 7(7), 1334-1337.

Scheme 64 (1 Reaction)

Steps: **1**



Suppliers (94)

Suppliers (6)

31-614-CAS-33432088

Steps: **1**

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 16 h, rt

Experimental Protocols

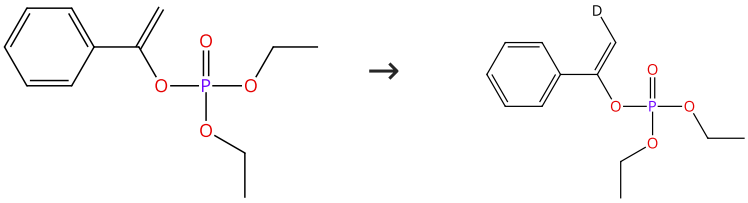
Unlocking C-H Functionalization at Room Temperature via a Light-Mediated Protodemetalation Reaction

By: Empel, Claire; et al

ACS Catalysis (2022), 12(14), 8229-8236.

Scheme 65 (2 Reactions)

Steps: **1**



Suppliers (5)

31-116-CAS-5387652

Steps: **1**

1.1 **Reagents:** Cupric acetate, Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: Tetrahydrofuran; rt → 80 °C; 2 h, 80 °C; cooled

Experimental Protocols

Selective alkenylation and hydroalkenylation of enol phosphates through direct C-H functionalization

By: Hu, Xu-Hong; et al

Angewandte Chemie, International Edition (2015), 54(51), 15535-15539.

31-116-CAS-7515421 Steps: **1**

1.1 **Reagents:** Methyl acrylate, Cupric acetate, Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: Tetrahydrofuran; rt → 80 °C; 2 h, 80 °C; cooled

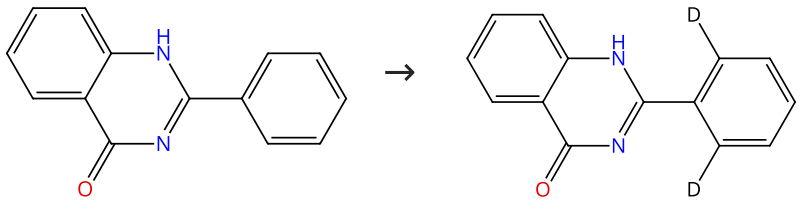
Experimental Protocols

Selective alkenylation and hydroalkenylation of enol phosphates through direct C-H functionalization

By: Hu, Xu-Hong; et al

Angewandte Chemie, International Edition (2015), 54(51), 15535-15539.

Scheme 66 (2 Reactions) Steps: **1**



Suppliers (72)

31-614-CAS-36455538 Steps: **1**

1.1 **Reagents:** Cupric acetate, Acetic acid-d_4, Silver hexafluoroantimonate
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: Dimethylformamide; 12 h, 90 °C

Experimental Protocols

Chemo- and Diastereoselective Synthesis of Polyheterocycles by Rhodium(III)-Catalyzed sp^2/sp^3 C-H Activation of 2-Arylquinazolin-4(3H)-ones with 3-Methylmaleimides

By: Devkota, Shreedhar; et al

Advanced Synthesis & Catalysis (2023), 365(9), 1465-1470.

31-116-CAS-20747951 Steps: **1**

1.1 **Reagents:** Cupric acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: Dimethylformamide; 4 h, 90 °C

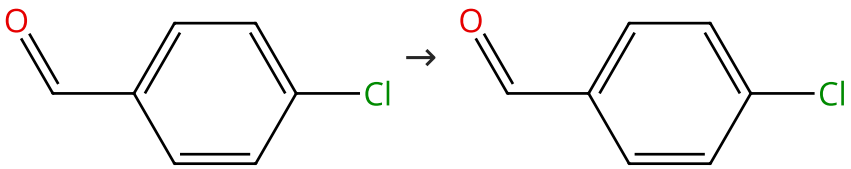
Experimental Protocols

Direct Construction of Diverse Polyheterocycles Bearing Pyrrolidinediones via Rh(III)-Catalyzed Cascade C-H Activation/Spirocyclization

By: Devkota, Shreedhar; et al

Advanced Synthesis & Catalysis (2019), 361(24), 5587-5595.

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



Suppliers (107)

31-614-CAS-34636537 Steps: **1**

1.1 **Reagents:** Aniline, Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 12 h, 60 °C

Experimental Protocols

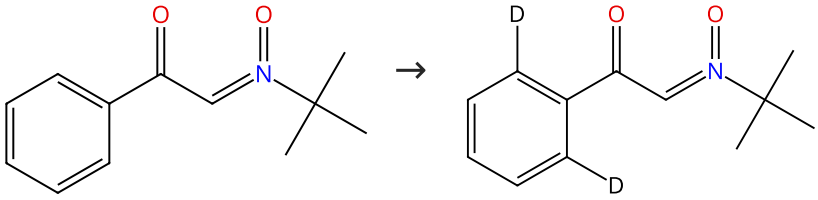
Rhodium-Catalyzed Tandem C-H Annulation Enabled by Transient Directing Group Strategy and Sequential Nucleophilic Substitution

By: Li, Zhong-Yuan; et al

Organic Letters (2022), 24(43), 7888-7893.

Scheme 68 (1 Reaction)

Steps: **1**



Supplier (1)

31-116-CAS-17728664

Steps: **1**

1.1 **Reagents:** Citric acid, Acetic acid-d_4, Methanesulfonic acid, 1,1,1-trifluoro-, nickel(2+) salt (2:1)
Catalysts: Rhodium(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; 12 h, 90 °C

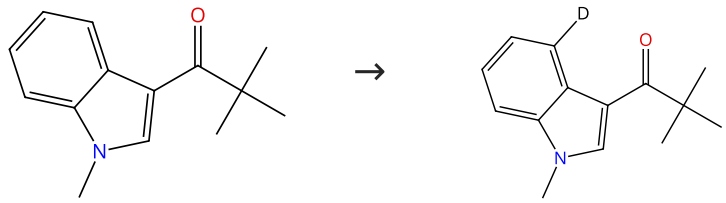
Naphthol synthesis: annulation of nitrones with alkynes via rhodium(III)-catalyzed C-H activation

By: Wang, Qiang; et al

Chemical Communications (Cambridge, United Kingdom) (2017), 53(69), 9640-9643.

Scheme 69 (1 Reaction)

Steps: **1**



Suppliers (32)

31-116-CAS-17910511

Steps: **1**

1.1 **Reagents:** Pivalic acid, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 20 h, 40 °C

Experimental Protocols

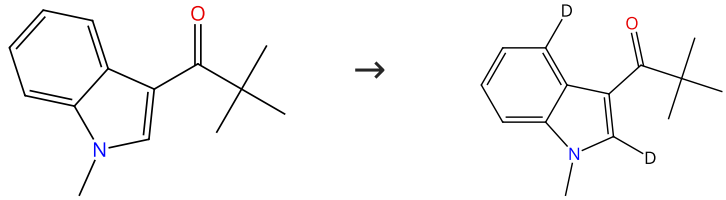
Rhodium-Catalyzed Site-Selective Coupling of Indoles with Diazo Esters: C4-Alkylation versus C2-Annulation

By: Chen, Xiaohong; et al

Organic Letters (2017), 19(22), 6184-6187.

Scheme 70 (2 Reactions)

Steps: **1**



Suppliers (32)

31-614-CAS-41629875

Steps: **1**

1.1 **Reagents:** Silver carbonate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 8 h, 100 °C

Experimental Protocols

Rh-Catalyzed C-H Alkynylation of Indole Derivatives with Silver(I)-Controlled Regiodivergence

By: Zhao, Yaokun; et al

Organic Letters (2024), 26(35), 7285-7290.

31-116-CAS-17910513 Steps: 1

1.1 **Reagents:** Acetic acid, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Zinc triflate, [1,1,1-Trifluoro-*N*-[(trifluoromethyl) sulfonyl-κ*O*]methanesulfonamidato-κ*O*]silver
Solvents: 1,2-Dichloroethane; 10 h, 100 °C

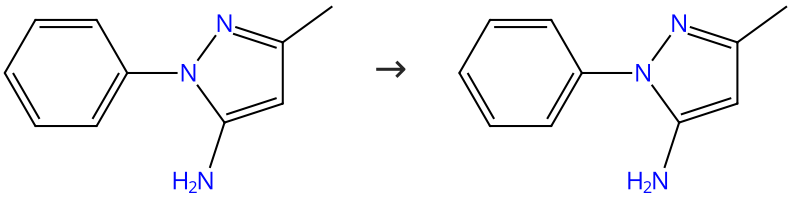
Experimental Protocols

Rhodium-Catalyzed Site-Selective Coupling of Indoles with Diazo Esters: C4-Alkylation versus C2-Annulation

By: Chen, Xiaohong; et al

Organic Letters (2017), 19(22), 6184-6187.

Scheme 71 (1 Reaction) Steps: 1



Suppliers (98)

31-614-CAS-41477553 Steps: 1

1.1 **Reagents:** Zinc acetate, Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: Toluene; 30 min, 120 °C

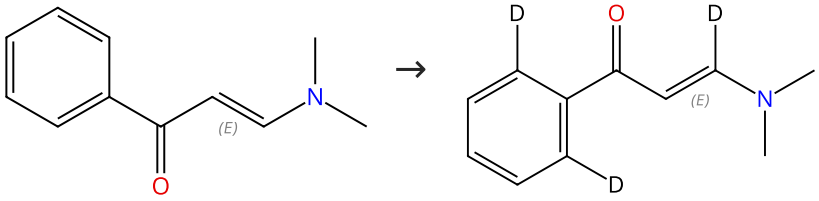
Experimental Protocols

Combinatorial synthesis of substituted pyrazolo-fused quinazolines by the Rh(III)-catalyzed [5 + 1] annulation of phenyl-1H-pyrazol-5-amine with alkynoates and alkynamides

By: Chiu, Wei-Jung; et al

Organic & Biomolecular Chemistry (2024), 22(33), 6841-6846.

Scheme 72 (1 Reaction) Steps: 1



Double bond geometry shown

Double bond geometry shown

Suppliers (49)

31-116-CAS-16023742 Steps: 1

1.1 **Reagents:** Silver acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 10 min, 80 °C

1.2 **Reagents:** Water-d_2; 12 h, 80 °C

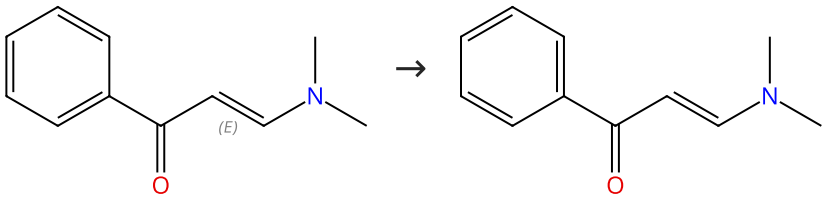
Experimental Protocols

Enaminones as Synthons for a Directed C-H Functionalization: Rh^{III}-Catalyzed Synthesis of Naphthalenes

By: Zhou, Shuguang; et al

Angewandte Chemie, International Edition (2016), 55(32), 9384-9388.

Scheme 73 (1 Reaction) Steps: 1



Double bond geometry shown

Suppliers (49)

31-614-CAS-40820150 Steps: **1**

1.1 **Reagents:** Silver carbonate, Acetic acid-*d*, Water-d_2
Catalysts: Rhodium(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: Dichloromethane; 24 h, 110 °C

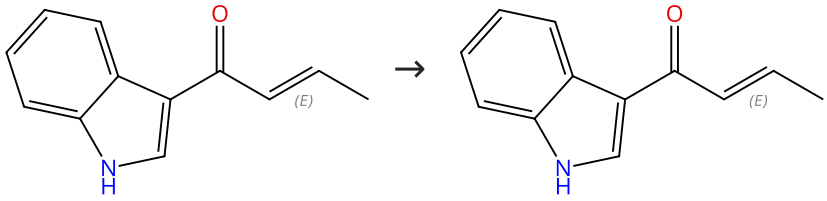
Experimental Protocols

Catalytic C-H activation-initiated transdiannulation: An oxygen transfer route to ring-fluorinated tricyclic γ-lactones

By: Li, Qiuyun; et al

Chinese Chemical Letters (2024), 35(9), 109494.

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



Double bond geometry shown

Double bond geometry shown

Suppliers (3)

31-614-CAS-29522688 Steps: **1**

1.1 **Reagents:** Zinc triflate
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], [1,1,1-Trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*] methanesulfonamidato-κ*O*]silver
Solvents: 1,2-Dichloroethane; 5 min, 60 °C

1.2 **Reagents:** Acetic acid-d_4
Solvents: 1,2-Dichloroethane; 4 h, 60 °C

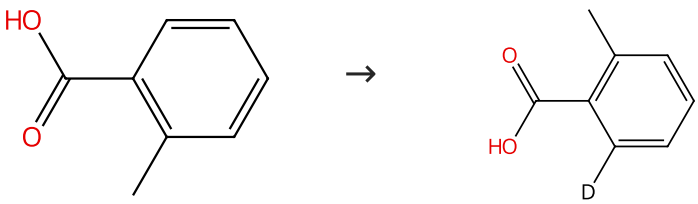
Experimental Protocols

Rapid Synthesis of Functionalized Hydrocarbazolones via Indole C2-H Activation Using Enone Functionality as a Directing Group/Electrophilic Species

By: Yanagawa, Mai; et al

Advanced Synthesis & Catalysis (2021), 363(8), 2189-2198.

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



Suppliers (92)

Suppliers (3)

31-116-CAS-22749332 Steps: **1**

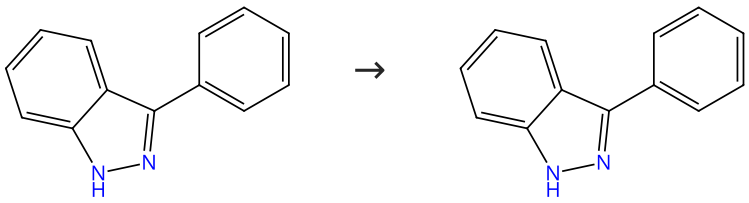
1.1 **Reagents:** Sodium acetate, Acetic acid-*d*, Cuprous iodide, Silver hexafluoroantimonate
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: Dimethylacetamide; 2 h, 120 °C

Rhodium(III)-catalyzed carboxylate-directed ortho-selective thiolation of benzoic acids

By: Wang, Dongjie; et al

Organic Chemistry Frontiers (2020), 7(20), 3229-3233.

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



Suppliers (59)

31-614-CAS-34076575 Steps: **1**

1.1 **Reagents:** Sodium acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: Toluene; 12 h, 120 °C

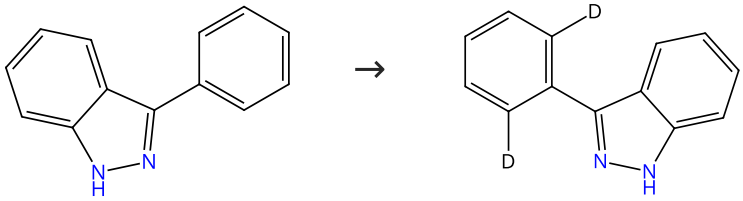
Experimental Protocols

Rhodium-catalysed regioselective [4 + 2]-type annulation of 1-H-indazoles with propargyl alcohols: direct access to 6-alkenylindazolo[3,2-a]isoquinolines

By: Zhao, Xiang; et al

Organic Chemistry Frontiers (2022), 9(20), 5617-5623.

Scheme 77 (1 Reaction) Steps: **1**



Suppliers (59)

31-614-CAS-38142897 Steps: **1**

1.1 **Reagents:** Sodium carbonate, 1-Adamantanecarboxylic acid, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 1,2-Dichloroethane; 12 h, 100 °C

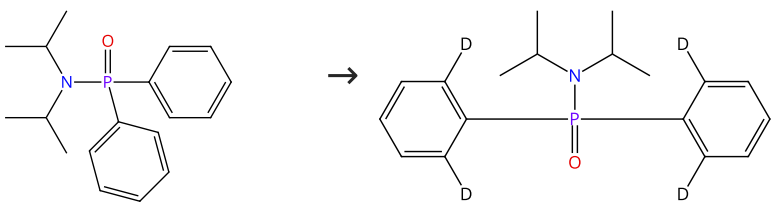
Experimental Protocols

Rhodium-Catalysed Selective C-H Allylation of 1H-Indazoles with Vinylethylene Carbonate: Easily Introducing Allylic Alcohol

By: Zhao, Xiang; et al

European Journal of Organic Chemistry (2023), 26(40), e202300823.

Scheme 78 (1 Reaction) Steps: **1**



Suppliers (24)

31-614-CAS-24234890 Steps: **1**

1.1 **Reagents:** Silver acetate, Acetic acid-d_4
Catalysts: Silver triflate, [(3a,4,5,6,6a-η)-(13c*R*)-3,7-Dihydro-2,8-dimethoxy-3a*H*-cyclopenta[6,7]cycloocta[2,1-*a*:3,4-*a*']dinaphthalen-3a-yl]bis(η^2-ethene)rhodium
Solvents: Dichloromethane; 24 h, 60 °C

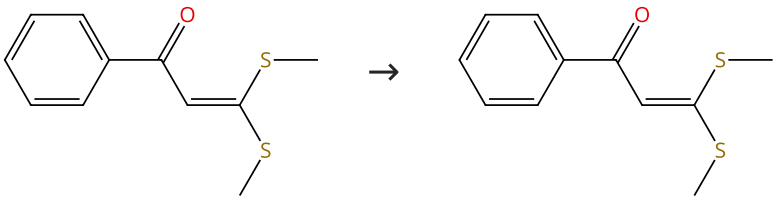
Experimental Protocols

Twofold C-H Activation-Based Enantio- and Diastereoselective C-H Arylation Using Diarylacetylenes as Rare Arylating Reagents

By: Hu, Panjie; et al

Angewandte Chemie, International Edition (2021), 60(37), 20424-20429.

