CAS SciFinder

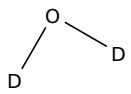
Task History

Initiating Search

February 23, 2025, 8:39 PM

Substances:

Filtered By:



Structure Match: **As Drawn**

Search Tasks

Task	Search Type	View
Returned Substance Results + Filters (1,728)	Substances	View Results
Exported: Retrieved Related Reaction Results + Filters (451)	Reactions	View Results

Filtered By:

Substance Role: **Reagent, Solvent**

Catalyst:	Aluminum nickel alloy, Benzenesulfonic acid, 4-methyl-, nickel(2+) salt (2:1), Bis(1,5-cyclooctadiene)nickel, Bis(acetylacetonato)nickel, (Bis(diphenylphosphino)ethane)dichloronickel, Bis(triphenylphosphine) nickel dibromide, Bis(triphenylphosphine)nickel dichloride, Bromo(2-methylphenyl)bis(triphenylphosphine)nickel, Dibromo(1,10-phenanthroline-κ*N*^{1},κ*N*^{10})nickel, Dibromo[1,1'-(oxy-κ*O*)bis[2-(methoxy-κ*O*)ethane]]nickel, Dibromo[1,2-di(methoxy-κ*O*)ethane]nickel, Dibromobis(tributylphosphine)nickel, Dichloro[1,1'-(1,3-propanediyl)bis[1,1-diphenylphosphine-κ*P*]]nickel, Dichloro[1,2-di(methoxy-κ*O*)ethane]nickel, Dichlorobis(triethylphosphine)nickel, Lithium, [μ$_{3}$-[(1,2-η)-1,5-cyclooctadiene-κ*C*^{1}:κ*C*^{2}]][μ$_{3}$-[(1,2,5,6-η)-1,5-cyclooctadiene-κ*C*^{1}:κ*C*^{6}]](nickel)tetrakis(tetrahydrofuran)di-, (2*Li*-*Ni*), Methanesulfonic acid, 1,1,1-trifluoro-, nickel(2+) salt (2:1), Nickel, Nickel(1+), bromo[(2,6-pyridinediyl-κ*N*)bis(3-methyl-1*H*-imidazol-1-yl-2(3*H*)-ylidene-κ*C*)]-, bromide (1:1), (*SP*-4-2)-, Nickel, (2,2'-bipyridine-κ*N*^{1},κ*N*$^{1'}$)dibromo-, (*SP*-4-2)-, Nickel, (2,2'-bipyridine-κ*N*^{1},κ*N*$^{1'}$)dichloro-, (*SP*-4-2)-, Nickel, [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κ*N*^{1},κ*N*$^{1'}$]dibromo-, (*T*-4)-, Nickel acetate, Nickel acetate tetrahydrate, Nickel alloys, copper-, Nickel bromide, Nickel chloride hexahydrate, Nickel, diaquadichloro(4,4'-dimethoxy-2,2'-bipyridine-κ*N*^{1},κ*N*$^{1'}$)-, (*OC*-6-32)-, Nickel, dibromo[1,2-ethanediylbis[diphenylphosphine-κ*P*]]-, (*SP*-4-2)-, Nickel, dibromo(4,4'-dimethyl-2,2'-bipyridine-κ*N*^{1},κ*N*$^{1'}$)-, Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κ*N*^{1},κ*N*$^{1'}$)-, (*T*-4)-, Nickel dichloride, Nickel hydroxide oxide (Ni(OH)O), Nickel(II) perchlorate, Nickel iodide (NiI$_{2}$), Nickel monoxide, Nickel phosphide (Ni$_{2}$P), Ruthenium(1+), (nickel)[(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]peroxy[μ-[[2,2'-[1,3-propanediylbis(methylimino-κ*N*)]bis[ethanethiolato-κ*S*:κ*S*]](2-)]]-, stereoisomer, nitrate (1:1), (*SP*-4-2)-Bromo(2-methylphenyl)[1,1'-(1,3-propanediyl)bis[1,1-diphenylphosphine-κ*P*]]nickel, Stereoisomer of bis(dihydroboron)tetrakis[μ-(1-methyl-1*H*-imidazol-2-yl-κ*C*^{2},κ*N*^{3})]nickel, Stereoisomer of tris[1,1'-[η^{2}-(1*E*)-1,2-ethenediyl]bis[4-(1,1-dimethylethyl)benzene]]nickel, (*T*-4)-Dibromo(2,9-dimethyl-1,10-phenanthroline-κ*N*^{1},κ*N*^{10})nickel, (*T*-4)-Dibromo[*N*,*N*'-(1,2-dimethyl-1,2-ethanediylidene)bis[2,6-dimethylbenzenamine-κ*N*]]nickel, (*T*-4)-Dichloro(1,10-phenanthroline-κ*N*^{1},κ*N*^{10})nickel, (*T*-4)-Dichlorobis(tricyclohexylphosphine)nickel, (*T*-4)-Dichlorobis(triphenylphosphine)nickel, Tungstate(16-), dotetraconta-μ-oxooctadecaoxobis[μ$_{12}$-[phosphato(3-)-κ*O*:κ*O*:κ*O*:κ*O*':κ*O*':κ*O*'':κ*O*'':κ*O*''':κ*O*''':κ*O*'']][tetraaquadi-μ$_{3}$-hydroxybis[μ$_{4}$-[[*P*,*P*'-[4-imino-1-(hydroxy-κ*O*)butylidene]bis[phosphonato-κ*O*:κ*O*:κ*O*']](5-)]]heptanickelate]octadeca-, potassium sodium hydrogen, hydrate (1:7:7:2:34), stereoisomer, Tungstate(16-), [octaaquabis[μ$_{5}$-[*N*-[(carboxy-κ*O*)methyl]-*N*-[4-(hydroxy-κ*O*)-4,4-di(phosphono-κ*O*:κ*O*:κ*O*')butyl]glycinato(7-)-κ*N*,κ*O*]]di-μ$_{3}$-hydroxynonanickelate]dotetraconta-μ-oxooctadecaoxobis[μ$_{12}$-[phosphato(3-)-κ*O*:κ*O*:κ*O*:κ*O*':κ*O*':κ*O*'':κ*O*'':κ*O*''':κ*O*''':κ*O*'']]octadeca-, potassium sodium, hydrate (1:15:1:45), stereoisomer
Document Type:	Journal
Language:	English

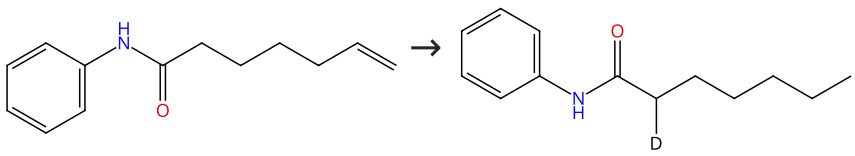
CAS SciFinder

Reactions (80)

View in CAS SciFinder

Scheme 1 (1 Reaction)

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



Suppliers (4)

31-614-CAS-35766420

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

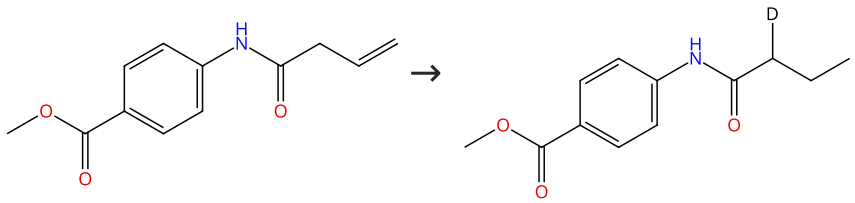
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 2 (1 Reaction)

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



Suppliers (2)

31-614-CAS-35766369

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

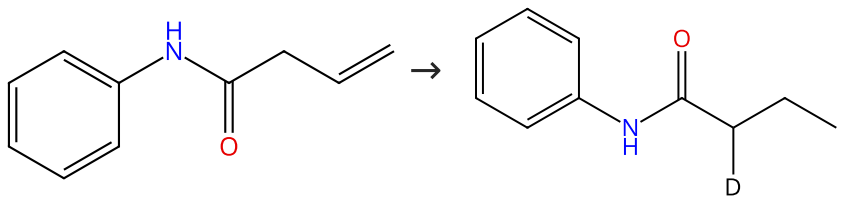
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 3 (1 Reaction)

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



Suppliers (11)

31-614-CAS-35766388 Steps: **1** Yield: **99%**

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

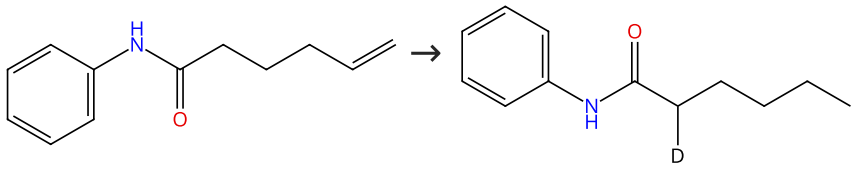
Experimental Protocols

Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 4 (1 Reaction) Steps: **1** Yield: **99%**



Suppliers (7)

31-614-CAS-35766412 Steps: **1** Yield: **99%**

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

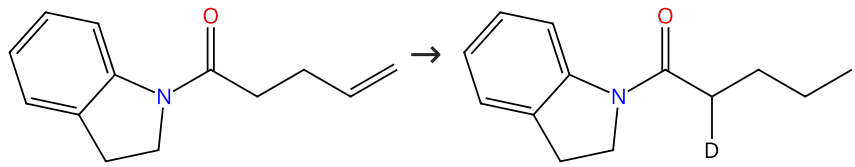
Experimental Protocols

Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 5 (1 Reaction) Steps: **1** Yield: **99%**



Suppliers (2)

31-614-CAS-35766410 Steps: **1** Yield: **99%**

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

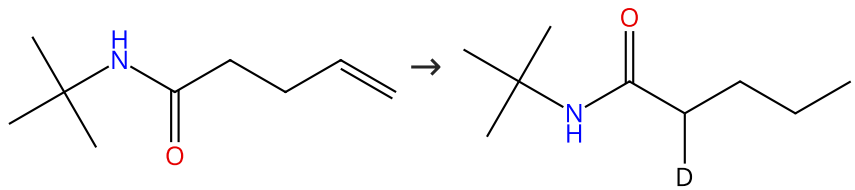
Experimental Protocols

Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 6 (1 Reaction) Steps: **1** Yield: **99%**



