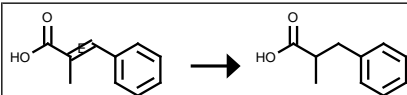
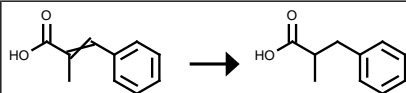


Query

| | Query | Results | Date |
|----------|-----------------|--------------|------------------------------|
| 1. Query | RX.PXRN=2046121 | 61 reactions | 2010-09-15 12h:28m:31s (EST) |

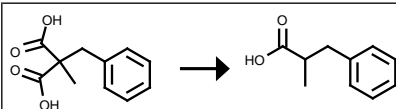

 Rx-ID: 305307 [View in Reaxys](#)

| Yield | Conditions & References |
|---------------|--|
| 99 % | <p>With potassium hydroxide, hydrogen, polystyrene-poly(ethylene glycol), palladium in water, Time= 24h, T= 25 °C , p= 760Torr</p> <p>Nakao, Ryu; Rhee, Hakjune; Uozumi, Yasuhiro; Organic Letters; vol. 7; nb. 1; (2005); p. 163 - 165 View in Reaxys</p> |
| | <p>With hydrogen, <Rh(cycloocten)2Cl>2 in tetrahydrofuran, Time= 17h, p= 825.07Torr , Ambient temperature, cat. asymmetric hydrogenation; various times, solvents and mol-ratios of the catalysts; Li-derivative of C₆H₅C=N-(S)-CH(CH₃)(C₆H₅)>NHCH(CH₃)(C₆H₅) as cocatalyst, Product distribution</p> <p>Brunner, Henri; Agrifoglio, Giuseppe; Monatshefte fuer Chemie; vol. 111; (1980); p. 275 - 287 View in Reaxys</p> |
| | <p>With nickel, T= 150 °C , p= 73550.8Torr , Hydrogenation</p> <p>Mastagli, Lambert; Comptes Rendus Hebdomadaires des Seances de l'Academie des Sciences; vol. 233; (1951); p. 751 View in Reaxys</p> |
| | <p>With sodium hydroxide, nickel monoaluminide</p> <p>Schrecker; Journal of Organic Chemistry; vol. 22; (1957); p. 33 View in Reaxys</p> |
| | <p>With acetic acid, platinum, Hydrogenation</p> <p>Woodruff; Conger; Journal of the American Chemical Society; vol. 60; (1938); p. 465 View in Reaxys</p> |
| | <p>With hydrogen, palladium on activated charcoal</p> <p>Somasekharan, K. N.; Kiefer, Edgar F.; Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry; vol. 27; nb. 1-12; (1988); p. 29 - 37 View in Reaxys</p> <p>Yu, Hongtao; Simon, Helmut; Tetrahedron; vol. 47; nb. 43; (1991); p. 9035 - 9052 View in Reaxys</p> |
| 99 % Chromat. | <p>With ammonium formate, 1-n-butyl-3-methylimidazolium tetrafluoroborate, palladium diacetate, Time= 5h, T= 65 °C</p> <p>Baan, Zoltan; Finta, Zoltan; Keglevich, Gyoergy; Hermecz, Istvan; Tetrahedron Letters; vol. 46; nb. 37; (2005); p. 6203 - 6204 View in Reaxys</p> |
| 97 % Spectr. | <p>With hydrogen, polysilane-supported Pd in hexane, Time= 6h, T= 20 °C</p> <p>Oyamada, Hidekazu; Akiyama, Ryo; Hagio, Hiroyuki; Naito, Takeshi; Kobayashi, Shu; Chemical Communications (Cambridge, United Kingdom); nb. 41; (2006); p. 4297 - 4299 View in Reaxys</p> |
| 99 % Chromat. | <p>With ammonium formate, 1-n-butyl-3-methylimidazolium tetrafluoroborate, magnesium-lanthanum mixed oxide, palladium, Time= 5h, T= 80 °C</p> <p>Baan, Zoltan; Potor, Attila; Cwik, Agnieszka; Hell, Zoltan; Keglevich, Gyoergy; Finta, Zoltan; Hermecz, Istvan; Synthetic Communications; vol. 38; nb. 10; (2008); p. 1601 - 1609 View in Reaxys</p> |

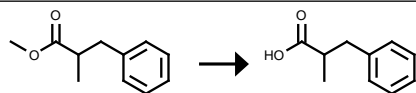

Rx-ID: 305298 [View in Reaxys](#)

| Yield | Conditions & References |
|---------|--|
| 86.50 % | <p>With methanol, magnesium</p> <p>Verma, Raman K.; Singla, Rubina; Punniyakoti, V. T.; Medicinal Chemistry Research; vol. 13; nb. 8-9; (2004); p. 660 - 676 View in Reaxys</p> |
| 68.2 % | <p>With potassium hydroxide, hydrogen, [RhCl(PPh₃)₂], Ph₂PO₂CCH=CMe₂ in acetone, Time= 17h, T= 22 °C , p= 2280Torr</p> <p>Preston, Sheila A.; Cupertino, Domenico C.; Palma-Ramirez, Pilar; Cole-Hamilton, David J.; Journal of the Chemical Society, Chemical Communications; nb. 12; (1986); p. 977 - 978 View in Reaxys</p> |
| | <p>With hydrogen, triethylamine, <Rh(PPh₃)₂(Ph₂PO₂CCMe=CHPh)>PF₆ in tetrahydrofuran, Time= 20h, p= 2280Torr , Ambient temperature, various catalysts, other bases; other substituted propenoic acids and hexene, Product distribution, Mechanism</p> <p>Iraqi, Ahmed; Fairfax, Neil R.; Preston, Sheila A.; Cupertino, Domenico C.; Irvine, Derek J.; Cole-Hamilton, David J.; Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1972-1999); nb. 8; (1991); p. 1929 - 1936 View in Reaxys</p> |
| | <p>With Wilkinson's catalyst, ammonium formate in water, dimethyl sulfoxide, Time= 0.0833333h, Irradiation, also without microwave irradiation in var. temp.; also 2H labelled formate salts; also cinnamic acid, Product distribution</p> <p>Al-Qahtani, Mohammed H.; Cleator, Nicola; Danks, Timothy N.; Garman, Russell N.; Jones, John R.; et al.; Journal of Chemical Research, Synopses; nb. 7; (1998); p. 400 - 401 View in Reaxys</p> |
| | <p>With sodium amalgam, ethanol</p> <p>Conrad; Bischoff; Justus Liebigs Annalen der Chemie; vol. 204; (1880); p. 180 View in Reaxys</p> |
| | <p>With sodium hydroxide, nickel</p> <p>Watson, M.B.; Youngson, G.W.; Journal of the Chemical Society [Section] C: Organic; (1968); p. 258 - 262 View in Reaxys</p> |
| | <p>With hydrogen, triethylamine, <RhCl(PPh₃)₂(Ph₂PO₂CCMe=CHPh)> in tetrahydrofuran, Time= 20h, p= 2280Torr , Ambient temperature, Yield given</p> <p>Iraqi, Ahmed; Fairfax, Neil R.; Preston, Sheila A.; Cupertino, Domenico C.; Irvine, Derek J.; Cole-Hamilton, David J.; Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1972-1999); nb. 8; (1991); p. 1929 - 1936 View in Reaxys</p> |
| | <p>Example Name 60.b Example Title b b α-Methyl-hydrocinnamic acid A solution of α-methyl cinnamic acid (10.0 g., 61.7 mmol.) in dry methanol (250 ml.) was treated with 10percent palladium on carbon and hydrogenated (balloon used) at room temperature for 16 hours. The reaction mixture was diluted with methanol (250 ml.), filtered through a Celite pad in a millipore unit, washing the pad well with methanol (2*100 ml.). The clear filtrate was evaporated to dryness to give 10.225 g. of title product as a thick syrup.</p> <p>With palladium in methanol</p> |

