
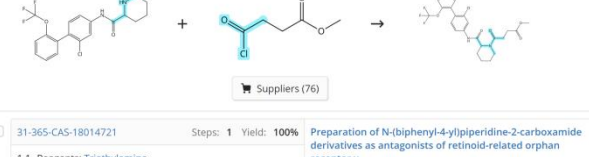
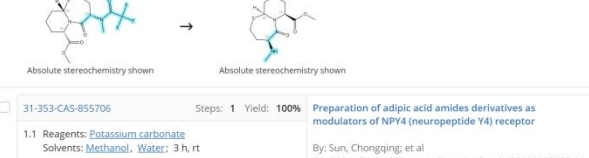
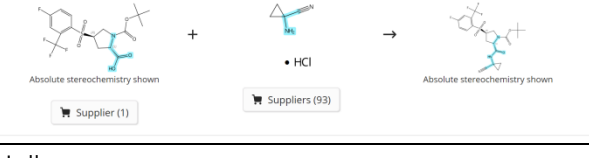
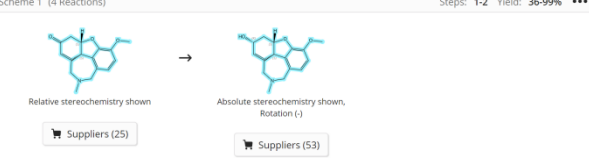
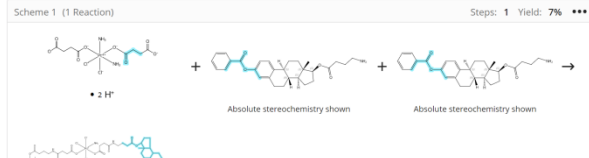
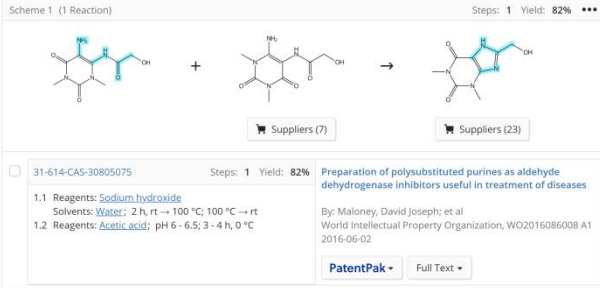
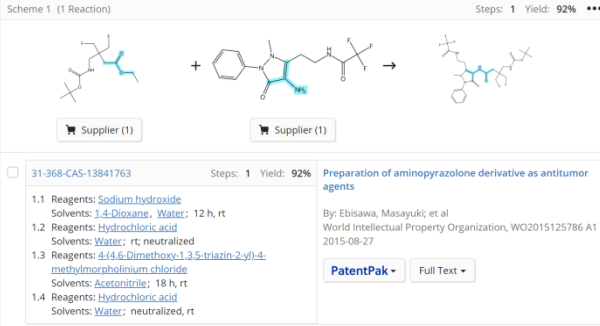
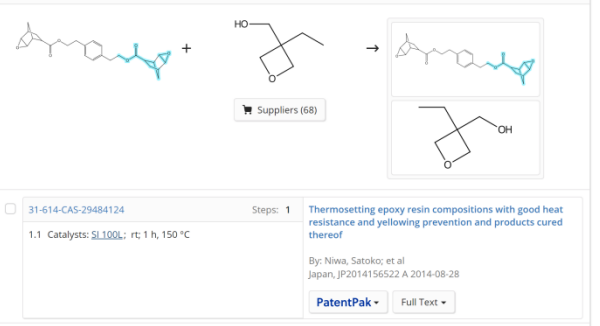

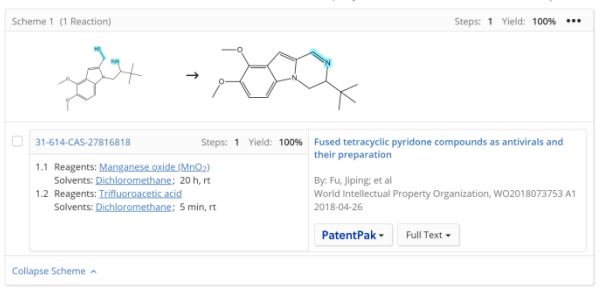



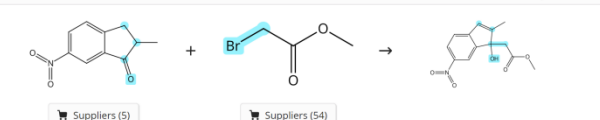
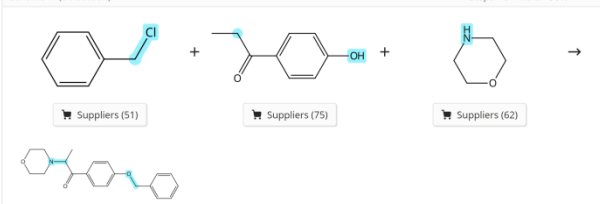

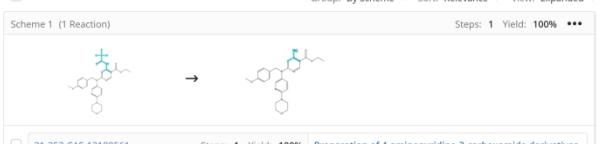
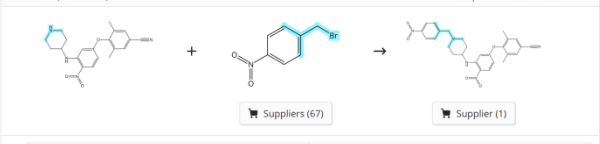






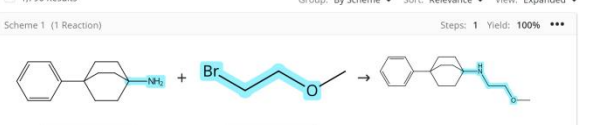
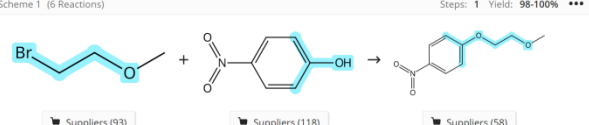

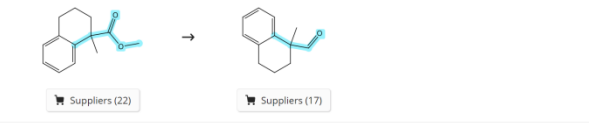
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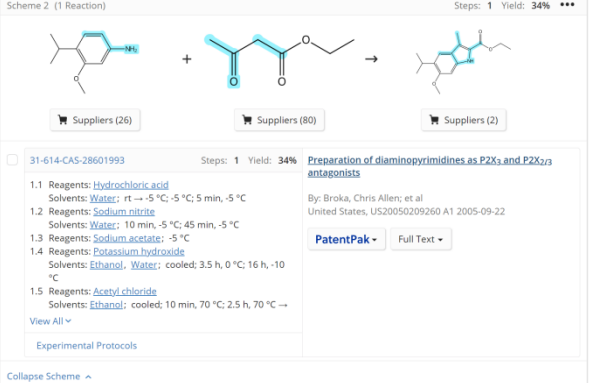
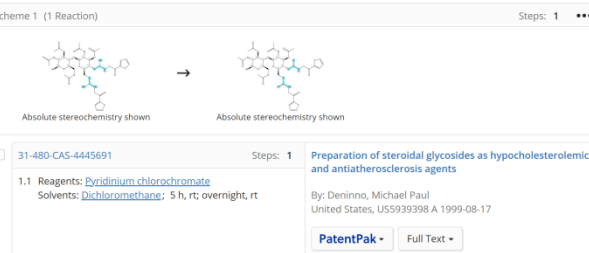
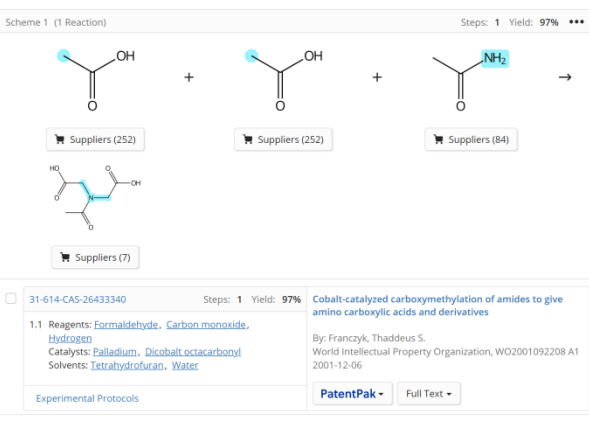
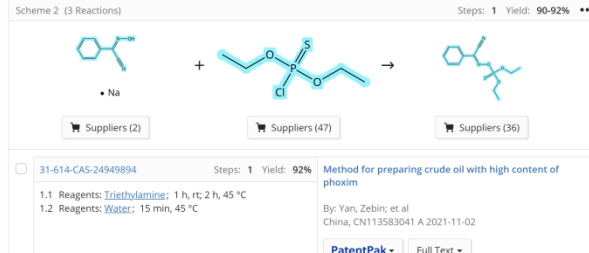
Route 5 Step 1	 <p>Suppliers (7) Suppliers (17) Supplier (1)</p> <p>31-179-CAS-7431019 Steps: 1 Yield: 100% Preparation of fused bicyclic thiazole and thiophene derivatives as PI3-kinase inhibitors</p> <p>1.1 Reagents: Tetrabutylammonium bromide, Tripotassium phosphate Catalysts: Tetakis(triphenylphosphine)palladium Solvents: 1,2-Dimethoxyethane, Water; rt → reflux; 2.5 h, reflux; reflux → rt</p> <p>By: Kinsella, Natasha; et al World Intellectual Property Organization, WO2009071895 A1 2009-06-11</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/63f35fa9692896544bfdc9e4/1
Step 2	 <p>Suppliers (76)</p> <p>31-365-CAS-18014721 Steps: 1 Yield: 100% Preparation of N-(biphenyl-4-yl)piperidine-2-carboxamide derivatives as antagonists of retinoid-related orphan receptor γ</p> <p>1.1 Reagents: Triethylamine Solvents: Dichloromethane; 0 °C → rt; 30 min, rt</p> <p>By: Hayashi, Shinnosuke; et al World Intellectual Property Organization, WO2017131156 A1 2017-08-03</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/63f3600e692896544bfdcf6c/1
Step 3	 <p>Absolute stereochemistry shown Absolute stereochemistry shown</p> <p>31-353-CAS-855706 Steps: 1 Yield: 100% Preparation of adipic acid amides derivatives as modulators of NP4 (neuropeptide Y4) receptor</p> <p>1.1 Reagents: Potassium carbonate Solvents: Methanol, Water; 3 h, rt</p> <p>By: Sun, Chongqing; et al World Intellectual Property Organization, WO2012125622 A1 2012-09-20</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/63f36073692896544bfdd49b/1
Step 4	 <p>Absolute stereochemistry shown Absolute stereochemistry shown</p> <p>Supplier (1) Suppliers (93)</p>	https://scifinder-n.cas.org/search/reaction/63f360bb692896544bfdd815/1
Step 5	Null	
Route 6 Step 1	 <p>Relative stereochemistry shown Absolute stereochemistry shown, Rotation (-)</p> <p>Suppliers (25) Suppliers (53)</p> <p>31-513-CAS-7629694 Steps: 1 Yield: 99% Synthesis of morphine and related derivatives</p> <p>1.1 Reagents: Narwedine 1.2 Reagents: Lithium tri-sec-butylborohydride</p> <p>By: Magnus, Philip D.; et al World Intellectual Property Organization, WO2010132570 A1 2010-11-18</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/63f36201692896544bfdeb3c/1
Route 7 Step 1	 <p>Absolute stereochemistry shown Absolute stereochemistry shown</p> <p>2 H⁺</p> <p>31-367-CAS-7786671 Steps: 1 Yield: 7% Coordination complexes having tethered therapeutic agents and/or targeting moieties, and methods of making and using the same</p> <p>1.1 Reagents: Diisopropylcarbodiimide Catalysts: 4-Dimethylaminopyridine Solvents: Dimethylformamide; 10 min, rt 1.2 15 h, rt</p> <p>By: Lippard, Stephen J.; et al United States, US20040235712 A1 2004-11-25</p> <p>PatentPak Full Text</p> <p>Collapse Scheme</p>	https://scifinder-n.cas.org/search/reaction/63f36249692896544bfdef43/1

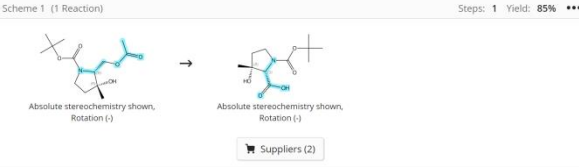
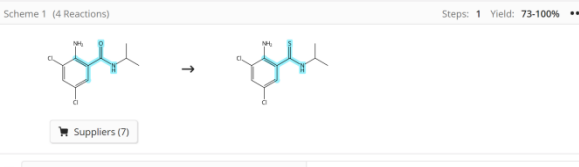
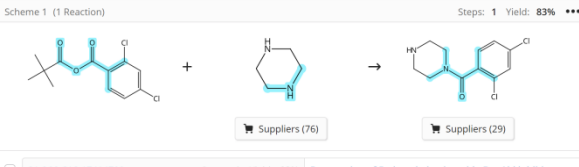

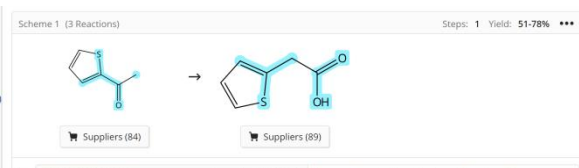
Route 8 Step 1	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 82%</p> <p>31-614-CAS-30805075 Steps: 1 Yield: 82% Preparation of polysubstituted purines as aldehyde dehydrogenase inhibitors useful in treatment of diseases</p> <p>1.1 Reagents: Sodium hydroxide Solvents: Water; 2 h, rt → 100 °C; 100 °C → rt 1.2 Reagents: Acetic acid; pH 6 - 6.5; 3 - 4 h, 0 °C</p> <p>By: Maloney, David Joseph; et al World Intellectual Property Organization, WO2016086008 A1 2016-06-02</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/63f36325692896544bfdc71/1
Step 2	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 92%</p> <p>31-368-CAS-13841763 Steps: 1 Yield: 92% Preparation of aminopyrazolone derivative as antitumor agents</p> <p>1.1 Reagents: Sodium hydroxide Solvents: 1,4-Dioxane, Water; 12 h, rt 1.2 Reagents: Hydrochloric acid Solvents: Water; rt; neutralized 1.3 Reagents: 4-(4,6-Dimethoxy-1,3,5-triazin-2-yl)-4-methylmorpholinium chloride Solvents: Acetonitrile; 18 h, rt 1.4 Reagents: Hydrochloric acid Solvents: Water; neutralized, rt</p> <p>By: Ebisawa, Masayuki; et al World Intellectual Property Organization, WO2015125786 A1 2015-08-27</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/63f363e4692896544bfe0871/1
Step 3	 <p>Scheme 1 (1 Reaction) Steps: 1</p> <p>31-614-CAS-29484124 Steps: 1 Thermosetting epoxy resin compositions with good heat resistance and yellowing prevention and products cured thereof</p> <p>1.1 Catalysts: SI100L; rt; 1 h, 150 °C</p> <p>By: Niwa, Satoko; et al Japan, JP2014156522 A 2014-08-28</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/63f364c6692896544bfe1457/1
Route 9 Step 1	 <p>Scheme 1 (8 Reactions) Steps: 1 Yield: 87-96%</p> <p>31-366-CAS-17583678 Steps: 1 Yield: 96% An improved process for the preparation of thalidomide</p> <p>1.1 Reagents: Triethylamine Solvents: Acetic acid; 3 h, reflux; 1 h, 25 - 30 °C 1.2 Solvents: Dimethyl sulfoxide; 20 - 30 min, 70 - 75 °C 1.3 Solvents: Water; 2 h, 25 - 30 °C</p> <p>By: Konakanchi, Durga Prasad; et al World Intellectual Property Organization, WO2017081701 A1 2017-05-18</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/63f36567692896544bfe1c68/1
Route 10 Step 1	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100%</p> <p>31-614-CAS-27816818 Steps: 1 Yield: 100% Fused tetracyclic pyridone compounds as antivirals and their preparation</p> <p>1.1 Reagents: Manganese oxide (MnO₂) Solvents: Dichloromethane; 20 h, rt 1.2 Reagents: Trifluoroacetic acid Solvents: Dichloromethane; 5 min, rt</p> <p>By: Fu, Jiping; et al World Intellectual Property Organization, WO2018073753 A1 2018-04-26</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/63f365a4692896544bfe1fbf/1
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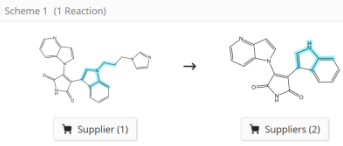
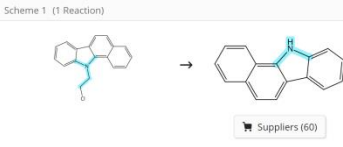
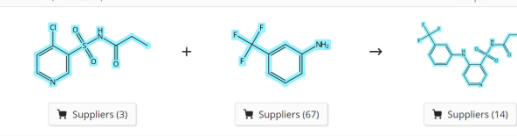