Scheme 79 (1 Reaction) Steps: **1**



Suppliers (43)

31-614-CAS-26638681 Steps: **1**

1.1 **Reagents:** Lithium carbonate (Li_2CO_3), Silver acetate, Acetic acid-d_4, (*SP*-4-1)-Bis(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato-κ*O*^{2},κ*O*^{4})copper
Catalysts: Rhodium(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: Dichloromethane; 24 h, 80 °C

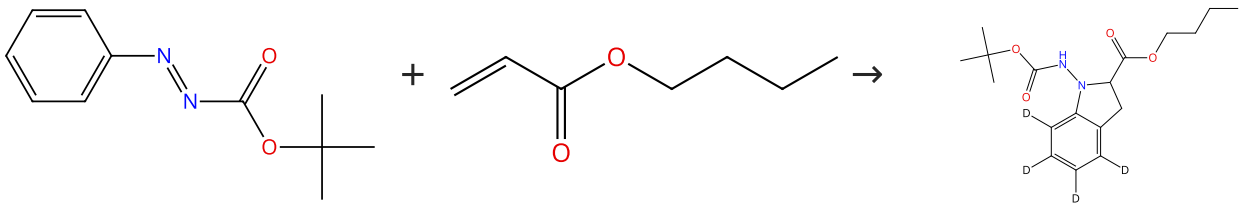
Experimental Protocols

Rhodium-catalyzed enone carbonyl directed C-H activation for the synthesis of indanones containing all-carbon quaternary centers

By: Lou, Jiang; et al

Organic Chemistry Frontiers (2021), 8(7), 1447-1453.

Scheme 80 (1 Reaction) Steps: **1**



Suppliers (3) Suppliers (66)

31-116-CAS-14955659 Steps: **1**

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Silver acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: 1,2-Dichloroethane; 7 h, rt

1.2 **Solvents:** Dichloromethane; rt

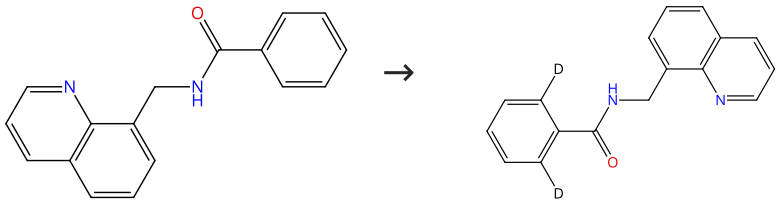
Experimental Protocols

Rhodium(III)-Catalyzed Cyclative Capture Approach to Diverse 1-Aminoindoline Derivatives at Room Temperature

By: Zhao, Dongbing; et al

Angewandte Chemie, International Edition (2015), 54(5), 1657-1661.

Scheme 81 (1 Reaction) Steps: **1**



Suppliers (2)

31-614-CAS-40420492 Steps: **1**

1.1 **Reagents:** Acetic acid-*d*, 2,6-Bis(trifluoromethyl)benzoic acid
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: Toluene; 24 h, 120 °C

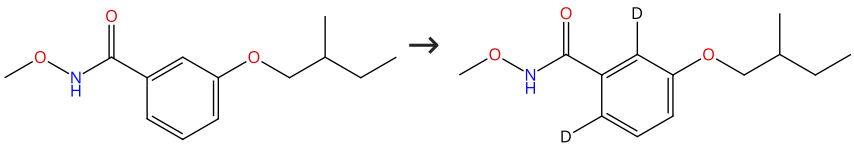
Experimental Protocols

Rhodium-catalyzed three-component C(sp^3)/C(sp^2)-H activation enabled by a two-fold directing group strategy

By: Hou, Fu-Cheng; et al

Chemical Communications (Cambridge, United Kingdom) (2024), 60(43), 5634-5637.

Scheme 82 (1 Reaction) Steps: **1**



31-116-CAS-13782933 Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Benzoyl peroxide, [(3a,4,5,6,6a-η)-(13c*R*)-3,7-Dihydro-2,8-dimethoxy-3a*H*-cyclopenta[6,7]cycloocta[2,1-*a*:3,4-*a*']dinaphthalen-3a-yl]bis(η^2-ethene)rhodium
Solvents: Dichloromethane-d_2; 12 h

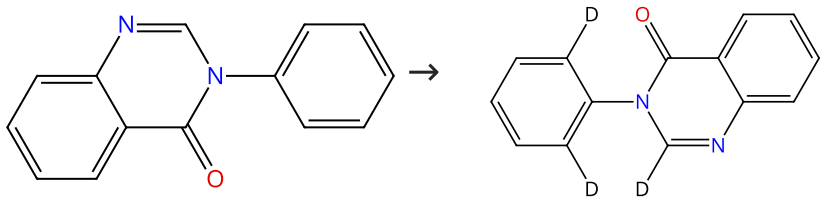
Experimental Protocols

Chiral Cp-Rhodium(III)-Catalyzed Asymmetric Hydroarylations of 1,1-Disubstituted Alkenes

By: Ye, Baihua; et al

Angewandte Chemie, International Edition (2014), 53(2), 507-511.

Scheme 83 (1 Reaction) Steps: **1**



Suppliers (56)

31-614-CAS-40796412 Steps: **1**

1.1 **Reagents:** Thiodiglycol, Acetic acid-*d*, Silver trifluoroacetate, Copper sulfate
Catalysts: Bis(acetato-κ*O*)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]rhodium; 24 h, 120 °C

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

Experimental Protocols

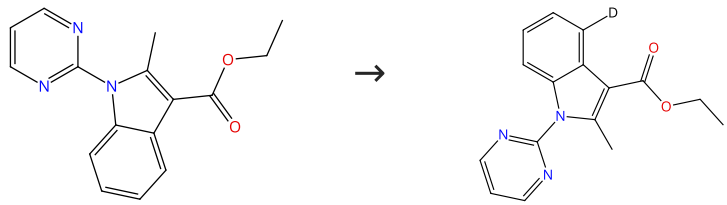
Rhodium(III)-Catalyzed Annulation Synthesis of Difluorinated Quinazolinone Derivatives Using an Amide Carbonyl as the Directing Group

By: Luo, Wen; et al

Journal of Organic Chemistry (2024), 89(13), 9627-9640.

Scheme 84 (1 Reaction)

Steps: **1**



31-116-CAS-4710528

Steps: **1**

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Rhodium(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*; 12 h, 80 °C

Experimental Protocols

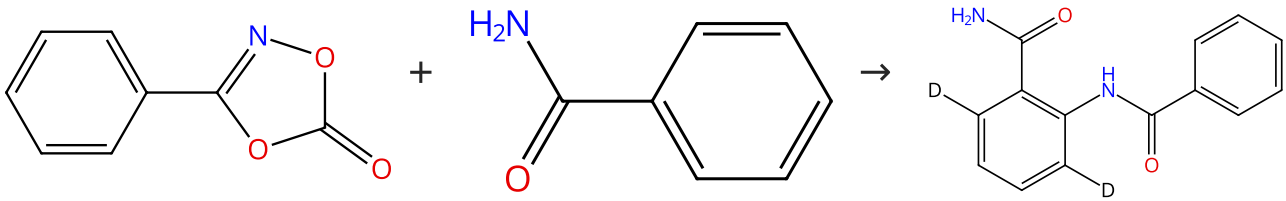
Rhodium(III)-Catalyzed Synthesis of Indole Derivatives From Pyrimidyl-Substituted Anilines and Diazo Compounds

By: Yu, Ke; et al

Advanced Synthesis & Catalysis (2016), 358(4), 661-666.

Scheme 85 (1 Reaction)

Steps: **1**



Suppliers (41)

Suppliers (115)

31-614-CAS-39824678

Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: Tetrahydrofuran; 36 h, 100 °C

Experimental Protocols

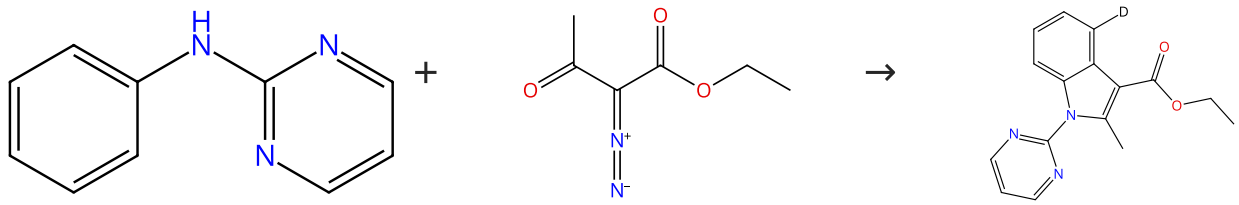
Rh(III)-catalyzed controlled ortho-amidation of arylamides with dioxazolones using weakly coordinating native primary amide as directing group

By: Mishra, Saksham; et al

Journal of Organic Chemistry (2024), 89(8), 5606-5618.

Scheme 86 (1 Reaction)

Steps: **1**



Suppliers (63)

Suppliers (41)

31-116-CAS-9580518

Steps: **1**

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Rhodium(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*; 12 h, 80 °C

Experimental Protocols

Rhodium(III)-Catalyzed Synthesis of Indole Derivatives From Pyrimidyl-Substituted Anilines and Diazo Compounds

By: Yu, Ke; et al

Advanced Synthesis & Catalysis (2016), 358(4), 661-666.

Scheme 87 (1 Reaction)

Steps: **1**

31-614-CAS-31961752

Steps: **1**

1.1 **Reagents:** Silver acetate, Acetic acid-d_4
Catalysts: Cupric acetate, Silver hexafluoroantimonate, Di-μ-chlorodichlorobis[(3a,4,5,6,6a-η)-(13b*R*)-3,7-dihydro-2,8-dimethoxy-3a*H*-cyclopenta[6,7]cycloocta[2,1-*a*:3,4-*a*']dinaphthalen-3a-yl]dirhodium
Solvents: 1,2-Dichloroethane; 20 °C; 12 h, 20 °C

Experimental Protocols

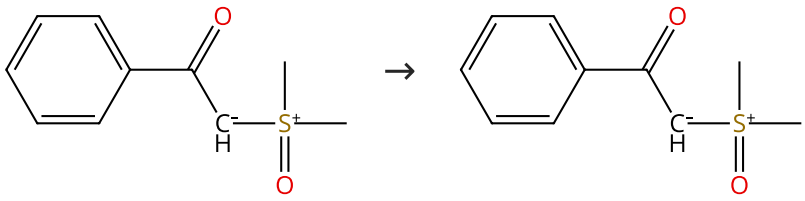
Rhodium-Catalyzed Atroposelective C-H Arylation of (Hetero) Arenes Using Carbene Precursors as Arylating Reagents

By: Zou, Yun; et al

Organic Letters (2022), 24(17), 3189-3193.

Scheme 88 (2 Reactions)

Steps: **1**



Suppliers (38)

31-614-CAS-32014043

Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 2-Propan-2-*d*-ol-*d*, 1,1,1,3,3,3-hexafluoro-; 10 min, 70 °C

Experimental Protocols

Synthesis of Indenone Derivatives by Rh(III)-Catalyzed C-H Functionalization of Sulfoxonium Ylides with 1,3-Diynes

By: Kumar, Sanjeev; et al

Organic Letters (2022), 24(18), 3395-3400.

31-614-CAS-30659932

Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: 1,2-Dichloroethane; 30 min, 110 °C

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

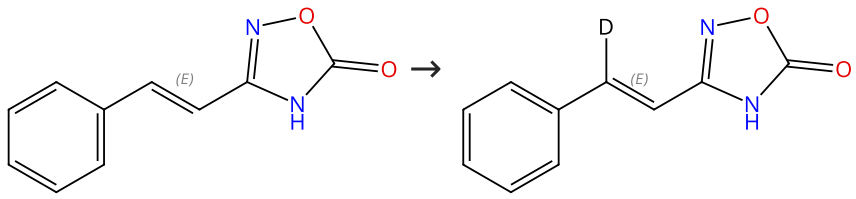
Rhodium-Catalyzed Reaction of Sulfoxonium Ylides and Anthranils toward Indoloindolones via a (4 + 1) Annulation

By: Wu, Xiaopeng; et al

Organic Letters (2019), 21(17), 6653-6657.

Scheme 89 (1 Reaction)

Steps: **1**



Double bond geometry shown

Double bond geometry shown

Supplier (1)

31-116-CAS-17049791 Steps: **1**

1.1 **Reagents:** Potassium acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 1,4-Dioxane; 20 h, 80 °C

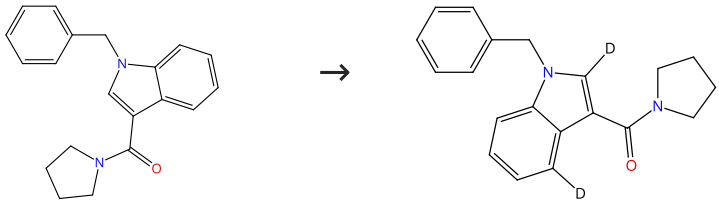
Experimental Protocols

Associative Covalent Relay: An Oxadiazolone Strategy for Rhodium(III)-Catalyzed Synthesis of Primary Pyridinylamines

By: Yu, Xiaolong; et al

Angewandte Chemie, International Edition (2017), 56(19), 5222-5226.

Scheme 90 (1 Reaction) Steps: **1**



Supplier (1)

31-614-CAS-37646095 Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Silver carbonate, Rhodium(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; 6 h, 115 °C

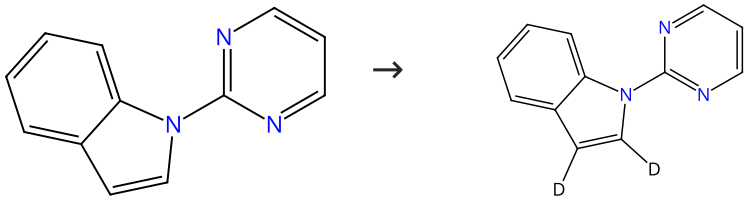
Experimental Protocols

Weakly coordinating tert-amide assisted Rh(III)-catalyzed C4-cyanation of indoles: application in photophysical studies

By: Sarkar, Souradip; et al

Chemical Communications (Cambridge, United Kingdom) (2023), 59(75), 11200-11203.

Scheme 91 (1 Reaction) Steps: **1**



Suppliers (59)

31-614-CAS-24291996 Steps: **1**

1.1 **Reagents:** Acetic acid-*d*, Methanol-d_4
Catalysts: Rhodium(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); 12 h, 120 °C

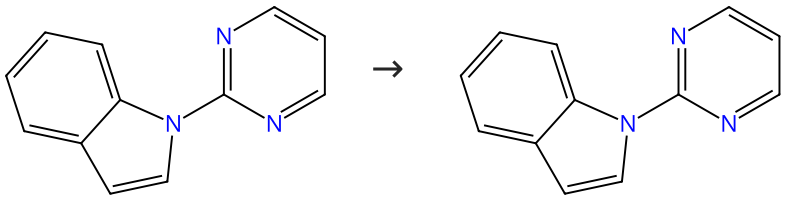
Experimental Protocols

Rh(III)-Catalyzed Divergent C2-carboxymethylation of Indoles and C7-formylmethylation of Indolines with Vinylene Carbonate

By: Hu, Weinan; et al

Asian Journal of Organic Chemistry (2021), 10(10), 2557-2561.

Scheme 92 (1 Reaction) Steps: **1**



Suppliers (59)

31-614-CAS-28191789 Steps: **1**

1.1 **Reagents:** Zinc acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: Dichloromethane; 1 h, 80 °C

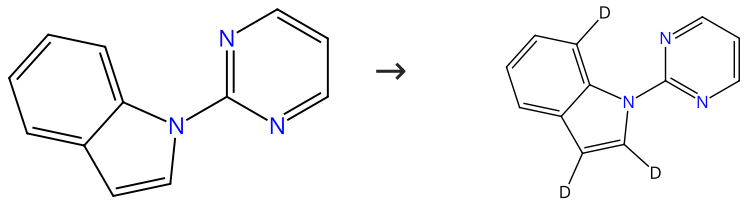
Experimental Protocols

Access to Substituted Propenoic Acids via Rh(III)-Catalyzed C-H Allylation of (Hetero)Arenes with Methyleneoxetanones

By: Xia, Jintao; et al

Organic Letters (2017), 19(21), 5972-5975.

Scheme 93 (1 Reaction) Steps: **1**



Suppliers (59)

31-116-CAS-11790982 Steps: **1**

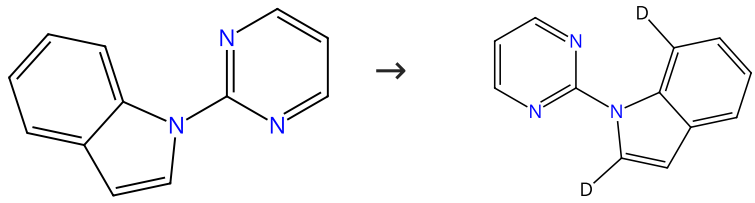
1.1 **Reagents:** Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate, Zinc triflate
Solvents: 1,2-Dichloroethane; 12 h, 100 °C

Rh(III)-Catalyzed Trifluoromethylthiolation of Indoles via C-H Activation

By: Wang, Qiang; et al

Journal of Organic Chemistry (2015), 80(16), 8361-8366.