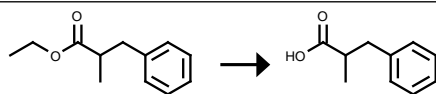
| | |
|--|--|
| | <p>Patent: E. R. Squibb and Sons, Inc.; US5552397; (1996); (A1) English View in Reaxys</p> |
| | <p>Example Name 25 27 mg (71 micromol) of Rh(NBD)(acac) was mixed with 4 ml of acetone in a small Schlenk flask. To the resulting clear solution was added 0.11 ml of a stock solution prepared by adding 0.1 ml of neat 54percent wt tetrafluoroboric acid in diethylether to 1 ml of acetone (1.02 eq), resulting in a red solution. After 1 minute, 20 microlitre (1 eq) of norbornadiene was added by syringe. 0.5 ml aliquots containing 9 micromoles of cationic Rh-complex was added to ligand samples as detailed in the table. Clear yellow to red solutions were obtained and aliquots were analysed by ³¹P NMR adding some d⁶ acetone. ³¹P NMR showed a virtually complete consumption of the ligand and formation of cationic Rh-complexes. 4 samples of 0.32 g of α-methylcinnamic acid were weighed into 4 glass liners of the Biotage Endeavour screening unit and to each was added 4 ml of acetone. After the addition of the catalyst solutions, the acetone solutions were purged several times with nitrogen. Hydrogenation at a substrate to catalyst ratio 200 /1 was carried out at 25°C and 15 bar for 60 hours, giving conversions as indicated in the table.</p> <p>With hydrogen, mixture of Rh(NBD)(acac), HBF₄, norbornadiene and Selke Ph-β-GLUP phosphine in diethyl ether, acetone, Time= 60h, T= 25 °C , p= 11251.1Torr , Product distribution / selectivity</p> <p>Patent: JOHNSON MATTHEY PUBLIC LIMITED COMPANY; NEDDEN, Hans Guenter; WO2010/1173; (2010); (A1) English View in Reaxys</p> |


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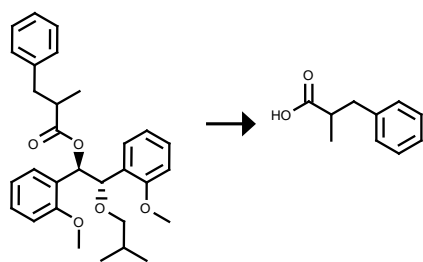
| Yield | Conditions & References |
|--------|--|
| 95 % | <p>With copper(I) oxide in acetonitrile, Time= 6h, Heating</p> <p>Toussaint, Olivier; Capdevielle, Patrice; Maumy, Michel; Synthesis; nb. 12; (1986); p. 1029 - 1031 View in Reaxys</p> |
| | <p>Conrad; Bischoff; Justus Liebigs Annalen der Chemie; vol. 204; (1880); p. 178 View in Reaxys</p> |
| | <p>(decarboxylation)</p> <p>Terashima,S. et al.; Chemical and Pharmaceutical Bulletin; vol. 18; (1970); p. 1124 - 1136 View in Reaxys</p> |
| | <p>in N,N-dimethyl-formamide, Time= 4h, T= 100 - 110 °C</p> <p>Colombo, M.; Amici, M. De; Micheli, C. De; Pitre, D.; Carrea, G.; Riva, S.; Tetrahedron: Asymmetry; vol. 2; nb. 10; (1991); p. 1021 - 1030 View in Reaxys</p> |
| | <p>With sulfuric acid, Time= 1h, Heating, Yield given</p> <p>Tyrrell, Elizabeth; Tsang, Michael W. H.; Skinner, George A.; Fawcett, John; Tetrahedron; vol. 52; nb. 29; (1996); p. 9841 - 9852 View in Reaxys</p> |
| | <p>With sulfuric acid, Time= 3h, Heating</p> <p>Dib, H. H.; Ibrahim, M. R.; Al-Awadi, N. A.; Ibrahim, Y. A.; Al-Awadi, S.; International Journal of Chemical Kinetics; vol. 40; nb. 2; (2008); p. 51 - 58 View in Reaxys</p> |
| 16.5 g | <p>Time= 2h, T= 170 °C</p> <p>Alcalde, Ermitas; Mesquida, Neus; Lopez-Perez, Sara; Frigola, Jordi; Merce, Ramon; Organic and Biomolecular Chemistry; vol. 6; nb. 20; (2008); p. 3795 - 3810 View in Reaxys</p> |


Rx-ID: 2042017 [View in Reaxys](#)

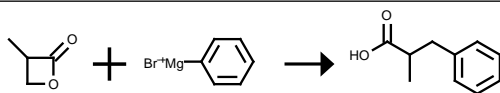
| Yield | Conditions & References |
|-------|--|
| 100 % | With potassium hydroxide in ethanol, water, Time= 8h, T= 0 °C Kato, Dai-ichiro; Mitsuda, Satoshi; Ohta, Hiromichi ; Journal of Organic Chemistry; vol. 68; nb. 19; (2003); p. 7234 - 7242 View in Reaxys |
| 95 % | With sodium hydroxide in methanol, Time= 1h, Heating Smonou, Ioulia; Orfanopoulos, Michael ; Synthetic Communications; vol. 20; nb. 9; (1990); p. 1387 - 1397 View in Reaxys |