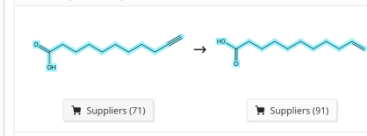
<p>Route 11 Step 1</p>	 <p>Suppliers (67) Suppliers (49) Suppliers (13)</p> <p>31-313-CAS-2547010 Steps: 1 1.1 Reagents: Triethylamine, Titanium isopropoxide Solvents: Ethanol 1.2 Reagents: Sodium borohydride Experimental Protocols Full Text</p> <p>Synthesis and Structure-Activity Relationships of Trisubstituted Phenyl Urea Derivatives as Neuropeptide Y5 Receptor Antagonists By: Fotsch, Christopher; et al Journal of Medicinal Chemistry (2001), 44(14), 2344-2356</p>	<p>https://scifinder-n.cas.org/search/reaction/63f36635692896544bfe27fc/1</p>
<p>Route 12 Step 1</p>	 <p>Suppliers (6) Suppliers (2) Suppliers (2)</p> <p>31-614-CAS-27929969 Steps: 1 No Data Available Muscarinic receptor subtype specificity of (N,N-dialkylamino)alkyl 2-cyclohexyl-2-phenylpropanates: cylex henes (cyclohexyl-substituted aprophen analogs) By: Leader, Haim; et al Journal of Medicinal Chemistry (1992), 35(7), 1290-5 Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/63f36c01692896544bfe8555/1</p>
<p>Route 13 Step 1</p>	 <p>Suppliers (47) Suppliers (387) Suppliers (32)</p> <p>31-614-CAS-30313339 Steps: 1 Yield: 100% 1.1 Catalysts: Tetracarbonyl-η-hydro(1,2,3,4,5-η)-1-hydroxy-ylato-2,3,4,5-tetraphenyl-2,4-cyclopentadiene Solvents: Methanol; 5 h, 90 °C Selective preparation of methyl esters via Ruthenium-catalyzed hydrogenative coupling of aldehydes with methanol By: Chakraborty, Sumit; et al World Intellectual Property Organization, WO2020102123 A1 2020-05-22 PatentPak Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/63f36c7e692896544bfe8e12/1</p>
<p>Step 2</p>	 <p>Suppliers (5) Suppliers (54)</p> <p>31-320-CAS-11743998 Steps: 1 1.1 Reagents: Mercury alloy, nonbase -Hg, Zn Catalysts: Iodine Solvents: Diethyl ether, Benzene; 5 min, rt; 11 h, 65 °C 1.2 Reagents: p-Toluenesulfonic acid monohydrate, Calcium chloride Solvents: Toluene; overnight, reflux Preparation of lactone compounds for treating patient with precancerous lesions By: Gross, Paul; et al United States, US5776962 A 1998-07-07 PatentPak Full Text</p> <p>Collapse Scheme</p>	<p>https://scifinder-n.cas.org/search/reaction/63f36d10692896544bfe98f1/1</p>
<p>Route 14 Step 1</p>	<p>Null</p>	
<p>Step 2</p>	<p>Null</p>	
<p>Route 15 Step 1</p>	 <p>Suppliers (51) Suppliers (75) Suppliers (62)</p> <p>31-008-CAS-20974636 Steps: 1 Yield: 90% 1.1 Reagents: Sodium hydride Catalysts: Tetrabutylammonium bromide Solvents: Toluene, Water; 90 °C 1.2 Catalysts: Aluminum chloride Solvents: Methanol, Toluene; rt → 45 °C 1.3 Reagents: Bromine; 40 - 45 °C 1.4 Solvents: Toluene; 2 h, 110 °C Process for the preparation of bazedoxifene By: Ferrari, Massimo; et al United States, US20190389842 A1 2019-12-26 PatentPak Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/63f36f75692896544bfec35e/1</p>

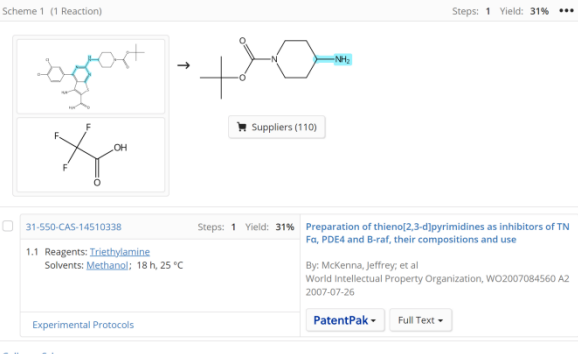
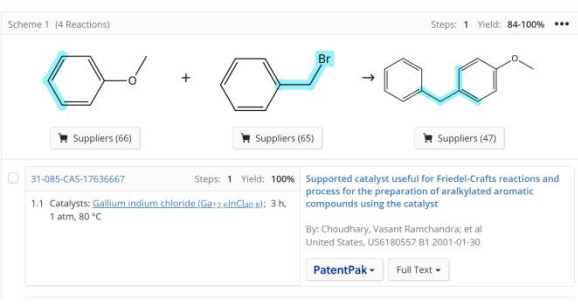
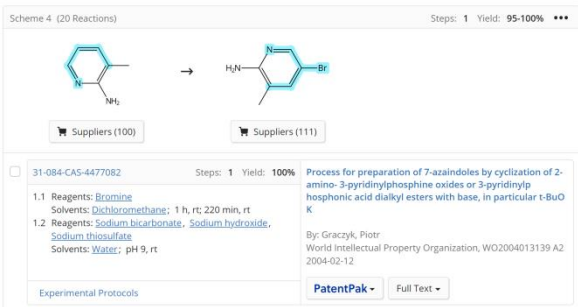

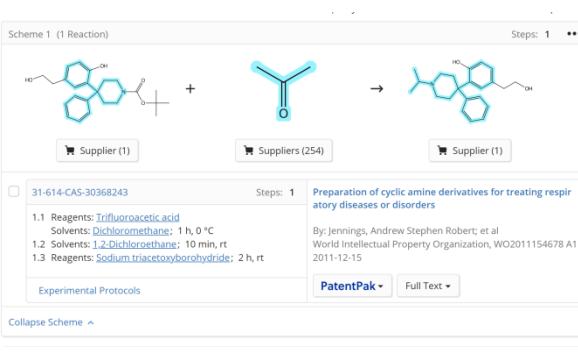
Route 16 Step 1	 <p>31-357-CAS-13549775 Steps: 1 Yield: 99% Process for preparation of propiverine hydrochloride</p> <p>1.1 Catalysts: Potassium tert-butoxide, Tetrabutylammonium chloride; 3 d, rt 1.2 Reagents: Ammonium chloride; neutralized</p> <p>By: Andagar Ramakrishna, Ramesha; et al World Intellectual Property Organization, WO201114195 A1 2011-09-22</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/63f36fba692896544bfec6d2/1
Route 17 Step 1	 <p>31-353-CAS-12188561 Steps: 1 Yield: 100% Preparation of 4-aminopyridine-3-carboxamide derivatives as JAK kinase inhibitors</p> <p>1.1 Reagents: Potassium carbonate Solvents: Methanol, Water; 4 h, rt</p> <p>By: Kitamura, Takahiro; et al World Intellectual Property Organization, WO2010061971 A1 2010-06-03</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/63f36ff6692896544bfeca65/1
Step 2	 <p>31-031-CAS-640878 Steps: 1 Yield: 100% Preparation of 2-(N-arylmethylpiperidine-4-ylamino)-4-(substituted-phenoxy)benzene derivatives as HIV-1 inhibitors</p> <p>1.1 Reagents: Potassium carbonate Solvents: Dimethylformamide; 1.5 - 12 h, rt</p> <p>By: Liu, Xinyong; et al China, CN103497146 A 2014-01-08</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/63f37061692896544bfed0b1/1
Step 3	 <p>31-368-CAS-10844267 Steps: 1 Yield: 100% Process for preparation of (isoxazolymethoxy)nicotinic acids</p> <p>1.1 Reagents: Trimethylaluminum Solvents: Toluene, 1,4-Dioxane; rt; 1 h, rt 1.2 Solvents: 1,4-Dioxane; 4 h, 85 - 95 °C</p> <p>By: Dott, Pascal; et al World Intellectual Property Organization, WO2013057123 A1 2013-04-25</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/63f37098692896544bfed467/1
Route 18 Step 1	 <p>31-313-CAS-6083723 Steps: 1 Yield: 95% Preparation of cyclopropylpiperazinyl benzamide derivatives as modulators of the histamine h3 receptor</p> <p>1.1 Solvents: 1,2-Dichloroethane; 5 min, rt → 10 °C 1.2 Reagents: Sodium triacetoxyborohydride; 1 h, 10 °C; 2 h, 10 °C; 10 °C → rt; 18 h, < 20 °C 1.3 Reagents: Water; 20 min, 20 °C 1.4 Reagents: Sodium hydroxide Solvents: Water; 10 min, pH 10</p> <p>By: Allison, Brett D.; et al United States, US2007066821 A1 2007-03-22</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/640597eb3136c60ac9283a8b/1
Route 19 Step 1	 <p>View Reaction Detail Steps: 2 2,4-Diamino-6,7-dimethoxyquinazolines, 1,2-[4(1,4-Benzodioxan-2-ylcarbonyl)piperazin-1-yl] derivatives as α₁-adrenoceptor antagonists and antihypertensive agents</p> <p>1.1 Reagents: Sodium hydroxide Solvents: Ethanol 2.1 Reagents: Thionyl chloride 2.2 -</p> <p>By: Campbell, Simon F; et al Journal of Medicinal Chemistry (1987), 30(1), 49-57</p> <p>Full Text</p>	https://scifinder-n.cas.org/search/reaction/640598213136c60ac9283fe2/1
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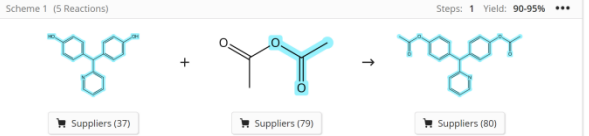
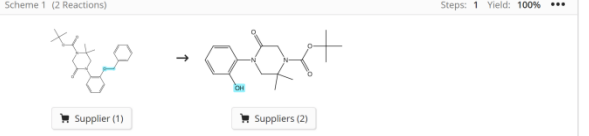
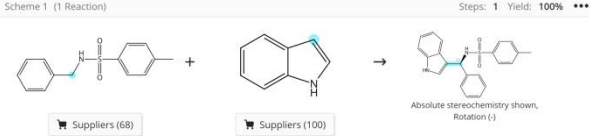
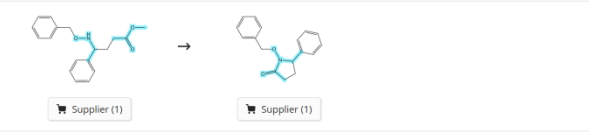
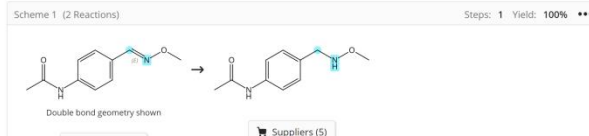
Step 2	<p>Scheme 3 (1 Reaction) Steps: 1 Yield: 100% ***</p>  <p>Suppliers (99) Suppliers (93)</p> <p>31-614-CAS-28807218 Steps: 1 Yield: 100% A novel dicationic ionic liquid as a highly effectual and dual-functional catalyst for the synthesis of 3-methyl-4-arylmethylene-isoxazole-5(4H)-ones</p> <p>1.1 Reagents: Chlorosulfonic acid Solvents: Dichloromethane; 10 °C; 10 min, 10 °C; 10 °C → rt; 4 h, rt 1.2 rt; 3 min, rt; 12 h, rt; 2 h, 60 °C</p> <p>By: Irannejad-Gheshlaghchaei, Navid; et al Research on Chemical Intermediates (2018), 44(10), 6253-6266</p> <p>Experimental Protocols Full Text</p> <p>Collapse Scheme</p>	https://scifinder-n.cas.org/search/reaction/640598b83136c60ac9284d70/1
Route 21 Step 1	<p>1,796 Results Group: By Scheme Sort: Relevance View: Expanded</p> <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p>  <p>Suppliers (11) Suppliers (93)</p> <p>31-031-CAS-19703347 Steps: 1 Yield: 100% Triazolopyridines as inhibitors of myeloperoxidase and/or eosinophil peroxidase and their preparation</p> <p>1.1 Reagents: Potassium carbonate Solvents: Acetonitrile; overnight, 80 °C</p> <p>By: Kick, Ellen K.; et al World Intellectual Property Organization, WO2017161145 A1 2017-09-21</p> <p>PatentPak Full Text</p> <p>Collapse Scheme</p>	https://scifinder-n.cas.org/search/reaction/64059d4d0e98827b63fa2cf1/1
Step 2	<p>Scheme 1 (6 Reactions) Steps: 1 Yield: 98-100% ***</p>  <p>Suppliers (93) Suppliers (118) Suppliers (58)</p> <p>31-008-CAS-4495902 Steps: 1 Yield: 100% Preparation of purine compounds as inhibitors of Bruton's tyrosine kinase</p> <p>1.1 Reagents: Potassium carbonate Solvents: Dimethylformamide; 5 h, 80 °C; 80 °C → rt 1.2 Reagents: Water</p> <p>By: Chen, Wei; et al World Intellectual Property Organization, WO2014130693 A1 2014-08-28</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/64059fea0e98827b63fa6fe0/1
Route 22 Step 1	<p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p>  <p>Suppliers (17) Suppliers (64) Suppliers (4)</p> <p>31-313-CAS-13647567 Steps: 1 Yield: 100% Preparation of thienopyridinylloxyphenyl ureas as inhibitors of protein tyrosine kinase activity</p> <p>1.1 Reagents: Acetic acid Solvents: Dichloromethane; 20 min, rt 1.2 Reagents: Sodium triacetoxyborohydride; 18 h, rt 1.3 Reagents: Hydrochloric acid Solvents: Water</p> <p>By: Raepfel, Stephane; et al World Intellectual Property Organization, WO2011127567 A1 2011-10-20</p> <p>PatentPak Full Text</p> <p>Collapse Scheme</p>	https://scifinder-n.cas.org/search/reaction/6405a59f0e98827b63fb1461/1
Step 2	<p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p>  <p>Suppliers (22) Suppliers (17)</p> <p>31-517-CAS-16637182 Steps: 1 Yield: 100% Preparation of acetylenic cyanoenones as therapeutics for inflammation and carcinogenesis</p> <p>1.1 Reagents: Lithium aluminum hydride Solvents: Tetrahydrofuran 1.2 Reagents: Oxalyl chloride Solvents: Dimethyl sulfoxide, Dichloromethane; 1 h, -78 °C</p> <p>By: Dinkova-Kostova, Alben; et al World Intellectual Property Organization, WO2016168450 A1 2016-10-20</p> <p>PatentPak Full Text</p> <p>Collapse Scheme</p>	https://scifinder-n.cas.org/search/reaction/6405b00a0e98827b63fc33b1/1