Suppliers (2)

31-614-CAS-35766360 Steps: **1** Yield: **99%**

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

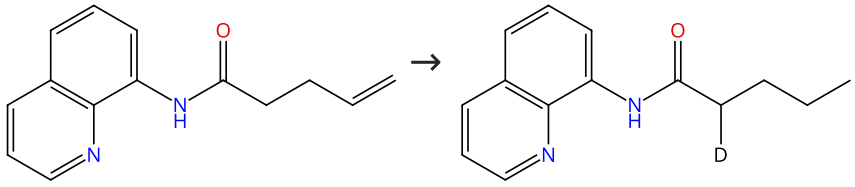
Experimental Protocols

Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 7 (1 Reaction) Steps: **1** Yield: **99%**



Supplier (1)

31-614-CAS-35766354 Steps: **1** Yield: **99%**

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

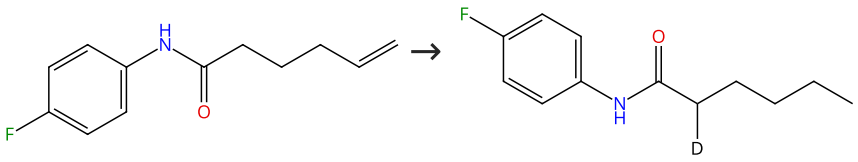
Experimental Protocols

Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 8 (1 Reaction) Steps: **1** Yield: **99%**



Suppliers (2)

31-614-CAS-35766421 Steps: **1** Yield: **99%**

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

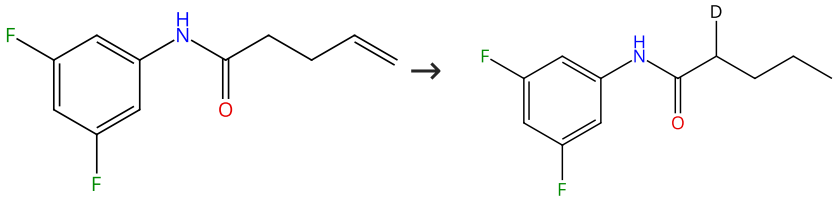
Experimental Protocols

Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 9 (1 Reaction) Steps: **1** Yield: **99%**



Suppliers (2)

31-614-CAS-35766357 Steps: **1** Yield: **99%**

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

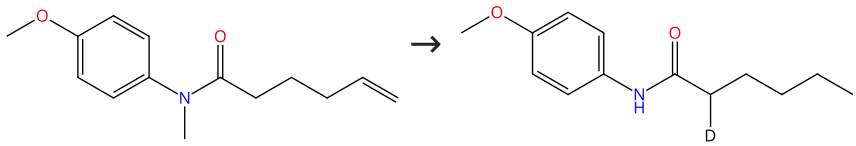
Experimental Protocols

Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 10 (1 Reaction) Steps: **1** Yield: **99%**



Supplier (1)

31-614-CAS-35766407 Steps: **1** Yield: **99%**

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

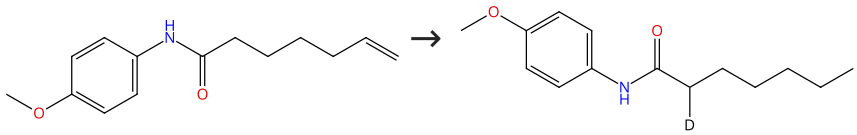
Experimental Protocols

Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 11 (1 Reaction) Steps: **1** Yield: **99%**



31-614-CAS-35766432 Steps: **1** Yield: **99%**

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

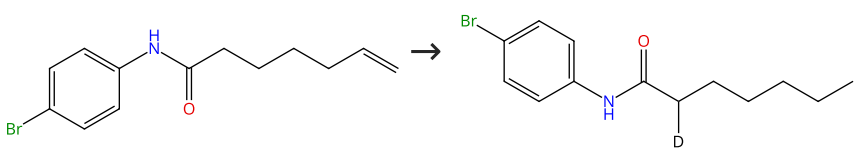
Experimental Protocols

Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 12 (1 Reaction) Steps: **1** Yield: **99%**



31-614-CAS-35766435 Steps: **1** Yield: **99%**

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

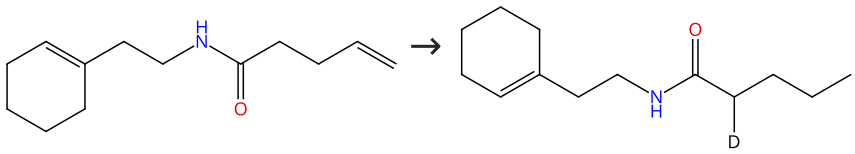
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 13 (1 Reaction)

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



Suppliers (2)

31-614-CAS-35766361

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

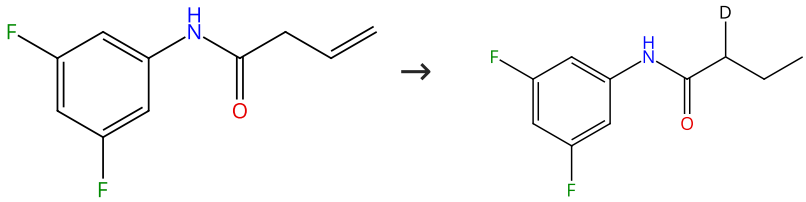
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 14 (1 Reaction)

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



Supplier (1)

31-614-CAS-35766390

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

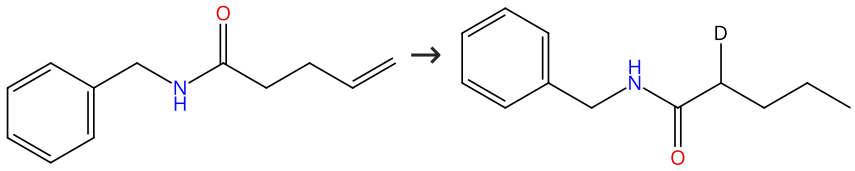
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 15 (1 Reaction)

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



Suppliers (5)

31-614-CAS-35766374

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

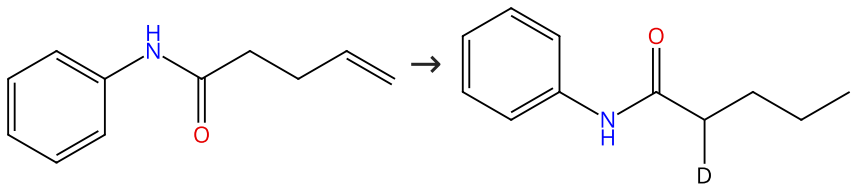
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 16 (1 Reaction)

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



Suppliers (10)

31-614-CAS-35766332

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

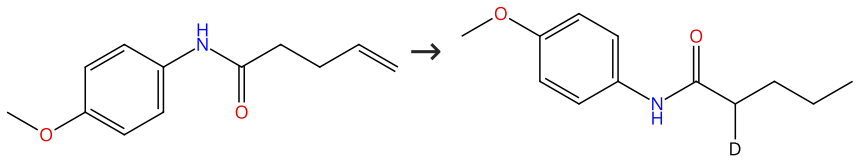
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 17 (1 Reaction)

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



Suppliers (10)

31-614-CAS-35766339

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

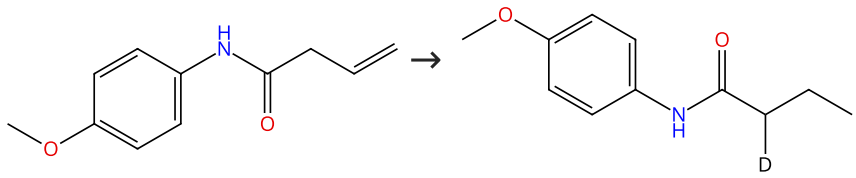
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 18 (1 Reaction)

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



Suppliers (5)

31-614-CAS-35766372

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

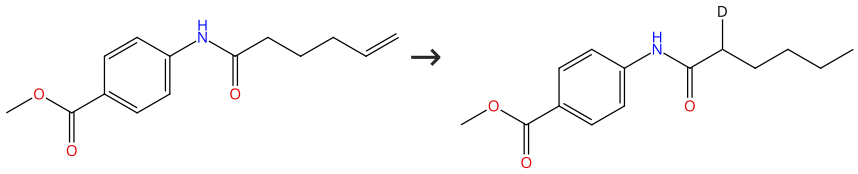
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 19 (1 Reaction)

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



Supplier (1)

31-614-CAS-35766422

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

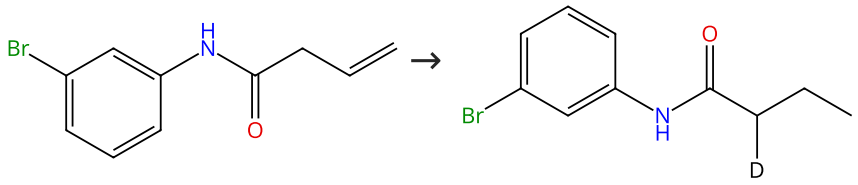
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 20 (1 Reaction)

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



Suppliers (4)

31-614-CAS-35766397

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

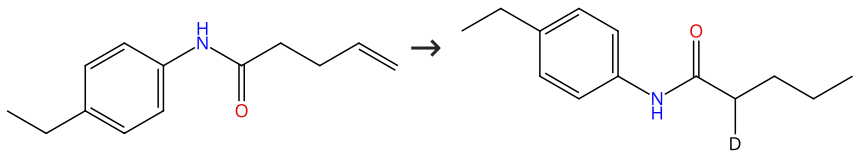
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 21 (1 Reaction)

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



Suppliers (5)