Rx-ID: 1992712 [View in Reaxys](#)

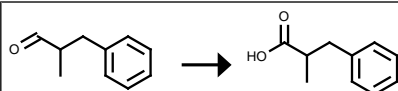
| Yield | Conditions & References |
|-------|---|
| 74 % | With water, hydroxide in ethanol, Time= 5h, Heating Knorr, Rudolf; Lattke, Ernst ; Chemische Berichte; vol. 114; nb. 6; (1981); p. 2116 - 2131 View in Reaxys |
| | With potassium hydroxide Crombie, Aimee L.; Kane, John L.; Shea, Kevin M.; Danheiser, Rick L. ; Journal of Organic Chemistry; vol. 69; nb. 25; (2004); p. 8652 - 8667 View in Reaxys |
| | With potassium hydroxide, water Kane, John L.; Shea, Kevin M.; Crombie, Aimee L.; Danheiser, Rick L. ; Organic Letters; vol. 3; nb. 7; (2001); p. 1081 - 1084 View in Reaxys |


Rx-ID: 28576617 [View in Reaxys](#)

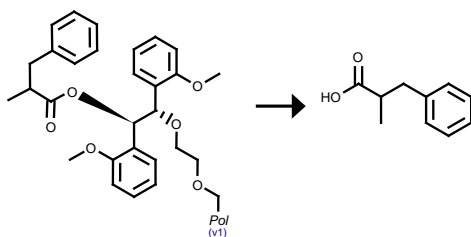
| Yield | Conditions & References |
|-------|--|
| 82 % | Stage 1: With lithium hydroxide, water in tetrahydrofuran, methanol, Time= 12h, T= 20 °C Stage 2: With water, sodium hydrogencarbonate Stage 3: With hydrogenchloride in water Broeker, Joachim; Knollmueller, Max; Gaertner, Peter ; Tetrahedron: Asymmetry; vol. 20; nb. 3; (2009); p. 273 - 287 View in Reaxys |


 Rx-ID: 1522267 [View in Reaxys](#)

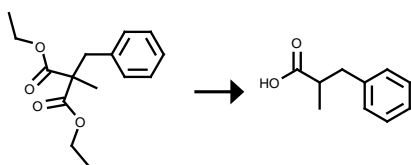
| Yield | Conditions & References |
|-------|--|
| 52 % | With copper(I) chloride in tetrahydrofuran, Time= 0.25h, T= 0 °C Sato, Toshio; Kawara, Tatsuo; Kawashima, Masatoshi; Fujisawa, Tamotsu; Chemistry Letters; (1980); p. 571 - 574 View in Reaxys |


 Rx-ID: 2063579 [View in Reaxys](#)

| Yield | Conditions & References |
|-------|---|
| 80 % | With potassium permanganate Nalesnik, Theodore E.; Freudenberger, John H.; Orchin, Milton; Journal of Organometallic Chemistry; vol. 221; nb. 2; (1981); p. 193 - 198 View in Reaxys |

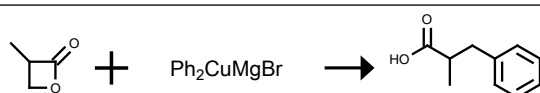

 Rx-ID: 28576616 [View in Reaxys](#)

| Yield | Conditions & References |
|-------|---|
| 49 % | Stage 1: With lithium hydroxide, water in tetrahydrofuran, methanol, Time= 96h, T= 20 °C , solid phase reaction Stage 2: With water, sodium hydrogencarbonate in tetrahydrofuran, methanol, solid phase reaction Stage 3: With hydrogenchloride in water, Cooling with ice, solid phase reaction, optical yield given as percent ee Broeker, Joachim; Knollmueller, Max; Gaertner, Peter; Tetrahedron: Asymmetry; vol. 20; nb. 3; (2009); p. 273 - 287 View in Reaxys |

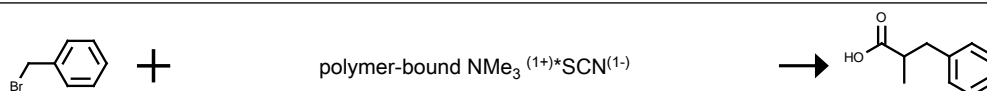

 Rx-ID: 17763424 [View in Reaxys](#)

| Yield | Conditions & References |
|-------|---|
| | Reaction Steps: 2 1: aq. KOH / 1 h / Heating 2: conc. H ₂ SO ₄ / 1 h / Heating With potassium hydroxide, sulfuric acid Tyrrell, Elizabeth; Tsang, Michael W. H.; Skinner, George A.; Fawcett, John; Tetrahedron; vol. 52; nb. 29; (1996); p. 9841 - 9852 View in Reaxys |

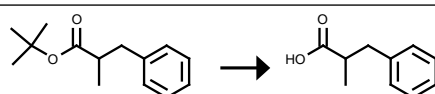
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| | <p>Reaction Steps: 2 1: aq. KOH / ethanol / 24 h / Heating 2: dimethylformamide / 4 h / 100 - 110 °C With potassium hydroxide in ethanol, N,N-dimethyl-formamide</p> <p>Colombo, M.; Amici, M. De; Micheli, C. De; Pitre, D.; Carrea, G.; Riva, S.; Tetrahedron: Asymmetry; vol. 2; nb. 10; (1991); p. 1021 - 1030 View in Reaxys</p> |
| | <p>Reaction Steps: 2 1: concentrated aqueous KOH-solution With potassium hydroxide</p> <p>Conrad; Bischoff; Justus Liebigs Annalen der Chemie; vol. 204; (1880); p. 178 View in Reaxys</p> |


 Rx-ID: 7250401 [View in Reaxys](#)

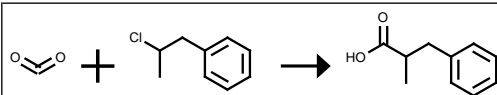
| Yield | Conditions & References |
|-------|--|
| 52 % | <p>in tetrahydrofuran, 1.) -30 deg C, 1 h, 2.) 0 deg C, 1 h</p> <p>Fujisawa, Tamotsu; Sato, Toshio; Kawara, Tatsuo; Kawashima, Masatoshi; Tetrahedron Letters; vol. 21; (1980); p. 2181 - 2184 View in Reaxys</p> |


 Rx-ID: 15507334 [View in Reaxys](#)