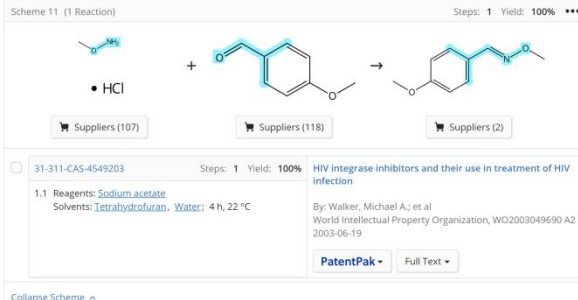
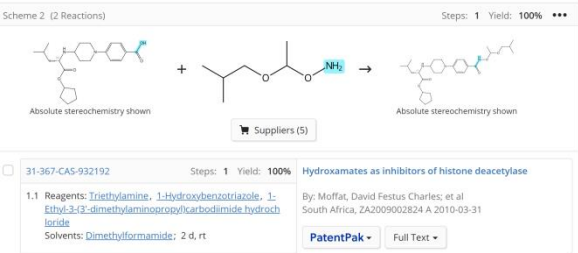
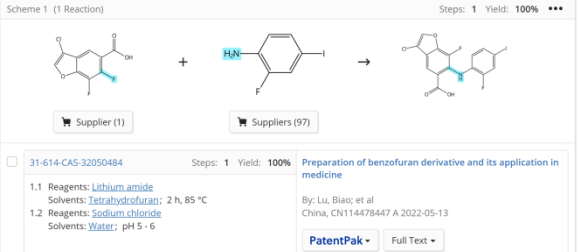
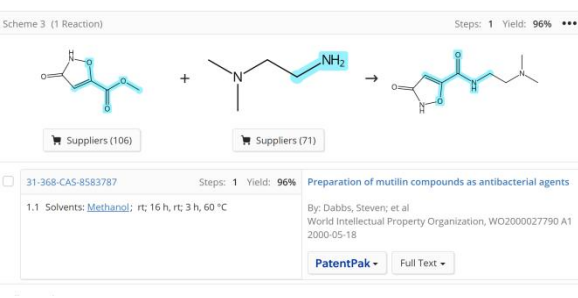
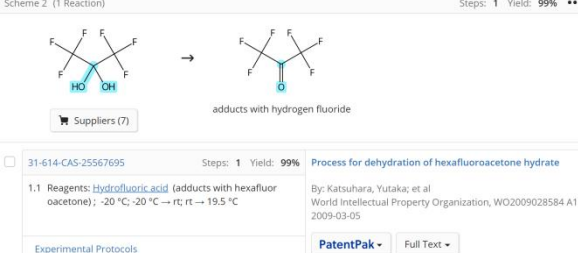
Step 3	 <p>Scheme 2 (1 Reaction) Steps: 1 Yield: 34% ***</p> <p>31-614-CAS-28601993 Steps: 1 Yield: 34% Preparation of diaminopyrimidines as P2X₃ and P2X₇ antagonists</p> <p>1.1 Reagents: Hydrochloric acid Solvents: Water; rt → -5 °C; 5 min, -5 °C</p> <p>1.2 Reagents: Sodium nitrite Solvents: Water; 10 min, -5 °C; 45 min, -5 °C</p> <p>1.3 Reagents: Potassium hydroxide Solvents: Ethanol; Water; cooled: 3.5 h, 0 °C; 16 h, -10 °C</p> <p>1.5 Reagents: Acetyl chloride Solvents: Ethanol; cooled: 10 min, 70 °C; 2.5 h, 70 °C →</p> <p>View All Experimental Protocols</p> <p>Collapse Scheme</p>	https://scifinder-n.cas.org/search/reaction/6405b1140e98827b63fc4e86/1
Route 23 Step 1	Null	
Step 2	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: ***</p> <p>31-480-CAS-4445691 Steps: 1 Preparation of steroidal glycosides as hypocholesterolemic and antiatherosclerosis agents</p> <p>1.1 Reagents: Pyridinium chlorochromate Solvents: Dichloromethane; 5 h, rt, overnight, rt</p> <p>By: Deninno, Michael Paul United States, US5939398 A 1999-08-17</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/6405b1fd0e98827b63fc643c/1
Step 3	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 97% ***</p> <p>31-614-CAS-26433340 Steps: 1 Yield: 97% Cobalt-catalyzed carboxymethylation of amides to give amino carboxylic acids and derivatives</p> <p>1.1 Reagents: Formaldehyde, Carbon monoxide, Hydrogen Catalysts: Palladium, Dicobalt octacarbonyl Solvents: Tetrahydrofuran, Water</p> <p>By: Franczyk, Thaddeus S. World Intellectual Property Organization, WO2001092208 A1 2001-12-06</p> <p>Experimental Protocols</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/6405b2bc0e98827b63fc7732/1
Route 24 Step 1	 <p>Scheme 2 (3 Reactions) Steps: 1 Yield: 90-92% ***</p> <p>31-614-CAS-24949894 Steps: 1 Yield: 92% Method for preparing crude oil with high content of phoxim</p> <p>1.1 Reagents: Triethylamine; 1 h, rt; 2 h, 45 °C</p> <p>1.2 Reagents: Water; 15 min, 45 °C</p> <p>By: Yan, Zebin; et al China, CN113583041 A 2021-11-02</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/6405c29f0e98827b63fdc97d/1

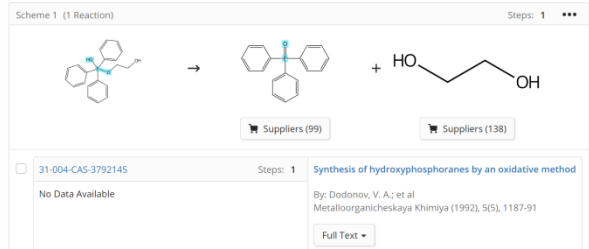
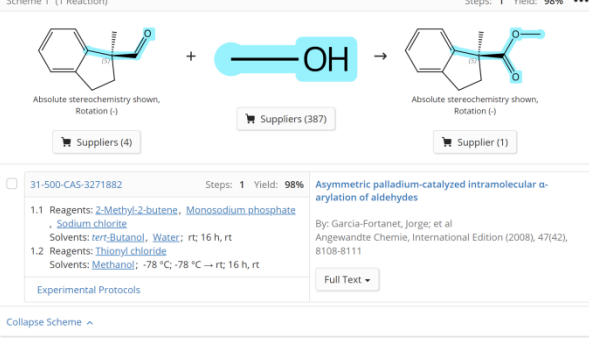
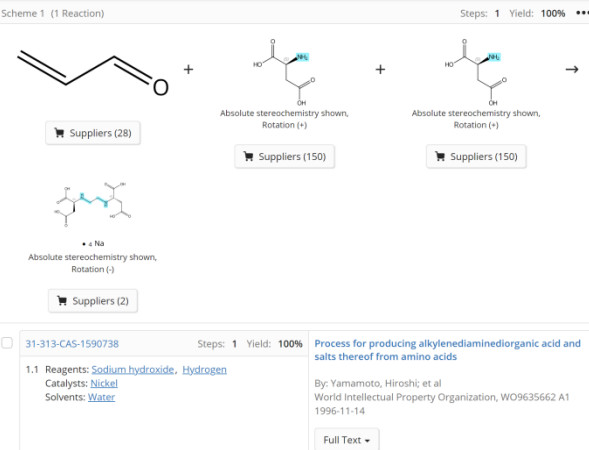
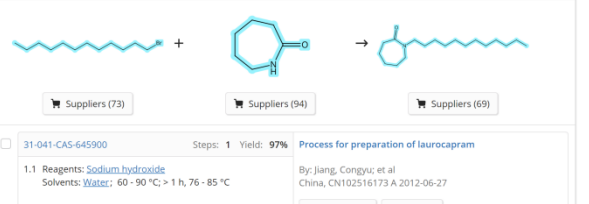
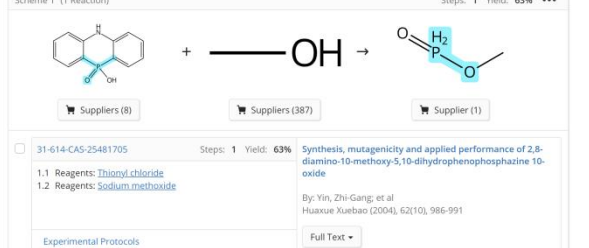
<p>Route 25 Step 1</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 85% ***</p> <p>31-352-CAS-1400413 Steps: 1 Yield: 85% Chemoenzymatic synthesis of N-Boc protected (2S,3R)-3-hydroxy-3-methylproline</p> <p>1.1 Reagents: Lithium hydroxide Solvents: Water; 2 h, rt</p> <p>1.2 Reagents: Sodium periodate, Ruthenium trichloride Solvents: Carbon tetrachloride, Acetonitrile, Water; 4 h, 0 °C</p> <p>By: Haddad, Mansour; et al Tetrahedron: Asymmetry (2005), 16(13), 2243-2247</p> <p>Full Text</p> <p>Collapse Scheme</p>	<p>https://scifinder-n.cas.org/search/transaction/6405cac60e98827b63fe6b4a/1</p>
<p>Step 2</p>	 <p>Scheme 1 (4 Reactions) Steps: 1 Yield: 73-100% ***</p> <p>31-614-CAS-24792546 Steps: 1 Yield: 100% Method for preparing 2-amino-3,5-dichloro-N-(1-methylethyl)-benzenecarbothioamide using dichloroethane</p> <p>1.1 Reagents: Phosphorus sulfide (P₂S₅) Solvents: Ethyl acetate; 0.5 h, reflux</p> <p>By: Zou, Bo China, CN113548991 A 2021-10-26</p> <p>PatentPak Full Text</p>	<p>https://scifinder-n.cas.org/search/transaction/6405cc2e0e98827b63fe8a5a/1</p>
<p>Step 3</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 83% ***</p> <p>31-366-CAS-17414702 Steps: 1 Yield: 83% Preparation of 5-phenyl nicotinamide Bcr-Abi inhibitors and their application as anticancer agents</p> <p>1.1 Solvents: Ethanol; overnight, rt</p> <p>By: Zhang, Jie; et al China, CN104262246 A 2015-01-07</p> <p>PatentPak Full Text</p>	<p>https://scifinder-n.cas.org/search/transaction/6405cca20e98827b63fe939b/1</p>
<p>Step 4</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>31-358-CAS-9947164 Steps: 1 Yield: 100% Process for the preparation of levetiracetam by crystallization-induced dynamic resolution of a diastereoisomeric mixture of an (±)-α-ethyl-2-oxo-1-pyrrolidineacetamide.</p> <p>1.1 Reagents: p-Toluenesulfonic acid (resin-bound) Solvents: Toluene, Water; rt → reflux; 6 h, reflux; reflux → 60 °C</p> <p>1.2 3 h, 60 °C</p> <p>By: Forcato, Massimiliano; et al World Intellectual Property Organization, WO2008012268 A1 2008-01-31</p> <p>Experimental Protocols PatentPak Full Text</p>	<p>https://scifinder-n.cas.org/search/transaction/6405cccf0e98827b63fe97a3/1</p>
<p>Route 26 Step 1</p>	 <p>Scheme 1 (3 Reactions) Steps: 1 Yield: 51-78% ***</p> <p>31-538-CAS-14905338 Steps: 1 Yield: 78% Process for producing thiophene-2-acetic acid</p> <p>1.1 Reagents: Sodium hydroxide, Sodium nitrite, Hydrochloric acid Catalysts: Phosphoric acid Solvents: Water</p> <p>1.2 Reagents: Hydrochloric acid Solvents: Ethyl acetate</p> <p>1.3 Reagents: Sodium hydroxide, Hydrazine hydrate (1:1) Solvents: Water</p> <p>By: Cserehely, Gyorgy; et al Hungary, HU54137 AZ 1991-01-28</p> <p>Full Text</p>	<p>https://scifinder-n.cas.org/search/transaction/6405ced80e98827b63fec47e/1</p>




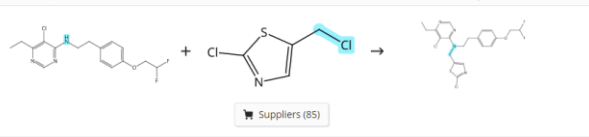
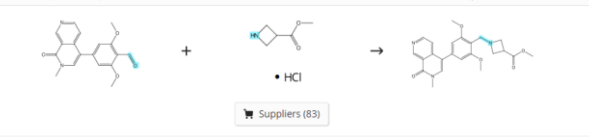
<p>Route 27 Step 1</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 85%</p> <p>Suppliers (1) Suppliers (2)</p> <p>31-550-CAS-10754599 Steps: 1 Yield: 85% 1.1 Reagents: Ammonium acetate; 4 h, 140 °C; cooled 1.2 Reagents: Sodium carbonate; Water Solvents: Water; basified, rt Synthesis and biological evaluation of novel 4-azaindoly-indoly-maleimides as glycogen synthase kinase-3β (GSK-3β) inhibitors By: Ye, Qing; et al Bioorganic & Medicinal Chemistry (2009), 17(13), 4302-4312 Experimental Protocols Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/6405cf3e0e98827b63fecf5c/1</p>
<p>Step 2</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 96%</p> <p>Suppliers (60)</p> <p>31-614-CAS-32192443 Steps: 1 Yield: 96% 1.1 Reagents: Sodium methoxide Solvents: Dimethylformamide; rt → 135 °C; 3 - 4 h, 120 - 135 °C Amine group protection and deprotection method of carbazole and carbazole derivatives By: Guo, Sullin; et al China, CN114349683 A 2022-04-15 PatentPak Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/6405cf740e98827b63fed3b6/1</p>
<p>Route 28 Step 1</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 50%</p> <p>Suppliers (3) Suppliers (67) Suppliers (14)</p> <p>31-172-CAS-1620734 Steps: 1 Yield: 50% No Data Available Synthesis and pharmacological properties of some N-acetylsulfonamides By: Delarge, J.; et al Annales Pharmaceutiques Francaises (1974), 32(12), 657-67 Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/6405d0300e98827b63fee3cb/1</p>
<p>Step 2</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 70%</p> <p>Suppliers (69) Suppliers (48) Suppliers (3)</p> <p>31-366-CAS-2577453 Steps: 1 Yield: 70% No Data Available Synthesis and pharmacological properties of some N-acetylsulfonamides By: Delarge, J.; et al Annales Pharmaceutiques Francaises (1974), 32(12), 657-67 Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/6405d0620e98827b63fee897/1</p>
<p>Route 29 Step 1</p>	 <p>Scheme 1 (3 Reactions) Steps: 1 Yield: 67-95%</p> <p>Suppliers (71) Suppliers (91)</p> <p>31-242-CAS-13017048 Steps: 1 Yield: 95% 1.1 Reagents: Phosphinic acid Catalysts: Hexamethylenetetramine, Copper citrate Solvents: Dimethylformamide, Water; 6 h, 130 °C Copper-Catalyzed Selective Semihydrogenation of Terminal Alkynes with Hypophosphorous Acid By: Cao, Huanyang; et al Advanced Synthesis & Catalysis (2014), 356(4), 765-769 Experimental Protocols Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/6405d0bd0e98827b63fef04f/1</p>

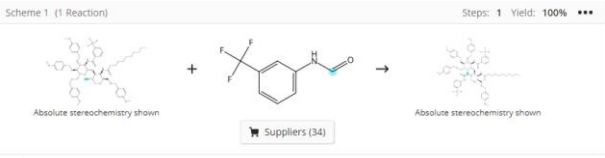

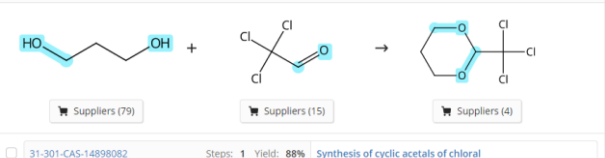
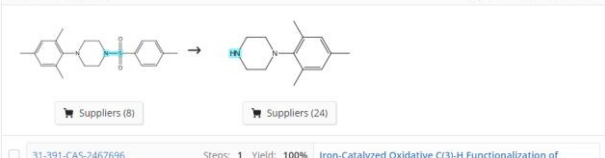
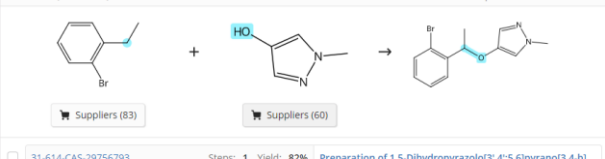
Route 30 Step 1	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 31% ***</p> <p>31-550-CAS-14510338 Steps: 1 Yield: 31% Preparation of thieno[2,3-d]pyrimidines as inhibitors of TNFα, PDE4 and B-raf, their compositions and use By: McKenna, Jeffrey; et al World Intellectual Property Organization, WO2007084560 A2 2007-07-26 PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/6405d3010e98827b63ff1c93/1
Step 2	 <p>Scheme 1 (4 Reactions) Steps: 1 Yield: 84-100% ***</p> <p>31-085-CAS-17636667 Steps: 1 Yield: 100% Supported catalyst useful for Friedel-Crafts reactions and process for the preparation of aralkylated aromatic compounds using the catalyst By: Choudhary, Vasant Ramchandra; et al United States, US6180557 B1 2001-01-30 PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/6405d3510e98827b63ff2268/1
Step 3	 <p>Scheme 4 (20 Reactions) Steps: 1 Yield: 95-100% ***</p> <p>31-084-CAS-4477082 Steps: 1 Yield: 100% Process for preparation of 7-azaindoles by cyclization of 2-amino-3-pyridinylphosphine oxides or 3-pyridinylphosphonic acid dialkyl esters with base, in particular t-BuOK By: Graczyk, Piotr World Intellectual Property Organization, WO2004013139 A2 2004-02-12 PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/6405d5860e98827b63ff4a38/1
Route 31 Step 1	 <p>Scheme 1 (1 Reaction) Steps: 1 ***</p> <p>31-031-CAS-15021108 Steps: 1 No Data Available 1-(3-(6-Fluoro-1,2-benzisoxazol-3-yl)propyl)-4-(2-oxo-1-benzimidazolyl)piperidines, their pharmaceutical compositions and their uses By: Davis, Larry; et al United States, US4390544 A 1983-06-28 PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/6405d8940e98827b63ff80e4/1
Route 32 Step 1	 <p>Scheme 1 (1 Reaction) Steps: 1 ***</p> <p>31-614-CAS-30368243 Steps: 1 Preparation of cyclic amine derivatives for treating respiratory diseases or disorders By: Jennings, Andrew Stephen Robert; et al World Intellectual Property Organization, WO2011154678 A1 2011-12-15 PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/6405d8d40e98827b63ff8596/1
Route 33 Step 1	Null	
Route 34	Null	