31-614-CAS-35766335

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

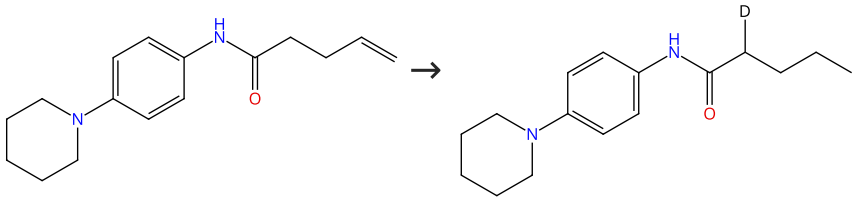
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 22 (1 Reaction)

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



31-614-CAS-35766348

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

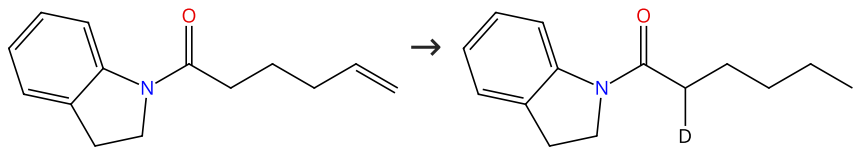
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 23 (1 Reaction)

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



Suppliers (2)

31-614-CAS-35766440

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

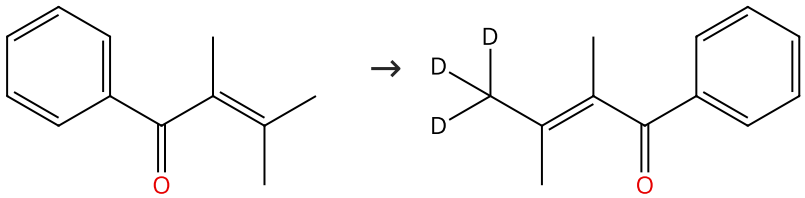
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 24 (1 Reaction)

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



Suppliers (4)

31-116-CAS-21352735

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

1.1 **Reagents:** Water-d_2
Catalysts: Cesium carbonate, Bis(1,5-cyclooctadiene)nickel, 1*H*-Imidazolium, 1,3-bis[2,6-bis(1-methylethyl)phenyl]-4,5-dihydro-, chloride (1:1)
Solvents: 1,4-Dioxane; 24 h, 150 °C

Experimental Protocols

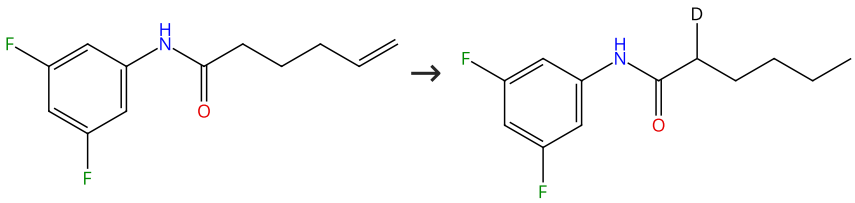
Ni-Catalyzed 1,2-Acyl Migration Reactions Triggered by C-C Bond Activation of Ketones

By: Jiang, Cheng; et al

ACS Catalysis (2020), 10(3), 1947-1953.

Scheme 25 (1 Reaction)

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



Supplier (1)

31-614-CAS-35766423

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

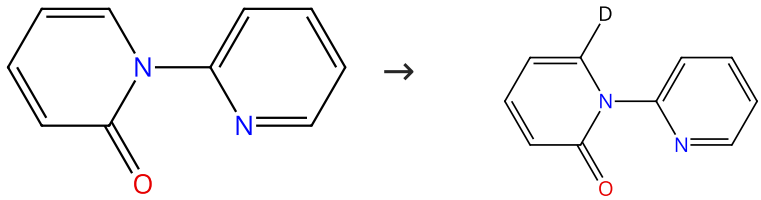
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 26 (1 Reaction)

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



Suppliers (8)

31-614-CAS-33726701

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

1.1 **Reagents:** Water-d_2
Catalysts: Triphenylphosphine, Bis(acetylacetonato)nickel, Sodium iodide
Solvents: Acetonitrile; 24 h, 160 °C

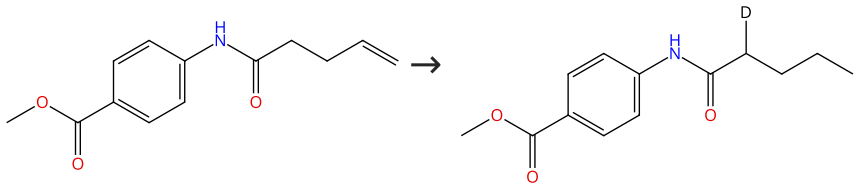
Switching the Reactivity of the Nickel-Catalyzed Reaction of 2-Pyridones with Alkynes: Easy Access to Polyaryl/ Polyalkyl Quinolinones

By: Prusty, Namrata; et al

Organic Letters (2022), 24(33), 6122-6127.

Scheme 27 (1 Reaction)

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



Suppliers (3)

31-614-CAS-35766355

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

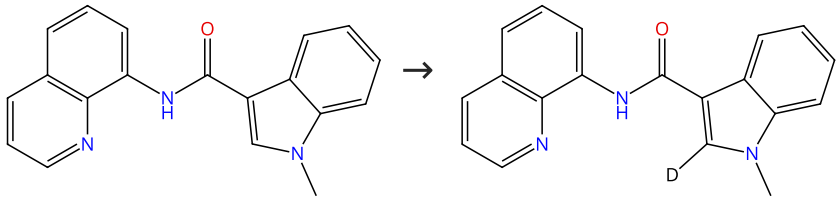
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 28 (1 Reaction)

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



Suppliers (2)

31-116-CAS-22795044

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

1.1 **Reagents:** Carbon dioxide, Potassium *tert*-butoxide, Manganese, Lithium chloride, Water-d_2
Catalysts: 4,7-Diphenyl-1,10-phenanthroline, Nickel dichloride
Solvents: Dimethylformamide; 12 h, 100 °C

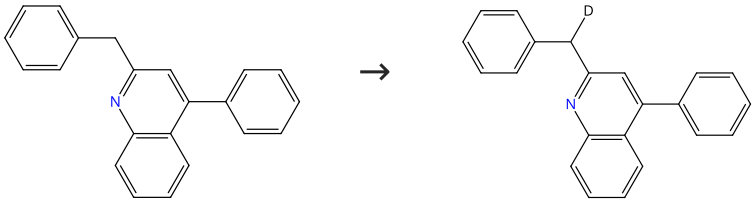
Ni-Catalyzed Direct Carboxylation of an Unactivated C-H Bond with CO_2

By: Pei, Chunzhe; et al

Organic Letters (2020), 22(17), 6897-6902.

Scheme 29 (1 Reaction)

Steps: **1** Yield: **91%**



Suppliers (2)

31-614-CAS-32982078

Steps: **1** Yield: **91%**

1.1 **Reagents:** Sodium *tert*-butoxide, Water-d_2
Catalysts: Bis(1,5-cyclooctadiene)nickel, 1*H*-Imidazolium, 1,3-bis[2,6-bis(1-methylethyl)phenyl]-, chloride (1:1)
Solvents: Mesitylene; 14 h, 80 °C

Experimental Protocols

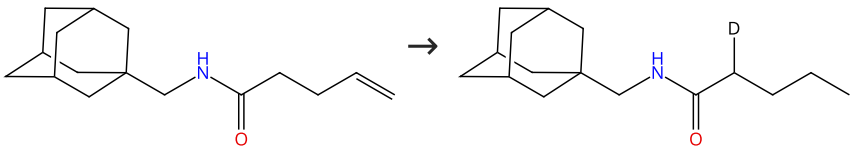
Nickel-Catalyzed Cascade Reaction of 2-Vinylanilines with gem-Dichloroalkenes

By: Lin, Jin; et al

Organic Letters (2022), 24(27), 4855-4859.

Scheme 30 (1 Reaction)

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



31-614-CAS-35766389

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

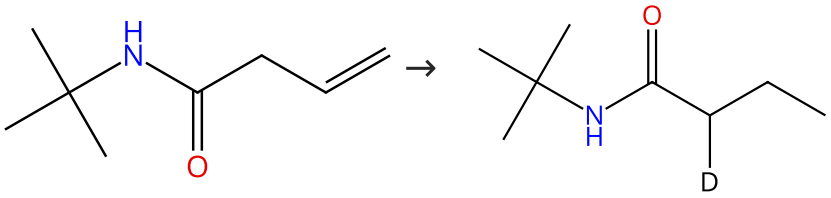
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 31 (1 Reaction)

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



Suppliers (3)

31-614-CAS-35766405

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

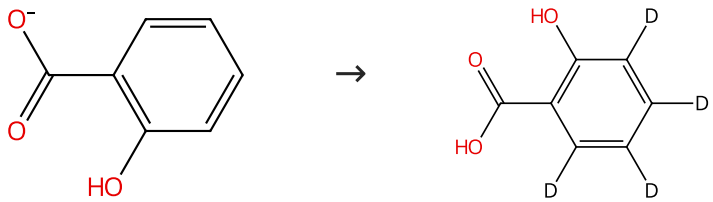
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 32 (1 Reaction)

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



Suppliers (4)

Suppliers (48)

31-116-CAS-13005977

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

1.1 **Reagents:** Sodium hydroxide-*d*
Catalysts: Aluminum nickel alloy
Solvents: Water-d_2; 18 h, reflux

1.2 **Reagents:** Sulfuric acid; acidified

Experimental Protocols

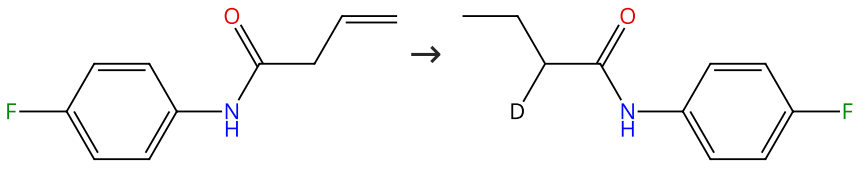
Magnetic Anisotropy in the [$Cu^{II}Tb^{III}(hfac)_2]_2$ Single Molecule Magnet: Experimental Study and Theoretical Modeling

By: Klokishner, Sophia I.; et al

Journal of Physical Chemistry C (2009), 113(20), 8573-8582.