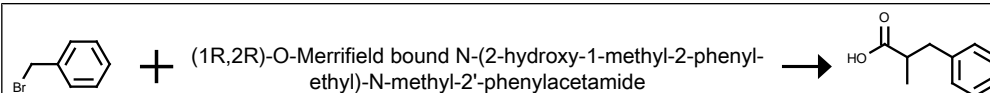
| Yield | Conditions & References |
|-------|--|
| | <p>Reaction Steps: 2 1: LDA / tetrahydrofuran 2: KOH; H₂O With potassium hydroxide, water, lithium diisopropyl amide in tetrahydrofuran</p> <p>Kane, John L.; Shea, Kevin M.; Crombie, Aimee L.; Danheiser, Rick L.; Organic Letters; vol. 3; nb. 7; (2001); p. 1081 - 1084 View in Reaxys</p> |


 Rx-ID: 29239361 [View in Reaxys](#)

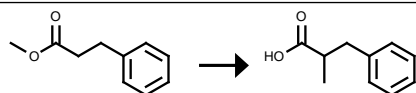
| Yield | Conditions & References |
|--------|---|
| 1.31 g | <p>With trifluoroacetic acid in dichloromethane, Time= 0.5h, T= 30 °C</p> <p>Davies, Stephen G.; Hepworth, David; Roberts, Paul M.; Thomson, James E.; Goodwin, Christopher J.; Journal of Organic Chemistry; vol. 75; nb. 4; (2010); p. 1214 - 1227 View in Reaxys</p> |


Rx-ID: 1046610 [View in Reaxys](#)

| Yield | Conditions & References |
|-------|---|
| | <p>With magnesium in diethyl ether</p> <p>Urry, W.H. et al.; Journal of Organic Chemistry; vol. 29; nb. 7; (1964); p. 1663 - 1669 View in Reaxys</p> |


Rx-ID: 13176314 [View in Reaxys](#)

| Yield | Conditions & References |
|-------|---|
| | <p>Reaction Steps: 2 1: LDA / tetrahydrofuran 2: aq. KOH With potassium hydroxide, lithium diisopropyl amide in tetrahydrofuran</p> <p>Crombie, Aimee L.; Kane, John L.; Shea, Kevin M.; Danheiser, Rick L.; Journal of Organic Chemistry; vol. 69; nb. 25; (2004); p. 8652 - 8667 View in Reaxys</p> |


Rx-ID: 14077256 [View in Reaxys](#)

| Yield | Conditions & References |
|-------|---|
| | <p>Reaction Steps: 2 1.1: diisopropylamine; n-butyllithium / tetrahydrofuran; hexane / 0.33 h / -78 °C 1.2: 47 percent / tetrahydrofuran; hexane / 0.5 h / 0 °C 2.1: 100 percent / potassium hydroxide / ethanol; H₂O / 8 h / 0 °C With potassium hydroxide, n-butyllithium, diisopropylamine in tetrahydrofuran, ethanol, hexane, water</p> <p>Kato, Dai-ichiro; Mitsuda, Satoshi; Ohta, Hiromichi; Journal of Organic Chemistry; vol. 68; nb. 19; (2003); p. 7234 - 7242 View in Reaxys</p> |


Rx-ID: 21039728 [View in Reaxys](#)

| Yield | Conditions & References |
|-------|---|
| | <p>Reaction Steps: 3 1: 1.) NaH / 1.) ethyl ether, reflux, 2.) ethyl ether, RT, 6 h 2: aq. KOH / ethanol / 24 h / Heating 3: dimethylformamide / 4 h / 100 - 110 °C With potassium hydroxide, sodium hydride in ethanol, N,N-dimethyl-formamide</p> <p>Colombo, M.; Amici, M. De; Micheli, C. De; Pitre, D.; Carrea, G.; Riva, S.; Tetrahedron: Asymmetry; vol. 2; nb. 10; (1991); p. 1021 - 1030 View in Reaxys</p> |
| | <p>Reaction Steps: 3 2: concentrated aqueous KOH-solution</p> |

With potassium hydroxide

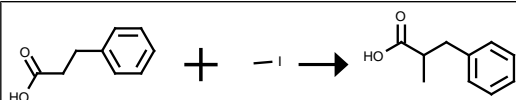
Conrad; Bischoff; Justus Liebigs Annalen der Chemie; **vol.** 204; (1880); p. 178

[View in Reaxys](#)



Rx-ID: 22518041 [View in Reaxys](#)

| Yield | Conditions & References |
|-------|---|
| | <p>Reaction Steps: 2</p> <p>1: SOCl₂</p> <p>2: Mg / diethyl ether</p> <p>With thionyl chloride, magnesium in diethyl ether</p> <p>Urry, W.H. et al.; Journal of Organic Chemistry; vol. 29; nb. 7; (1964); p. 1663 - 1669</p> <p>View in Reaxys</p> |



Rx-ID: 11048898 [View in Reaxys](#)

| Yield | Conditions & References |
|-------|--|
| | <p>With lithium diisopropyl amide in tetrahydrofuran, T= -78 °C</p> <p>Zhang, Minsheng; Porte, Alex; Diamantidis, George; Sogi, Kimberly; Kubrak, Dennis; Resnick, Lynn; Mayer, Scott C.; Wang, Zheng; Kreft, Anthony F.; Harrison, Boyd L.; Bioorganic and Medicinal Chemistry Letters; vol. 17; nb. 9; (2007); p. 2401 - 2403</p> <p>View in Reaxys</p> |



Rx-ID: 18527359 [View in Reaxys](#)

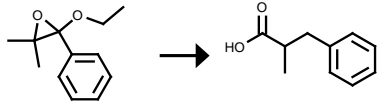
| Yield | Conditions & References |
|-------|---|
| | <p>Reaction Steps: 2</p> <p>1: 96 percent / NaOAc, PPh₃, H₂, RhCl(PPh₃) / benzene / 24 h / 110 °C / 103430 Torr</p> <p>2: 80 percent / KMnO₄</p> <p>With potassium permanganate, RhCl(PPh₃), hydrogen, sodium acetate, triphenylphosphine in benzene</p> <p>Nalesnik, Theodore E.; Freudenberger, John H.; Orchin, Milton; Journal of Organometallic Chemistry; vol. 221; nb. 2; (1981); p. 193 - 198</p> <p>View in Reaxys</p> |