Scheme 94 (1 Reaction) Steps: **1**



Suppliers (59)

31-116-CAS-18485377 Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: 1,3-Bis(diphenylphosphino)propane, Rhodium, tetracarbonyldi-μ-chlorodi-
Solvents: Toluene; 24 h, 140 °C

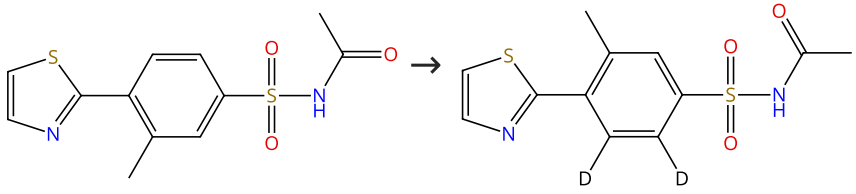
Experimental Protocols

Rhodium(I)-catalysed decarbonylative direct C-H vinylation and dienylation of arenes

By: Xu, Jianbin; et al

Organic Chemistry Frontiers (2018), 5(5), 734-740.

Scheme 95 (1 Reaction) Steps: **1**



31-116-CAS-21550914 Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Silver acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: 1,2-Dichloroethane; overnight, 60 °C

Experimental Protocols

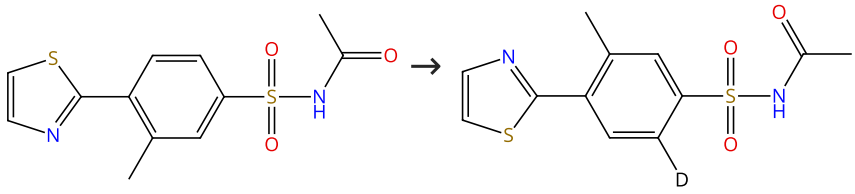
Switching the site-selectivity of C-H activation in aryl sulfon amides containing strongly coordinating N-heterocycles

By: Dong, Yi; et al

Chemical Science (2019), 10(38), 8744-8751.

Scheme 96 (1 Reaction)

Steps: **1**



31-116-CAS-21550904

Steps: **1**

1.1 **Catalysts:** Silver acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: Toluene; 3 h, 60 °C

1.2 **Reagents:** Acetic acid-d_4; 5 min, 60 °C

Experimental Protocols

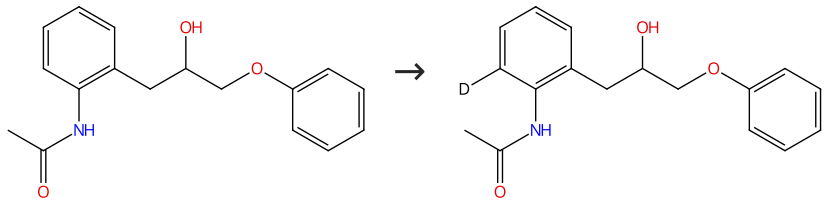
Switching the site-selectivity of C-H activation in aryl sulfon amides containing strongly coordinating N-heterocycles

By: Dong, Yi; et al

Chemical Science (2019), 10(38), 8744-8751.

Scheme 97 (1 Reaction)

Steps: **1**



31-614-CAS-31582339

Steps: **1**

1.1 **Reagents:** Cupric acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: Acetone; 40 °C

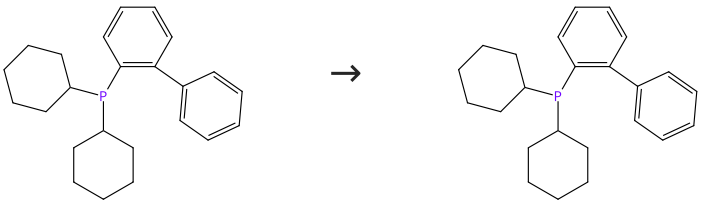
Rhodium-catalyzed cascade C-H activation/annulation/1,6-acyl migration: direct construction of free N-H indoles under mild conditions

By: Thombal, Raju S.; et al

New Journal of Chemistry (2022), 46(13), 6126-6133.

Scheme 98 (1 Reaction)

Steps: **1**



Suppliers (87)

partially deuterated

31-614-CAS-25965120

Steps: **1**

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Bis[μ-(acetato-κ*O*:κ*O*')]bis[(1,2,5,6-η)-1,5-cyclooctadiene]dirhodium
Solvents: Toluene; 24 h, 110 °C

Experimental Protocols

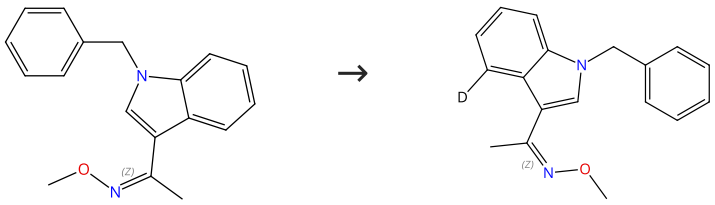
Rh^{I}-Catalyzed P^{III}-Directed C-H Bond Alkylation: Design of Multifunctional Phosphines for Carboxylation of Aryl Bromides with Carbon Dioxide

By: Zhang, Zhuan; et al

Angewandte Chemie, International Edition (2019), 58(40), 14110-14114.

Scheme 99 (1 Reaction)

Steps: **1**



Double bond geometry shown

Double bond geometry shown

31-116-CAS-22786649

Steps: **1**

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Pivalic acid, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], [1,1,1-Trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*]methanesulfonamidato-κ*O*]silver
Solvents: 2,2,2-Trifluoroethanol; 0.5 h, 120 °C

Experimental Protocols

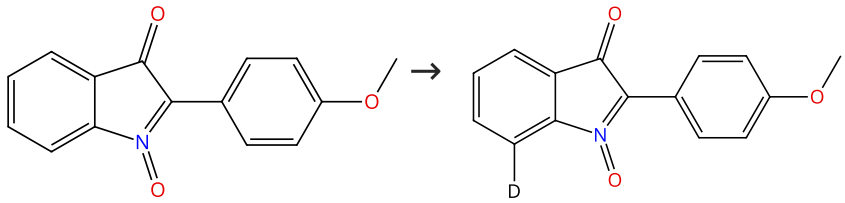
Rhodium(III)-catalyzed C4-amidation of indole-oximes with dioxazolones via C-H activation

By: Tang, Shi-Biao; et al

Organic & Biomolecular Chemistry (2020), 18(39), 7922-7931.

Scheme 100 (1 Reaction)

Steps: **1**



Suppliers (7)

31-614-CAS-39311053

Steps: **1**

1.1 **Reagents:** Acetic acid-d_4, Tetrabutylammonium bromide, Cesium acetate
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: Toluene; 40 min, 130 °C

Experimental Protocols

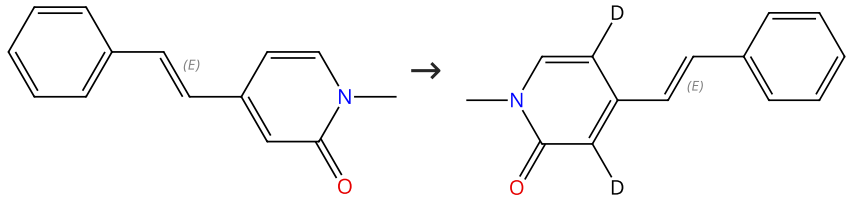
Rh(III)-Catalyzed C7-Alkylation of Isatogens with Malonic Acid Diazoesters

By: Guan, Xiang; et al

Journal of Organic Chemistry (2024), 89(5), 2984-2995.

Scheme 101 (1 Reaction)

Steps: **1**



Double bond geometry shown

Double bond geometry shown

31-116-CAS-23223182

Steps: **1**

1.1 **Reagents:** Cupric acetate, Acetic acid-d_4, Potassium pyrophosphate
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: Toluene; 24 h, 160 °C

Experimental Protocols

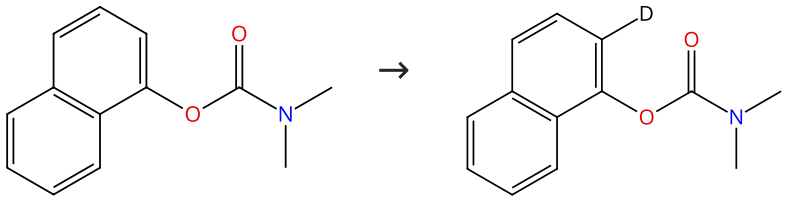
Rhodium-Catalyzed C4-Selective C-H Alkenylation of 2-Pyridones by Traceless Directing Group Strategy

By: Hazra, Sunit; et al

Organic Letters (2021), 23(4), 1388-1393.

Scheme 102 (1 Reaction)

Steps: **1**



Suppliers (5)

31-116-CAS-17888715

Steps: **1**

1.1 **Reagents:** Acetic acid-d_4, Silver hexafluoroantimonate
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: Fluorobenzene; 12 h, rt → 110 °C

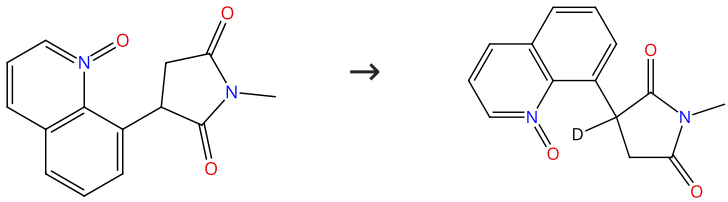
Rhodium(III)-Catalyzed Sequential Cleavage of Two C-H Bonds for the Synthesis of Polyarylated Naphthols

By: Feng, Ruokun; et al

Synlett (2017), 28(16), 2147-2152.

Scheme 103 (1 Reaction)

Steps: **1**



31-116-CAS-23525197

Steps: **1**

1.1 **Reagents:** Methanol-d_4, Acetic acid-d_4
Catalysts: Silver acetate, Silver hexafluoroantimonate, Di-μ-chlorobis[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]dirhodium
Solvents: 1,2-Dichloroethane; 6 h, 80 °C

Experimental Protocols

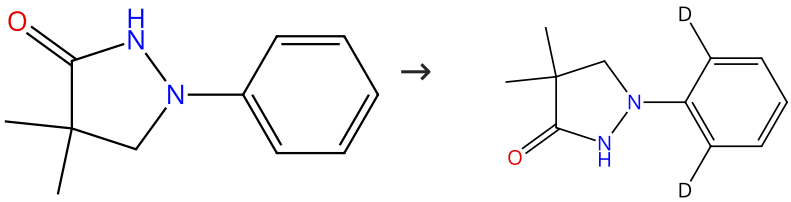
Rh(III)-Catalyzed Regioselective C8-Alkylation of Quinoline N-Oxides with Maleimides and Acrylates

By: Thakur, Ankita; et al

Journal of Organic Chemistry (2021), 86(9), 6612-6621.

Scheme 104 (1 Reaction)

Steps: **1**



Suppliers (25)

31-614-CAS-25058199

Steps: **1**

1.1 **Reagents:** Sodium acetate, Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 1,1,1,3,3,3-Hexafluoro-2-propanol; 12 h, 80 °C

Experimental Protocols

A Facile Route to Pyrazolo[1,2-a]cinnoline via Rhodium(III)-catalyzed Annulation of Pyrazolidinoes and Iodonium Ylides

By: Yang, Zi; et al

Asian Journal of Organic Chemistry (2022), 11(1), e202100656.

Scheme 105 (1 Reaction)

Steps: **1**

Suppliers (15)

31-614-CAS-37456939

Steps: **1**

1.1 **Reagents:** Acetic acid-d_4, [1,1,1-Trifluoro-*N*-[(trifluoromethyl) sulfonyl-κ*O*]methanesulfonamidato-κ*O*]copper
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: Acetone; 4 h, 80 °C

Experimental Protocols

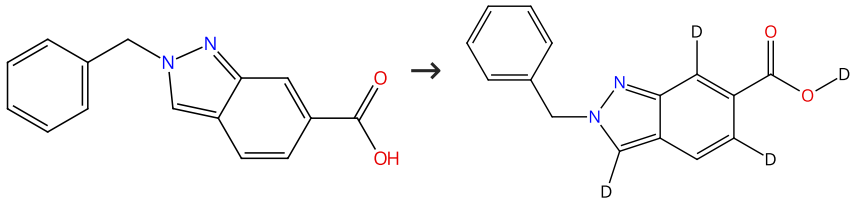
Construction of Diversified Penta-Spiro-Heterocyclic and Fused-Heterocyclic Frameworks with Potent Antitumor Activity

By: Liu, Qi; et al

Chemistry - A European Journal (2023), 29(54), e202301553.

Scheme 106 (1 Reaction)

Steps: **1**



31-614-CAS-42450396

Steps: **1**

1.1 **Reagents:** Acetic acid-*d*, Methanol-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 2,2,2-Trifluoroethanol; 0.5 h, 80 °C

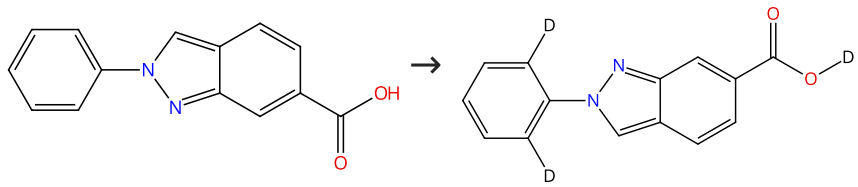
Microwave-Assisted Rhodium (III)-Catalyzed [3+3] Annulation of 2-Benzyl-2H-Indazole-6-carboxylic Acids with Iodonium Ylides: A Regioselective Synthesis of Indazole-Fused Chromenes

By: Chen, Hong-Ren; et al

Advanced Synthesis & Catalysis (2025), 367(1), e202400756.

Scheme 107 (1 Reaction)

Steps: **1**



31-614-CAS-42450400

Steps: **1**

1.1 **Reagents:** Acetic acid-*d*, Water-d_2
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 2,2,2-Trifluoroethanol; 5 min, 80 °C

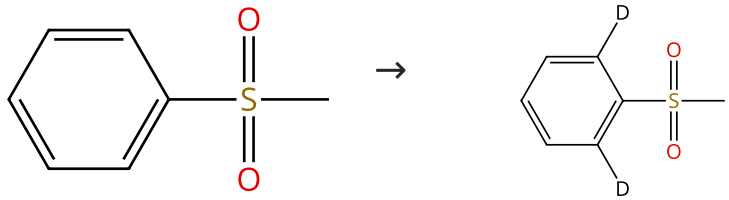
Microwave-Assisted Rhodium (III)-Catalyzed [3+3] Annulation of 2-Benzyl-2H-Indazole-6-carboxylic Acids with Iodonium Ylides: A Regioselective Synthesis of Indazole-Fused Chromenes

By: Chen, Hong-Ren; et al

Advanced Synthesis & Catalysis (2025), 367(1), e202400756.

Scheme 108 (1 Reaction)

Steps: **1**



Suppliers (84)

31-116-CAS-764891

Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Rhodium(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: Chlorobenzene; 12 h, 140 °C

Experimental Protocols

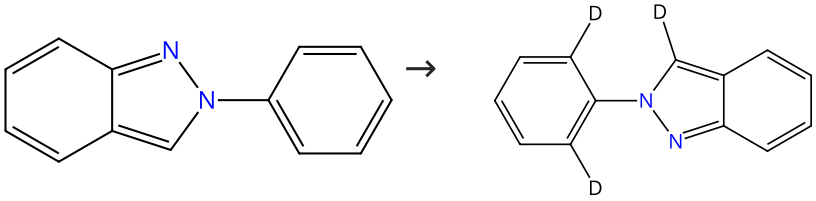
Rhodium-catalyzed direct ortho-alkenylation of phenyl sulfones with alkynes utilizing sulfonyl function as modifiable directing group

By: Nobushige, Kazunori; et al

Tetrahedron (2015), 71(37), 6506-6512.

Scheme 109 (1 Reaction)

Steps: **1**



Suppliers (36)

31-116-CAS-23761586

Steps: **1**

1.1 **Reagents:** Cupric acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 1,2-Dichloroethane; 12 h, 110 °C

Experimental Protocols

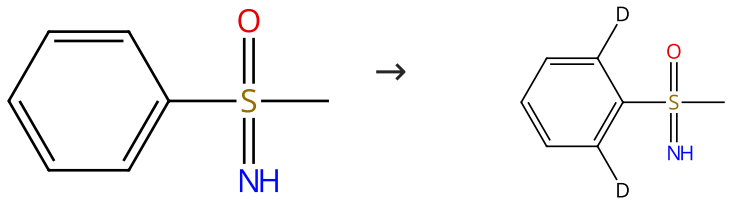
Rh(III)-Catalyzed synthesis of cinnolinium and fluoranthenium salts using C-H activation/annulation reactions: organelle specific mitochondrial staining applications

By: Mayakrishnan, Sivakalai; et al

Organic & Biomolecular Chemistry (2021), 19(24), 5413-5425.

Scheme 110 (1 Reaction)

Steps: **1**



Suppliers (49)

31-614-CAS-36065424

Steps: **1**

1.1 **Reagents:** Acetic acid-d_4, Silver fluoride
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: Chlorobenzene; 24 h, 70 °C

Experimental Protocols

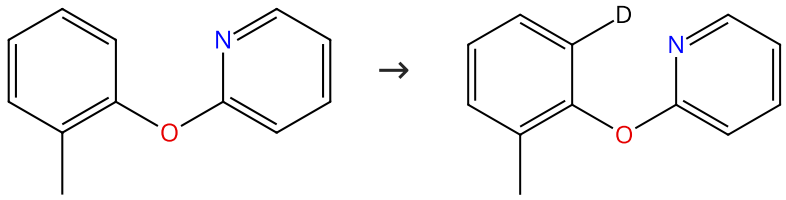
Rh(III)-catalyzed direct ortho-C-H diarylation of arylsulf oximines with arylsilanes

By: Zhang, Xiuqi; et al

New Journal of Chemistry (2023), 47(14), 6536-6539.