Scheme 33 (1 Reaction)

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



Suppliers (3)

31-614-CAS-35766370

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

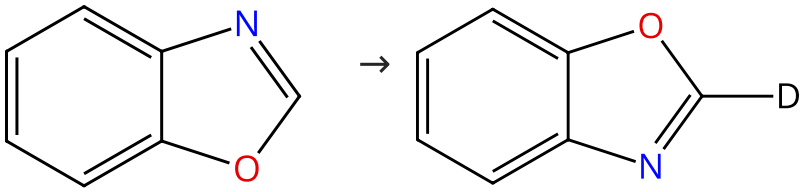
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 34 (3 Reactions)

Steps: **1** Yield: **78-85%**



Suppliers (81)

31-116-CAS-16148497

Steps: **1** Yield: **85%**

1.1 **Reagents:** Silver carbonate, Water-d_2, Propanoic acid-*d*, 2,2-dimethyl-
Catalysts: Nickel acetate, Triphenylphosphine
Solvents: *o*-Xylene; 3 min, rt; 2 h, 120 °C; 120 °C → rt

Experimental Protocols

Nickel Catalysis Enables Oxidative C(sp^2)-H/C(sp^2)-H Cross-Coupling Reactions between Two Hetero arenes

By: Cheng, Yangyang; et al

Angewandte Chemie, International Edition (2016), 55(40), 12275-12279.

31-116-CAS-16148498

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

1.1 **Reagents:** Silver carbonate, Water-d_2, *N*-8-Quinolinyl benzamide, Propanoic acid-*d*, 2,2-dimethyl-
Catalysts: Nickel acetate, Triphenylphosphine
Solvents: *o*-Xylene; 3 min, rt; 2 h, 120 °C; 120 °C → rt

Experimental Protocols

Nickel Catalysis Enables Oxidative C(sp^2)-H/C(sp^2)-H Cross-Coupling Reactions between Two Hetero arenes

By: Cheng, Yangyang; et al

Angewandte Chemie, International Edition (2016), 55(40), 12275-12279.

31-614-CAS-31947024

Steps: **1**

1.1 **Reagents:** 1-Adamantanecarboxylic acid, Water-d_2, Silver oxide (Ag_2O)
Catalysts: Tri-*o*-tolylphosphine, Nickel dichloride
Solvents: 1,4-Dioxane; 1 h, 110 °C

Experimental Protocols

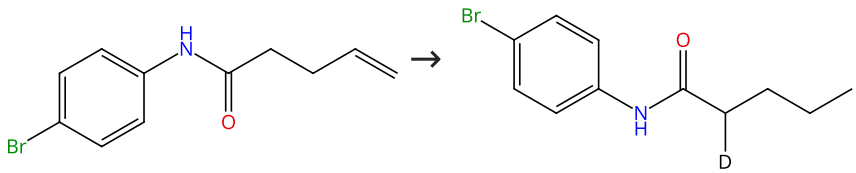
Expedient Ni-catalyzed C-H/C-H cross-dehydrogenative coupling of aryl amides with azoles

By: Sarkar, Tanumay; et al

Chemical Communications (Cambridge, United Kingdom) (2022), 58(40), 5980-5983.

Scheme 35 (1 Reaction)

Steps: **1** Yield: **85%**



Suppliers (5)

31-614-CAS-35766337

Steps: **1** Yield: **85%**

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

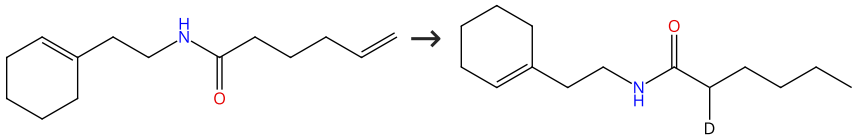
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 36 (1 Reaction)

Steps: **1** Yield: **84%**



31-614-CAS-35766429 Steps: **1** Yield: **84%**

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

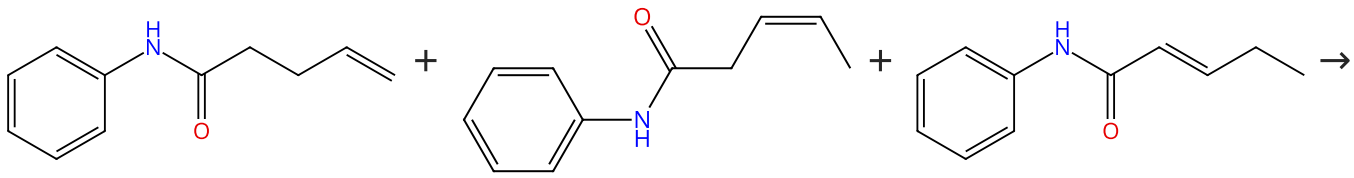
Experimental Protocols

Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

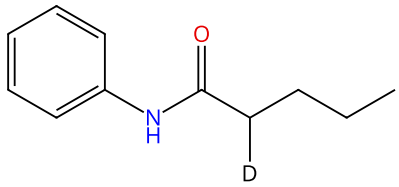
By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 37 (1 Reaction) Steps: **1** Yield: **83%**



Suppliers (10) Suppliers (3) Suppliers (4)



31-614-CAS-35766472 Steps: **1** Yield: **83%**

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 38 (1 Reaction) Steps: **1** Yield: **83%**

Absolute stereochemistry shown, Rotation (+)

Absolute stereochemistry shown

Suppliers (91)

31-116-CAS-15028080 Steps: **1** Yield: **83%**

1.1 **Catalysts:** Nickel
Solvents: Water-d_2; 144 h, reflux

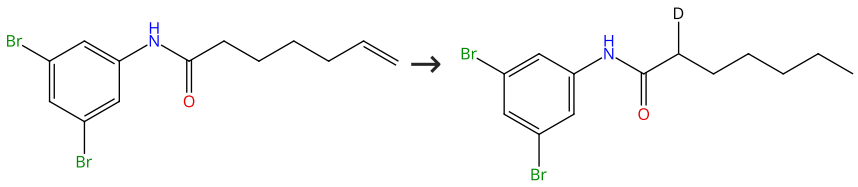
A new [^{2}H]-labeled α-trichloroimidate glucuronic ester for the synthesis of deuterated drug conjugates

By: Heinkele, Georg; et al

Journal of Labelled Compounds and Radiopharmaceuticals (2014), 57(12), 699-703.

Scheme 39 (1 Reaction)

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



31-614-CAS-35766454

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

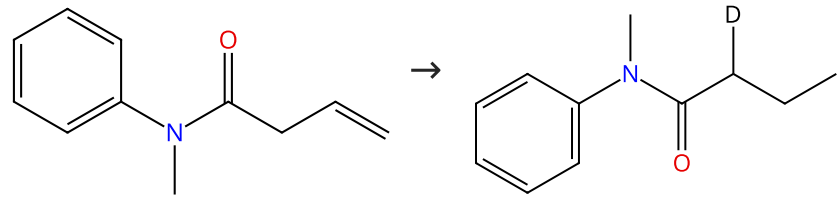
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 40 (1 Reaction)

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



Suppliers (9)

31-614-CAS-35766417

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

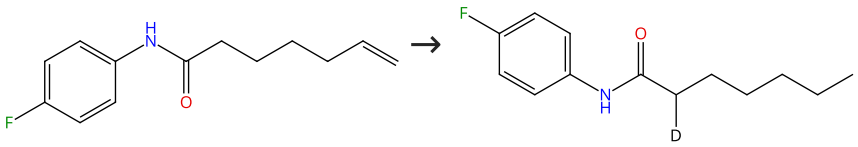
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 41 (1 Reaction)

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



31-614-CAS-35766446

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

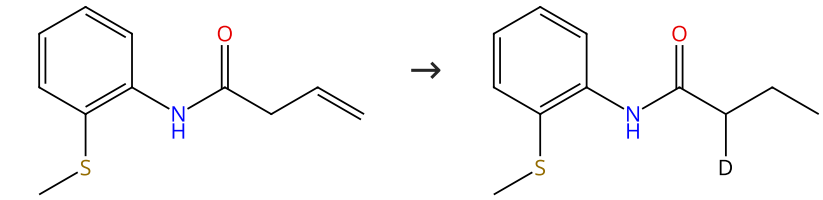
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 42 (1 Reaction)

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



Supplier (1)

31-614-CAS-35766385

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

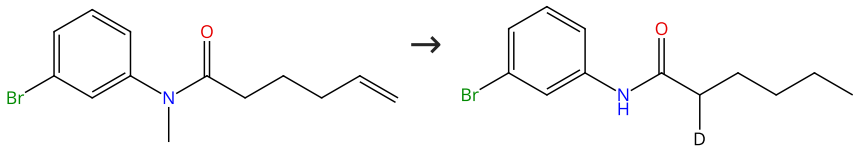
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 43 (1 Reaction)

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



Supplier (1)

31-614-CAS-35766415

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

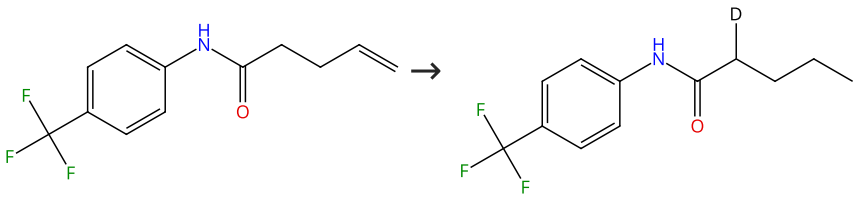
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 44 (1 Reaction)

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



Suppliers (3)

31-614-CAS-35766346

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

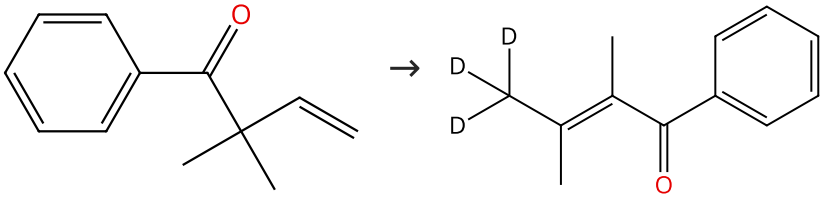
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 45 (1 Reaction)

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



Suppliers (5)

31-614-CAS-25535877

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

1.1 **Reagents:** Water-d_2
Catalysts: Cesium carbonate, Bis(1,5-cyclooctadiene)nickel, 1*H*-Imidazolium, 1,3-bis[2,6-bis(1-methylethyl)phenyl]-4,5-dihydro-, chloride (1:1)
Solvents: 1,4-Dioxane; 24 h, 150 °C

Experimental Protocols

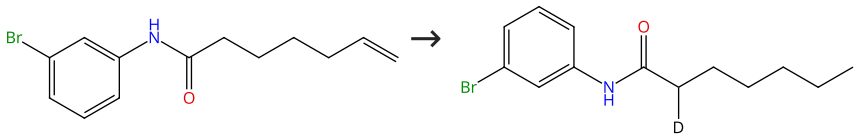
Ni-Catalyzed 1,2-Acyl Migration Reactions Triggered by C-C Bond Activation of Ketones

By: Jiang, Cheng; et al

ACS Catalysis (2020), 10(3), 1947-1953.