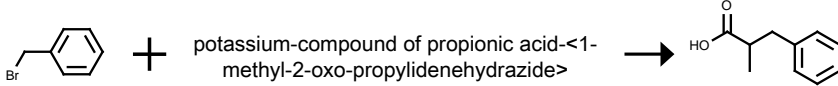


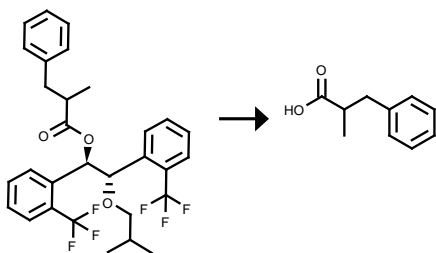
Rx-ID: 317273 [View in Reaxys](#)

| Yield | Conditions & References |
|-------|--|
| | <p>With chromic acid, acetic acid</p> <p>Guerbet; Bulletin de la Societe Chimique de France; vol. 3; (1908); p. 945; Chem. Zentralbl.; vol. 79; nb. II; (1908); p. 866</p> <p>View in Reaxys</p> |

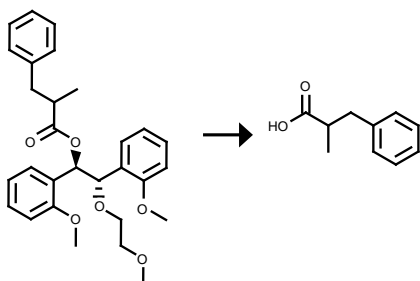
| | |
|--|--|
| | <p>Guerbet; Comptes Rendus Hebdomadaires des Seances de l'Academie des Sciences; vol. 146; (1908); p. 1406; Bulletin de la Societe Chimique de France; vol. <4> 3; (1908); p. 944; Chem. Zentralbl.; vol. 79; nb. II; (1908); p. 866 View in Reaxys</p> |
| | <p>With potassium carbonate, T= 230 °C , im geschlossenen Rohr</p> <p>Guerbet; Bulletin de la Societe Chimique de France; vol. <4> 3; (1908); p. 945; Chem. Zentralbl.; vol. 79; nb. II; (1908); p. 866 View in Reaxys</p> <p>Guerbet; Comptes Rendus Hebdomadaires des Seances de l'Academie des Sciences; vol. 146; (1908); p. 1406; Bulletin de la Societe Chimique de France; vol. <4> 3; (1908); p. 944; Chem. Zentralbl.; vol. 79; nb. II; (1908); p. 866 View in Reaxys</p> |
| | <p>bei der Oxydation</p> <p>Guerbet; Comptes Rendus Hebdomadaires des Seances de l'Academie des Sciences; vol. 146; (1908); p. 300,1405 View in Reaxys</p> <p>Guerbet; Bulletin de la Societe Chimique de France; vol. <4> 3; (1908); p. 504,943; Chem. Zentralbl.; vol. 79; nb. II; (1908); p. 866 View in Reaxys</p> |

|  | | Rx-ID: 4818648 View in Reaxys |
|---|---|---|
| Yield | Conditions & References | |
| 89 % | <p>With oxonium in tetrahydrofuran, T= 100 °C</p> <p>Suprun, W. Y.; Journal fuer Praktische Chemie/Chemiker-Zeitung; vol. 340; nb. 3; (1998); p. 247 - 255 View in Reaxys</p> | |

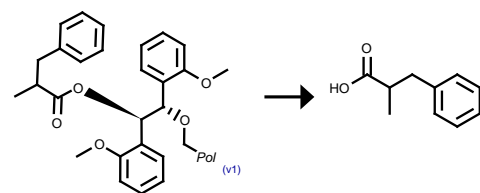
|  | | Rx-ID: 17508389 View in Reaxys |
|--|---|--|
| Yield | Conditions & References | |
| | <p>Reaction Steps: 2 1: 80 percent / LDA / tetrahydrofuran / 1.) 0 deg C, 45 min, 2.) r.t., 1 h 2: 5 percent / manganese(III) acetate / 22 h / 60 °C With manganese triacetate, lithium diisopropyl amide in tetrahydrofuran</p> <p>Jamie, Joanne F.; Rickards, Rodney W.; Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999); nb. 21; (1996); p. 2603 - 2614 View in Reaxys</p> | |
| | <p>Reaction Steps: 2 1: 80 percent / LDA / tetrahydrofuran / 1.) 0 deg C, 45 min, 2.) r.t., 1 h 2: 5 percent / manganese(III) acetate, acetic acid / 22 h / 60 °C With manganese triacetate, acetic acid, lithium diisopropyl amide in tetrahydrofuran</p> <p>Jamie, Joanne F.; Rickards, Rodney W.; Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999); nb. 21; (1996); p. 2603 - 2614 View in Reaxys</p> | |


 Rx-ID: 28576586 [View in Reaxys](#)

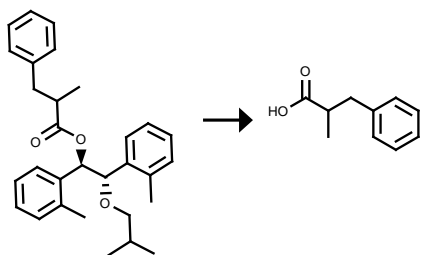
| Yield | Conditions & References |
|-------|--|
| | <p>Stage 1: With lithium hydroxide, water in tetrahydrofuran, methanol, Time= 12h, T= 20 °C</p> <p>Stage 2: With water, sodium hydrogencarbonate</p> <p>Stage 3: With hydrogenchloride in water</p> <p>Broeker, Joachim; Knollmueller, Max; Gaertner, Peter; Tetrahedron: Asymmetry; vol. 20; nb. 3; (2009); p. 273 - 287</p> <p>View in Reaxys</p> |


 Rx-ID: 28576587 [View in Reaxys](#)

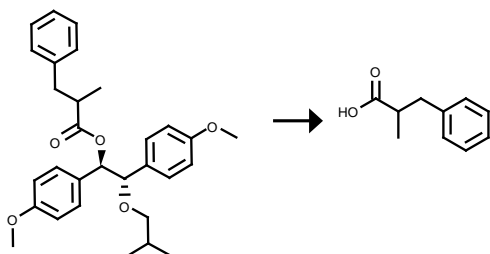
| Yield | Conditions & References |
|-------|--|
| | <p>Stage 1: With lithium hydroxide, water in tetrahydrofuran, methanol, Time= 12h, T= 20 °C</p> <p>Stage 2: With water, sodium hydrogencarbonate</p> <p>Stage 3: With hydrogenchloride in water</p> <p>Broeker, Joachim; Knollmueller, Max; Gaertner, Peter; Tetrahedron: Asymmetry; vol. 20; nb. 3; (2009); p. 273 - 287</p> <p>View in Reaxys</p> |