Scheme 111 (1 Reaction)

Steps: **1**



Suppliers (8)

31-116-CAS-20224327

Steps: **1**

1.1 **Reagents:** Acetic acid-*d*, Oxygen
Catalysts: Di-μ-chlorobis[(1,2,5,6-η)-1,5-cyclooctadiene] dirhodium, (*T*-4)-Bis[1,1,1-trifluoro-*N*-[(trifluoromethyl) sulfonyl-κ*O*]methanesulfonamidato-κ*O*]zinc
Solvents: Chlorobenzene; 5 h, 140 °C

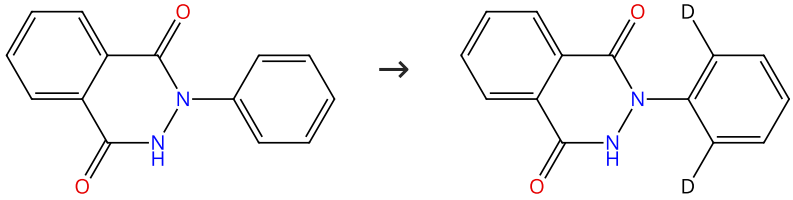
Highly Regio- and Chemoselective Oxidative C-H/C-H Cross-Couplings of Anilines and Phenols Enabled by a Co- Oxidant-Free Rh(I)/Zn(NTf$_2$)$_2$/Air Catalytic System

By: Zhang, Luoqiang; et al

ACS Catalysis (2019), 9(6), 5358-5364.

Scheme 112 (1 Reaction)

Steps: **1**



Suppliers (38)

31-614-CAS-35771488

Steps: **1**

1.1 **Reagents:** Sodium acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: Tetrahydrofuran; 6 h, 60 °C

1.2 **Solvents:** Ethyl acetate

Experimental Protocols

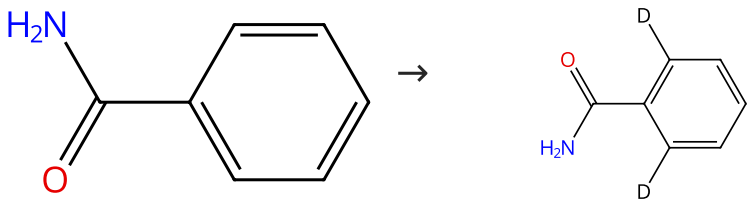
Rhodium(III)-catalyzed C-H alkylation of arylhydrophthalazinediones with α-Cl ketones as sp^3-carbon alkylated agents

By: Li, He; et al

Organic & Biomolecular Chemistry (2023), 21(10), 2096-2100.

Scheme 113 (1 Reaction)

Steps: **1**



Suppliers (115)

31-614-CAS-39824671

Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: Tetrahydrofuran; 36 h, 100 °C

Experimental Protocols

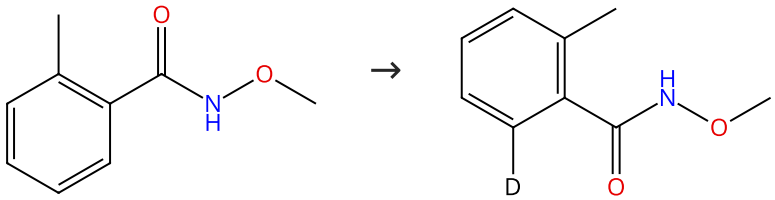
Rh(III)-catalyzed controlled ortho-amidation of arylamides with dioxazolones using weakly coordinating native primary amide as directing group

By: Mishra, Saksham; et al

Journal of Organic Chemistry (2024), 89(8), 5606-5618.

Scheme 114 (1 Reaction)

Steps: **1**



Suppliers (8)

31-614-CAS-31909667

Steps: **1**

1.1 **Reagents:** Sodium acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: 1,1,1,3,3,3-Hexafluoro-2-propanol; 6 h, 100 °C

Experimental Protocols

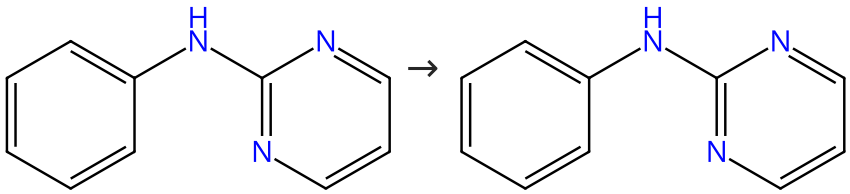
A New Approach to Isoindolinones: Rhodium(III)-Catalyzed [3+2] Annulation Reactions of N-Methoxybenzamides with Bis(tosylamido)methane

By: Fang, Zhang; et al

European Journal of Organic Chemistry (2022), 2022(14), e202200047.

Scheme 115 (1 Reaction)

Steps: **1**



Suppliers (63)

31-614-CAS-27949369

Steps: **1**

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Rhodium(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*; 12 h, 80 °C

Experimental Protocols

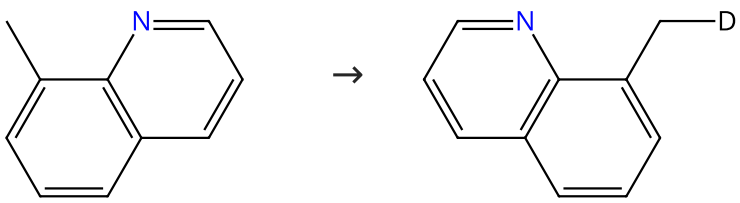
Rhodium(III)-Catalyzed Synthesis of Indole Derivatives From Pyrimidyl-Substituted Anilines and Diazo Compounds

By: Yu, Ke; et al

Advanced Synthesis & Catalysis (2016), 358(4), 661-666.

Scheme 116 (2 Reactions)

Steps: **1**



Suppliers (69)

Supplier (1)

31-116-CAS-23488691

Steps: **1**

1.1 **Reagents:** Ethanol, Acetic acid-*d*
Catalysts: Cupric acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: Water-d_2; 20 h, 100 °C

Experimental Protocols

Pd-Catalyzed sp^3 C-H alkoxycarbonylation of 8-methylquinolines using $Mo(CO)_6$ as a CO surrogate

By: Talukdar, Kangkan; et al

Chemical Communications (Cambridge, United Kingdom) (2021), 57(27), 3359-3362.

31-116-CAS-22501045 Steps: 1

1.1 **Reagents:** Cupric acetate, Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: Water-d_2; 20 h, 100 °C

Ru(II)-Catalyzed Chemoselective C(sp^3)-H Monoarylation of 8-Methyl Quinolines with Arylboronic Acids

By: Parmar, Diksha; et al

Journal of Organic Chemistry (2020), 85(18), 11844-11855.

Scheme 117 (1 Reaction) Steps: **1**

Suppliers (69)

31-614-CAS-41689791 Steps: 1

1.1 **Reagents:** Cupric acetate, Acetic acid-d_4, Water-d_2
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]; 24 h, 100 °C

1.2 **Reagents:** Hydrogen peroxide
Catalysts: Methyltrioxorhenium
Solvents: Dichloromethane; 10 min, 0 °C; 0 °C → rt; 24 h, rt

1.3 **Reagents:** Manganese oxide (MnO_2); rt

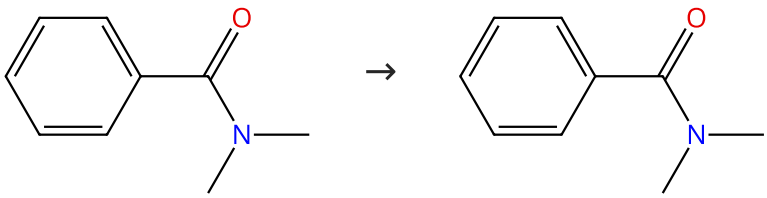
Experimental Protocols

Dual C(sp^3)-H and C(sp^2)-H Activation of 8-Methylquinoline N-Oxides: A Route to Access C7-H Bond

By: Mandal, Santu; et al

Organic Letters (2024), 26(36), 7560-7564.

Scheme 118 (1 Reaction) Steps: **1**



Suppliers (75)

31-614-CAS-29791163 Steps: 1

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 0.5 h, 80 °C

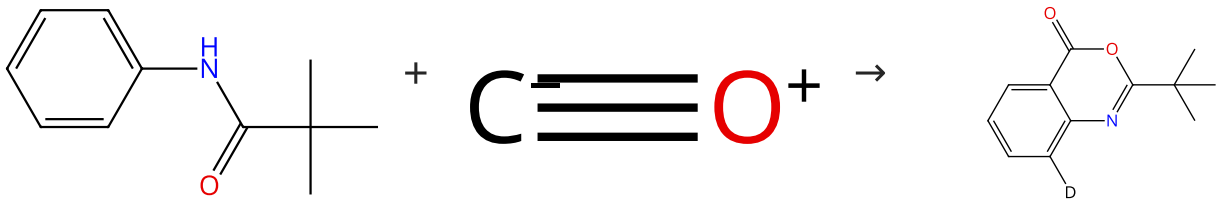
Experimental Protocols

Rh^{III}-Catalyzed Hydroarylation of Internal Alkynes through C-H Bond Activation

By: Wang, Cheng-Qiang; et al

Asian Journal of Organic Chemistry (2016), 5(8), 1002-1007.

Scheme 119 (1 Reaction) Steps: **1**



Suppliers (78)

Suppliers (17)

31-614-CAS-37044781 Steps: **1**

1.1 **Reagents:** Acetic anhydride, Silver acetate
Catalysts: Rhodium(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; rt; rt → 95 °C; 10 h, 95 °C

1.2 **Reagents:** Acetic acid-*d*

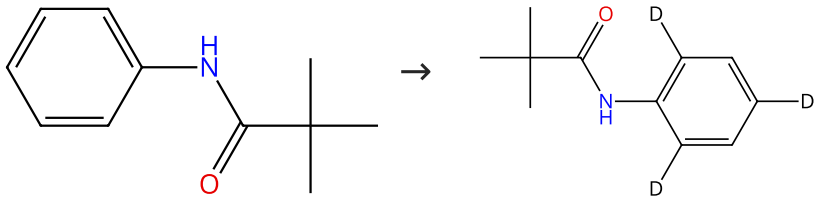
Experimental Protocols

Construction of Benzoxazinones from Anilines and Their Derivatives

By: Zhao, Teng-Fei; et al

Organic Letters (2023), 25(27), 4968-4973.

Scheme 120 (1 Reaction) Steps: **1**



Suppliers (78)

31-116-CAS-20224328 Steps: **1**

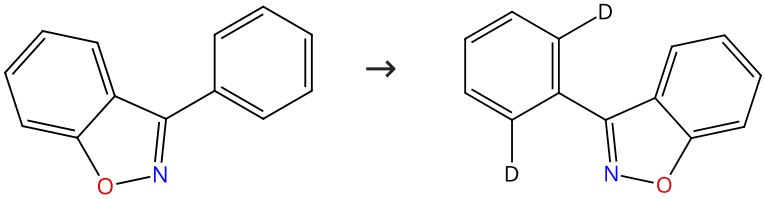
1.1 **Reagents:** Acetic acid-*d*, Oxygen
Catalysts: Di-μ-chlorobis[(1,2,5,6-η)-1,5-cyclooctadiene]dirhodium, (*T*-4)-Bis[1,1,1-trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*]methanesulfonamidato-κ*O*]zinc
Solvents: Chlorobenzene; 5 h, 140 °C

Highly Regio- and Chemoselective Oxidative C-H/C-H Cross-Couplings of Anilines and Phenols Enabled by a Co- Oxidant-Free Rh(I)/Zn(NTf$_2$)$_2$/Air Catalytic System

By: Zhang, Luoqiang; et al

ACS Catalysis (2019), 9(6), 5358-5364.

Scheme 121 (1 Reaction) Steps: **1**



Suppliers (9)

31-614-CAS-37211228 Steps: **1**

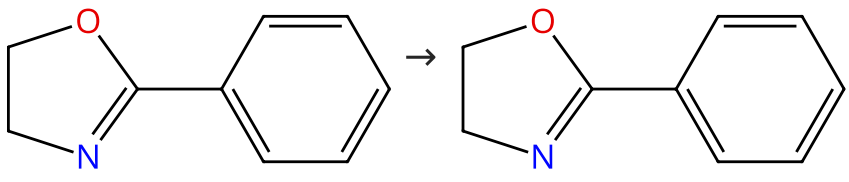
1.1 **Reagents:** Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], [1,1,1-Trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*]methanesulfonamidato-κ*O*]silver
Solvents: 1,2-Dichloroethane; 12 h, 100 °C

Rhodium(III)-catalysed redox neutral alkylation of 3-arylbenzo[d]isoxazoles: easy access to substituted succinimides

By: Yue, Xuelin; et al

Organic & Biomolecular Chemistry (2023), 21(29), 5985-5989.

Scheme 122 (1 Reaction) Steps: **1**



Suppliers (68)

31-614-CAS-34636472 Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 2,2,2-Trifluoroethanol; 10 min, 80 °C

1.2 **Solvents:** Ethyl acetate

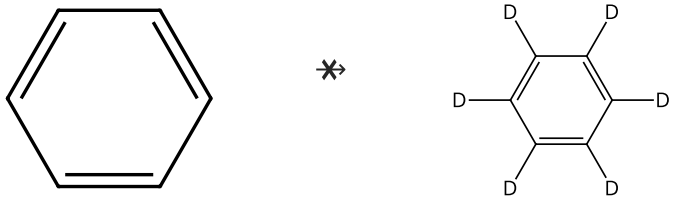
Experimental Protocols

Three-Component Synthesis of Isoquinolone Derivatives via Rh(III)-Catalyzed C-H Activation and Tandem Annulation

By: Yang, Zhenke; et al

Journal of Organic Chemistry (2022), 87(21), 14809-14818.

Scheme 123 (1 Reaction) Steps: **1**



Suppliers (179) Suppliers (143)

31-116-CAS-16473386 Steps: **1 Failed**

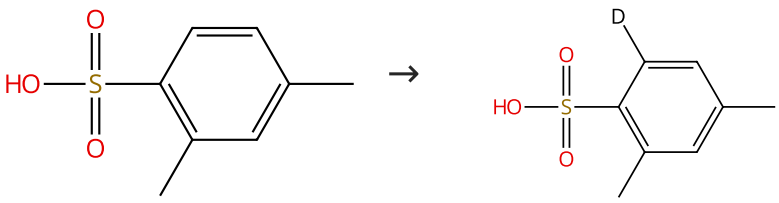
1.1 **Reagents:** Trifluoroacetic acid-*d*
Catalysts: (η^2-Ethene)[*N*,*N*'-(1,2-dimethyl-1,2-ethanediylidene) bis[2,3,4,5,6-pentafluorobenzenamine-κ*N*]](2,2,2-trifluoro acetato-κ*O*)rhodium; 4 h, 150 °C

Electrophilic Rh^I catalysts for arene H/D exchange in acidic media: Evidence for an electrophilic aromatic substitution mechanism

By: Webster-Gardiner, Michael S.; et al

Journal of Molecular Catalysis A: Chemical (2017), 426(Part_B), 381-388.

Scheme 124 (1 Reaction) Steps: **1**



Suppliers (67)

31-116-CAS-965008 Steps: **1**

1.1 **Reagents:** Silver acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,4-Dioxane; 16 h, 100 °C

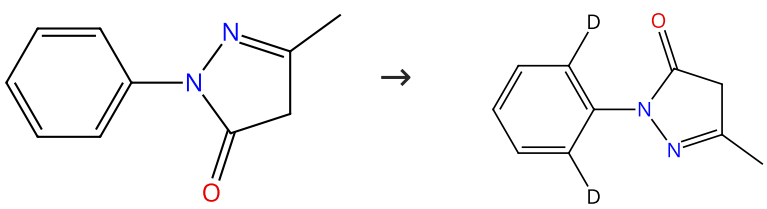
Experimental Protocols

Rh(III)-Catalyzed synthesis of sultones through C-H activation directed by a sulfonic acid group

By: Qi, Zisong; et al

Chemical Communications (Cambridge, United Kingdom) (2014), 50(68), 9776-9778.

Scheme 125 (2 Reactions) Steps: **1**



Suppliers (132)

31-614-CAS-33832582 Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Zinc acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: Toluene; 10 min, 120 °C

Rh(III)-Catalyzed (4 + 1) Annulation of Pyrazol-3-ones with Alkynoates via Ortho-Alkenylation/Cyclization Cascade: Synthesis of Indazole-Fused Pyrazoles

By: Chiu, Wei-Jung; et al

Journal of Organic Chemistry (2022), 87(18), 12109-12114.

31-116-CAS-18701627 Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 12 h, 80 °C

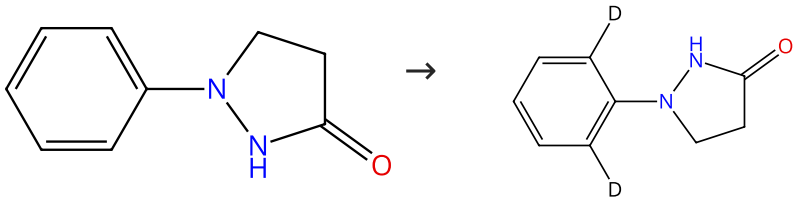
Experimental Protocols

Gold(I)- and rhodium(III)-catalyzed formal regiodivergent C-H alkynylation of 1-arylpyrazolones

By: Wang, Xueli; et al

Organic & Biomolecular Chemistry (2018), 16(16), 2860-2864.