Scheme 46 (1 Reaction)

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



31-614-CAS-35766444

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

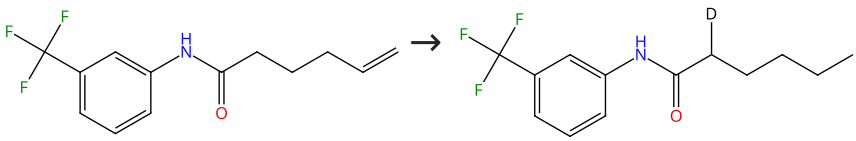
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 47 (1 Reaction)

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



Supplier (1)

31-614-CAS-35766430

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

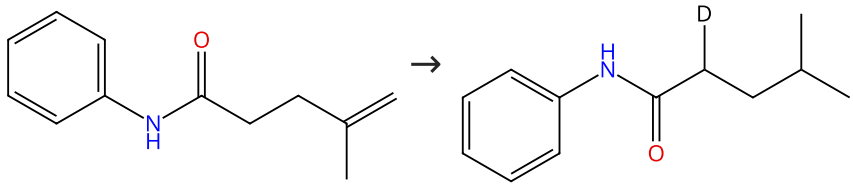
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 48 (1 Reaction)

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



Suppliers (4)

31-614-CAS-35766367

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

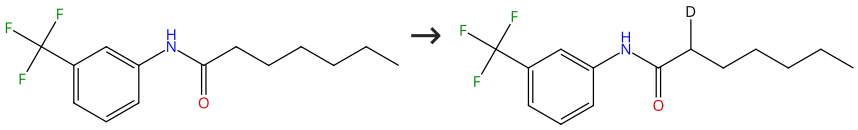
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 49 (1 Reaction)

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



Suppliers (3)

31-614-CAS-35766452

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

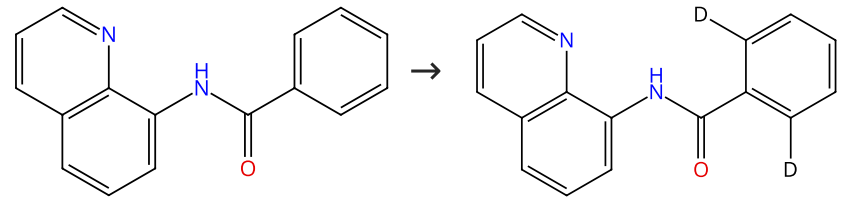
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 50 (1 Reaction)

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



Suppliers (25)

31-116-CAS-22684351

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

1.1 **Reagents:** Oxygen, Silver phosphate, Water-d_2, Tricyclo[3.3.1.1^{3,7}]decane-1-carboxylic acid, potassium salt (1:1)
Catalysts: Nickel acetate
Solvents: Dimethylacetamide; 4 h, 140 °C

Experimental Protocols

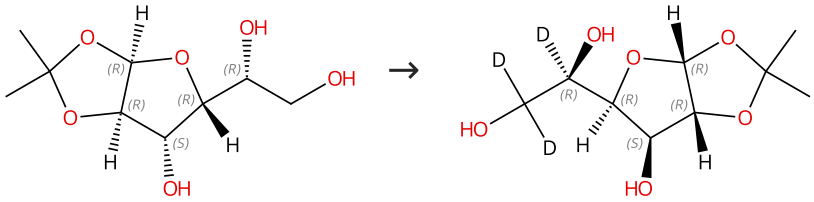
Nickel-catalyzed dual C(sp^2)-H activation of arenes: a new route to diaryl ethers

By: Lv, Ningning; et al

Organic Chemistry Frontiers (2020), 7(16), 2224-2229.

Scheme 51 (1 Reaction)

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



Absolute stereochemistry shown, Rotation (-)

Absolute stereochemistry shown, Rotation (-)

Suppliers (77)

31-116-CAS-3162105

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

1.1 **Solvents:** Water-d_2; rt → 85 °C

1.2 **Reagents:** Water-d_2
Catalysts: Nickel
Solvents: Water-d_2; reflux

Experimental Protocols

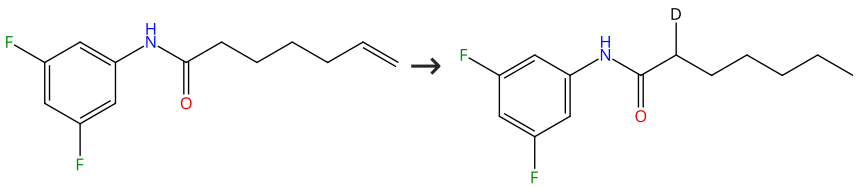
Regioselective synthesis of $1^{I},1^{II},5^{I},5^{II},6^{I},6^{I},6^{II},6^{II}$-$^{2}H_8$-cellobiose

By: Zhang, Fuyi; et al

Carbohydrate Research (2007), 342(17), 2546-2556.

Scheme 52 (1 Reaction)

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



31-614-CAS-35766450

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

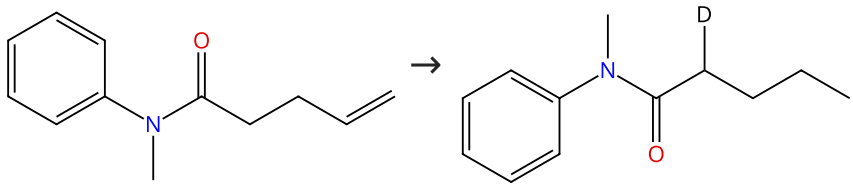
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 53 (1 Reaction)

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



Suppliers (8)

31-614-CAS-35766383

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

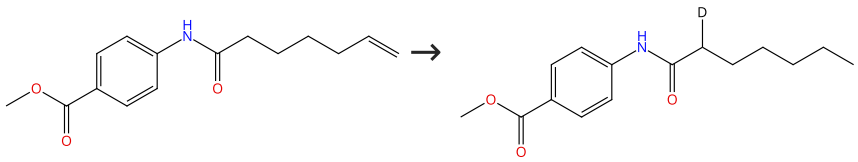
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 54 (1 Reaction)

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



31-614-CAS-35766431

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

1.1 **Reagents:** Water-d_2, Pinacolborane
Catalysts: Nickel, dibromo(6,6'-dimethyl-2,2'-bipyridine-κN^1, κ$N^{1'}$)-, (*T*-4)-
Solvents: Tetrahydrofuran; 8 h, 20 °C

Experimental Protocols

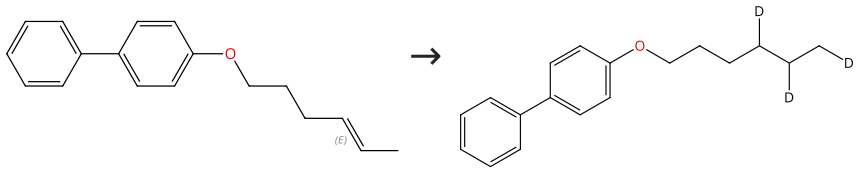
Remote Site-Selective C(sp^3)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy

By: Song, Heng; et al

ACS Catalysis (2023), 13(6), 3644-3654.

Scheme 55 (1 Reaction)

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



Double bond geometry shown

31-614-CAS-40030524

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

1.1 **Reagents:** 1,1',1''-(Chlorosilylidyne)tris[benzene], Tetrabutylammonium tetrafluoroborate, Water-d_2
Catalysts: Nickel, [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-κN^1,κ$N^{1'}$]dibromo-, (*T*-4)-
Solvents: Dimethylformamide; 10 h, rt

Experimental Protocols

Electroreduction of unactivated alkenes using water as hydrogen source

By: Wang, Yanwei; et al

Nature Communications (2024), 15(1), 2780.

Scheme 56 (1 Reaction)

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

Suppliers (96)

• HCl

Suppliers (41)

31-116-CAS-16884858

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

1.1 **Reagents:** Water-d_2
Catalysts: Nickel; rt → 180 °C; 4 h, 180 °C; 180 °C → 90 °C; 4 h, 90 °C → 180 °C; 180 °C → rt

1.2 **Reagents:** Hydrochloric acid
Solvents: Water; rt

Experimental Protocols

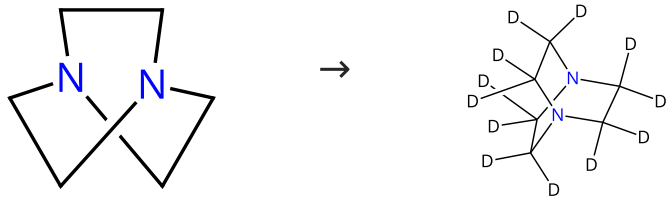
An efficient and scalable process to produce morpholine-d_8

By: Ye, Naidong; et al

Synthetic Communications (2017), 47(5), 481-485.