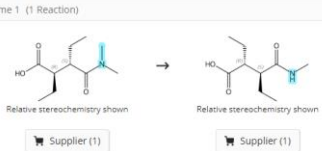
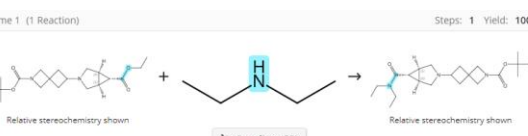
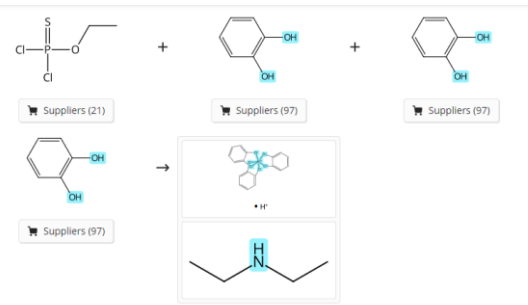
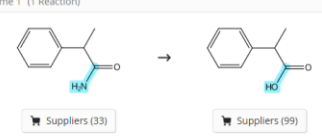
<p>Route 35 Step 1</p>	 <p>Scheme 1 (5 Reactions) Steps: 1 Yield: 90-95% ***</p> <p>Suppliers (37) Suppliers (79) Suppliers (80)</p> <p>31-355-CAS-19756952 Steps: 1 Yield: 95% Method for synthesizing 4,4'-(2-pyridylmethylene)diphenol diacetate using 2-pyridinecarboxaldehyde</p> <p>1.1 Reagents: Sodium acetate; rt → 140 °C; 2 - 3 h, 120 - 140 °C</p> <p>By: Xu, Lai; et al China, CN108707108 A 2018-10-26</p> <p>PatentPak - Full Text -</p>	<p>https://scifinder-n.cas.org/search/reaction/64069b4a0e98827b6309c531/1</p>
<p>Step 2</p>	 <p>Scheme 1 (2 Reactions) Steps: 1 Yield: 100% ***</p> <p>Supplier (1) Suppliers (2)</p> <p>31-049-CAS-7448886 Steps: 1 Yield: 100% Preparation of cyclic amine compounds as renin inhibitors</p> <p>1.1 Reagents: Hydrogen Catalysts: Palladium Solvents: Methanol, Water; 6 h, rt</p> <p>By: Miyazaki, Shojiro; et al Japan, JP2009167179 A 2009-07-30</p> <p>PatentPak - Full Text -</p> <p>Experimental Protocols</p>	<p>https://scifinder-n.cas.org/search/reaction/64069bf30e98827b6309d3ca/1</p>
<p>Step 3</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>Suppliers (68) Suppliers (100)</p> <p>31-085-CAS-22147239 Steps: 1 Yield: 100% Organophosphorus compound based on [2,2]-paracyclophan skeleton, and its intermediate, preparing method and application</p> <p>1.1 Catalysts: 15-23-Ethano-1,5:9,13:14,18-trimetheno-5H-, 6,8,7-benzodioxaphosphacyclodocosa-, 4- Solvents: Toluene; 20 h, -20 °C</p> <p>1.2 Reagents: Triethylamine; neutralized</p> <p>By: Lin, Xufeng; et al China, CN109566044 A 2019-04-23</p> <p>PatentPak - Full Text -</p>	<p>https://scifinder-n.cas.org/search/reaction/64069ccf0e98827b6309e59b/1</p>
<p>Route 36 Step 1</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 83% ***</p> <p>Supplier (1) Supplier (1)</p> <p>31-368-CAS-10771602 Steps: 1 Yield: 83% Direct nucleophilic addition to N-alkoxyamides</p> <p>1.1 Reagents: Lithium hydroxide, monohydrate Solvents: Tetrahydrofuran, Water; 1 d, rt</p> <p>1.2 Reagents: Ammonium chloride Solvents: Water</p> <p>1.3 Reagents: Triethylamine, 1-Ethyl-3-(3-dimethylamino)propyl carbodiimide hydrochloride Solvents: Dichloromethane; 19 h, rt</p> <p>1.4 Reagents: Water</p> <p>By: Yanagita, Yuta; et al Chemistry - A European Journal (2013), 19(2), 678-684</p> <p>Full Text -</p> <p>Experimental Protocols</p>	<p>https://scifinder-n.cas.org/search/reaction/64069d110e98827b6309ea5b/1</p>
<p>Step 2</p>	<p>49,022 Results Group: By Scheme - Sort: Relevance - View: Expanded</p>  <p>Scheme 1 (2 Reactions) Steps: 1 Yield: 100% ***</p> <p>Suppliers (4) Suppliers (5)</p> <p>31-519-CAS-2580782 Steps: 1 Yield: 100% Preparation of pyrrolecarboxamides as HIV integrase inhibitors</p> <p>1.1 Reagents: Acetic acid, Sodium cyanoborohydride; 10 min, 10 °C; 18 h, 25 °C</p> <p>1.2 Reagents: Sodium hydroxide Solvents: Water; pH 9</p> <p>By: Walker, Michael A.; et al World Intellectual Property Organization, WO2004004657 A2 2004-01-15</p> <p>PatentPak - Full Text -</p> <p>Experimental Protocols</p>	<p>https://scifinder-n.cas.org/search/reaction/64069d850e98827b6309f339/1</p>


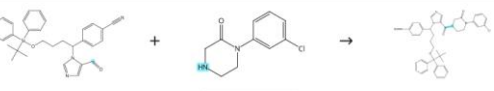

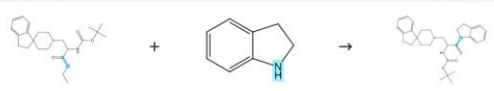
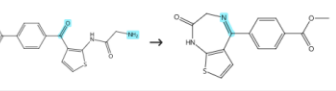
Step 3	 <p>Scheme 11 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>Suppliers (107) Suppliers (118) Suppliers (2)</p> <p>31-311-CAS-4549203 Steps: 1 Yield: 100% HIV integrase inhibitors and their use in treatment of HIV infection</p> <p>1.1 Reagents: Sodium acetate Solvents: Tetrahydrofuran, Water; 4 h, 22 °C</p> <p>By: Walker, Michael A.; et al World Intellectual Property Organization, WO2003049690 A2 2003-06-19</p> <p>PatentPak Full Text</p> <p>Collapse Scheme</p>	https://scifinder-n.cas.org/search/reaction/64069e000e98827b6309fcd2/1
Step 4	 <p>Scheme 2 (2 Reactions) Steps: 1 Yield: 100% ***</p> <p>Suppliers (5)</p> <p>31-367-CAS-932192 Steps: 1 Yield: 100% Hydroxamates as inhibitors of histone deacetylase</p> <p>1.1 Reagents: Triethylamine, 1-Hydroxybenzotriazole, 1-Ethyl-3-(3-dimethylamino)propylcarbodiimide hydrochloride Solvents: Dimethylformamide; 2 d, rt</p> <p>By: Moffat, David Festus Charles; et al South Africa, ZA2009002824 A 2010-03-31</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/64069e3d0e98827b630a00a2/1
Step 5	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>Supplier (1) Suppliers (97)</p> <p>31-614-CAS-32050484 Steps: 1 Yield: 100% Preparation of benzofuran derivative and its application in medicine</p> <p>1.1 Reagents: Lithium amide Solvents: Tetrahydrofuran; 2 h, 85 °C</p> <p>1.2 Reagents: Sodium chloride Solvents: Water; pH 5 - 6</p> <p>By: Lu, Biao; et al China, CN114478447 A 2022-05-13</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/64069e9a0e98827b630a081e/1
Route 37 Step 1	 <p>Scheme 3 (1 Reaction) Steps: 1 Yield: 96% ***</p> <p>Suppliers (106) Suppliers (71)</p> <p>31-368-CAS-8583787 Steps: 1 Yield: 96% Preparation of mullin compounds as antibacterial agents</p> <p>1.1 Solvents: Methanol; rt; 16 h, rt; 3 h, 60 °C</p> <p>By: Dabbs, Steven; et al World Intellectual Property Organization, WO2000027790 A1 2000-05-18</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/64069f100e98827b630a1063/1
Route 38 Step 1	 <p>Scheme 2 (1 Reaction) Steps: 1 Yield: 99% ***</p> <p>Suppliers (7)</p> <p>31-614-CAS-25567695 Steps: 1 Yield: 99% Process for dehydration of hexafluoroacetone hydrate</p> <p>1.1 Reagents: Hydrofluoric acid (adducts with hexafluoroacetone); -20 °C; -20 °C → rt; rt → 19.5 °C</p> <p>By: Katsuhara, Yutaka; et al World Intellectual Property Organization, WO2009028584 A1 2009-03-05</p> <p>Experimental Protocols PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/6406a1550e98827b630a40d8/1
Step 2	Null	

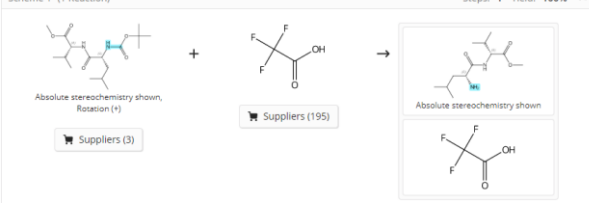
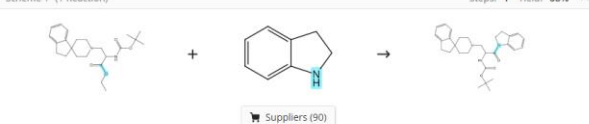
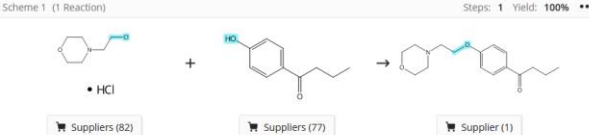

Route 39 Step 1	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: ...</p> <p>Suppliers (99) Suppliers (138)</p> <p>31-004-CAS-3792145 Steps: 1 Yield: ... Synthesis of hydroxyphosphoranes by an oxidative method No Data Available By: Dodonov, V. A.; et al Metalloorganicheskaya Khimiya (1992), 9(5), 1187-91 Full Text</p>	https://scifinder-n.cas.org/search/transaction/6406a1ef0e98827b630a4d4c/1
Step 2	Null	
Route 40 Step 1	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 98%</p> <p>Suppliers (4) Suppliers (387) Supplier (1)</p> <p>31-500-CAS-3271882 Steps: 1 Yield: 98% Asymmetric palladium-catalyzed intramolecular α-arylation of aldehydes 1.1 Reagents: 2-Methyl-2-butene, Monosodium phosphate, Sodium chloride Solvents: tert-Butanol, Water; rt; 16 h, rt 1.2 Reagents: Thionyl chloride Solvents: Methanol; -78 °C; -78 °C → rt; 16 h, rt Experimental Protocols By: Garcia-Fortanet, Jorge; et al Angewandte Chemie, International Edition (2008), 47(42), 8108-8111 Full Text</p>	https://scifinder-n.cas.org/search/transaction/6406a2b10e98827b630a5c21/1
Route 41 Step 1	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100%</p> <p>Suppliers (28) Suppliers (150) Suppliers (150) Suppliers (2)</p> <p>31-313-CAS-1590738 Steps: 1 Yield: 100% Process for producing alkylenediaminediorganico acid and salts thereof from amino acids 1.1 Reagents: Sodium hydroxide, Hydrogen Catalysts: Nickel Solvents: Water By: Yamamoto, Hiroshi; et al World Intellectual Property Organization, WO9635662 A1 1996-11-14 Full Text</p>	https://scifinder-n.cas.org/search/transaction/6406a4270e98827b630a7abb/1
Route 42 Step 1	 <p>Scheme 1 (21 Reactions) Steps: 1 Yield: 94-97%</p> <p>Suppliers (73) Suppliers (94) Suppliers (69)</p> <p>31-041-CAS-645900 Steps: 1 Yield: 97% Process for preparation of laurocapram 1.1 Reagents: Sodium hydroxide Solvents: Water; 60 - 90 °C; > 1 h, 76 - 85 °C By: Jiang, Congyu; et al China, CN102516173 A 2012-06-27 PatentPak Full Text</p>	https://scifinder-n.cas.org/search/transaction/6406a5660e98827b630a9217/1
Route 43 Step 1	Null	
Step 2	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 63%</p> <p>Suppliers (8) Suppliers (387) Supplier (1)</p> <p>31-614-CAS-25481705 Steps: 1 Yield: 63% Synthesis, mutagenicity and applied performance of 2,8-diamino-10-methoxy-5,10-dihydrophenophosphazine 10-oxide 1.1 Reagents: Thionyl chloride 1.2 Reagents: Sodium methoxide Experimental Protocols By: Yin, Zhi-Gang; et al Huaxue Xuebao (2004), 62(10), 986-991 Full Text</p>	https://scifinder-n.cas.org/search/transaction/6406a6000e98827b630a9e3a/1


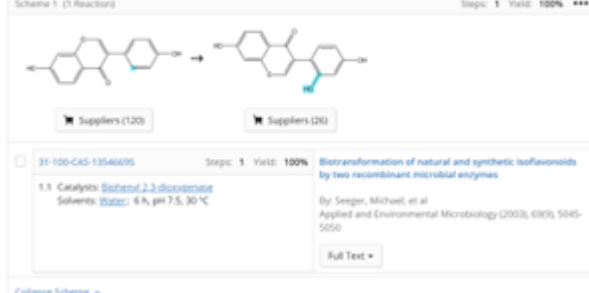

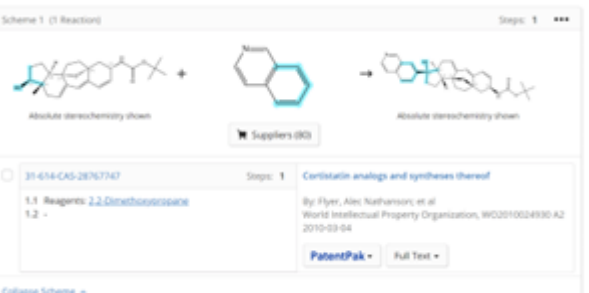
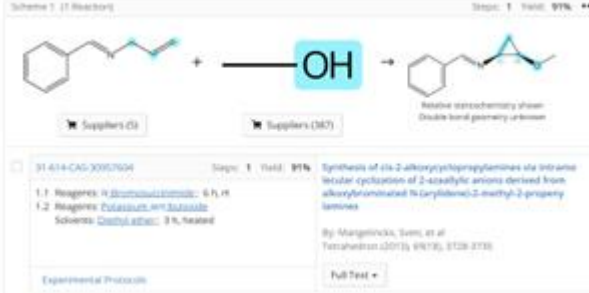
Route 44 Step 1	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 99% ***</p> <p>31-313-CAS-6917425 Steps: 1 Yield: 99% Preparation of 2(aminoalkyl)aryloxy)nicotinamides and analogs as opioid receptor antagonists for treatment of obesity and related conditions</p> <p>1.1 Solvents: Methanol; overnight, rt 1.2 Reagents: Sodium hydroxide</p> <p>By: Blanco-Fillets, Marjames, et al World Intellectual Property Organization, WO200402005 A1 2004-04-01</p> <p>Experimental Protocols PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/640729582b901c23fd16a807/1
Step 2	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 96% ***</p> <p>31-125-CAS-4819164 Steps: 1 Yield: 96% Preparation of 2(aminoalkyl)aryloxy)nicotinamides and analogs as opioid receptor antagonists for treatment of obesity and related conditions</p> <p>1.1 Reagents: Potassium carbonate Solvents: Dimethylformamide; 1.5 h, 100 °C</p> <p>By: Blanco-Fillets, Marjames, et al World Intellectual Property Organization, WO200402005 A1 2004-04-01</p> <p>Experimental Protocols PatentPak Full Text</p> <p>Collapse Scheme</p>	https://scifinder-n.cas.org/search/reaction/640729862b901c23fd16ab50/1
Route 45 Step 1	Null	
Route 46 Step 1	 <p>Scheme 1 (10 Reactions) Steps: 1 Yield: 53-99% ***</p> <p>31-080-CAS-6095797 Steps: 1 Yield: 99% Electrochemical C-H Amination: Synthesis of Aromatic Primary Amines via N-Arylpyridinium Ions</p> <p>1.1 Reagents: Pyridine, Tetrabutylammonium tetrafluoroborate, Trifluoromethanesulfonic acid Solvents: Acetonitrile; 25 °C 1.2 Reagents: Piperidine; 12 h, 80 °C</p> <p>By: Morofuji, Tatsuya, et al Journal of the American Chemical Society (2013), 135(13), 5000-5003</p> <p>Experimental Protocols Full Text</p>	https://scifinder-n.cas.org/search/reaction/64073ce415f126035f20ffab/1
Route 47 Step 1	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 96% ***</p> <p>31-031-CAS-17116431 Steps: 1 Yield: 96% 4-(2-Phenylethylamino)pyrimidine-nicotine derivatives as pesticides and their preparation, pharmaceutical compositions and use in the pest control</p> <p>1.1 Reagents: Sodium hydroxide Solvents: 1-Butanol; 4 h, 60 °C</p> <p>By: Tang, Jianfeng, et al China, CN103232434 A 2013-08-07</p> <p>Experimental Protocols PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/64073c5d15f126035f20f4fc/1
Route 48 Step 1	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>31-313-CAS-21582860 Steps: 1 Yield: 100% Preparation of heterocyclic compounds for treating cancer and viral infection</p> <p>1.1 Reagents: Sodium cyanoborohydride Solvents: Dichloromethane; 1 h, rt</p> <p>By: Zhou, Qianhe, et al World Intellectual Property Organization, WO2019152440 A1 2019-08-08</p> <p>Experimental Protocols PatentPak Full Text</p> <p>Collapse Scheme</p>	https://scifinder-n.cas.org/search/reaction/64073d1a15f126035f210346/1