 Rx-ID: 28576615 [View in Reaxys](#)

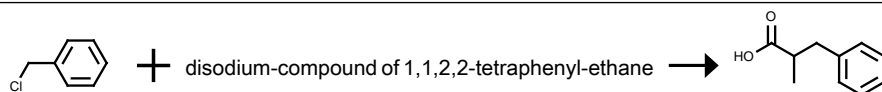
| Yield | Conditions & References |
|-------|---|
| | <p>Stage 1: With lithium hydroxide, water in tetrahydrofuran, methanol, Time= 96h, T= 20 °C , solid phase reaction</p> <p>Stage 2: With water, sodium hydrogencarbonate in tetrahydrofuran, methanol, solid phase reaction</p> <p>Stage 3: With hydrogenchloride in water, Cooling with ice, solid phase reaction, optical yield given as percent ee</p> <p>Broeker, Joachim; Knollmueller, Max; Gaertner, Peter; Tetrahedron: Asymmetry; vol. 20; nb. 3; (2009); p. 273 - 287</p> <p>View in Reaxys</p> |


Rx-ID: 28576624 [View in Reaxys](#)

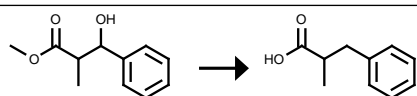
| Yield | Conditions & References |
|-------|--|
| | <p>Stage 1: With lithium hydroxide, water in tetrahydrofuran, methanol, Time= 12h, T= 20 °C</p> <p>Stage 2: With water, sodium hydrogencarbonate</p> <p>Stage 3: With hydrogenchloride in water</p> <p>Broeker, Joachim; Knollmueller, Max; Gaertner, Peter; Tetrahedron: Asymmetry; vol. 20; nb. 3; (2009); p. 273 - 287</p> <p>View in Reaxys</p> |


Rx-ID: 28576625 [View in Reaxys](#)

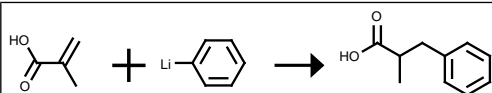
| Yield | Conditions & References |
|-------|--|
| | <p>Stage 1: With lithium hydroxide, water in tetrahydrofuran, methanol, Time= 12h, T= 20 °C</p> <p>Stage 2: With water, sodium hydrogencarbonate</p> <p>Stage 3: With hydrogenchloride in water</p> <p>Broeker, Joachim; Knollmueller, Max; Gaertner, Peter; Tetrahedron: Asymmetry; vol. 20; nb. 3; (2009); p. 273 - 287</p> <p>View in Reaxys</p> |


Rx-ID: 20638978 [View in Reaxys](#)

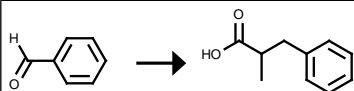
| Yield | Conditions & References |
|-------|---|
| | <p>Reaction Steps: 2</p> <p>1: 52 percent / NaOEt / ethanol / 5 h / Heating</p> <p>2: 74 percent / H₂O/OH⁻ / ethanol / 5 h / Heating</p> <p>With water, hydroxide, sodium ethanolate in ethanol</p> <p>Knorr, Rudolf; Lattke, Ernst; Chemische Berichte; vol. 114; nb. 6; (1981); p. 2116 - 2131</p> <p>View in Reaxys</p> |


Rx-ID: 21824188 [View in Reaxys](#)

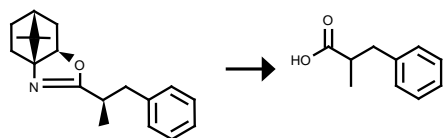
| Yield | Conditions & References |
|-------|--|
| | Reaction Steps: 2 1: 85 percent / Et ₃ SiH, BF ₃ -Et ₂ O / CH ₂ Cl ₂ / 1 h / 0 °C 2: 95 percent / aq. NaOH / methanol / 1 h / Heating With triethylsilane, sodium hydroxide, boron trifluoride diethyl etherate in methanol, dichloromethane Smonou, Ioulia; Orfanopoulos, Michael ; Synthetic Communications; vol. 20; nb. 9; (1990); p. 1387 - 1397 View in Reaxys |


 Rx-ID: 5061704 [View in Reaxys](#)

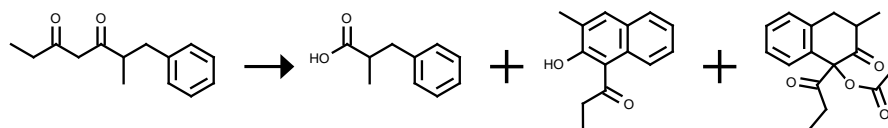
| Yield | Conditions & References |
|-------|--|
| 12 % | in tetrahydrofuran, Time= 2h, T= -70 °C , Addition Aurell, Maria Jose; Domingo, Luis Ramon; Mestres, Ramon; Munos, Elena; Zaragoza, Ramon Jose ; Tetrahedron; vol. 55; nb. 3; (1999); p. 815 - 830 View in Reaxys |


 Rx-ID: 21852832 [View in Reaxys](#)

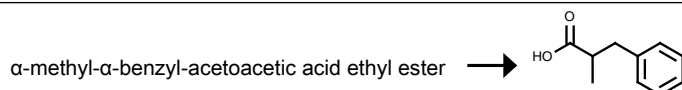
| Yield | Conditions & References |
|-------|---|
| | Reaction Steps: 3 1: 90 percent / Zn, I ₂ / benzene; diethyl ether / 3 h / Heating 2: 85 percent / Et ₃ SiH, BF ₃ -Et ₂ O / CH ₂ Cl ₂ / 1 h / 0 °C 3: 95 percent / aq. NaOH / methanol / 1 h / Heating With triethylsilane, sodium hydroxide, boron trifluoride diethyl etherate, iodine, zinc in methanol, diethyl ether, dichloromethane, benzene Smonou, Ioulia; Orfanopoulos, Michael ; Synthetic Communications; vol. 20; nb. 9; (1990); p. 1387 - 1397 View in Reaxys |


 Rx-ID: 8648162 [View in Reaxys](#)

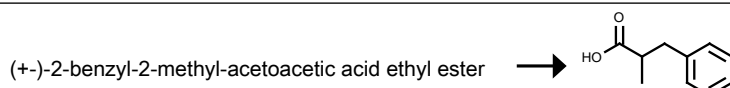
| Yield | Conditions & References |
|-------|--|
| | With hydrogenchloride, Hydrolysis Chandrasekhar, Sosale; Kausar, Amina ; Tetrahedron: Asymmetry; vol. 11; nb. 11; (2000); p. 2249 - 2254 View in Reaxys |