Scheme 57 (1 Reaction)

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



Suppliers (115)

Suppliers (25)

31-116-CAS-8991594

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

1.1 **Reagents:** Sodium
Solvents: Water-d_2; 0 °C; 0 °C; 50 °C

1.2 **Catalysts:** Nickel; < 55 °C; 1 h, 50 °C

1.3 **Solvents:** Water-d_2; 40 h, 100 °C; 100 °C → rt

Experimental Protocols

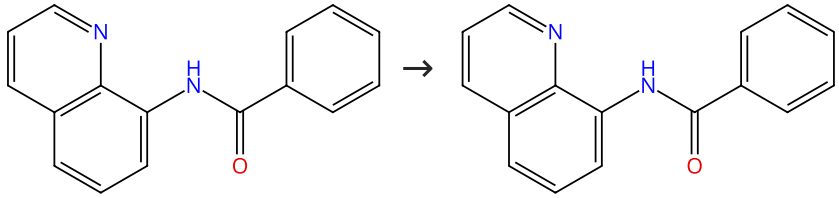
Dynamic Characterization of Crystalline Supramolecular Rotors Assembled through Halogen Bonding

By: Catalano, Luca; et al

Journal of the American Chemical Society (2015), 137(49), 15386-15389.

Scheme 58 (1 Reaction)

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



Suppliers (25)

31-614-CAS-28602446

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

1.1 **Reagents:** Silver carbonate, Water-d_2, Propanoic acid-d, 2,2-dimethyl-
Catalysts: Nickel acetate, Triphenylphosphine
Solvents: *o*-Xylene; 3 min, rt; 2 h, 120 °C; 120 °C → rt

Experimental Protocols

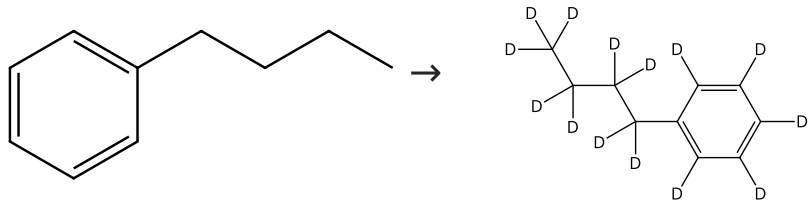
Nickel Catalysis Enables Oxidative C(sp^2)-H/C(sp^2)-H Cross-Coupling Reactions between Two Hetero arenes

By: Cheng, Yangyang; et al

Angewandte Chemie, International Edition (2016), 55(40), 12275-12279.

Scheme 59 (1 Reaction)

Steps: **1**



Suppliers (75)

Suppliers (13)

31-116-CAS-12414844

Steps: **1**

1.1 **Reagents:** Water-d_2
Catalysts: Nickel
Solvents: Water-d_2; 2 h, 250 °C

Experimental Protocols

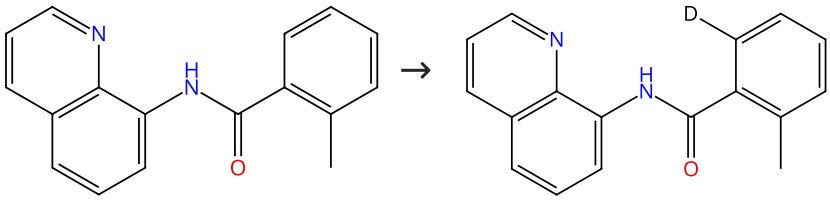
C-H bond activation by water on a palladium or platinum metal surface

By: Matsubara, Seijiro; et al

Synthesis (2007), (13), 2055-2059.

Scheme 60 (1 Reaction)

Steps: **1**



Suppliers (4)

31-116-CAS-21569312

Steps: **1**

1.1 **Reagents:** Sodium carbonate, Water-d_2, Silver sulfate
Catalysts: Nickel acetate
Solvents: 1,2-Dichlorobenzene; 24 h, 140 °C

Experimental Protocols

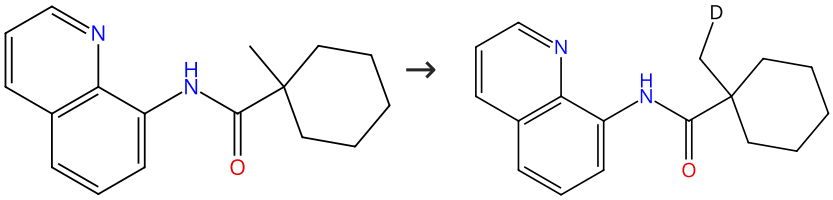
Nickel-Catalyzed ortho-Acyloxylation of Benzamides and Acrylamides with Carboxylic Acids

By: Lin, Jingyi; et al

ChemistrySelect (2020), 5(6), 1925-1928.

Scheme 61 (1 Reaction)

Steps: **1**



Supplier (1)

31-116-CAS-6951343

Steps: **1**

1.1 **Reagents:** Water-d_2
Catalysts: Nickel acetate, Triphenylphosphine
Solvents: Toluene; 3 h, 170 °C

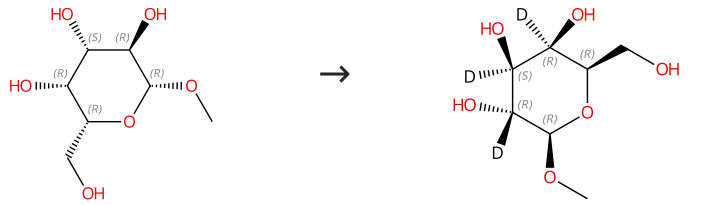
Nickel-Catalyzed Addition-Type Alkenylation of Unactivated, Aliphatic C-H Bonds with Alkynes: A Concise Route to Polysubstituted γ-Butyrolactones

By: Li, Mingliang; et al

Organic Letters (2015), 17(10), 2546-2549.

Scheme 62 (1 Reaction)

Steps: **1**



Absolute stereochemistry shown

Absolute stereochemistry shown

Suppliers (86)

31-116-CAS-9054879

Steps: **1**

1.1 **Reagents:** Water-d_2
Catalysts: Nickel
Solvents: Tetrahydrofuran; 6 min

Microwave-assisted C-H bond activation using a commercial microwave oven for rapid deuterium exchange labeling (C-H → C-D) in carbohydrates

By: Cioffi, Eugene A.; et al

Tetrahedron: Asymmetry (2005), 16(2), 471-475.

Scheme 63 (1 Reaction)

Steps: **1**

Suppliers (115)

31-614-CAS-40350569

Steps: **1**

1.1 **Reagents:** Sodium, Water-d_2
Catalysts: Nickel; rt; < 55 °C; 1 h, 55 °C → 60 °C

1.2 **Reagents:** Water-d_2; 48 h, 100 °C

Experimental Protocols

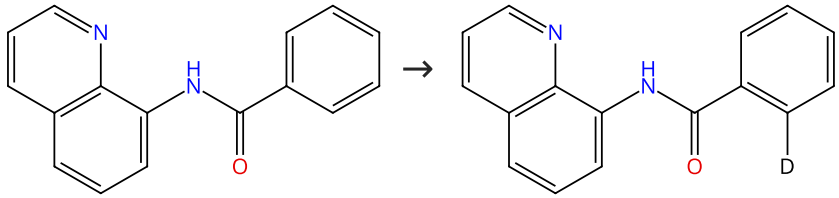
Indolocarbazole as a Platform for Concatenated Crystalline Rotors

By: Hernandez-Morales, Ernesto A.; et al

Crystal Growth & Design (2023), 23(9), 6785-6794.

Scheme 64 (1 Reaction)

Steps: **1**



Suppliers (25)

31-116-CAS-20302475

Steps: **1**

1.1 **Reagents:** Water-d_2
Catalysts: Dichlorobis(triethylphosphine)nickel
Solvents: Dimethylformamide; heated

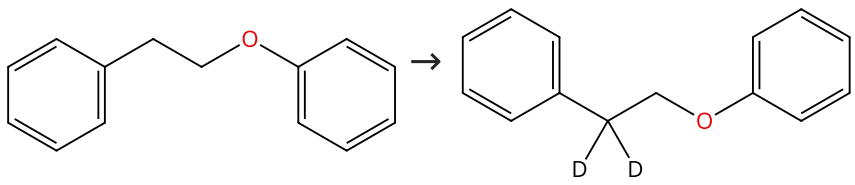
Synthesis of Seven-Membered Benzolactones by Nickel-Catalyzed C-H Coupling of Benzamides with Oxetanes

By: Xu, Shibo; et al

Chemistry - A European Journal (2019), 25(40), 9400-9404.

Scheme 65 (1 Reaction)

Steps: **1**



Suppliers (61)

31-116-CAS-21718432

Steps: **1**

1.1 **Reagents:** Water-d_2
Catalysts: Nickel
Solvents: Isopropanol; 1 h, 60 °C

Experimental Protocols

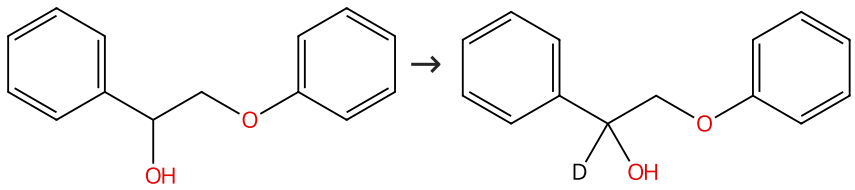
Multiple Mechanisms Mapped in Aryl Alkyl Ether Cleavage via Aqueous Electrocatalytic Hydrogenation over Skeletal Nickel

By: Zhou, Yuting; et al

Journal of the American Chemical Society (2020), 142(8), 4037-4050.