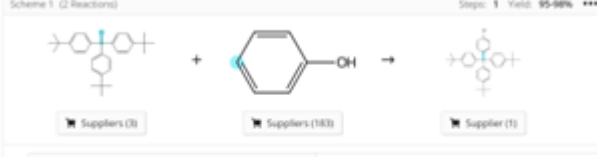
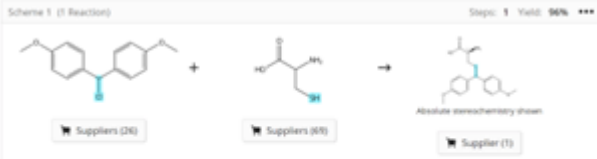

<p>Route 49 Step 1</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>Suppliers (34)</p> <p>31-211-CAS-12761752 Steps: 1 Yield: 100% Combinatorial library solid phase synthesis of disaccharides for drug discovery 1.1 Solvents: Dimethylformamide; 2.5 h, rt. By: Meutermans, Wim; et al World Intellectual Property Organization, WO2003093286 A1 2003-11-13 PatentPak Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073d5915f126035f2107b6/1</p>
<p>Route 50 Step 1</p>	 <p>Scheme 1 (4 Reactions) Steps: 1 Yield: 35% ***</p> <p>Suppliers (18) Suppliers (28)</p> <p>31-538-CAS-13615535 Steps: 1 Yield: 35% Metal-Free Cross-Dehydrogenative Coupling of Heterocycles with Aldehydes 1.1 Reagents: Hydrazine hydrate (1:1) Solvents: Ethylene glycol; 30 min, 120 °C 1.2 Reagents: Potassium hydroxide Solvents: Ethylene glycol; 120 °C; 120 °C → 190 °C; 3 h, 190 °C By: Matcha, Kiran; et al Angewandte Chemie, International Edition (2013), 52(7), 2082-2086 Experimental Protocols Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073db615f126035f210dcc/1</p>
<p>Route 51 Step 1</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 88% ***</p> <p>Suppliers (79) Suppliers (15) Suppliers (4)</p> <p>31-301-CAS-14898082 Steps: 1 Yield: 88% Synthesis of cyclic acetals of chloral No Data Available By: Akhmetdinov, R. T.; et al Nekotor. Vopr. Issled. Razl. Khim. Sistem Fiz.-khim. Metodami, Ashkhabad (1980), 50-4 Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073e1d15f126035f211457/1</p>
<p>Route 52 Step 1</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>Suppliers (8) Suppliers (24)</p> <p>31-391-CAS-2467696 Steps: 1 Yield: 100% Iron-Catalyzed Oxidative C(3)-H Functionalization of Amines 1.1 Reagents: Sulfuric acid; 3 h, 120 °C; 120 °C → 0 °C 1.2 Reagents: Sodium hydroxide Solvents: Water; pH 12, 0 °C By: Takasu, Noriaki; et al Organic Letters (2013), 15(8), 1918-1921 Experimental Protocols Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073e5f15f126035f211947/1</p>
<p>Step 2</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 82% ***</p> <p>Suppliers (83) Suppliers (60)</p> <p>31-614-CAS-29756793 Steps: 1 Yield: 82% Preparation of 1,5-Dihydropyrazolo[3',4':5,6]pyrano[3,4-b]pyridines via a Microwave-Assisted, Palladium-Catalyzed Regioselective C-H Heteroarylation of Electron-Rich Pyrazoles 1.1 Reagents: N-Bromosuccinimide Catalysts: Benzoyl peroxide Solvents: Carbon tetrachloride; reflux; reflux → rt 1.2 Reagents: Water; rt 1.3 Reagents: Cesium carbonate Solvents: Tetrahydrofuran; rt → 50 °C; 50 °C → rt 1.4 Reagents: Water; rt By: Garrison, Aaron T.; et al Journal of Organic Chemistry (2019), 84(9), 5855-5862 Experimental Protocols Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073ea115f126035f211e1b/1</p>





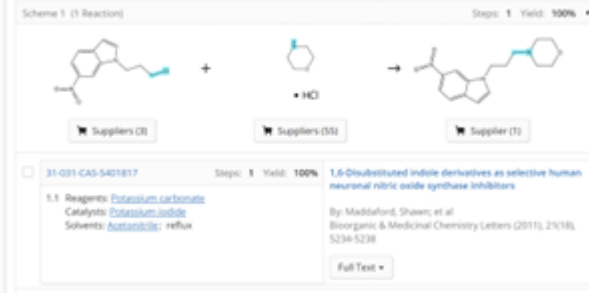

<p>Route 53 Step 1</p>	 <p>31-550-CAS-7887483 Steps: 1 Yield: 100% The nonadrides. III. The absolute configuration of gluconic and gluconic acids</p> <p>1.1 Reagents: Acetic acid; Zinc Solvents: Carbon tetrachloride; Acetic acid</p> <p>By: Barton, D. H. R.; et al Journal of the Chemical Society (1965), (March), 1779-86</p> <p>Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073f2d15f126035f212a49/1</p>
<p>Step 2</p>	 <p>31-368-CAS-21012174 Steps: 1 Yield: 100% 3-Azabicyclo[3.1.0]hexane derivatives as muscarinic M1 and M4 agonists and their preparation</p> <p>1.1 Reagents: Triethylamine Solvents: Toluene; 0 °C; 20 min, 20 - 27 °C 1.2 Reagents: Trimethylaluminum Solvents: Toluene; 0 °C; 16 h, 60 °C</p> <p>By: Brown, Giles Albert; et al World Intellectual Property Organization, WO2018229511 A1 2018-12-20</p> <p>PatentPak Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073f8f15f126035f213338/1</p>
<p>Route 54 Step 1</p>	 <p>31-614-CAS-26143320 Steps: 1 Yield: 100% Reaction of thiophosfonyl dichloride with catechol</p> <p>1.1 Reagents: Triethylamine Solvents: Toluene</p> <p>By: Liu, Lunzu; et al Huaxue Xuebao (1986), 44(12), 1249-52</p> <p>Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073fbd15f126035f213625/1</p>
<p>Step 2</p>	<p>Null</p>	
<p>Route 55 Step 1</p>	 <p>31-353-CAS-7370597 Steps: 1 Yield: 100% Enantioselective hydrolysis of racemic ibuprofen amide to 5-(+)-ibuprofen by Rhodococcus AJ270</p> <p>1.1 Solvents: Water; 16 h, pH 8, 30 °C</p> <p>By: Snell, David; et al Enzyme and Microbial Technology (1999), 24(3/4), 160-163</p> <p>Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/6407402315f126035f213d57/1</p>






<p>Route 56 Step 1</p>	<p>Scheme 1 (3 Reactions) Steps: 1 Yield: 98-100% ***</p>  <p>Suppliers (44) Suppliers (29)</p> <p><input type="checkbox"/> 31-541-CAS-19912583 Steps: 1 Yield: 100% Cyanoindoline derivatives as NIK inhibitors and their preparation 1.1 Reagents: (7-5-Trihydrofuran)boron Solvents: Tetrahydrofuran; 0 °C; 16 h. rt 1.2 Reagents: Hydrochloric acid Solvents: Water; 1 h. reflux By: Stansfield, Ian; et al World Intellectual Property Organization, WO2018002219 A1 2018-01-04 PatentPak - Full Text -</p> <p><input type="checkbox"/> 31-541-CAS-20112821 Steps: 1 Yield: 98% Preparation of 2-[(pyrazolyl)amino]-4-[(hetero)arylamino]pyridine or 2-[(pyrazolyl)amino]-4-[(hetero)arylamino]pyrimidine derivatives useful as FAK kinase inhibitors 1.1 Reagents: (7-5-Trihydrofuran)boron Solvents: Tetrahydrofuran; 6 h. 45 °C By: Lin, Xinglong; et al China, CN108948019 A 2018-12-07 PatentPak - Full Text -</p>	<p>https://scifinder-n.cas.org/search/reaction/6407407715f126035f2144be/1</p>
<p>Step 2</p>	<p>Scheme 1 (1 Reaction) Steps: 1 ***</p>  <p>Suppliers (48)</p> <p><input type="checkbox"/> 31-211-CAS-17648140 Steps: 1 Inhibitors of prenyl-protein transferase 1.1 Solvents: 1,2-Dichloroethane; 2 h. rt 1.2 Reagents: Sodium triacetoxyborohydride; 72 h. rt By: Stump, Craig A.; et al World Intellectual Property Organization, WO2001076693 A1 2001-10-18 PatentPak - Full Text -</p>	<p>https://scifinder-n.cas.org/search/reaction/640740bd15f126035f214b4e/1</p>
<p>Route 57 Step 1</p>	<p>Scheme 2 (1 Reaction) Steps: 1 Yield: 100% ***</p>  <p>Suppliers (44)</p> <p><input type="checkbox"/> 31-353-CAS-2433851 Steps: 1 Yield: 100% Improved method for the synthesis of substituted formyl amines and substituted amines 1.1 Reagents: Hydrochloric acid Solvents: Methanol, Water; rt → 120 °C By: Bobylev, Mikhail World Intellectual Property Organization, WO2009018353 A1 2009-02-05 PatentPak - Full Text -</p> <p>Experimental Protocols</p> <p>Collapse Scheme ^</p>	<p>https://scifinder-n.cas.org/search/reaction/640740f415f126035f215051/1</p>
<p>Step 2</p>	<p>Scheme 1 (1 Reaction) Steps: 1 Yield: 68% ***</p>  <p>Suppliers (90)</p> <p><input type="checkbox"/> 31-368-CAS-3271187 Steps: 1 Yield: 68% Preparation of spiroperidine compounds as ligands for the ORL-1 receptor 1.1 Reagents: Sodium hydroxide Solvents: Methanol, Tetrahydrofuran, Water; 2 h. 60 °C; 60 °C → rt 1.2 Reagents: Hydrochloric acid Solvents: Water; neutralized 1.3 Reagents: Triethylamine, 1-Ethyl-3-(3'-dimethylamino)propylcarbodiimide, 1-Hydroxybenzotriazole Solvents: Dichloromethane; 3 d. rt By: Ito, Fumitaka; et al World Intellectual Property Organization, WO2003000677 A1 2003-01-03 PatentPak - Full Text -</p>	<p>https://scifinder-n.cas.org/search/reaction/6407416f15f126035f2158ef/1</p>
<p>Route 58 Step 1</p>	<p>Scheme 1 (2 Reactions) Steps: 1 Yield: 100% ***</p>  <p>Suppliers (44) Suppliers (29)</p> <p><input type="checkbox"/> 31-309-CAS-5355837 Steps: 1 Yield: 100% Preparation of benzo-fused 7-membered heterocyclic compounds and methods for treating cognitive disorders using inhibitors of histone deacetylase 1.1 Reagents: Acetic acid Solvents: Methanol; overnight, 100 °C By: Rogers, Kathryn; et al World Intellectual Property Organization, WO2009137462 A2 2009-11-12 PatentPak - Full Text -</p> <p>Experimental Protocols</p> <p><input type="checkbox"/> 31-309-CAS-4199760 Steps: 1 Yield: 100% Preparation of tricyclic hydroxamic acids as inhibitors of histone deacetylase 1.1 Reagents: Acetic acid Solvents: Methanol; overnight, 100 °C By: Shapiro, Gideon; et al World Intellectual Property Organization, WO2008055068 A2 2008-05-08 PatentPak - Full Text -</p> <p>Experimental Protocols</p>	<p>https://scifinder-n.cas.org/search/reaction/640741b515f126035f215ecc/1</p>

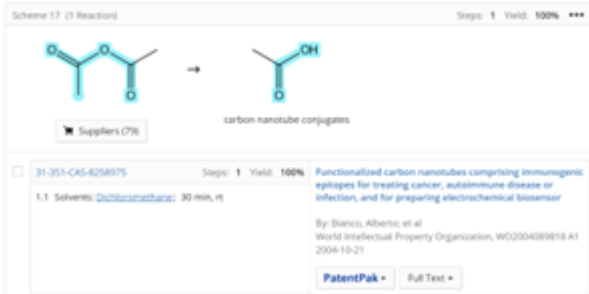


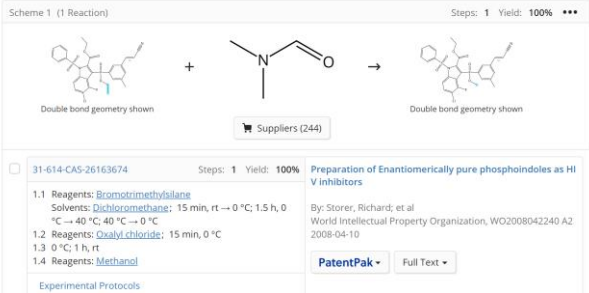
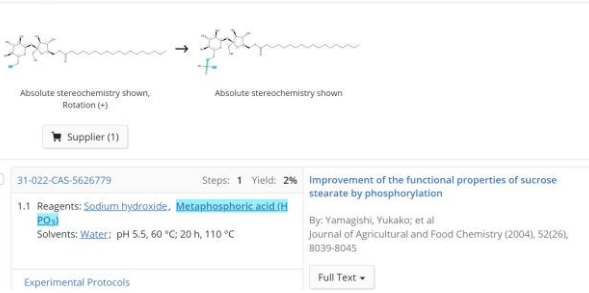
Step 2	<p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p>  <p>Absolute stereochemistry shown, Rotation (+) Suppliers (195)</p> <p>31-352-CAS-7284376 Steps: 1 Yield: 100% Synthesis and Host-Guest Studies of Chiral N-Linked Peptidoresorcin(4)arenes</p> <p>1.1 Solvents: Dichloromethane</p> <p>By: Botta, Bruno; et al Journal of Organic Chemistry (2007), 72(24), 9283-9290</p> <p>Experimental Protocols Full Text</p> <p>Collapse Scheme</p>	https://scifinder-n.cas.org/search/reaction/640741fb15f126035f2163f6/1
Step 3	<p>Scheme 1 (1 Reaction) Steps: 1 Yield: 68% ***</p>  <p>Suppliers (90)</p> <p>31-368-CAS-3271187 Steps: 1 Yield: 68% Preparation of spiroperidine compounds as ligands for the ORL-1 receptor</p> <p>1.1 Reagents: Sodium hydroxide Solvents: Methanol, Tetrahydrofuran, Water; 2 h, 60 °C, 60 °C → rt</p> <p>1.2 Reagents: Hydrochloric acid Solvents: Water; neutralized</p> <p>1.3 Reagents: Triethylamine, 1-Ethyl-3-(3'-dimethylaminopropoxy)carbodiimide, 1-Hydroxybenzotriazole Solvents: Dichloromethane; 3 d, rt</p> <p>By: Ito, Fumitaka; et al World Intellectual Property Organization, WO200300067 A1 2003-01-03</p> <p>PatentPak Full Text</p> <p>Collapse Scheme</p>	https://scifinder-n.cas.org/search/reaction/6407424015f126035f216963/1
Route 59 Step 1	<p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p>  <p>Suppliers (82) Suppliers (77) Supplier (1)</p> <p>31-008-CAS-1082988 Steps: 1 Yield: 100% Preparation of WP1130 analogs as deubiquitinase inhibitors</p> <p>1.1 Reagents: Potassium carbonate Solvents: Acetone; 48 h, reflux</p> <p>By: Donato, Nicholas J.; et al World Intellectual Property Organization, WO2012040527 A2 2012-03-29</p> <p>PatentPak Full Text</p> <p>Experimental Protocols</p>	https://scifinder-n.cas.org/search/reaction/640731e69bdefb0477012104/1
Route 60 Step 1	<p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p>  <p>Suppliers (40) Suppliers (77)</p> <p>31-049-CAS-18510900 Steps: 1 Yield: 100% Synthesis and self-assembly of temperature-responsive copolymers based on N-vinylpyrrolidone and trimethylene glycol methacrylate</p> <p>1.1 Reagents: Zinc dust Solvents: Dichloroethane; 0 °C, 1 h, 0 °C, 17 h, rt</p> <p>1.2 Solvents: Methanol; rt</p> <p>By: Jameaux, Coline; et al Polymer Chemistry (2015), 6(22), 4116-4122</p> <p>PatentPak Full Text</p> <p>Experimental Protocols</p> <p>Collapse Scheme</p>	https://scifinder-n.cas.org/search/reaction/6407341b2b901c23fd1767dd/1