 Rx-ID: 4586308 [View in Reaxys](#)

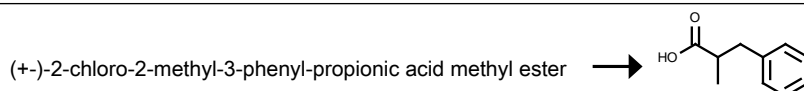
| Yield | Conditions & References |
|------------------------|---|
| 9 % Chromat., 2 %, 5 % | With manganese triacetate, acetic acid, Time= 22h, T= 60 °C Jamie, Joanne F.; Rickards, Rodney W.; Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999); nb. 21; (1996); p. 2603 - 2614 View in Reaxys |
| 9 % Chromat., 5 %, 2 % | With manganese triacetate, acetic acid, Time= 22h, T= 60 °C Jamie, Joanne F.; Rickards, Rodney W.; Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999); nb. 21; (1996); p. 2603 - 2614 View in Reaxys |


Rx-ID: 7250395 [View in Reaxys](#)

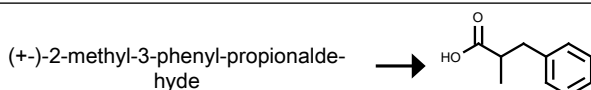
| Yield | Conditions & References |
|-------|--|
| | With potassium hydroxide Conrad; Bischoff; Justus Liebigs Annalen der Chemie; vol. 204; (1880); p. 180 View in Reaxys |


Rx-ID: 7250396 [View in Reaxys](#)

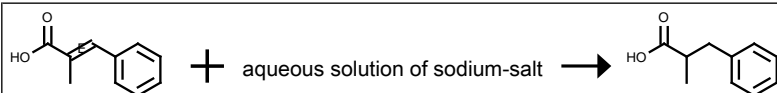
| Yield | Conditions & References |
|-------|---|
| | With barium dihydroxide Shinya; Nippon Nogei Kagaku Kaishi; vol. 29; (1955); p. 91,92; Chem.Abstr.; (1959); p. 1227 View in Reaxys |


Rx-ID: 7250397 [View in Reaxys](#)

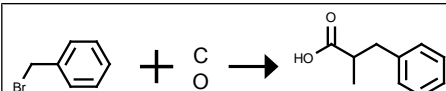
| Yield | Conditions & References |
|-------|---|
| | With acetic acid, zinc Dombrowskii et al.; Zhurnal Obshchei Khimii; vol. 27; (1957); p. 419; engl. Ausg. S. 473 View in Reaxys |


Rx-ID: 7250398 [View in Reaxys](#)

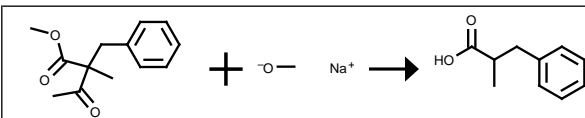
| Yield | Conditions & References |
|-------|---|
| | With iron isobutyrate, oxygen, 2-methyl propanoic acid, T= 30 °C Patent; Shell Devel. Co.; US2010358; (1933) View in Reaxys |


Rx-ID: 7250400 [View in Reaxys](#)

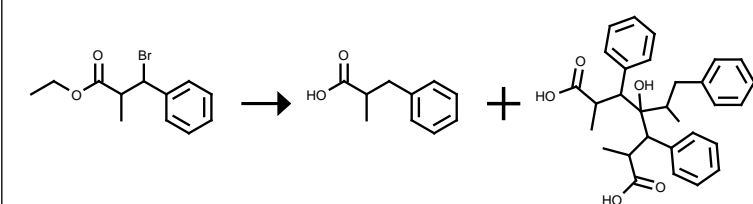
| Yield | Conditions & References |
|-------|--|
| | <p>With sodium amalgam, Hydrogenation</p> <p>Holden; Lapworth; Journal of the Chemical Society; (1931); p. 2368,2375 View in Reaxys</p> |


Rx-ID: 17758483 [View in Reaxys](#)

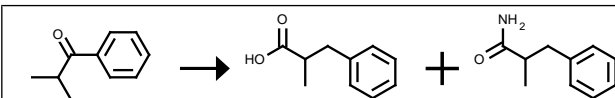
| Yield | Conditions & References |
|-------|--|
| | <p>Reaction Steps: 3 1: 1.) NaOEt / 1.) EtOH, 30 min, 2.) EtOH, reflux, 2 h 2: aq. KOH / 1 h / Heating 3: conc. H₂SO₄ / 1 h / Heating With potassium hydroxide, sulfuric acid, sodium ethanolate</p> <p>Tyrrell, Elizabeth; Tsang, Michael W. H.; Skinner, George A.; Fawcett, John; Tetrahedron; vol. 52; nb. 29; (1996); p. 9841 - 9852 View in Reaxys</p> |


Rx-ID: 470487 [View in Reaxys](#)

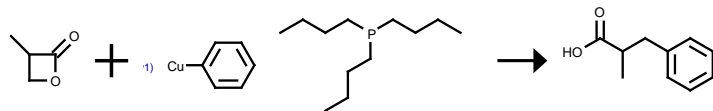
| Yield | Conditions & References |
|-------|---|
| | <p>With methanol, Behandeln des Reaktionsprodukts mit wss. Natronlauge</p> <p>Patent; Kay-Fries Chem. Inc.; US2413493; (1941) View in Reaxys</p> |


Rx-ID: 472551 [View in Reaxys](#)

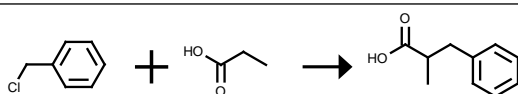
| Yield | Conditions & References |
|-------|--|
| | <p>With magnesium, nachfolgend Verseifen</p> <p>Salkind; Grabowski; Zhurnal Russkago Fiziko-Khimicheskago Obshchestva; vol. 46; (1914); p. 505; Chem. Zentralbl.; vol. 85; nb. II; (1914); p. 1270 View in Reaxys</p> |


Rx-ID: 796180 [View in Reaxys](#)