Scheme 66 (1 Reaction)

Steps: **1**



Suppliers (59)

Supplier (1)

31-116-CAS-21718433

Steps: **1**

1.1 **Reagents:** Water-d_2
Catalysts: Nickel
Solvents: Isopropanol; 9 h, 60 °C

Experimental Protocols

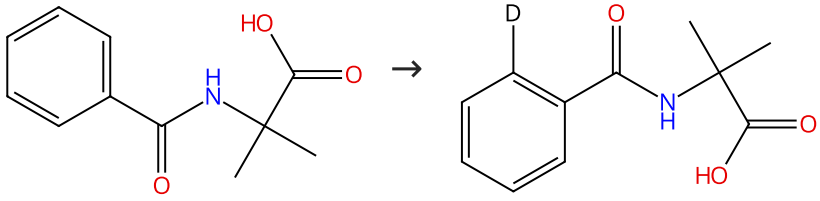
Multiple Mechanisms Mapped in Aryl Alkyl Ether Cleavage via Aqueous Electrocatalytic Hydrogenation over Skeletal Nickel

By: Zhou, Yuting; et al

Journal of the American Chemical Society (2020), 142(8), 4037-4050.

Scheme 67 (1 Reaction)

Steps: **1**



Suppliers (37)

31-116-CAS-20418746

Steps: **1**

1.1 **Reagents:** Sodium carbonate, 4-Iodotoluene, Tetrabuty lammonium bromide, Water-d_2
Catalysts: 2,4,6-Trimethylbenzoic acid, Methanesulfonic acid, 1,1,1-trifluoro-, nickel(2+) salt (2:1)
Solvents: Dimethyl sulfoxide; 16 h, 140 °C

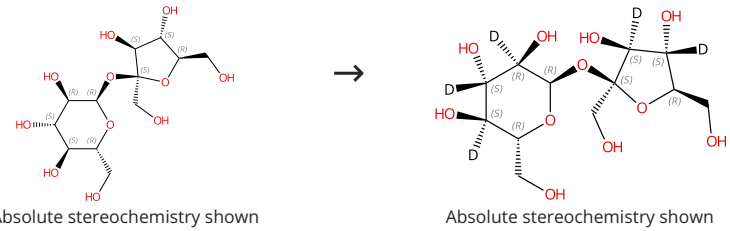
Ni(II)-catalyzed mono-selective ortho-arylation of unactivated aryl C-H bonds utilizing amino acids as a directing group

By: Cong, Zhanqing; et al

RSC Advances (2019), 9(19), 10820-10824.

Scheme 68 (1 Reaction)

Steps: **1**



Absolute stereochemistry shown

Absolute stereochemistry shown

Suppliers (255)

31-116-CAS-11188837

Steps: **1**

1.1 **Reagents:** Water-d_2
Catalysts: Nickel
Solvents: Tetrahydrofuran; 6 min

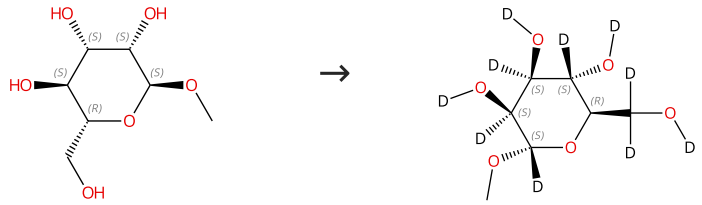
Microwave-assisted C-H bond activation using a commercial microwave oven for rapid deuterium exchange labeling (C-H → C-D) in carbohydrates

By: Cioffi, Eugene A.; et al

Tetrahedron: Asymmetry (2005), 16(2), 471-475.

Scheme 69 (1 Reaction)

Steps: **1**



Absolute stereochemistry shown

Absolute stereochemistry shown

Suppliers (114)

31-116-CAS-3598813

Steps: **1**

1.1 **Reagents:** Water-d_2
Catalysts: Nickel

Synthesis of model oligosaccharides of biological significance. 8. A synthesis of a specifically deuterated 2-propyl 3,6-di-o-[α-D-mannopyranosyl]-β-D-mannopyranoside

By: Dime, David S.; et al

Journal of Labelled Compounds and Radiopharmaceuticals (1987), 24(6), 725-39.

Scheme 70 (2 Reactions)

Steps: **1**

Absolute stereochemistry shown

Absolute stereochemistry shown

Suppliers (180)

Suppliers (92)

31-508-CAS-14855229

Steps: **1**

1.1 **Reagents:** Hydrogen peroxide
Catalysts: Tungstate(16-), [octaaquabis[μ5-[*N*-[(carboxy-κ*O*)methyl]-*N*-[4-(hydroxy-κ*O*)-4,4-di(phosphono-κ*O*:κ*O*:κ*O*')butyl]glycinato(7-)-κ*N*,κ*O*]]di-μ3-hydroxynonanickelate]dotetraconta-μ-oxooctadecaoxobis[μ12-[phosphato(3-)-κ*O*:κ*O*:κ*O*:κ*O*':κ*O*':κ*O*'':κ*O*'':κ*O*''':κ*O*''':κ*O*''']]octadeca-, potassium sodium, hydrate (1:15:1:45), stereoisomer
Solvents: Water, Water-d_2; rt; 27 h, 85 °C

Experimental Protocols

Properties of a Tunable Multin uclear Nickel Polyoxotungstate Platform

By: El Moll, Hani; et al

Chemistry - A European Journal (2013), 19(21), 6753-6765.

31-508-CAS-8191575

Steps: **1**

1.1 **Reagents:** Hydrogen peroxide
Catalysts: Tungstate(16-), dotetraconta-μ-oxooctadecaoxobis[μ12-[phosphato(3-)-κ*O*:κ*O*:κ*O*:κ*O*':κ*O*':κ*O*'':κ*O*'':κ*O*''':κ*O*''':κ*O*''']][tetraaquadi-μ3-hydroxybis[μ4-[[*P*,*P*-[4-imino-1-(hydroxy-κ*O*)butylidene]bis[phosphonato-κ*O*:κ*O*:κ*O*']](5-)]]heptanickelate]octadeca-, potassium sodium hydrogen, hydrate (1:7:7:2:34), stereoisomer
Solvents: Water, Water-d_2; rt; 27 h, 85 °C

Experimental Protocols

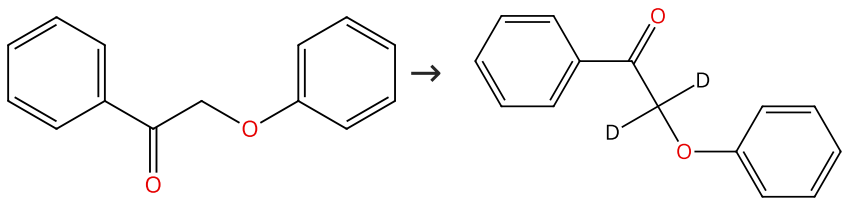
Properties of a Tunable Multin uclear Nickel Polyoxotungstate Platform

By: El Moll, Hani; et al

Chemistry - A European Journal (2013), 19(21), 6753-6765.

Scheme 71 (1 Reaction)

Steps: **1**



Suppliers (67)

31-116-CAS-21718434

Steps: **1**

1.1 **Reagents:** Water-d_2
Catalysts: Nickel
Solvents: Isopropanol; 10 min, 60 °C

Experimental Protocols

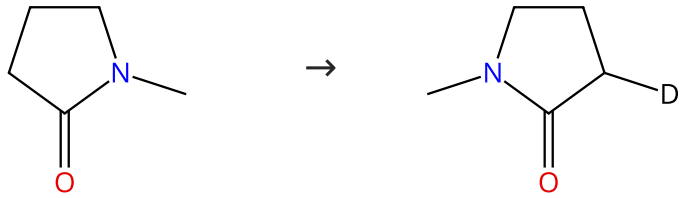
Multiple Mechanisms Mapped in Aryl Alkyl Ether Cleavage via Aqueous Electrocatalytic Hydrogenation over Skeletal Nickel

By: Zhou, Yuting; et al

Journal of the American Chemical Society (2020), 142(8), 4037-4050.

Scheme 72 (1 Reaction)

Steps: **1**



Suppliers (260)

31-116-CAS-21782552

Steps: **1**

1.1 **Reagents:** Manganese, Lithium chloride, Water-d_2
Catalysts: Dichloro[1,2-di(methoxy-κ*O*)ethane]nickel, Terpyridine
Solvents: Mesitylene; 24 h, 170 °C

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

Experimental Protocols

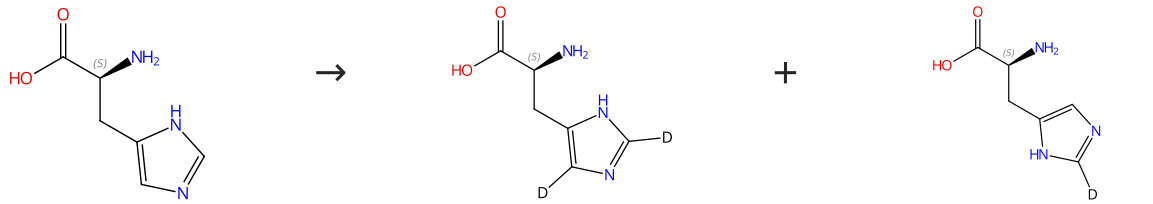
Nickel-Catalyzed Claisen Condensation Reaction between Two Different Amides

By: Chen, Jiajia; et al

Organic Letters (2020), 22(6), 2287-2292.

Scheme 73 (1 Reaction)

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



Absolute stereochemistry shown, Rotation (-)

Absolute stereochemistry shown

Absolute stereochemistry shown

Suppliers (158)

31-614-CAS-39077233 Steps: **1** Yield: **99%**

1.1 **Reagents:** Deuterium
Catalysts: Nickel (complexes with N-heterocyclic carbenes), Palladium (complexes with N-heterocyclic carbenes), 2135813-04-4 (Palladium nanoparticle, Nickle nanoparticle, and bimetallic Palladium/...)
Solvents: Water-d_2; 48 h, pH 8 - 9, 2 bar, 55 °C

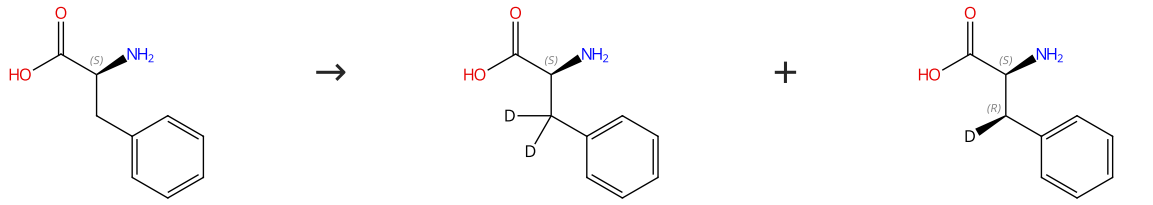
Experimental Protocols

Water-soluble NHC Pd/Ni bimetallic nanoparticles for H/D exchange in aromatic amino-acids

By: Suarez-Riano, Oscar; et al

Chemical Communications (Cambridge, United Kingdom) (2023), 59(8), 1062-1065.