Scheme 126 (1 Reaction) Steps: **1**



Suppliers (92)

31-116-CAS-21901864 Steps: **1**

1.1 **Reagents:** Sodium acetate, Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: 1,2-Dichloroethane; 12 h, 100 °C

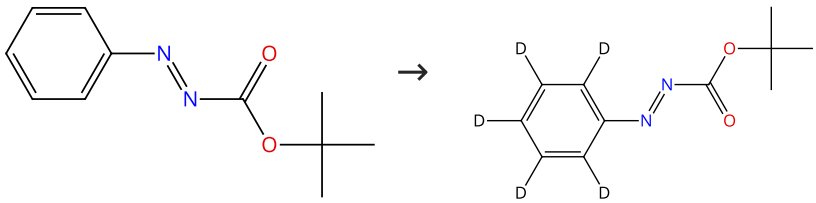
Experimental Protocols

Rhodium(III)-catalyzed [4 + 3] annulation of N- aryl-pyrazolidinones and propargylic acetates: access to benzo[c][1,2]diazepines

By: Li, Tingfang; et al

Organic Letters (2020), 22(11), 4078-4082.

Scheme 127 (1 Reaction) Steps: **1**



Suppliers (3)

31-116-CAS-12827583 Steps: **1**

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Silver acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: 1,2-Dichloroethane; 1 h, rt

Experimental Protocols

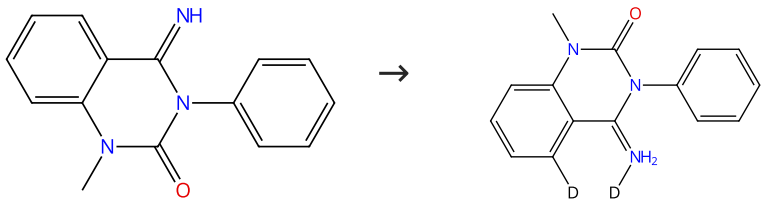
Rhodium(III)-Catalyzed Cyclative Capture Approach to Diverse 1-Aminoindoline Derivatives at Room Temperature

By: Zhao, Dongbing; et al

Angewandte Chemie, International Edition (2015), 54(5), 1657-1661.

Scheme 128 (1 Reaction)

Steps: **1**



Suppliers (5)

31-614-CAS-38854046

Steps: **1**

1.1 **Reagents:** Lithium acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], [1,1,1-Trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*]methanesulfonamidato-κ*O*]silver
Solvents: 1,2-Dichloroethane; 12 h, 100 °C

Experimental Protocols

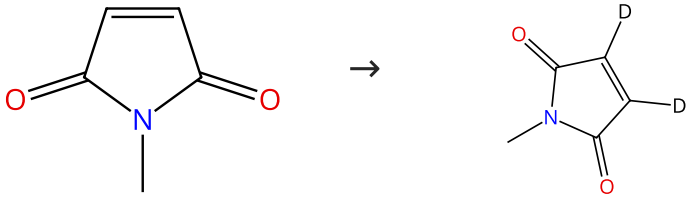
Substrate- and Catalyst-Controlled C-H Bond Activation/Annulation for Construction of Pyrido[2,3,4-de]quinazolinones and Indolo[1,2-c]quinazolinones

By: Hou, Xinjiao; et al

Advanced Synthesis & Catalysis (2024), 366(1), 134-140.

Scheme 129 (1 Reaction)

Steps: **1**



Suppliers (82)

31-614-CAS-31316870

Steps: **1**

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Bis[μ-(acetato-κ*O*:κ*O*′)]bis[(1,2,5,6-η)-1,5-cyclooctadiene]dirhodium
Solvents: Toluene; 8 h, 170 °C

Experimental Protocols

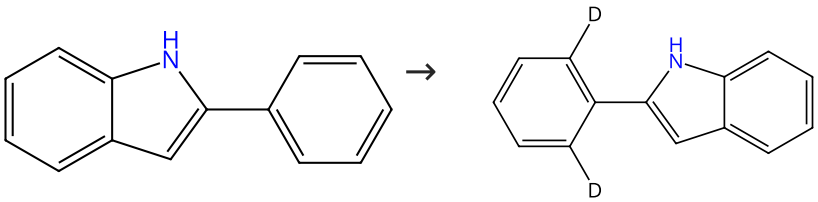
Rh(I)-catalyzed imine-directed C-H functionalization via the oxidative [3+2] cycloaddition of benzylamine derivatives with maleimides

By: Das, Amrita; et al

Chemical Communications (Cambridge, United Kingdom) (2022), 58(8), 1123-1126.

Scheme 130 (1 Reaction)

Steps: **1**



Suppliers (88)

31-116-CAS-18640825

Steps: **1**

1.1 **Reagents:** Sodium acetate, Silver carbonate, Acetic acid-d_4
Catalysts: Silver acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: Cyclohexane; 15 h, 80 °C

Experimental Protocols

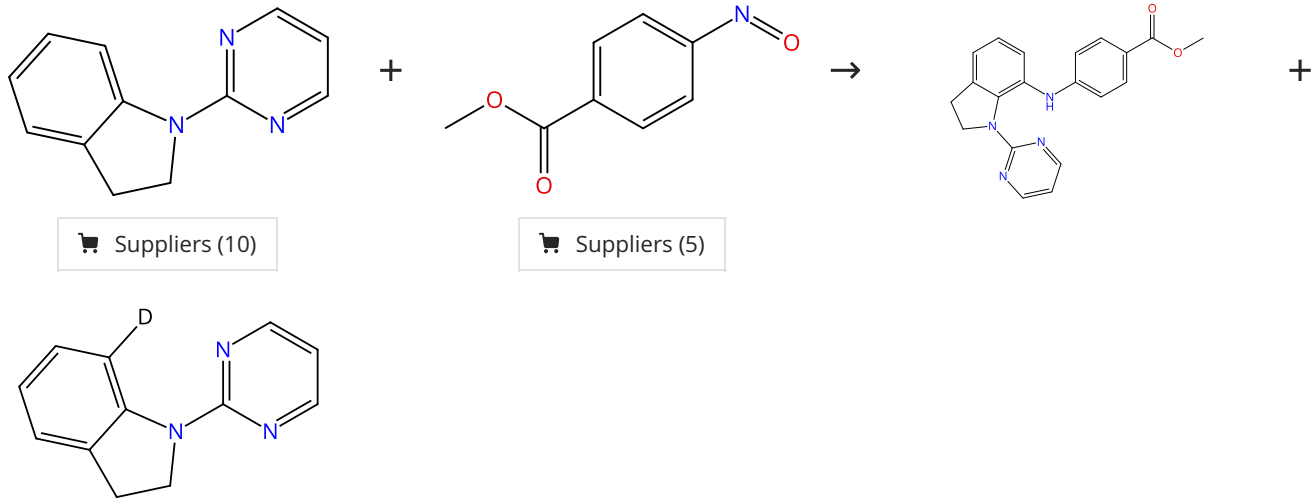
Access to Quaternary Stereogenic Centers via Rhodium(III)-Catalyzed Annulations between 2-Phenylindoles and Ketenes

By: Yang, Xifa; et al

Organic Letters (2018), 20(7), 1957-1960.

Scheme 131 (1 Reaction)

Steps: **1** Yield: **83%**



Suppliers (10)

Suppliers (5)

31-080-CAS-19542440

Steps: **1** Yield: **83%**

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Rhodium(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: Tetrahydrofuran; 90 min, 30 °C

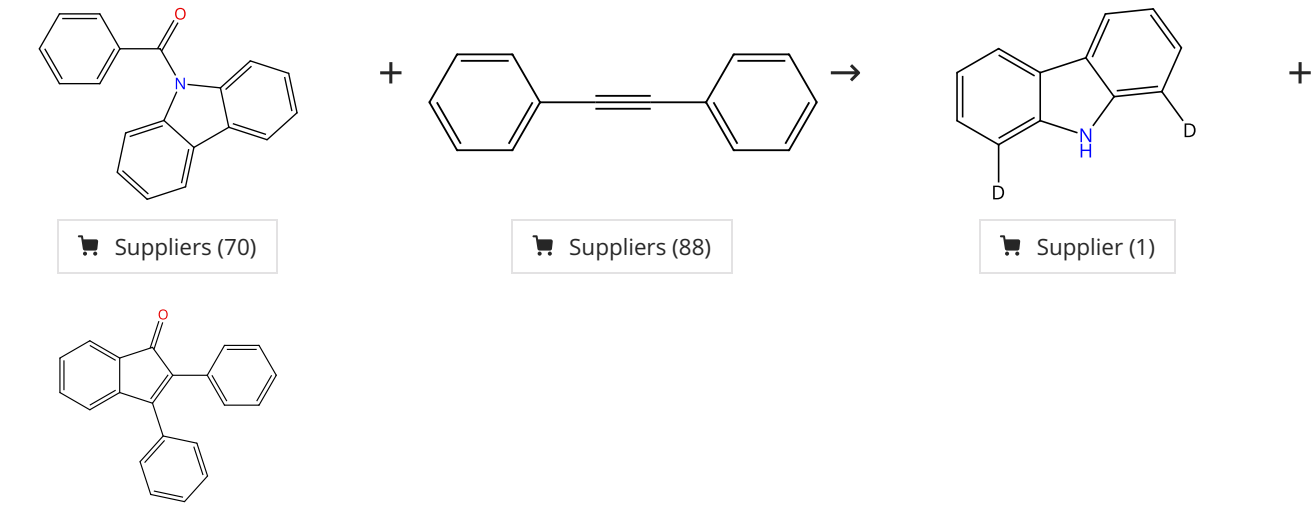
Rhodium-Catalyzed Mild C7-Amination of Indolines with Nitrosobenzenes

By: Xiong, Dan; et al

ChemistrySelect (2018), 3(47), 13497-13500.

Scheme 132 (1 Reaction)

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



Suppliers (70)

Suppliers (88)

Supplier (1)

Suppliers (26)

31-116-CAS-23747282

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

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Silver phosphate, Bis[dichloro[η^5-(pentameth ylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 24 h, 120 °C

Experimental Protocols

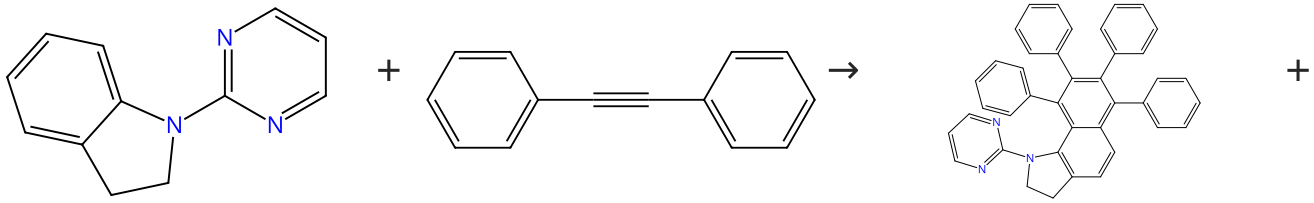
Synthesis of Indenones through Rhodium(III)-catalyzed [3+2] Annulation Utilizing a Recyclable Carbazolyl Leaving Group

By: Ochiai, Shiho; et al

Chemistry Letters (2021), 50(4), 585-588.

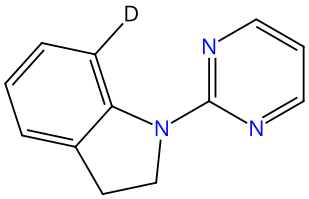
Scheme 133 (1 Reaction)

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



Suppliers (10)

Suppliers (88)



31-116-CAS-18881756

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

1.1 **Reagents:** Cupric acetate, Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: *N*-Methyl-2-pyrrolidone; 15 min, 100 °C

Experimental Protocols

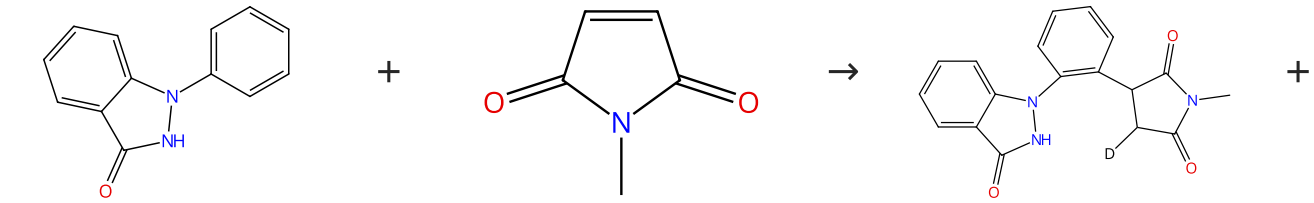
Rhodium-catalyzed oxidative homologation of N-pyrimidyl indolines with alkynes via dual C-H activation: Facile synthesis of benzo[g]indolines

By: Wang, Lianhui; et al

Chinese Chemical Letters (2018), 29(6), 907-910.

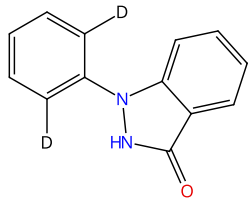
Scheme 134 (1 Reaction)

Steps: **1** Yield: **71%**



Suppliers (15)

Suppliers (82)



31-614-CAS-33428955

Steps: **1** Yield: **71%**

1.1 **Reagents:** Acetic acid-d_4, Oxygen
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: Acetone-d_6; 4 h, 80 °C

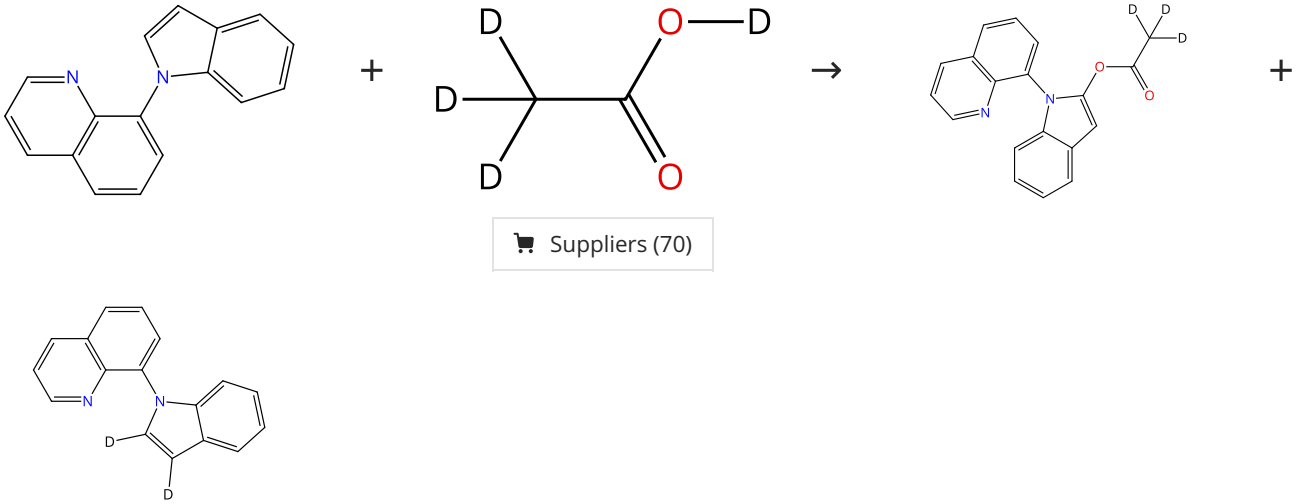
Synthesis of Succinimide-Linked Indazol-3-ols Derived from Maleimides under Rh(III) Catalysis

By: Kang, Ju Young; et al

ACS Omega (2022), 7(17), 14712-14722.

Scheme 135 (1 Reaction)

Steps: **1** Yield: **70%**



Suppliers (70)

31-614-CAS-38709270

Steps: **1** Yield: **70%**

1.1 **Reagents:** Manganese oxide (MnO_2)
Catalysts: Silver acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: 1,2-Dichloroethane; 0.5 h, 60 °C

Experimental Protocols

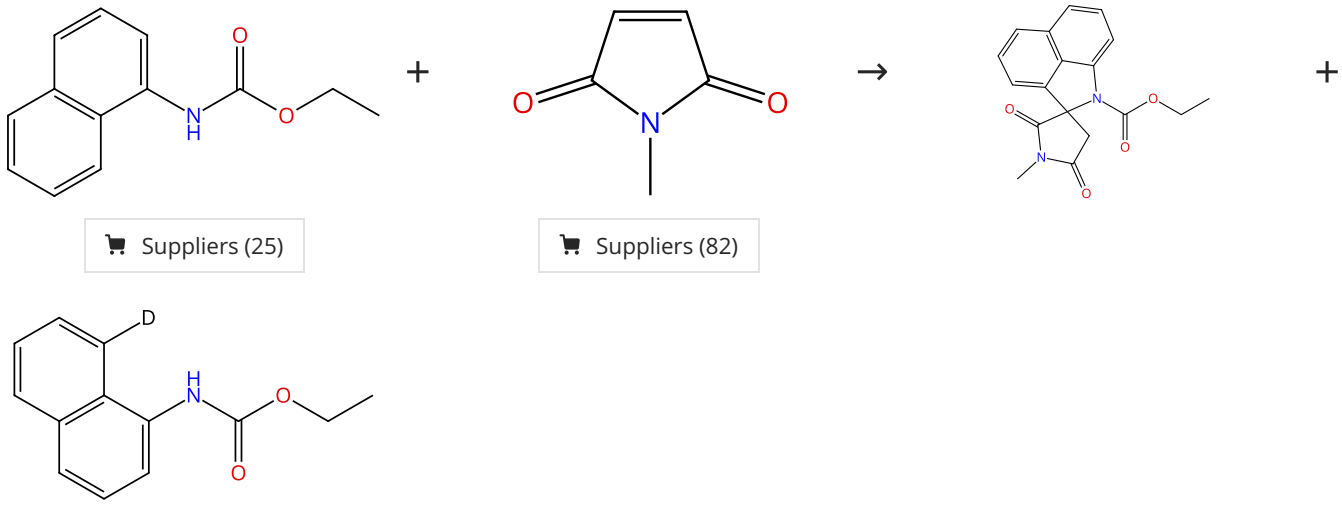
Rh(III)-catalyzed selective C2 C-H acyloxylation of indoles

By: Fang, Chaoying; et al

Chemical Communications (Cambridge, United Kingdom) (2024), 60(2), 216-219.