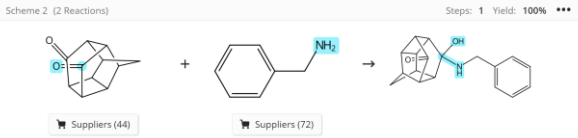
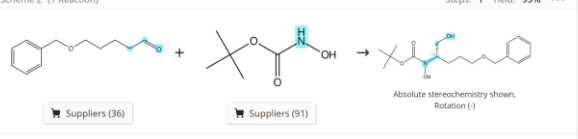
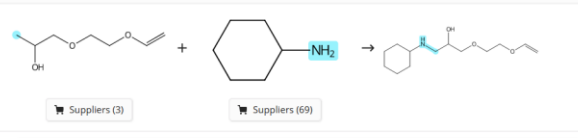

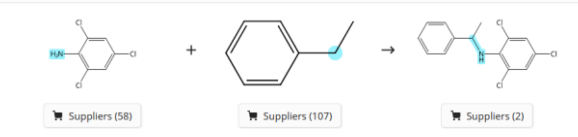
Step 2	 <p>31-201-CAS-22106586 Steps: 1 Yield: 98% ***</p> <p>1.1 Reagents: 2,6-Lutidine Catalysts: 2,2,2-Trifluoroethyl 2-hydroxyacetate 18 h, 10 kg/mol, 110 °C</p> <p>Ni and Pd N-confused porphyrin complexes as catalysts for the synthesis of cyclic carbonates from epoxides and CO₂</p> <p>By: de la Cruz, Jay-ri, et al Dalton Transactions (2019), 48(22), 7527-7531</p> <p>Full Text</p>	https://scifinder-n.cas.org/search/reaction/640734982b901c23fd176e98/1
Route 61 Step 1	 <p>31-100-CAS-13546695 Steps: 1 Yield: 100% ***</p> <p>1.1 Catalysts: Biotinyl 2,2-dioxygenase Solvents: Water; 4 h, pH 7.5, 30 °C</p> <p>Biotransformation of natural and synthetic isoflavonoids by two recombinant microbial enzymes</p> <p>By: Seeger, Michael, et al Applied and Environmental Microbiology (2003), 69(5), 5045-5050</p> <p>Full Text</p>	https://scifinder-n.cas.org/search/reaction/640735302b901c23fd1776de/1
Route 62 Step 1	 <p>31-352-CAS-370090 Steps: 1 Yield: 100% ***</p> <p>1.1 Reagents: Potassium hydroxide Solvents: Ethanol, Toluene; 0 °C</p> <p>2-Aryl-3,3,3-trifluoro-2-hydroxypropionic acids: A new class of protein tyrosine phosphatase 1B inhibitors</p> <p>By: Adams, David R., et al Bioorganic & Medicinal Chemistry Letters (2007), 17(23), 4579-4583</p> <p>Full Text</p>	https://scifinder-n.cas.org/search/reaction/6407359b2b901c23fd177e13/1
Route 63 Step 1	 <p>31-614-CAS-28767747 Steps: 1 Yield: 91% ***</p> <p>1.1 Reagents: 2,2-Dimethoxypropane</p> <p>Carbistatin analogs and syntheses thereof</p> <p>By: Flyer, Alex Nathanson, et al World Intellectual Property Organization, WO2010024930-A2 2010-03-04</p> <p>PatentPak Full Text</p>	https://scifinder-n.cas.org/search/reaction/640735ed2b901c23fd178365/1
Step 2	 <p>31-614-CAS-30957604 Steps: 1 Yield: 91% ***</p> <p>1.1 Reagents: 2,2,2-Trifluoroethyl 2-hydroxyacetate; 6 h, rt 1.2 Reagents: Diethylamine, N,N-Dimethylacetamide Scheme: Diethylamine; 3 h, heated</p> <p>Synthesis of 6a-2-alkoxypropylpyrrolidines via intramolecular cyclization of 2-oxoalkyl anions derived from alkyl(aryl)imidate N-cryptidines/2-methyl-2-propyl-1-imidates</p> <p>By: Mangemck, Sam, et al Tetrahedron (2015), 69(19), 3128-3135</p> <p>Full Text</p>	https://scifinder-n.cas.org/search/reaction/6407364c2b901c23fd178bb6/1

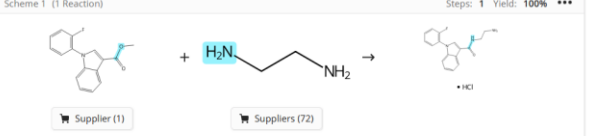
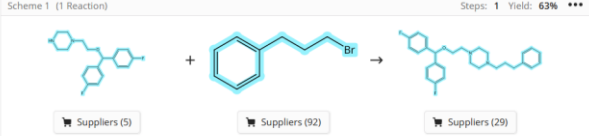
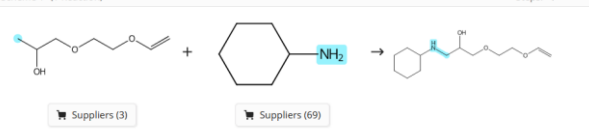
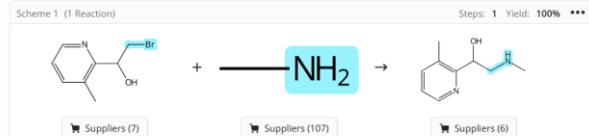

<p>Route 64 Step 1</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 92% **</p> <p>31-351-CAS-10385464 Steps: 1 Yield: 92% Synthesis of a novel series of 6-chloro-1,4,2-benzodiazine 1,1-dioxide derivatives with potential biological activity By: Brzosowski, Z.; et al Journal of Heterocyclic Chemistry (2005), 42(7), 1297-1303 Full Text</p> <p>1.1 Reagents: Sodium hydroxide Solvents: Water; 5 h, pH 11, rt 1.2 Reagents: Hydrochloric acid Solvents: Water; pH 6, pH 1.5</p>	<p>https://scifinder-n.cas.org/search/reaction/640736eb2b901c23fd179967/1</p>
<p>Step 2</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>31-614-CAS-2768662 Steps: 1 Yield: 100% Identification of a pyridone-derived small-molecule inhibitor targeting dengue virus RNA-dependent RNA polymerase By: Fu, Hong-Tao; et al Antimicrobial Agents and Chemotherapy (2016), 60(1), 600-608 Full Text</p> <p>1.1 Reagents: Chloroacetic acid Solvents: Chloroform; 1 h, rt 1.2 Reagents: Dichloroacetic anhydride Solvents: Dichloromethane; 20 h, 45 °C 1.3 Reagents: Methylamine hydrochloride Solvents: Chloroform; 1 h, reflux 1.4 Reagents: Sulfolane, Potassium carbonate/tetrahydrofuran Solvents: Sulfolane; 1 h, rt Experimental Protocols</p>	<p>https://scifinder-n.cas.org/search/reaction/6407371a2b901c23fd179dc0/1</p>
<p>Step 3</p>	 <p>Scheme 1 (2 Reactions) Steps: 1 Yield: 95-98% ***</p> <p>31-614-CAS-23974190 Steps: 1 Yield: 98% Towards a real knotaxane By: Ouden, Torben; et al Chemistry (Basel, Switzerland) (2020), 2(2), 29 Full Text</p> <p>1.1 Reagents: Hydrochloric acid Solvents: Water; 4 h, 120 °C</p>	<p>https://scifinder-n.cas.org/search/reaction/6407379b2b901c23fd17a7c4/1</p>
<p>Route 65 Step 1</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 96% ***</p> <p>31-026-CAS-11728795 Steps: 1 Yield: 96% Substituted diphenylmethyl protecting groups in peptide synthesis By: Hanson, R. W.; et al Journal of the Chemical Society (1965), (Dec.), 7285-96 Full Text</p> <p>1.1 Solvents: Dimethylformamide</p>	<p>https://scifinder-n.cas.org/search/reaction/640737c22b901c23fd17ab20/1</p>
<p>Step 2</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>31-353-CAS-8868749 Steps: 1 Yield: 100% Phosphonated fluoroquinolones, antibacterial analogs thereof, and methods for the prevention and treatment of bone and joint infections By: Delorme, David; et al World Intellectual Property Organisation, WO2007017762 A2 2007-02-15 PatentPak Full Text</p> <p>1.1 Reagents: Sodium hydroxide Solvents: Methanol; 1.5 h, reflux; reflux -> 0 °C 1.2 Reagents: Hydrochloric acid Solvents: Water; acidified</p>	<p>https://scifinder-n.cas.org/search/reaction/640737e32b901c23fd17ae00/1</p>



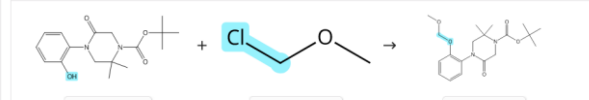
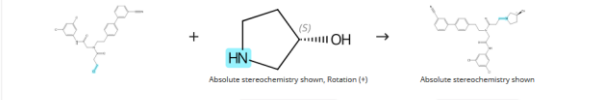

Step 3	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 70% ***</p> <p>31-026-CAS-1174187</p> <p>1.1 Reagents: Potassium iodide Solvents: Methanol</p> <p>Synthesis and evaluation of 5-HT_{2A} and 5-HT_{2C} receptor binding affinities of novel pyrimidine derivatives</p> <p>By: Boering, Daniel, et al Bioorganic & Medicinal Chemistry Letters (2002), 13(21), 3097-3099</p> <p>Full Text</p>	https://scifinder-n.cas.org/search/reaction/6407380b2b901c23fd17b1aa/1
Route 66 Step 1	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 70% ***</p> <p>31-614-CAS-26740059</p> <p>1.1 Reagents: Lithium perchlorate Solvents: Methanol, Acetonitrile; 25 °C</p> <p>Electrocyclic-driven Nsp²-Csp² bond cleavage of sulfonamides</p> <p>By: Wetzal, Annica, et al ACS Sustainable Chemistry & Engineering (2020), 8(5), 3487-3493</p> <p>Full Text</p>	https://scifinder-n.cas.org/search/reaction/640738362b901c23fd17b503/1
Route 67 Step 1	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 99% ***</p> <p>31-530-CAS-6042457</p> <p>1.1 Reagents: Hydrogen Catalysts: Palladium Solvents: Ethanol</p> <p>Synthesis and reactions of 2,3-dihydrothiazolo[3,2-a]pyrimidine derivatives</p> <p>By: Kinoshita, Toshiro, et al Chemical & Pharmaceutical Bulletin (1987), 35(1), 90-6</p> <p>Full Text</p>	https://scifinder-n.cas.org/search/reaction/6407386a2b901c23fd17bacc/1
Step 2	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 87% ***</p> <p>31-479-CAS-7835047</p> <p>1.1 Reagents: Thionyl chloride Solvents: Toluene</p> <p>Biphenyl, stilbene, and diphenylethane derivatives-2-methylimidazole derivatives, V</p> <p>By: Cavalini, G., et al Farmaco, Edizione Scientifica (1956), 11, 378-88</p> <p>Full Text</p>	https://scifinder-n.cas.org/search/reaction/6407388b2b901c23fd17bdce/1
Route 68 Step 1	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>31-031-CAS-5401817</p> <p>1.1 Reagents: Potassium carbonate Catalysts: Potassium iodide Solvents: Acetonitrile; reflux</p> <p>1,6-Disubstituted indole derivatives as selective human neuronal nitric oxide synthase inhibitors</p> <p>By: Madhford, Shawn, et al Bioorganic & Medicinal Chemistry Letters (2011), 21(18), 5294-5298</p> <p>Full Text</p>	https://scifinder-n.cas.org/search/reaction/640738aa2b901c23fd17c068/1
Route 69 Step 1	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>31-205-CAS-13984515</p> <p>1.1 Reagents: N-Bromosuccinimide Catalysts: Silver acetate Solvents: Acetone; 21 h, rt</p> <p>Synthesis of novel Bis(β-lactam)-5,3-dienes by copper-promoted homo- or cross-coupling of alkynyl 2-acetyl imines</p> <p>By: Alcalá, Benito, et al European Journal of Organic Chemistry (2008), (5), 1575-1581</p> <p>Full Text</p>	https://scifinder-n.cas.org/search/reaction/6407390c2b901c23fd17c822/1


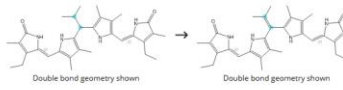
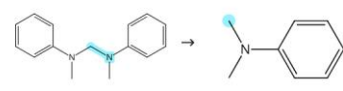
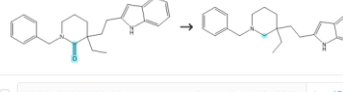
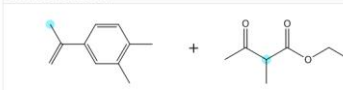
<p>Route 70 Step 1</p>	 <p>31-031-CAS-21313259 Steps: 1 Yield: 99% 1.1 Reagents: Potassium hydroxide Solvents: Acetone; overnight, reflux Experimental Protocols Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/6407399f2b901c23fd17d3ab/1</p>
<p>Route 71 Step 1</p>	 <p>31-008-CAS-5165142 Steps: 1 Yield: 95% 1.1 Reagents: Potassium carbonate Solvents: Acetone; 15 h, rt to 60 °C PatentPak Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/640739d32b901c23fd17d7da/1</p>
<p>Step 2</p>	 <p>31-017-CAS-22890791 Steps: 1 Yield: 80% 1.1 Reagents: Sodium carbonate, Potassium iodide Solvents: Dimethyl sulfoxide; 0 °C to rt, 24 h, rt Experimental Protocols Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073a042b901c23fd17db7d/1</p>
<p>Route 72 Step 1</p>	 <p>81-900-CAS-7914960 Steps: 1 Yield: 78% 1.1 Reagents: 2-Methyl-2-butene, Methylalumoxane, Sodium chloride Solvents: Acetonitrile, Water; 1.5 h, 25 °C 1.2 Reagents: 1,1-Bis(2-cyanoethyl)ethane-1,2-dithiolane, Water Solvents: Acetonitrile; pH 7, 25 °C 1.3 Reagents: Dichloroacetic anhydride Solvents: Dichloroacetic anhydride; 2.5 h, 25 °C Experimental Protocols Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073adc2b901c23fd17eb2a/1</p>
<p>Route 73 Step 1</p>	 <p>31-031-CAS-17135259 Steps: 1 Yield: 94% 1.1 Reagents: Sodium carbonate Solvents: Acetonitrile; 0 to 70 °C 1.2 Catalysts: Potassium iodide; 5-6 h, 70 °C; 70 °C to 10 °C; 1-2 h, 5-10 °C 1.3 Solvents: Water; 1-2 h, rt; 2 h, rt PatentPak Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073b0c2b901c23fd17ee4b/1</p>


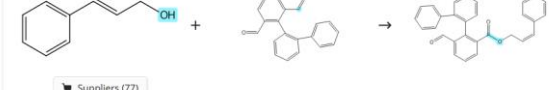
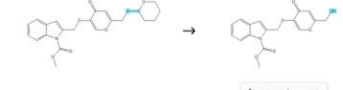