Scheme 74 (1 Reaction) Steps: **1** Yield: **97%**



Absolute stereochemistry shown, Rotation (-)

Suppliers (205)

Absolute stereochemistry shown

Suppliers (34)

Absolute stereochemistry shown

Supplier (1)

31-614-CAS-39077232 Steps: **1** Yield: **97%**

1.1 **Reagents:** Deuterium
Catalysts: Nickel (complexes with N-heterocyclic carbenes), Palladium (complexes with N-heterocyclic carbenes), 2135813-04-4 (Palladium nanoparticle, Nickle nanoparticle, and bimetallic Palladium/...)
Solvents: Water-d_2; 48 h, pH 8 - 9, 2 atm, 55 °C

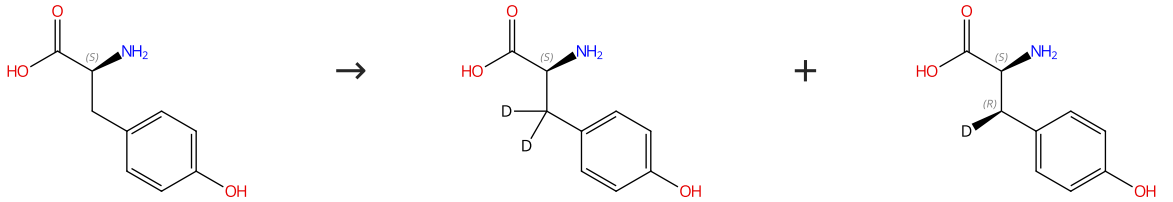
Experimental Protocols

Water-soluble NHC Pd/Ni bimetallic nanoparticles for H/D exchange in aromatic amino-acids

By: Suarez-Riano, Oscar; et al

Chemical Communications (Cambridge, United Kingdom) (2023), 59(8), 1062-1065.

Scheme 75 (1 Reaction) Steps: **1** Yield: **21%**



Absolute stereochemistry shown, Rotation (-)

Suppliers (177)

Absolute stereochemistry shown

Suppliers (32)

Absolute stereochemistry shown

Supplier (1)

31-614-CAS-39077236 Steps: **1** Yield: **21%**

1.1 **Reagents:** Deuterium
Catalysts: Nickel (complexes with N-heterocyclic carbenes), Palladium (complexes with N-heterocyclic carbenes), 2135813-04-4 (Palladium nanoparticle, Nickle nanoparticle, and bimetallic Palladium/...)
Solvents: Water-d_2; 48 h, pH 11 - 12, 2 bar, 55 °C

Experimental Protocols

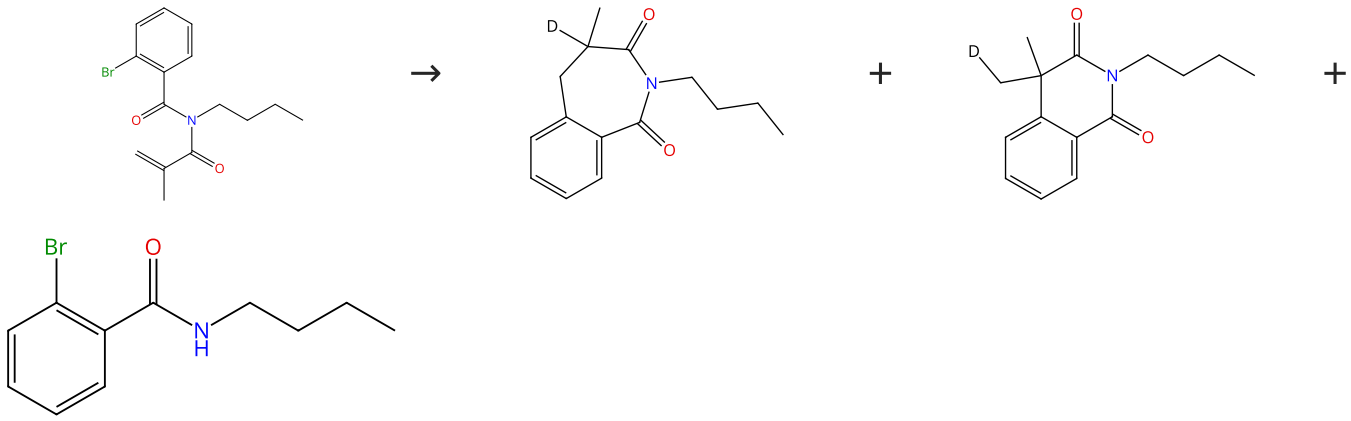
Water-soluble NHC Pd/Ni bimetallic nanoparticles for H/D exchange in aromatic amino-acids

By: Suarez-Riano, Oscar; et al

Chemical Communications (Cambridge, United Kingdom) (2023), 59(8), 1062-1065.

Scheme 76 (1 Reaction)

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



Suppliers (48)

31-614-CAS-32146465

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

1.1 **Reagents:** Manganese, Water-d_2
Catalysts: Dibromo[1,2-di(methoxy-κ*O*)ethane]nickel, *N*,*N*'-(2,6-Pyridinediyldiethylidyne)bis[2,6-bis(1-methylethyl)benzenamine
Solvents: Dimethyl sulfoxide; 48 h, 80 °C

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

Experimental Protocols

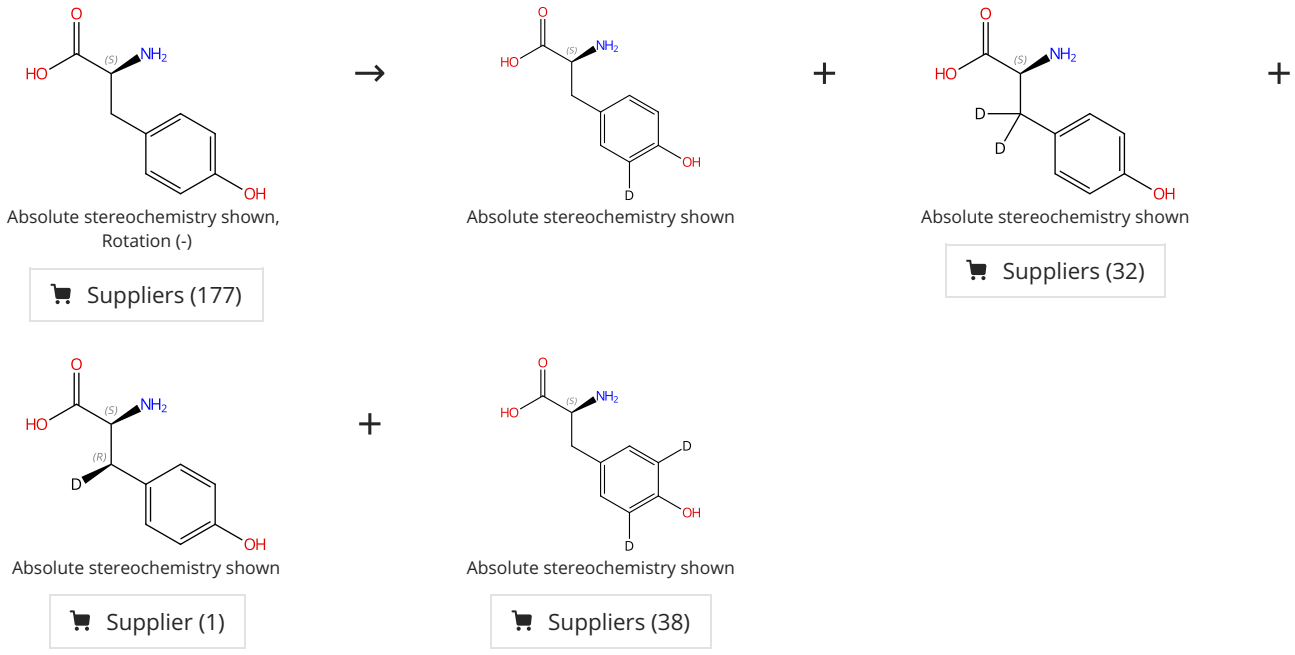
Switchable 1,2-Rearrangement Enables Expedient Synthesis of Structurally Diverse Fluorine-Containing Scaffolds

By: Ping, Yuanyuan; et al

Journal of the American Chemical Society (2022), 144(26), 11626-11637.

Scheme 77 (1 Reaction)

Steps: **1** Yield: **5%**



Absolute stereochemistry shown, Rotation (-)

Suppliers (177)

Absolute stereochemistry shown

Absolute stereochemistry shown

Suppliers (32)

Absolute stereochemistry shown

Supplier (1)

Absolute stereochemistry shown

Suppliers (38)

31-614-CAS-39077230

Steps: **1** Yield: **5%**

1.1 **Reagents:** Deuterium
Catalysts: Nickel (complexes with N-heterocyclic carbenes), Palladium (complexes with N-heterocyclic carbenes), 2135813-04-4 (Palladium nanoparticle, Nickle nanoparticle, and bimetallic Palladium/...)
Solvents: Water-d_2; 48 h, pH 11 - 12, 2 bar, 120 °C

Experimental Protocols

Water-soluble NHC Pd/Ni bimetallic nanoparticles for H/D exchange in aromatic amino-acids

By: Suarez-Riano, Oscar; et al

Chemical Communications (Cambridge, United Kingdom) (2023), 59(8), 1062-1065.