Scheme 136 (1 Reaction)

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



Suppliers (25)

Suppliers (82)

31-614-CAS-37155960

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

1.1 **Reagents:** Silver carbonate, Acetic acid-d_4
Catalysts: Bis(acetato-κ*O*)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]rhodium
Solvents: Toluene; rt; 0.5 h, 130 °C

Experimental Protocols

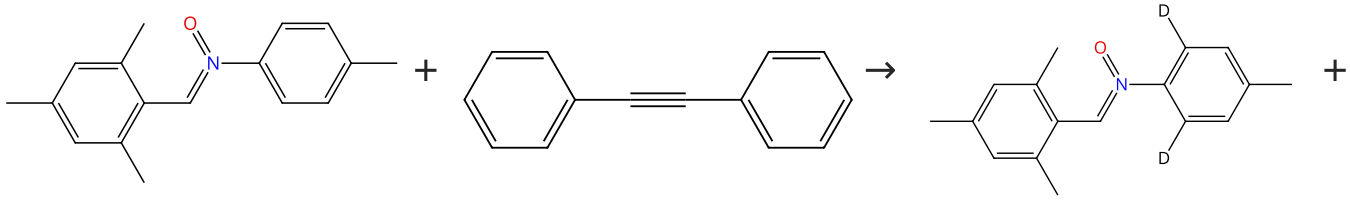
Rh(III)-Catalyzed C8-Spiroannulation of 1-Aminonaphthalenes with Maleimides

By: Chung, Eunjae; et al

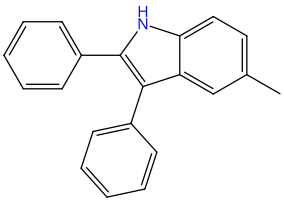
Journal of Organic Chemistry (2023), 88(15), 11227-11239.

Scheme 137 (1 Reaction)

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



Suppliers (88)



Suppliers (11)

31-116-CAS-9077826

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

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Tris(acetonitrile)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]rhodium(2+)
Solvents: Methanol-d_4; 2 h, 80 °C

Experimental Protocols

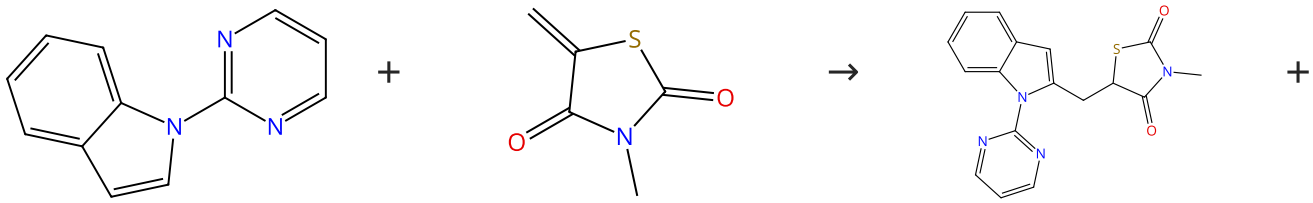
Rhodium(III)-Catalyzed Redox-Neutral C-H Annulation of Arylnitrones and Alkynes for the Synthesis of Indole Derivatives

By: Zhou, Zhi; et al

Advanced Synthesis & Catalysis (2015), 357(13), 2944-2950.

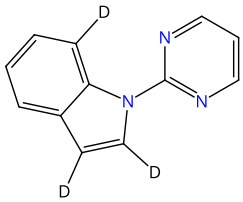
Scheme 138 (1 Reaction)

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



Suppliers (59)

Supplier (1)



31-614-CAS-34866700

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

1.1 **Reagents:** Sodium acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 7 h, 80 °C

Experimental Protocols

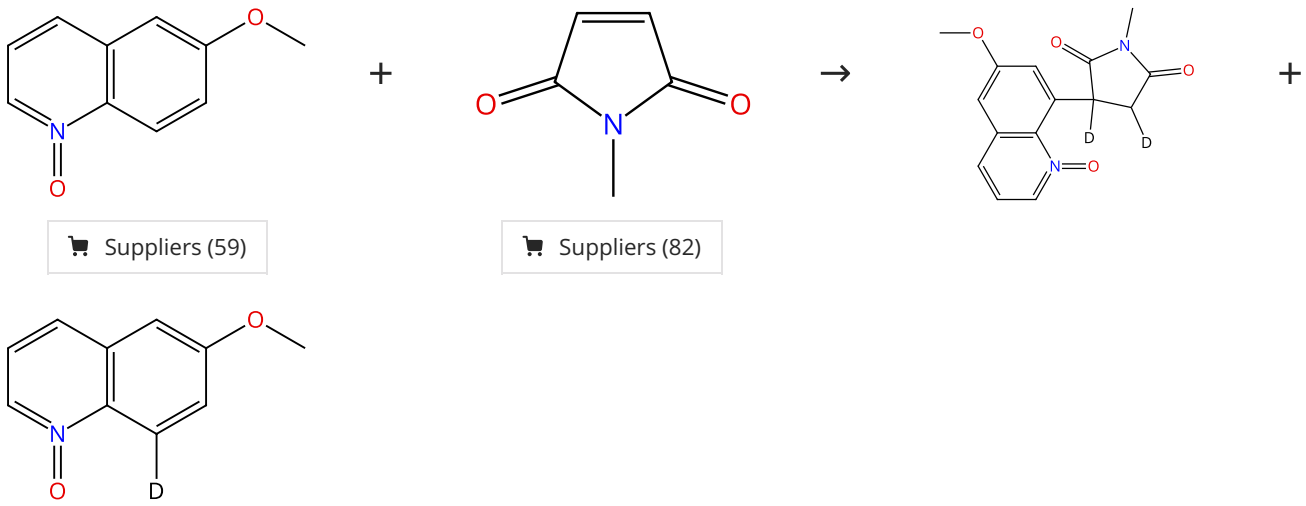
Methylene Thiazolidinediones as Alkylation Reagents in Catalytic C-H Functionalization: Rapid Access to Glitazones

By: Byun, Youjung; et al

Organic Letters (2022), 24(46), 8578-8583.

Scheme 139 (1 Reaction)

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



Suppliers (59)

Suppliers (82)

31-085-CAS-23554246

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

1.1 **Reagents:** Methanol-d_4, Acetic acid-d_4, Silver hexafluoro antimonate
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: 1,2-Dichloroethane; 5 h, 80 °C

Experimental Protocols

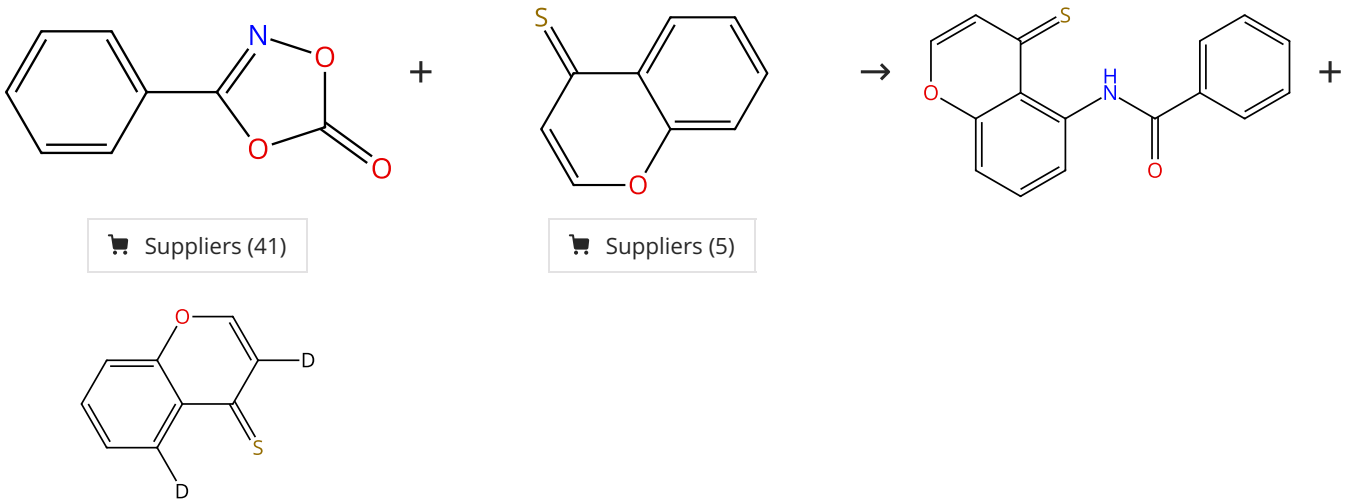
Site-Selective C8-Alkylation of Quinoline N-Oxides with Maleimides under Rh(III) Catalysis

By: An, Won; et al

Journal of Organic Chemistry (2021), 86(11), 7579-7587.

Scheme 140 (1 Reaction)

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



Suppliers (41)

Suppliers (5)

31-614-CAS-42340819

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

1.1 **Reagents:** Sodium acetate, Acetic acid-d_4
Catalysts: Silver hexafluoroantimonate, Di-μ-chlorobis[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]dirhodium
Solvents: Toluene; 2 h, 120 °C

Experimental Protocols

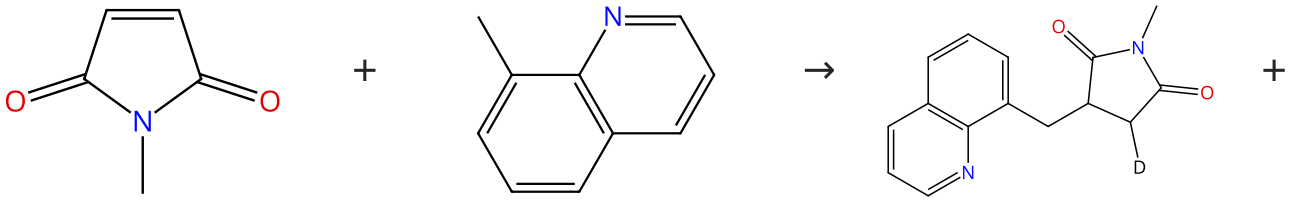
Thione-Directed C-H Amidation of Chromone Analogues with Dioxazolones under Rh(III) Catalysis

By: Min, Jeonghyun; et al

Organic Letters (2024), 26(42), 9157-9161.

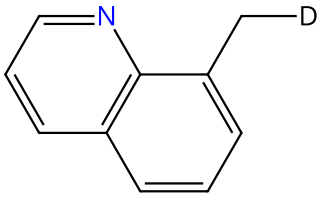
Scheme 141 (1 Reaction)

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



Suppliers (82)

Suppliers (69)



Supplier (1)

31-116-CAS-16095939

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

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; rt; 3 h, 70 °C

Experimental Protocols

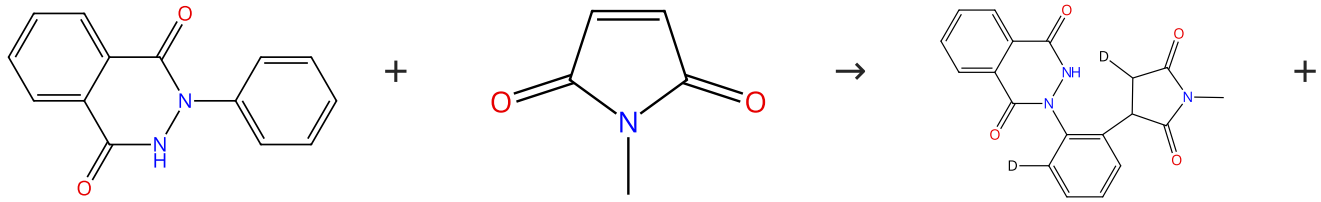
Rhodium(III)-Catalyzed C(sp^3)-H Alkylation of 8-Methylquinolines with Maleimides

By: Han, Sangil; et al

Organic Letters (2016), 18(18), 4666-4669.

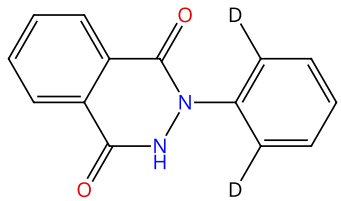
Scheme 142 (1 Reaction)

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



Suppliers (38)

Suppliers (82)



31-085-CAS-22972222

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

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], Silver hexafluoroantimonate
Solvents: Dichloromethane; 2 h, 80 °C

Experimental Protocols

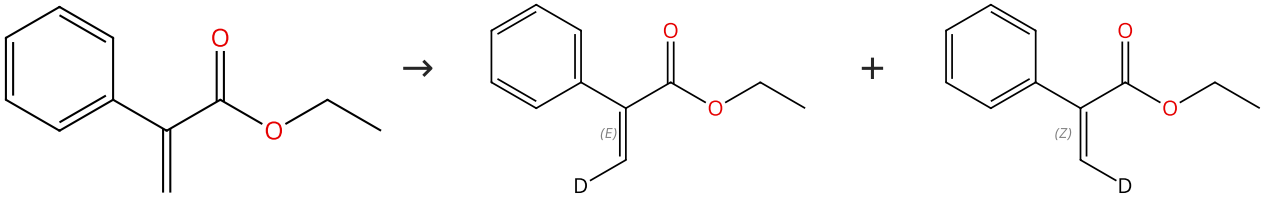
Direct Integration of Phthalazinone and Succinimide Scaffolds via Rh(III)-Catalyzed C-H Functionalization

By: Cho, Yong Sun; et al

Asian Journal of Organic Chemistry (2021), 10(1), 202-209.

Scheme 143 (1 Reaction)

Steps: **1** Yield: **38%**



Suppliers (59)

Double bond geometry shown

Double bond geometry shown

31-116-CAS-2125021

Steps: **1** Yield: **38%**

1.1 **Reagents:** Cupric acetate, Acetic acid-d_4
Catalysts: Di-μ-chlorodichlorobis(η^5-2,4-cyclopentadien-1-yl) dirhodium, Silver hexafluoroantimonate
Solvents: Acetone-d_6; 1 h, rt → 110 °C

Experimental Protocols

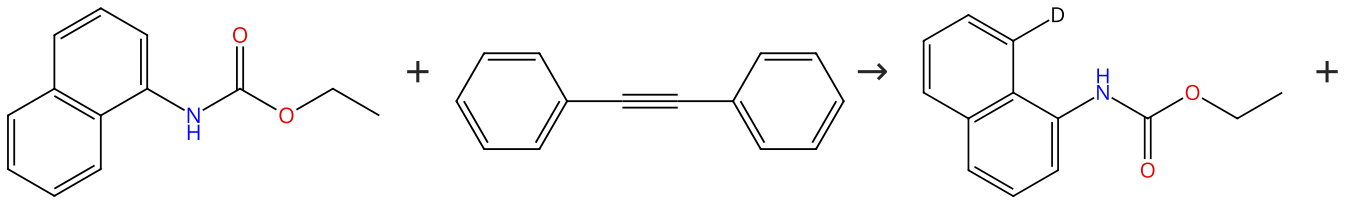
Ester-directed selective olefination of acrylates by rhodium catalysis

By: Feng, Ruokun; et al

Advanced Synthesis & Catalysis (2014), 356(7), 1501-1508.

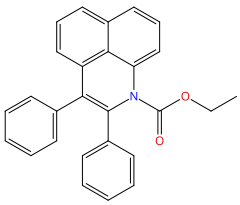
Scheme 144 (1 Reaction)

Steps: **1** Yield: **36%**



Suppliers (25)

Suppliers (88)



31-116-CAS-9677729

Steps: **1** Yield: **36%**

1.1 **Reagents:** Silver carbonate, Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: Dimethylformamide; rt; 2 h, 70 °C

Experimental Protocols

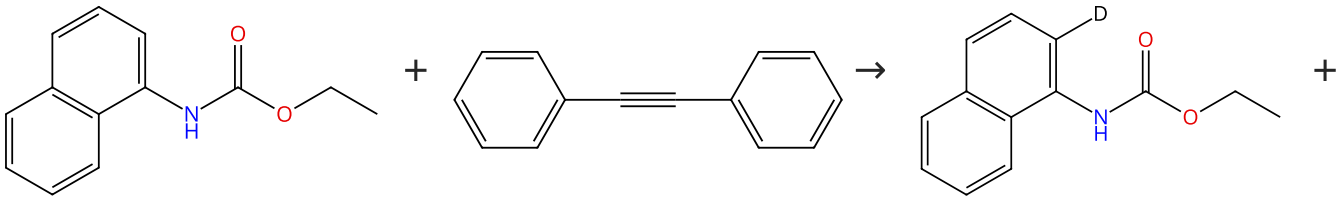
Rh(III)-Catalyzed Regioselective Functionalization of C-H Bonds of Naphthylcarbamates for Oxidative Annulation with Alkynes

By: Zhang, Xuan; et al

Organic Letters (2014), 16(18), 4830-4833.