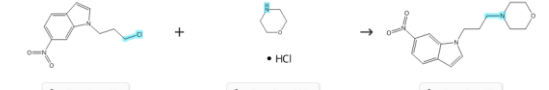
<p>Route 74 Step 1</p>	 <p>Scheme 17 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>31-351-CAS-8258975 Steps: 1 Yield: 100% Functionalized carbon nanotubes comprising immunogenic epitopes for treating cancer, autoimmune disease or infection, and for preparing electrochemical biosensor</p> <p>1.1 Solvents: Dichloromethane; 30 min, rt</p> <p>By: Bianco, Alberto, et al World Intellectual Property Organization, WO2004089818 A1 2004-10-21</p> <p>PatentPak - Full Text -</p>	<p>https://scifinder-n.cas.org/search/reaction/64073c8d2b901c23fd180ab2/1</p>
<p>Step 2</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 ***</p> <p>31-614-CAS-2889510 Steps: 1 Organocatalytic oxidation of aldehydes to mixed anhydrides</p> <p>1.1 Reagents: Pyridine, tert-Butylhydroperoxide Catalysts: Tetralin Solvents: Acetonitrile; 25 min, 0 °C; 0 °C → -25 °C</p> <p>By: Toledo, Hilda, et al Chemical Communications (Cambridge, United Kingdom) 2013, 49(39), 4367-4369</p> <p>Full Text -</p> <p>Collapse Scheme -</p>	<p>https://scifinder-n.cas.org/search/reaction/64073d062b901c23fd1812e8/1</p>
<p>Step 3</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 ***</p> <p>31-008-CAS-23072256 Steps: 1 Method for synthesizing farnesoid X receptor (FXR) antagonist 6Ph 7623 molecule (2S,3S,4S,5S)-6-(4-(4-(2,5-dimethylphenyl)-2,2-dimethylpentan-1-yl)phenyl)-5,4,5-trihydroxyheptan-3-yl pyran-2-carboxylic acid</p> <p>1.1 Reagents: Sodium hydride Solvents: Dry tetrahydrofuran; Toluene; 2 h, rt → reflux</p> <p>1.2 Reagents: Sodium hydride; overnight, 130 °C</p> <p>By: Qin, Yimin, et al China, CN11333681 A, 2000-08-26</p> <p>PatentPak - Full Text -</p>	<p>https://scifinder-n.cas.org/search/reaction/64073d352b901c23fd181666/1</p>
<p>Route 75 Step 1</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>31-614-CAS-26163674 Steps: 1 Yield: 100% Preparation of Enantiomerically pure phosphinoides as HIV inhibitors</p> <p>1.1 Reagents: Bromotrimethylsilane Solvents: Dichloromethane; 15 min, rt → 0 °C; 1.5 h, 0 °C → 40 °C; 40 °C → 0 °C</p> <p>1.2 Reagents: Dialkylchloride; 15 min, 0 °C</p> <p>1.3 0 °C; 1 h, rt</p> <p>1.4 Reagents: Methanol</p> <p>By: Storer, Richard, et al World Intellectual Property Organization, WO2008042240 A2 2008-04-10</p> <p>PatentPak - Full Text -</p>	<p>https://scifinder-n.cas.org/search/reaction/640745833136c60ac9448417/1</p>
<p>Step 2</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 2% ***</p> <p>31-022-CAS-5626779 Steps: 1 Yield: 2% Improvement of the functional properties of sucrose stearate by phosphorylation</p> <p>1.1 Reagents: Sodium hydroxide, Metaphosphoric acid (H₃PO₃) Solvents: Water; pH 5.5, 60 °C; 20 h, 110 °C</p> <p>By: Yamagishi, Yukako, et al Journal of Agricultural and Food Chemistry (2004), 52(26), 8039-8045</p> <p>Full Text -</p>	<p>https://scifinder-n.cas.org/search/reaction/640745a53136c60ac944866d/1</p>

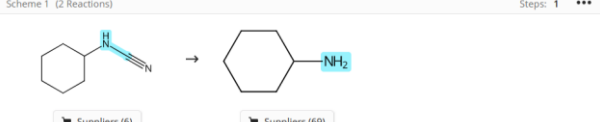
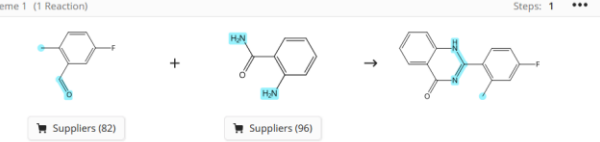
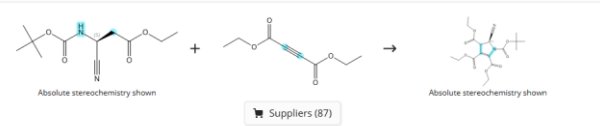

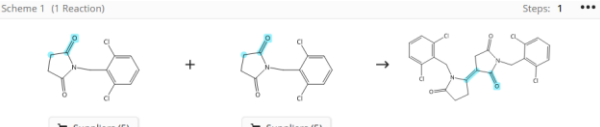

<p>Step 3</p>	 <p>Scheme 2 (2 Reactions) Steps: 1 Yield: 100% ***</p> <p>Suppliers (44) Suppliers (72)</p> <p>31-309-CAS-10667106 Steps: 1 Yield: 100% 1.1 Solvents: <u>Ethanol</u>; 10 min, 100 psi, 80 °C Microwave-assisted methods for the synthesis of pentacyclo[5.4.0.0^{2,5}.0^{3,10}.0^{5,9}]undecylamines By: Joubert, Jacques; et al Tetrahedron Letters (2013), 54(50), 6923-6927 Experimental Protocols Full Text -</p> <p>31-309-CAS-15891195 Steps: 1 1.1 Solvents: <u>Tetrahydrofuran</u>; 5 °C Synthesis and Biological Evaluation of Pentacycloundecylamines and Triquinylamines as Voltage-Gated Calcium Channel Blockers By: Young, Lois-May; et al Archiv der Pharmazie (Weinheim, Germany) (2016), 349(4), 252-267 Experimental Protocols Full Text -</p> <p>Collapse Scheme ^</p>	<p>https://scifinder-n.cas.org/search/reaction/640745f63136c60ac9448c96/1</p>
<p>Route 76 Step 1</p>	 <p>Scheme 2 (1 Reaction) Steps: 1 Yield: 95% ***</p> <p>Suppliers (36) Suppliers (91)</p> <p>31-493-CAS-1528353 Steps: 1 Yield: 95% 1.1 Reagents: <u>Benzoyl peroxide</u> Catalysts: <u>(11b)(9-(6-(8-(9-(3,5-difluorophenyl)(triethylsilyloxy)methyl)-4-oxobut-3-yl)-2-fluorophenyl)oxy)propan-2-yl</u> Solvents: <u>Toluene</u>; 20 h, 0 °C 1.2 Reagents: <u>Sodium borohydride</u> Solvents: <u>Methanol</u>; 0.5 h, rt Metal-Free Enantioselective Hydroxyamination of Aldehydes with Nitroso Carbonyl Compounds Catalyzed by an Axially Chiral Amine By: Kano, Taichi; et al Journal of the American Chemical Society (2013), 135(48), 18036-18039 Experimental Protocols Full Text -</p> <p>Collapse Scheme ^</p>	<p>https://scifinder-n.cas.org/search/reaction/640746673136c60ac94495c4/1</p>
<p>Route 77 Step 1</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 ***</p> <p>Suppliers (3) Suppliers (69)</p> <p>31-127-CAS-18155626 Steps: 1 No Data Available An efficient access to functionally substituted 1,3-oxazolidin-2-ones via cyclization of 1-alkylamino- and 1-arylamino-3-(2-(vinyl)ethoxy)propan-2-ols with dimethyl carbonate By: Lobanova, Natalya A.; et al ARKIVOC (Gainesville, FL, United States) (2015), (5), 319-333 Experimental Protocols Full Text -</p> <p>Collapse Scheme ^</p>	<p>https://scifinder-n.cas.org/search/reaction/6407465b9bdefb04770285d4/1</p>
<p>Step 2</p>	 <p>Scheme 6 (1 Reaction) Steps: 1 ***</p> <p>Supplier (1) Suppliers (67)</p> <p>31-491-CAS-11979875 Steps: 1 1.1 Reagents: <u>2-(Tributylphosphoronyl)acetonitrile</u> Solvents: <u>Toluene</u>; 1 h, 150 °C; 150 °C → rt Azetidines derivatives and related compounds as serotonin receptor modulators and their preparation and use in the treatment of serotonin-mediated diseases By: Carruthers, Nicholas L.; et al World Intellectual Property Organization, WO2010059393 A1 2010-05-27 Experimental Protocols PatentPak - Full Text -</p> <p>Collapse Scheme ^</p>	<p>https://scifinder-n.cas.org/search/reaction/640746929bdefb0477028927/1</p>
<p>Route 78 Step 1</p>	 <p>Scheme 42 (3 Reactions) Steps: 1 Yield: 13.99% •</p> <p>Suppliers (58) Suppliers (107) Suppliers (2)</p>	<p>https://scifinder-n.cas.org/search/reaction/640745b89bdefb0477027bd5/3</p>



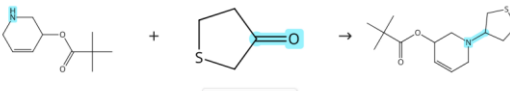
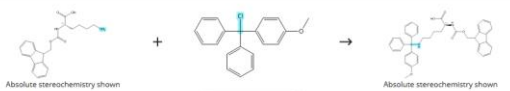
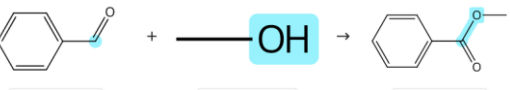
<p>Route 79 Step 1</p>	 <p>Supplier (1) Suppliers (72)</p> <p>31-368-CAS-14123545 Steps: 1 Yield: 100% Preparation of pyrazole, benzimidazole, indole, or indazole compounds useful as diacylglycerol acyl transferase inhibitors and for the treatment of obesity, hyperlipidemia, diabetes 1.1 20 h, 90 °C 1.2 Reagents: Hydrochloric acid Solvents: Diethyl ether By: Kitamura, Shuji; et al World Intellectual Property Organization, WO2008011130 A2 2008-01-24 PatentPak Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/640745239bdefb0477027181/1</p>
<p>Step 2</p>	<p>Null</p>	
<p>Route 80 Step 1</p>	<p>Null</p>	
<p>Route 81 Step 1</p>	 <p>Suppliers (5) Suppliers (92) Suppliers (29)</p> <p>31-031-CAS-6278221 Steps: 1 Yield: 63% Aryl 1,4-dialk(enyl)piperazines as selective and very potent inhibitors of dopamine uptake No Data Available By: Van der Zee, Peter; et al European Journal of Medicinal Chemistry (1980), 15(4), 363-70 Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/640744909bdefb04770269b7/1</p>
<p>Route 82 Step 1</p>	 <p>Suppliers (3) Suppliers (69)</p> <p>31-127-CAS-18155626 Steps: 1 An efficient access to functionally substituted 1,3-oxazolidin-2-ones via cyclization of 1-alkylamino- and 1-arylamino-3-[2-(vinylloxy)ethoxy]propan-2-ols with dimethyl carbonate No Data Available By: Lobanova, Natal'ya A.; et al ARKIVOC (Gainesville, FL, United States) (2015), (5), 319-333 Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/640744639bdefb0477026769/1</p>
<p>Route 83 Step 1</p>	 <p>Suppliers (7) Suppliers (107) Suppliers (6)</p> <p>31-031-CAS-3053572 Steps: 1 Yield: 100% Preparation of pyrido[3,2-f][1,4]oxazepine compounds and their use for treatment of Aβ-related diseases 1.1 Solvents: Methanol; 5 min, rt → 100 °C By: Maccari, Istvan; et al World Intellectual Property Organization, WO2012064269 A1 2012-05-18 PatentPak Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/640744359bdefb04770264b5/1</p>
<p>Route 84 Step 1</p>	 <p>Suppliers (3) Suppliers (41)</p> <p>31-353-CAS-7180116 Steps: 1 Yield: 78% New antiarrhythmic agents. 6. Quantitative structure-activity relationships of aminoxyldides 1.1 Reagents: Hydrazine, Water Solvents: Water By: Tenthorey, Paul A.; et al Journal of Medicinal Chemistry (1981), 24(7), 798-806 Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/640743d59bdefb0477025f45/1</p>

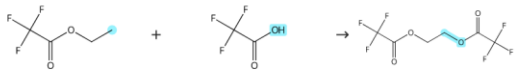
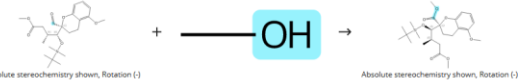
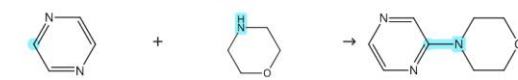
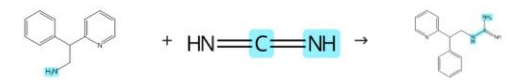
<p>Route 85 Step 1</p>	 <p>Scheme 47 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>31-530-CAS-465318 Steps: 1 Yield: 100% A new variant of Reformatsky-Claisen rearrangement mediated by indium chloride</p> <p>1.1 Reagents: Chlorotrimethylsilane, Triethylamine; 5 min, rt 1.2 Reagents: Indium, Indium trichloride Solvents: Benzene; 6 h, 10 - 30 °C</p> <p>Experimental Protocols Full Text -</p> <p>By: Ishihara, Jun; et al Synlett (2009), (14), 2351-2355</p> <p>Collapse Scheme ^</p>	<p>https://scifinder-n.cas.org/search/reaction/640742e09bdefb0477024f45/3</p>
<p>Step 2</p>	 <p>Scheme 47 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>31-530-CAS-465318 Steps: 1 Yield: 100% A new variant of Reformatsky-Claisen rearrangement mediated by indium chloride</p> <p>1.1 Reagents: Chlorotrimethylsilane, Triethylamine; 5 min, rt 1.2 Reagents: Indium, Indium trichloride Solvents: Benzene; 6 h, 10 - 30 °C</p> <p>Experimental Protocols Full Text -</p> <p>By: Ishihara, Jun; et al Synlett (2009), (14), 2351-2355</p> <p>Collapse Scheme ^</p>	<p>https://scifinder-n.cas.org/search/reaction/640742e09bdefb0477024f45/3</p>
<p>Step 3</p>	 <p>Scheme 1 (3 Reactions) Steps: 1 Yield: 100% ***</p> <p>31-008-CAS-730726 Steps: 1 Yield: 100% Preparation of cyclic amine compounds as renin inhibitors</p> <p>1.1 Reagents: Diisopropylethylamine Solvents: Dichloromethane; overnight, rt</p> <p>Experimental Protocols PatentPak - Full Text -</p> <p>By: Miyazaki, Shojiro; et al Japan, JP2009167179 A 2009-07-30</p>	<p>https://scifinder-n.cas.org/search/reaction/640742439bdefb04770241ef/1</p>
<p>Step 4</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>31-031-CAS-15277243 Steps: 1 Yield: 100% Biaryl diamides as potent melanin concentrating hormone receptor 1 antagonists</p> <p>1.1 Reagents: Potassium carbonate Catalysts: Sodium iodide Solvents: Acetonitrile</p> <p>Experimental Protocols Full Text -</p> <p>By: Palani, Anandan; et al Bioorganic & Medicinal Chemistry Letters (2005), 15(23), 5234-5236</p> <p>Collapse Scheme ^</p>	<p>https://scifinder-n.cas.org/search/reaction/640742209bdefb0477023fa2/1</p>
<p>Route 86 Step 1</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>31-031-CAS-5401817 Steps: 1 Yield: 100% 1,6-Disubstituted indole derivatives as selective human neuronal nitric oxide synthase inhibitors</p> <p>1.1 Reagents: Potassium carbonate Catalysts: Potassium iodide Solvents: Acetonitrile; reflux</p> <p>Experimental Protocols Full Text -</p> <p>By: Maddaford, Shawn; et al Bioorganic & Medicinal Chemistry Letters (2011), 21(18), 5234-5238</p>	<p>https://scifinder-n.cas.org/search/reaction/640740e59bdefb0477022a63/1</p>
<p>Step 2</p>		<p>https://scifinder-n.cas.org/search/reaction/640741129bdefb0477022df9/1</p>