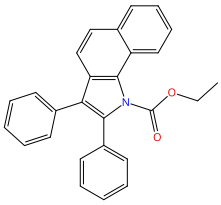
Scheme 145 (1 Reaction)

Steps: **1** Yield: **35%**



Suppliers (25)

Suppliers (88)



31-116-CAS-11805374

Steps: **1** Yield: **35%**

1.1 **Reagents:** Acetic acid-*d*, Oxygen
Catalysts: Cupric acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: Dichloromethane; 1 atm, rt; 2 h, 100 °C

Experimental Protocols

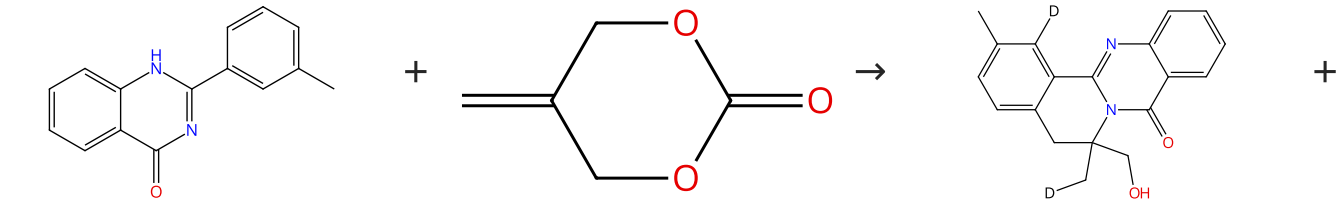
Rh(III)-Catalyzed Regioselective Functionalization of C-H Bonds of Naphthylcarbamates for Oxidative Annulation with Alkynes

By: Zhang, Xuan; et al

Organic Letters (2014), 16(18), 4830-4833.

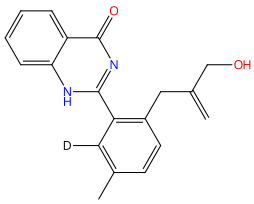
Scheme 146 (1 Reaction)

Steps: **1** Yield: **34%**



Suppliers (24)

Suppliers (4)



31-614-CAS-37644337

Steps: **1** Yield: **34%**

1.1 **Reagents:** Cupric acetate, Acetic acid-d_4
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 24 h, 80 °C

Experimental Protocols

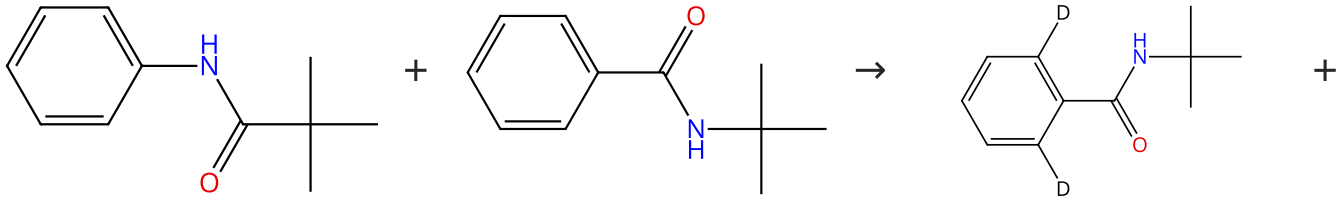
Catalyst-Controlled C-H Allylation and Annulation of 2-Aryl Quinazolinones with 2-Methylidene Cyclic Carbonate

By: Ko, Nayoung; et al

Journal of Organic Chemistry (2023), 88(18), 13315-13326.

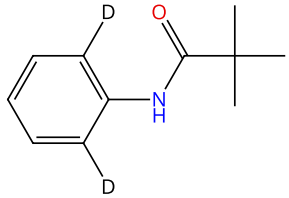
Scheme 147 (1 Reaction)

Steps: **1** Yield: **14%**



Suppliers (78)

Suppliers (55)



31-116-CAS-18998649

Steps: **1** Yield: **14%**

1.1 **Reagents:** Silver carbonate, Trifluoroacetic acid-*d*, Water-d_2
Catalysts: Copper fluoride (CuF_2), Rhodium trichloride
Solvents: Toluene; 2 h, 150 °C; cooled

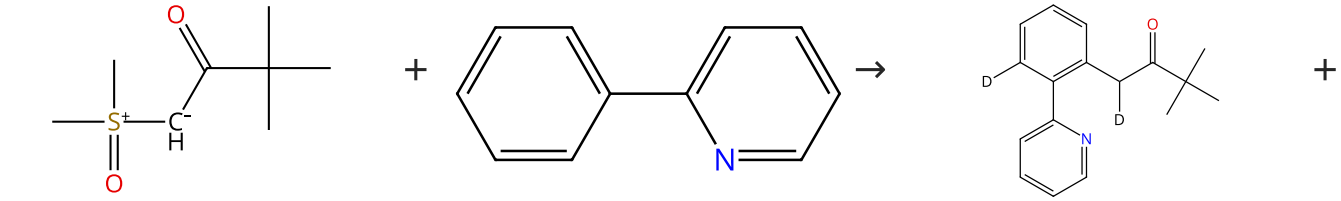
Oxidative C-H/C-H Cross-Coupling Reactions between N-Acylanilines and Benzamides Enabled by a Cp*- Free $RhCl_3$/TFA Catalytic System

By: Shi, Yang; et al

Angewandte Chemie, International Edition (2018), 57(29), 9108-9112.

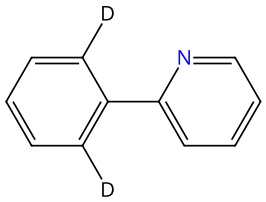
Scheme 148 (1 Reaction)

Steps: **1**



Supplier (1)

Suppliers (94)



Supplier (1)

31-116-CAS-17826892

Steps: **1**

1.1 **Reagents:** Pivalic acid, Acetic acid-d_4
Catalysts: Zinc acetate, Rhodium(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; 2 h, 70 °C

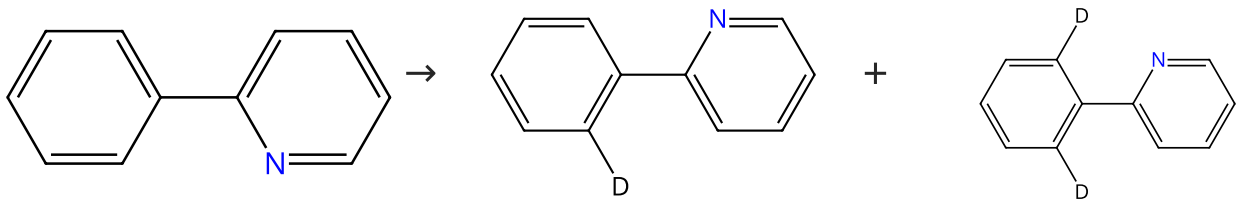
Sulfoxonium Ylides as a Carbene Precursor in Rh(III)-Catalyzed C-H Acylmethylation of Arenes

By: Xu, Youwei; et al

Organic Letters (2017), 19(19), 5256-5259.

Scheme 149 (1 Reaction)

Steps: **1**



Suppliers (94)

Suppliers (6)

Supplier (1)

31-116-CAS-20419185

Steps: **1**

1.1 **Reagents:** Acetic acid-*d*
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium], [1,1,1-Trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*] methanesulfonamidato-κ*O*]silver
Solvents: Toluene; 24 h, 120 °C

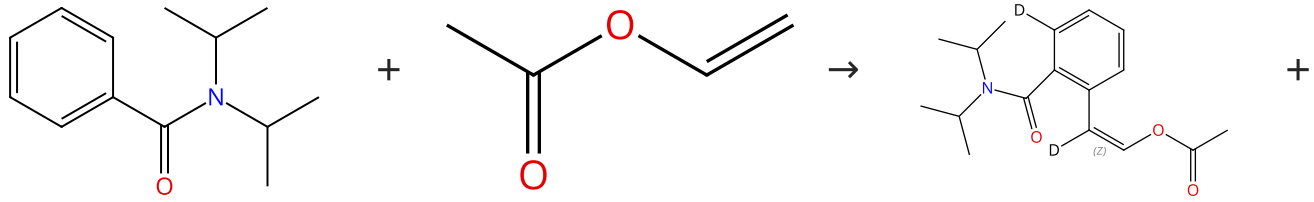
Traceless-Activation Strategy for Rh-Catalyzed Csp^2-H Arylation of Coumarins

By: Han, Fuzhong; et al

Organic Letters (2019), 21(15), 5907-5911.

Scheme 150 (1 Reaction)

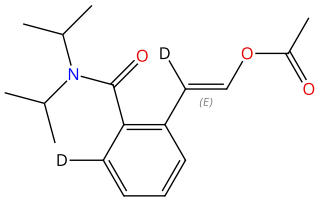
Steps: **1**



Suppliers (57)

Suppliers (77)

Double bond geometry shown



Double bond geometry shown

31-116-CAS-19505013

Steps: **1**

1.1 **Reagents:** Acetic acid-d_4, Copper diacetate monohydrate, Oxygen, Silver hexafluoroantimonate
Catalysts: (η^5-2,4-Cyclopentadien-1-yl)diiodorhodium
Solvents: Tetrahydrofuran; 6 h, 80 °C

Experimental Protocols

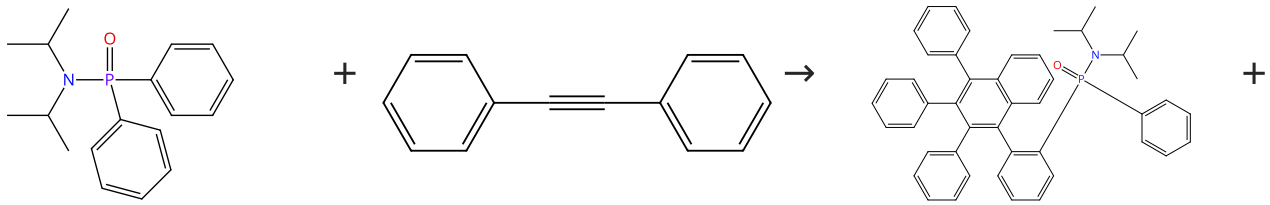
Dual Effects of Cyclopentadienyl Ligands on Rh(III)-Catalyzed Dehydrogenative Arylation of Electron-Rich Alkenes

By: Lin, Weidong; et al

ACS Catalysis (2018), 8(9), 8070-8076.

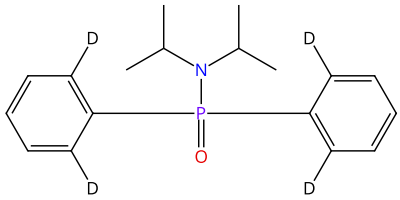
Scheme 151 (1 Reaction)

Steps: **1**



Suppliers (24)

Suppliers (88)



31-614-CAS-24234901

Steps: **1**

1.1 **Reagents:** Silver acetate, Acetic acid-d_4
Catalysts: Silver triflate, [(3a,4,5,6,6a-η)-(13c*R*)-3,7-Dihydro-2,8-dimethoxy-3a*H*-cyclopenta[6,7]cycloocta[2,1-*a*:3,4-*a*']dinaphthalen-3a-yl]bis(η^2-ethene)rhodium
Solvents: Dichloromethane; 6 h, 60 °C

Experimental Protocols

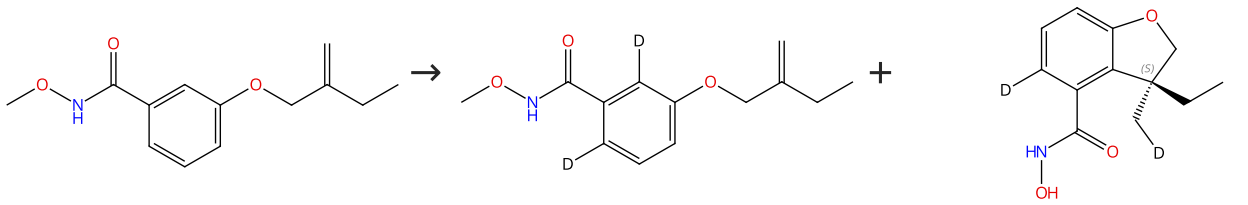
Twofold C-H Activation-Based Enantio- and Diastereoselective C-H Arylation Using Diarylacetylenes as Rare Arylating Reagents

By: Hu, Panjie; et al

Angewandte Chemie, International Edition (2021), 60(37), 20424-20429.

Scheme 152 (1 Reaction)

Steps: **1**



Absolute stereochemistry shown

31-085-CAS-11661736

Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Benzoyl peroxide, [(3a,4,5,6,6a-η)-(13c*R*)-3,7-Dihydro-2,8-dimethoxy-3a*H*-cyclopenta[6,7]cycloocta[2,1-*a*:3,4-*a*']dinaphthalen-3a-yl]bis(η^2-ethene)rhodium
Solvents: Dichloromethane-d_2; 12 h

Experimental Protocols

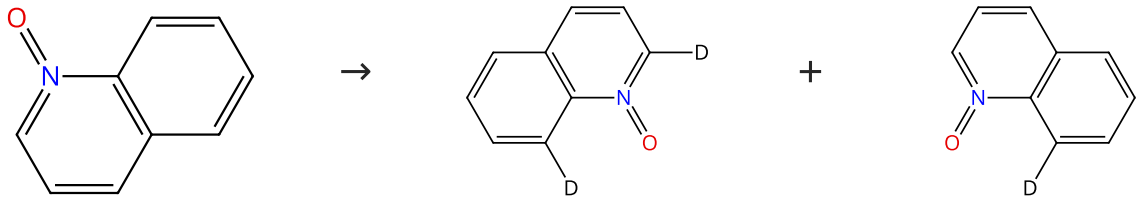
Chiral Cp-Rhodium(III)-Catalyzed Asymmetric Hydroarylations of 1,1-Disubstituted Alkenes

By: Ye, Baihua; et al

Angewandte Chemie, International Edition (2014), 53(2), 507-511.

Scheme 153 (1 Reaction)

Steps: **1**



Suppliers (57)

Supplier (1)

Supplier (1)

31-614-CAS-38664820 Steps: 1

1.1 **Catalysts:** Pivalic acid, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane, Acetic acid-*d*; 36 h, 110 °C

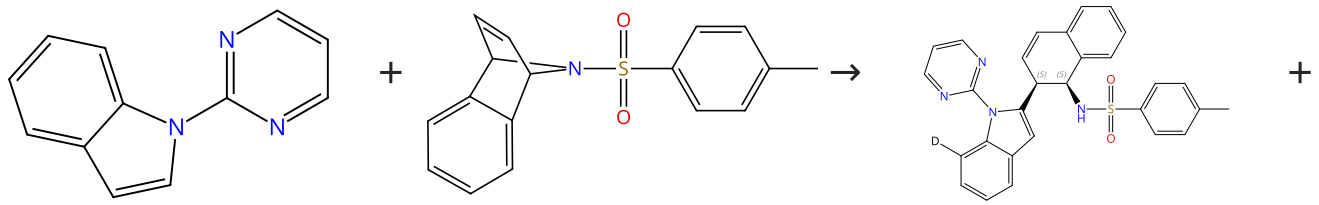
Experimental Protocols

Rhodium(I)-Catalyzed Asymmetric Hydroarylative Cyclization of 1,6-Diynes to Access Atropisomerically Labile Chiral Dienes

By: Hu, Panjie; et al

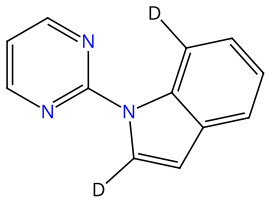
Angewandte Chemie, International Edition (2024), 63(1), e202312923.

Scheme 154 (1 Reaction) Steps: **1**



Suppliers (59) Suppliers (3)

Relative stereochemistry shown



31-116-CAS-19615499 Steps: 1

1.1 **Reagents:** Silver acetate, Acetic acid-d_4
Catalysts: Rhodium(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: Dichloromethane; 14 h, 60 °C

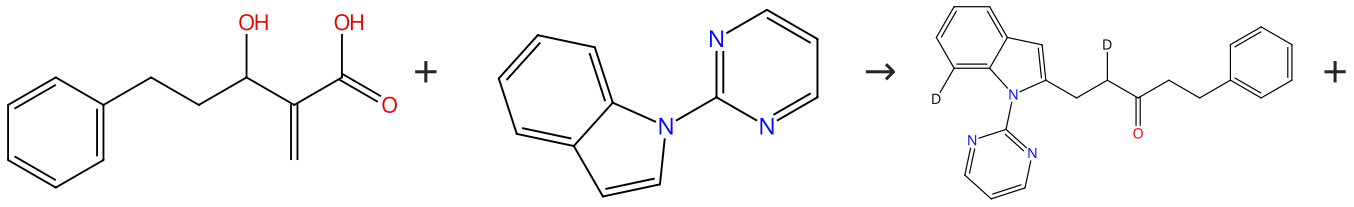
Experimental Protocols

Rhodium(III)-Catalyzed Enantioselective Coupling of Indoles and 7-Azabenzonorbornadienes by C-H Activation/Desymmetrization

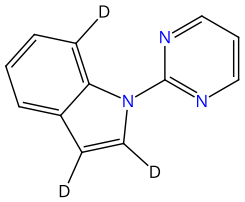
By: Yang, Xifa; et al

Angewandte Chemie, International Edition (2019), 58(1), 322-326.