	<p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p>  <p>Absolute stereochemistry shown, Rotation (+) Absolute stereochemistry shown</p> <p>Suppliers (110) Suppliers (3)</p> <p>31-201-CAS-11508567 Steps: 1 Yield: 100% Peculiar Stability of Amino Acids and Peptides from a Radical Perspective</p> <p>1.1 Reagents: Chlorine Solvents: Trifluoroacetic acid; 1 - 20 min</p> <p>By: Watts, Zachary L; et al Journal of the American Chemical Society (2009), 131(32), 11323-11325</p> <p>Experimental Protocols Full Text</p> <p>Collapse Scheme</p>	
Route 87 Step 1	<p>Scheme 1 (1 Reaction) Steps: 1 Yield: 83% ***</p>  <p>Double bond geometry shown Double bond geometry shown</p> <p>31-479-CAS-12435936 Steps: 1 Yield: 83% Chemistry of pyrrole pigments. 79. The structural effect of very bulky groups in 10-substituted 1,19-bilindiones</p> <p>1.1 Reagents: 2,3-Dichloro-5,6-dicyano-1,4-benzoquinone Solvents: Tetrahydrofuran</p> <p>By: Falk, Heinz; et al Monatshette fuer Chemie (1987), 120(1), 35-43</p> <p>Full Text</p>	https://scifinder-n.cas.org/search/reaction/640740ab9bdefb04770226cc/1
Step 2	<p>Scheme 5 (2 Reactions) Steps: 1 Yield: 99-100% ***</p>  <p>Suppliers (13) Suppliers (80)</p> <p>31-544-CAS-18769077 Steps: 1 Yield: 100% Tungstate catalysis: pressure-switched 2- and 6-electron reductive functionalization of CO₂ with amines and phenyl silane</p> <p>1.1 Reagents: Carbon dioxide, Phenylsilane Catalysts: Potassium Tungstate (K₂WO₄) Solvents: Acetonitrile; 12 h, 1 bar, 70 °C</p> <p>By: Wang, Mei-Yan; et al Green Chemistry (2018), 20(7), 1564-1570</p> <p>Experimental Protocols Full Text</p>	https://scifinder-n.cas.org/search/reaction/640740459bdefb0477021fa3/1
Step 3	<p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p>  <p>31-541-CAS-22039199 Steps: 1 Yield: 100% A unified synthesis of topologically diverse Aspidosperma alkaloids through divergent iminium-trapping</p> <p>1.1 Reagents: Vinylide Solvents: Toluene, Tetrahydrofuran; 0 °C; 1 h, 0 °C 1.2 Reagents: Potassium sodium tartrate Solvents: Water; 0 °C; 1 h, rt</p> <p>By: Mijangos, Marco V.; et al Organic & Biomolecular Chemistry (2018), 16(48), 9409-9419</p> <p>Experimental Protocols Full Text</p>	https://scifinder-n.cas.org/search/reaction/640740199bdefb0477021ce0/1
Step 4	Null	
Route 88 Step 1	<p>Scheme 2 (1 Reaction) Steps: 1 Yield: 98% ***</p>  <p>Suppliers (9) Suppliers (86)</p> <p>31-614-CAS-32524626 Steps: 1 Yield: 98% Asymmetric C-H Dehydrogenative Allylic Alkylation by Ternary Photoredox-Cobalt-Chiral Primary Amine Catalysis under Visible Light</p> <p>1.1 Catalysts: Iridium(III), [4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-<i>rac</i>]-[Ru(II)-2,2'-bipyridine], [10C-6-42]-Chlorobis([1,2-cyclohexanedione 1,2-dioximate-<i>rac</i>])-[1,1,1]-trifluoro-compd. with (9S)-<i>rac</i>-[1,1-dimethylethyl]-4-<i>rac</i>-<i>rac</i></p> <p>Solvents: Acetonitrile; 36 - 72 h, -20 °C</p> <p>By: Jia, Zongbin; et al Journal of the American Chemical Society (2022), 144(24), 10705-10710</p> <p>Experimental Protocols Full Text</p> <p>Collapse Scheme</p>	https://scifinder-n.cas.org/search/reaction/64073f549bdefb047702113a/1

<p>Route 89 Step 1</p>	 <p>Scheme 2 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>31-541-CAS-14896729 Steps: 1 Yield: 100% Preparation of fused bicyclic derivatives of 2,4-diaminopyrimidine as ALK and c-Met kinase inhibitors</p> <p>1.1 Reagents: (7R)-7-hydroxy-2,3,4,5-tetrahydrofuran-2(1H)-one Solvents: Tetrahydrofuran; 2 min, 0 °C; 0 °C → 65 °C; 4 h, 65 °C, cooled 1.2 Reagents: Hydrochloric acid Solvents: Water; 1.5 h, 65 °C; 65 °C → 0 °C 1.3 Reagents: Potassium hydroxide Solvents: Water; basified, 0 °C</p> <p>By: Ahmed, Gulzar; et al World Intellectual Property Organization, WO2008051547 A1 2008-05-02</p> <p>PatentPak Full Text</p> <p>Experimental Protocols</p> <p>Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073ec79bdefb0477020931/1</p>
<p>Step 2</p>	 <p>Suppliers (77)</p> <p>31-614-CAS-31487211 Steps: 1 Yield: 97% Synthesis of Axially Chiral Aldehydes by N-Heterocyclic-Carbene-Catalyzed Desymmetrization Followed by Kinetic Resolution</p> <p>1.1 Reagents: Cesium carbonate Catalysts: #H,6#-Indenol[2,1-b][1,2,4]triazolol[4,3-d][1,4]oxazinium,5a,10b-dihydro-2,2,4,4-tetrahydro-2H-pyridin-2-ylidene Solvents: Dichloromethane; 5 min, 0 °C 1.2 Reagents: #J3,S-Bis[1,1-dimethylethyl]-4-oxo-2,5-cyclohexadien-1-ylidene-2,6-bis[1,1-dimethyl-2-phenylethyl]pyridinium salt Solvents: Dichloromethane; 72 h, 0 °C</p> <p>By: Wu, Yingtao; et al Angewandte Chemie, International Edition (2022), 61(14), e202117340</p> <p>Full Text</p> <p>Experimental Protocols</p> <p>Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073ea59bdefb04770206b4/1</p>
<p>Step 3</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>Suppliers (2)</p> <p>31-006-CAS-3327463 Steps: 1 Yield: 100% Modular Synthesis of Candidate Indole-based Insulin Mimics by Claisen Rearrangement</p> <p>1.1 Reagents: Lawesson's reagent Solvents: Methanol; 1 h, rt</p> <p>By: Xiong, Xin; et al Organic Letters (2008), 10(6), 1151-1154</p> <p>Full Text</p> <p>Experimental Protocols</p> <p>Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073e5d9bdefb04770202bc/1</p>
<p>Step 4</p>	<p>Null</p>	
<p>Route 90 Step 1</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>Suppliers (23) Suppliers (107)</p> <p>31-313-CAS-15359622 Steps: 1 Yield: 100% Synthesis and Neurotoxicity Profile of 2,4,5-Trihydroxymethamphetamine and its 6-(N-Acetylcystein-S-yl) Conjugate</p> <p>1.1 Solvents: Dichloromethane, Tetrahydrofuran; -5 °C; 1 h, rt 1.2 Reagents: Sodium triacetoxyborohydride Catalysts: Acetic acid; rt; 3 h, rt 1.3 Reagents: Sodium hydroxide Solvents: Water; rt</p> <p>By: Neudorffer, Anne; et al Chemical Research in Toxicology (2011), 24(6), 968-978</p> <p>Full Text</p> <p>Experimental Protocols</p> <p>Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073cd79bdefb047701ebfe/1</p>
<p>Route 91 Step 1</p>	 <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p> <p>Suppliers (3) Suppliers (55) Supplier (1)</p> <p>31-031-CAS-5401817 Steps: 1 Yield: 100% 1,6-Disubstituted indole derivatives as selective human neuronal nitric oxide synthase inhibitors</p> <p>1.1 Reagents: Potassium carbonate Catalysts: Potassium iodide Solvents: Acetonitrile; reflux</p> <p>By: Maddaford, Shawn; et al Bioorganic & Medicinal Chemistry Letters (2011), 21(18), 5234-5238</p> <p>Full Text</p> <p>Experimental Protocols</p> <p>Full Text</p>	<p>https://scifinder-n.cas.org/search/reaction/64073c229bdefb047701e05e/1</p>

Route 92 Step 1	 <p>Suppliers (6) Suppliers (69)</p> <p>31-614-CAS-27047529 Steps: 1 Cyanamide</p> <p>No Data Available</p> <p>By: Schow, Steven e-EROS Encyclopedia of Reagents for Organic Synthesis (2001), No pp. given</p> <p>Full Text -</p>	https://scifinder-n.cas.org/search/reaction/64073bdb9bdefb047701dc21/1
Route 93 Step 1	 <p>Suppliers (82) Suppliers (96)</p> <p>31-614-CAS-25846777 Steps: 1 Synthesis of Difluoromethyl-Substituted Quinazolines through Selective Difluoromethylation</p> <p>1.1 Reagents: Sodium bisulfite Solvents: Dimethylacetamide; 150 °C</p> <p>By: Peng, Jing; et al Synthesis (2021), 53(13), 2286-2292</p> <p>Full Text -</p> <p>collapse Scheme ^</p>	https://scifinder-n.cas.org/search/reaction/64073b2a9bdefb047701d09b/1
Route 94 Step 1	Null	
Step 2	 <p>Absolute stereochemistry shown</p> <p>Suppliers (87)</p>	https://scifinder-n.cas.org/search/reaction/640738679bdefb047701a1e0/1
Route 95 Step 1	 <p>Absolute stereochemistry shown</p> <p>Suppliers (87)</p> <p>31-614-CAS-26701064 Steps: 1 Yield: 97% Preparation of saxagliptin for diabetes mellitus</p> <p>1.1 Reagents: Sodium acetate, Silver oxide (Ag₂O) Catalysts: Palladium chloride, Dinaphthyl(2,1-d):1',2'-[1,3,2]dioxaphosphepin-4-(2R;2-phenyl)-1:(1R)-phenyl... Solvents: Tetrahydrofuran; 3 h, 40 °C</p> <p>By: Yan, Dewen; et al China, CN109761876 A 2019-05-17</p> <p>PatentPak - Full Text -</p>	https://scifinder-n.cas.org/search/reaction/640738679bdefb047701a1e0/1
Step 2	 <p>Suppliers (5) Suppliers (5)</p> <p>31-329-CAS-6946731 Steps: 1 Spiro cyclizations of N-acyliminium ions involving an aromatic n-nucleophile</p> <p>1.1 Reagents: Magnesium Catalysts: Iodine Solvents: Diethyl ether; 1 h, reflux 1.2 Solvents: Tetrahydrofuran; overnight, rt 1.3 Reagents: Ammonium chloride Solvents: Water; rt 1.4 Solvents: Trifluoroacetic acid; 48 h, reflux</p> <p>By: Bailey, Patrick D.; et al Tetrahedron (2003), 59(18), 3369-3378</p> <p>Full Text -</p>	https://scifinder-n.cas.org/search/reaction/640737e59bdefb04770197e0/1
Route 96 Step 1	 <p>Suppliers (5) Suppliers (5)</p> <p>31-352-CAS-9293789 Steps: 1 Yield: 100% Preparation of fused bicyclic thiazole and thiophene derivatives as PI3-kinase inhibitors</p> <p>1.1 Reagents: Trifluoroacetic acid Solvents: Dichloromethane; 18 h, rt</p> <p>By: Kinsella, Natacha; et al World Intellectual Property Organization, WO2009071895 A1 2009-06-11</p> <p>Experimental Protocols</p> <p>PatentPak - Full Text -</p>	https://scifinder-n.cas.org/search/reaction/640737349bdefb0477018b37/1

Step 2	<p>Scheme 1 (1 Reaction) Steps: 1 Yield: 66% ***</p>  <p>Suppliers (59) Suppliers (115)</p> <p>31-209-CAS-21328135 Steps: 1 Yield: 66% Magnetic Field Effects on Chemical Reactions of Biradical Radical Ion Pairs in Homogeneous Fluid Solvents</p> <p>1.1 Reagents: Dicyclohexylcarbodiimide Catalysts: 4-(Dimethylamino)pyridine Solvents: Dichloromethane; 2 d, rt</p> <p>By: Mori, Yukie; et al Journal of Physical Chemistry A (2000), 104(21), 4896-4905</p> <p>Full Text -</p> <p>Collapse Scheme -></p>	https://scifinder-n.cas.org/search/reaction/6407376e9bdefb0477018f20/1
Route 97 Step 1	Null	
Step 2	Null	
Route 98 Step 1	<p>63,449 Results Group: By Scheme Sort: Relevance View: Expand</p> <p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% **</p>  <p>31-550-CAS-9676511 Steps: 1 Yield: 100% Preparation of benzoimidazolylsulfone derivatives for use as CB2 receptor agonists</p> <p>1.1 Reagents: Trifluoroacetic acid Solvents: Dichloromethane; 20 min, rt</p> <p>By: Ando, Kazuo; et al World Intellectual Property Organization, WO2010084767 A1 2010-07-29</p> <p>Experimental Protocols PatentPak - Full Text -</p>	https://scifinder-n.cas.org/search/reaction/640735569bdefb04770169ba/1
Step 2	<p>Scheme 1 (1 Reaction) Steps: 1 Yield: 100% ***</p>  <p>Suppliers (89)</p> <p>31-313-CAS-22235328 Steps: 1 Yield: 100% Preparation of substituted tetrahydropyridinols and analogs as choline metabolism inhibitors</p> <p>1.1 Reagents: Acetic acid Solvents: Methanol; 30 min, 0 °C 1.2 Reagents: Sodium cyanoborohydride; overnight, rt</p> <p>By: Balskus, Emily P.; et al World Intellectual Property Organization, WO2020117942 A1 2020-06-11</p> <p>PatentPak - Full Text -</p>	https://scifinder-n.cas.org/search/reaction/640735ae9bdefb04770170a2/1
Step 3	<p>Scheme 1 (3 Reactions) Steps: 1 Yield: 91-100% ***</p>  <p>Absolute stereochemistry shown Suppliers (76) Suppliers (94) Suppliers (58)</p> <p>31-031-CAS-9289133 Steps: 1 Yield: 100% Cobalamin taxane bioconjugates for treating eye disease</p> <p>1.1 Reagents: Chlorotrimethylsilane Solvents: Dichloromethane; rt 1 h, 50 °C; cooled 1.2 Reagents: Diisopropylethylamine; 20 h, rt</p> <p>By: Gebhard, John R.; et al World Intellectual Property Organization, WO2010088287 A1 2010-08-05</p> <p>Experimental Protocols PatentPak - Full Text -</p>	https://scifinder-n.cas.org/search/reaction/640735ed9bdefb04770175b0/1
Route 99 Step 1	<p>Scheme 1 (143 Reactions) Steps: 1 Yield: 100% ***</p>  <p>Suppliers (66) Suppliers (387) Suppliers (75)</p>	https://scifinder-n.cas.org/search/reaction/640732d09bdefb04770132ae/1

Step 2	<p>Scheme 1 (2 Reactions) Steps: 1 Yield: 85% ...</p>  <p>Suppliers (60) Suppliers (195) Suppliers (4)</p> <p><input type="checkbox"/> 31-614-CAS-30798164 Steps: 1 Yield: 85% Selective photo-oxygenation of light alkanes using iodine oxides and chloride 1.1 Reagents: Potassium chloride, Ammonium iodate; 24 h By: Liebov, Nichole S.; et al ChemCatChem (2019), 11(20), 5045-5054 Experimental Protocols Full Text -</p> <p><input type="checkbox"/> 31-209-CAS-21137303 Steps: 1 Mechanism of Hydrocarbon Functionalization by an Iodate/Chloride System: The Role of Ester Protection 1.1 Reagents: Potassium chloride, Ammonium iodate Solvents: Trifluoroacetic acid; 100 psi, 140 °C By: Schwartz, Nichole A.; et al ACS Catalysis (2018), 8(4), 3138-3149 Experimental Protocols Full Text -</p> <p>Collapse Scheme ^</p>	https://scifinder-n.cas.org/search/reaction/640734429bdefb04770154c7/1
Step 3	<p>Scheme 1 (3 Reactions) Steps: 1 Yield: 96-100% ...</p>  <p>Absolute stereochemistry shown, Rotation (-) Suppliers (387)</p> <p><input type="checkbox"/> 31-500-CAS-18272805 Steps: 1 Yield: 100% The paecilin puzzle - enantioselective synthesis of the proposed structures of paecilin A and B 1.1 Reagents: Potassium hydroxide, Iodine Solvents: Methanol; 4 h, rt By: Tietze, Lutz F.; et al Heterocycles (2014), 88(2), 1101-1119 Full Text -</p>	https://scifinder-n.cas.org/search/reaction/640734bd9bdefb0477015ca5/1
Route 100 Step 1	<p>Scheme 1 (1 Reaction) Steps: 1 Yield: 57% ...</p>  <p>Suppliers (88) Suppliers (64) Suppliers (21)</p> <p><input type="checkbox"/> 31-614-CAS-24122106 Steps: 1 Yield: 57% Effect of Precatalyst Oxidation State in C-N Cross-Couplings with 2-Phosphinoimidazole-Derived Bimetallic Pd(I) and Pd(II) Complexes 1.1 Reagents: Sodium tert-butoxide Catalysts: Silver triflate, Palladium bis(u-11-(2,6-bis(1-methylethyl)phenyl)-2-diphenylphosphino-εP)-1,1'-di... Solvents: Toluene; overnight, 60 °C By: Martinez, Erin E.; et al Organometallics (2021), 40(16), 2763-2767 Experimental Protocols Full Text -</p>	https://scifinder-n.cas.org/search/reaction/64072fe79bdefb047700ffa5/1
Route 101 Step 1	<p>Scheme 1 (1 Reaction) Steps: 1 ..</p>  <p>Suppliers (37) Suppliers (5) Supplier (1)</p> <p><input type="checkbox"/> 31-614-CAS-28069594 Steps: 1 Preparation of pyridyl- and piperidylacetonitriles and some derivatives. II 1.1 Solvents: Ethanol By: Panizon, Leandro Helvetica Chimica Acta (1946), 29, 324-8 Full Text -</p> <p>Collapse Scheme ^</p>	https://scifinder-n.cas.org/search/reaction/64072eb59bdefb047700eb2f/1