Scheme 155 (1 Reaction) Steps: **1**



Suppliers (2) Suppliers (59)



31-116-CAS-18400346 Steps: 1

1.1 **Reagents:** Acetic acid-d_4, Oxygen
Catalysts: Zinc acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium]
Solvents: Acetone; 0.5 h, 80 °C

Experimental Protocols

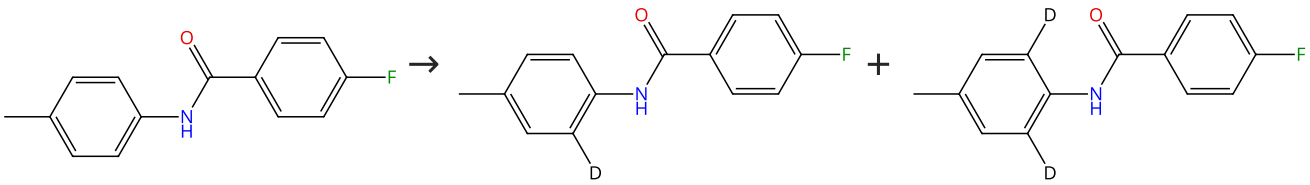
Rh(III)-Catalyzed Acceptorless Dehydrogenative Coupling of (Hetero)arenes with 2-Carboxyl Allylic Alcohols

By: Xia, Jintao; et al

Organic Letters (2018), 20(3), 740-743.

Scheme 156 (1 Reaction)

Steps: **1**



Suppliers (25)

31-614-CAS-34897428

Steps: **1**

1.1 **Reagents:** Silver acetate, Acetic acid-d_4, Selenium
Catalysts: Silver hexafluoroantimonate, Bis[(1,2,3,4,5-η)-1,3-bis(ethoxycarbonyl)-2,4,5-trimethyl-2,4-cyclopentadien-1-yl]di-μ-chlorodichlorodirhodium
Solvents: 1,1,1,3,3,3-Hexafluoro-2-propanol; 2 h, rt

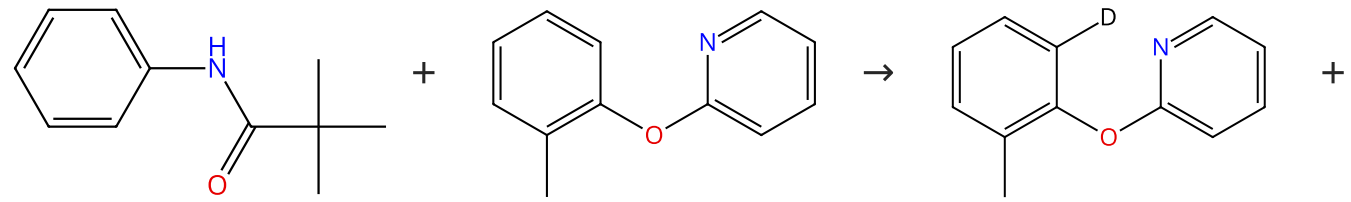
Synthesis of Diarylselenides through Rh-catalyzed Direct Diarylation of Elemental Selenium with Benzamides

By: Xu-Xu, Qing-Feng; et al

Journal of Organic Chemistry (2022), 87(24), 16887-16894.

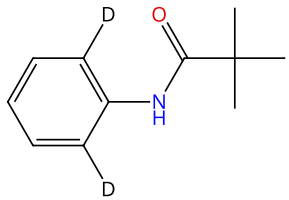
Scheme 157 (1 Reaction)

Steps: **1**



Suppliers (78)

Suppliers (8)



31-116-CAS-20224329

Steps: **1**

1.1 **Reagents:** Acetic acid-*d*, Oxygen
Catalysts: Di-μ-chlorobis[(1,2,5,6-η)-1,5-cyclooctadiene]dirhodium, (*T*-4)-Bis[1,1,1-trifluoro-*N*-[(trifluoromethyl)sulfonyl-κ*O*]methanesulfonamidato-κ*O*]zinc
Solvents: Chlorobenzene; 5 h, 140 °C

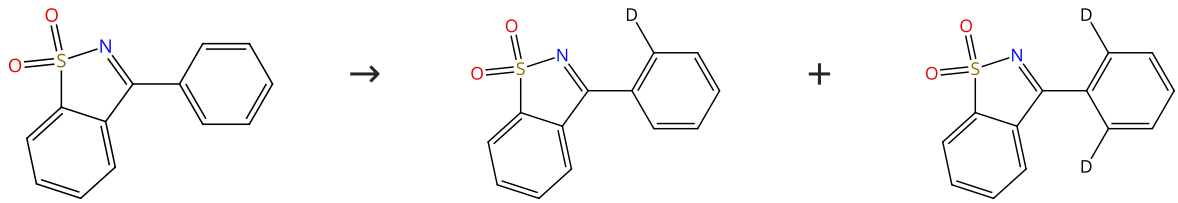
Highly Regio- and Chemoselective Oxidative C-H/C-H Cross-Couplings of Anilines and Phenols Enabled by a Co- Oxidant-Free Rh(I)/Zn(NTf$_2$)$_2$/Air Catalytic System

By: Zhang, Luoqiang; et al

ACS Catalysis (2019), 9(6), 5358-5364.

Scheme 158 (1 Reaction)

Steps: **1**



Suppliers (30)

31-116-CAS-17829067 Steps: **1**

1.1 **Reagents:** Trifluoroacetic acid-*d*
Catalysts: Silver triflate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate
Solvents: 1,2-Dichloroethane; 12 h, 40 °C

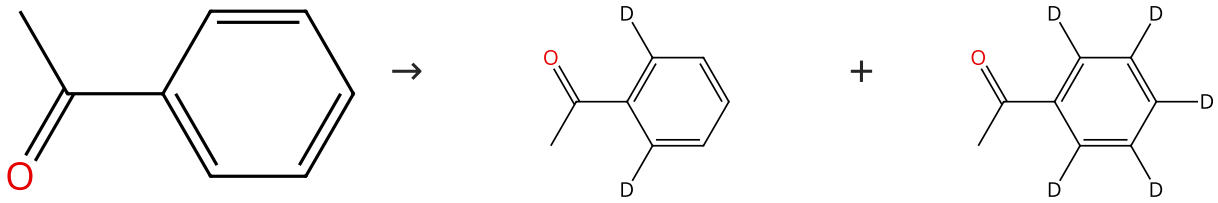
Experimental Protocols

Rh(III)-Catalyzed Diastereodivergent Spiroannulation of Cyclic Imines with Activated Alkenes

By: Liu, Bingxian; et al

Organic Letters (2017), 19(19), 5402-5405.

Scheme 159 (1 Reaction) Steps: **1**



Suppliers (109) Supplier (1) Suppliers (40)

31-116-CAS-19313273 Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: 3,5-Bis(trifluoromethyl)benzenamine, Silver hexafluorophosphate, Bis[μ-(acetato-κ*O*:κ*O*')]bis(acetato-κ*O*)bis[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]dirhodium
Solvents: 2,2,2-Trifluoroethanol; 24 h, 100 °C

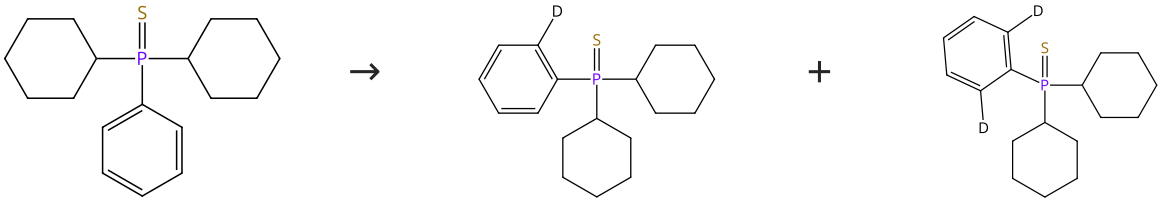
Experimental Protocols

Rh(III)-Catalyzed ortho-C-(sp^2)-H amidation of ketones and aldehydes under synergistic ligand-accelerated catalysis

By: Hande, Akshay Ekanath; et al

Chemical Communications (Cambridge, United Kingdom) (2018), 54(85), 12113-12116.

Scheme 160 (1 Reaction) Steps: **1**



Suppliers (2)

31-116-CAS-8587608 Steps: **1**

1.1 **Reagents:** Acetic acid-d_4
Catalysts: Rhodium(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: Chlorobenzene; 3 h, 120 °C

Experimental Protocols

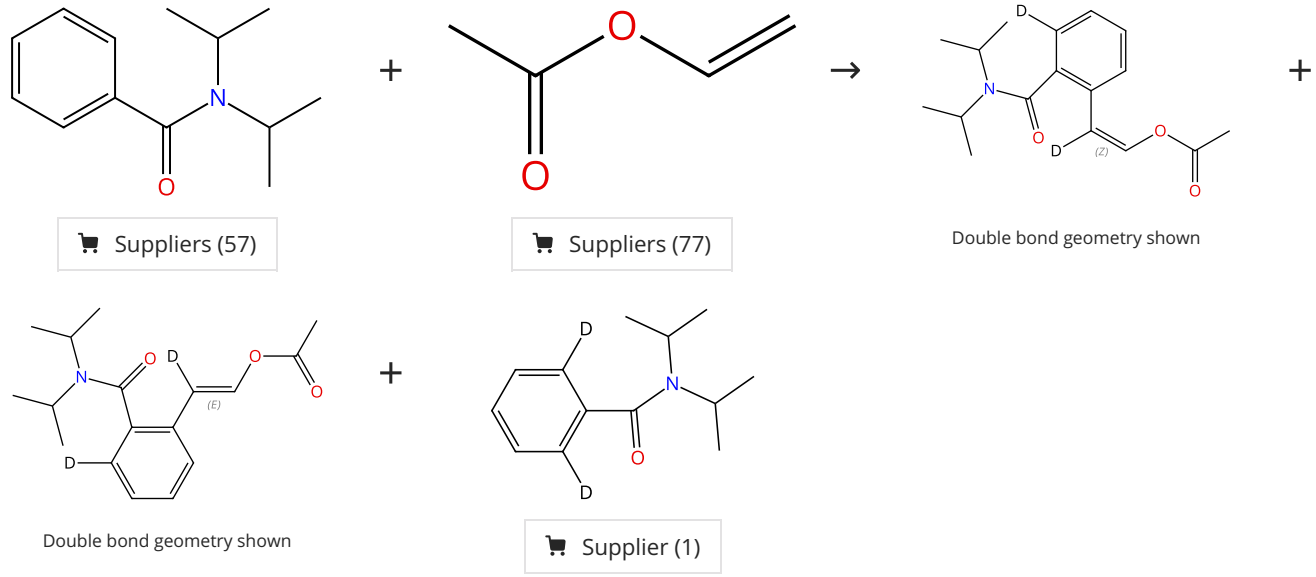
Rhodium(III)-Catalyzed Regioselective C-H Alkenylation of Phenylphosphine Sulfides

By: Yokoyama, Yuki; et al

Journal of Organic Chemistry (2014), 79(16), 7649-7655.

Scheme 161 (2 Reactions)

Steps: **1** Yield: **50-90%**



Suppliers (57)

Suppliers (77)

Double bond geometry shown

Double bond geometry shown

Supplier (1)

31-116-CAS-19505014

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

1.1 **Reagents:** Acetic acid-d_4, Copper diacetate monohydrate, Oxygen, Silver hexafluoroantimonate
Catalysts: Bis[dichloro[η^5-(pentamethylcyclopentadienyl)] rhodium]
Solvents: Tetrahydrofuran; 6 h, 80 °C

Experimental Protocols

Dual Effects of Cyclopentadienyl Ligands on Rh(III)-Catalyzed Dehydrogenative Arylation of Electron-Rich Alkenes

By: Lin, Weidong; et al

ACS Catalysis (2018), 8(9), 8070-8076.

31-116-CAS-19507616

Steps: **1** Yield: **50%**

1.1 **Reagents:** Acetic acid-d_4, Copper diacetate monohydrate, Oxygen, Silver hexafluoroantimonate
Catalysts: (η^5-2,4-Cyclopentadien-1-yl)diiodorhodium
Solvents: Tetrahydrofuran; 2 h, 80 °C

Experimental Protocols

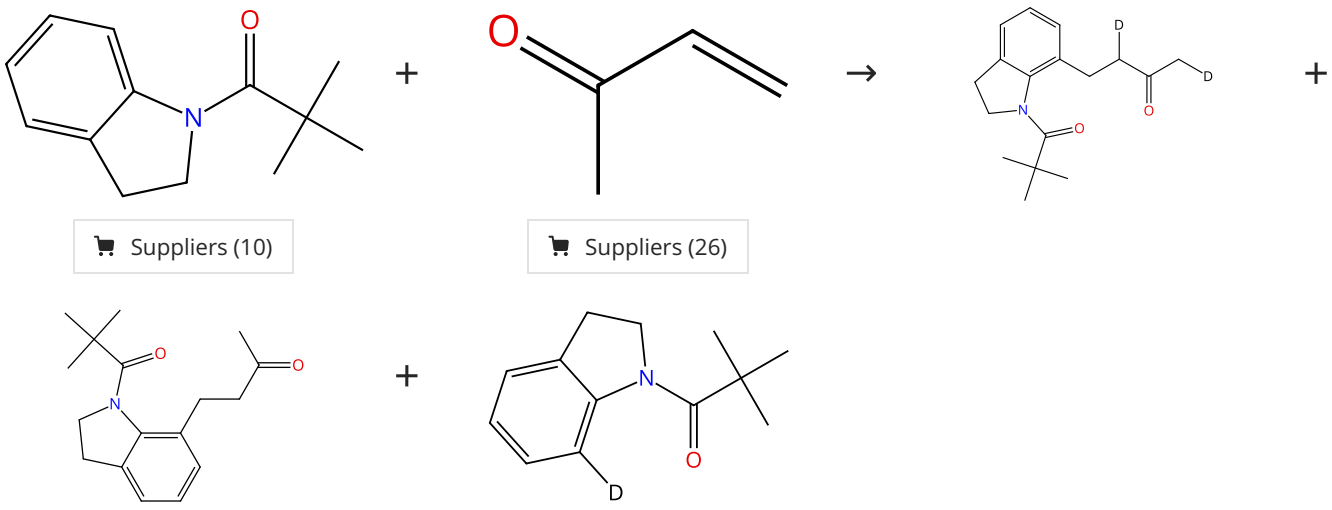
Dual Effects of Cyclopentadienyl Ligands on Rh(III)-Catalyzed Dehydrogenative Arylation of Electron-Rich Alkenes

By: Lin, Weidong; et al

ACS Catalysis (2018), 8(9), 8070-8076.

Scheme 162 (1 Reaction)

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



Suppliers (10)

Suppliers (26)

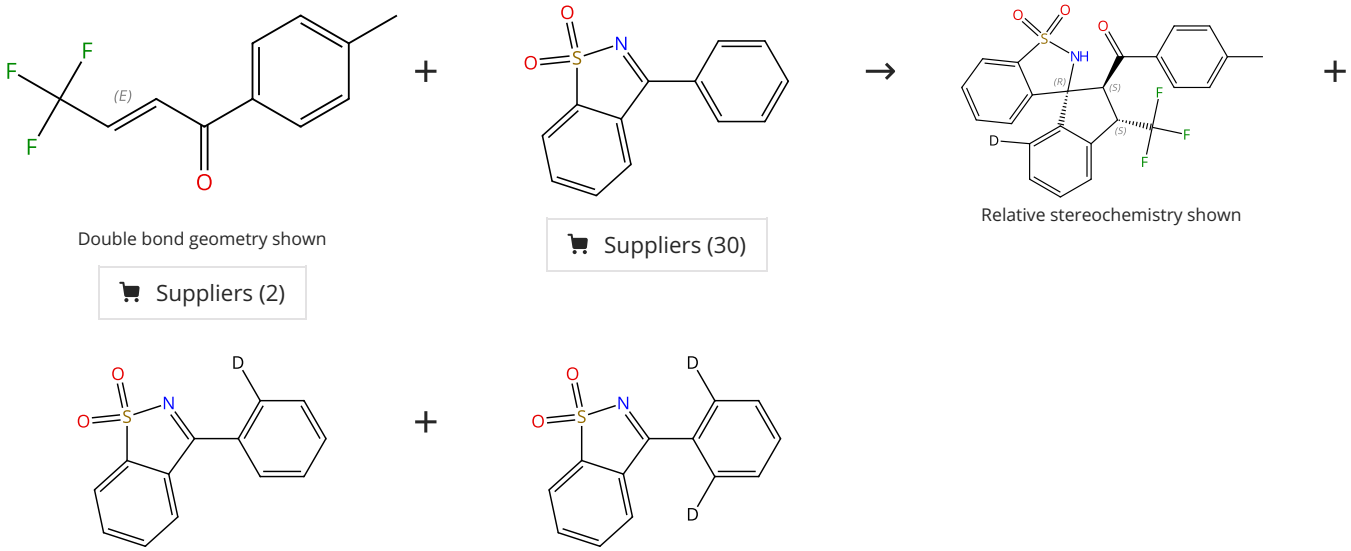
31-085-CAS-17263150	Steps: **1** Yield: **86%**
1.1 **Reagents:** Acetic acid-*d* **Catalysts:** Cupric acetate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate **Solvents:** 1,2-Dichloroethane; rt; 30 min, 60 °C	
Experimental Protocols	

Rh(III)-catalyzed C-H alkylation of indolines with enones through conjugate addition and protonation pathway

By: Oh, Hyunjung; et al

Tetrahedron (2017), 73(32), 4739-4749.

Scheme 163 (1 Reaction) Steps: **1** Yield: **73%**



Double bond geometry shown

Suppliers (2)

Suppliers (30)

Relative stereochemistry shown

31-116-CAS-17829068	Steps: **1** Yield: **73%**
1.1 **Reagents:** Trifluoroacetic acid-*d* **Catalysts:** Silver triflate, Bis[dichloro[η^5-(pentamethylcyclopentadienyl)]rhodium], Silver hexafluoroantimonate **Solvents:** 1,2-Dichloroethane; 12 h, 40 °C	
Experimental Protocols	

Rh(III)-Catalyzed Diastereodivergent Spiroannulation of Cyclic Imines with Activated Alkenes

By: Liu, Bingxian; et al

Organic Letters (2017), 19(19), 5402-5405.