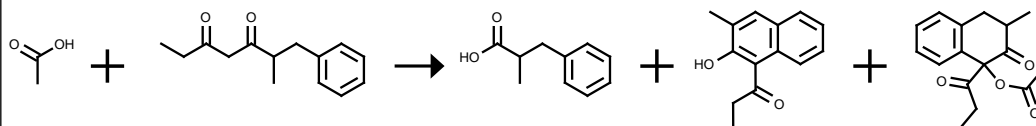
| Yield | Conditions & References |
|-------|--|
| | <p>With yellow aqueous ammonium sulfide, T= 200 °C , unter Druck</p> <p>Willgerodt; Merk; Journal fuer Praktische Chemie (Leipzig); vol. <2> 80; (1909); p. 193 View in Reaxys</p> |


Rx-ID: 1522269 [View in Reaxys](#)

| Yield | Conditions & References |
|-------|--|
| 67 % | <p>in diethyl ether, Time= 1.5h, T= -78 °C</p> <p>Kawashima, Masatoshi; Sato, Toshio; Fujisawa, Tamotsu; Tetrahedron; vol. 45; nb. 2; (1989); p. 403 - 412 View in Reaxys</p> |


Rx-ID: 2696287 [View in Reaxys](#)

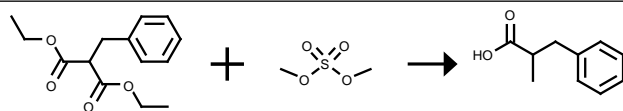
| Yield | Conditions & References |
|-------|---|
| | <p>With n-butyllithium, diisopropylamine, 1) THF, -60 deg C to room temp., 30 min; 2) THF, -40 deg C to 20 deg C, Yield given. Multistep reaction</p> <p>Boche, Gernot; Buckl, Klaus; Martens, Diether; Schneider, Dieter R.; Liebigs Annalen der Chemie; nb. 7; (1980); p. 1135 - 1171 View in Reaxys</p> |


Rx-ID: 4575471 [View in Reaxys](#)

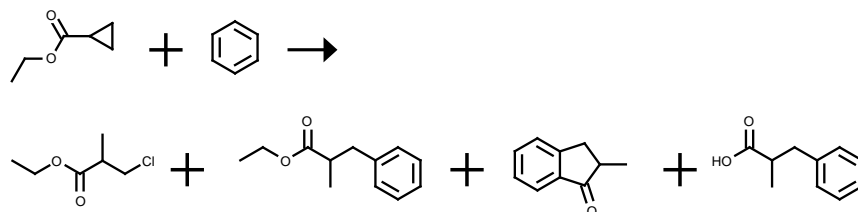
| Yield | Conditions & References |
|------------------------|---|
| 2 %, 5 %, 9 % Chromat. | <p>With manganese triacetate, Time= 22h, T= 60 °C</p> <p>Jamie, Joanne F.; Rickards, Rodney W.; Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999); nb. 21; (1996); p. 2603 - 2614 View in Reaxys</p> |


Rx-ID: 1041842 [View in Reaxys](#)

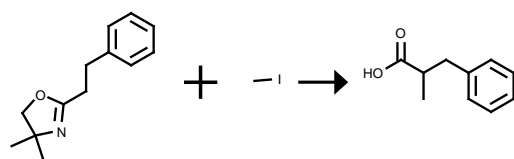
| Yield | Conditions & References |
|-------|---|
| | <p>With sodium hydroxide, dihydrogen peroxide in methanol</p> <p>Cocker, W.; Grayson, D.H.; Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999); (1975); p. 1347 - 1352 View in Reaxys</p> |


Rx-ID: 4271420 [View in Reaxys](#)

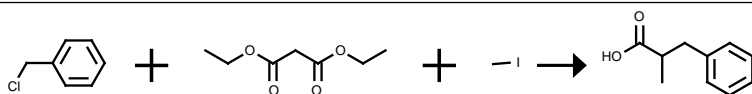
| Yield | Conditions & References |
|-------|---|
| | <p>With potassium hydroxide, sodium hydride, 1.) THF, 3 h, room temp., 2.) H₂O, room temp., 3.) 190 deg C, Yield given. Multistep reaction</p> <p>Bucher, von Christoph B.; Linden, Anthony; Heimgartner, Heinz; Helvetica Chimica Acta; vol. 78; nb. 4; (1995); p. 935 - 946 View in Reaxys</p> |


Rx-ID: 3917528 [View in Reaxys](#)

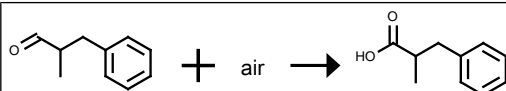
| Yield | Conditions & References |
|-------|--|
| | <p>With aluminium trichloride, Ambient temperature, Mechanism, Product distribution</p> <p>Pinnick, Harold W.; Brown, Stephen P.; McLean, Elizabeth A.; Zoller, Linwood W.; Journal of Organic Chemistry; vol. 46; nb. 18; (1981); p. 3758 - 3760 View in Reaxys</p> |


Rx-ID: 1433633 [View in Reaxys](#)

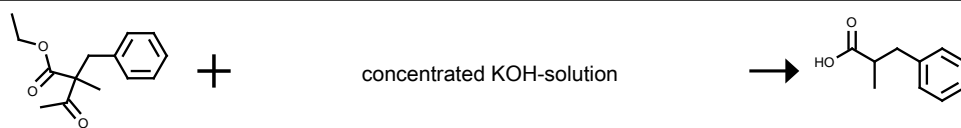
| Yield | Conditions & References |
|-------|---|
| | <p>(i) nBuLi, (ii) /BRN= 969135/, (iii) aq. HCl, Multistep reaction</p> <p>Meyers, A.I. et al.; Journal of Organic Chemistry; vol. 39; (1974); p. 2778 - 2783 View in Reaxys</p> |


Rx-ID: 1203266 [View in Reaxys](#)

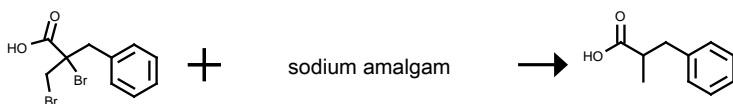
| Yield | Conditions & References |
|-------|---|
| | <p>Kashiwagi, T. et al.; Tetrahedron; vol. 26; (1970); p. 3619 - 3629 View in Reaxys</p> |


Rx-ID: 7250399 [View in Reaxys](#)

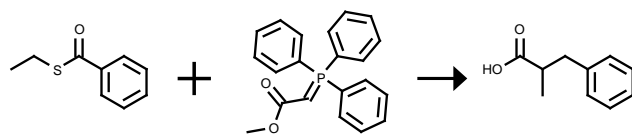
| Yield | Conditions & References |
|-------|---|
| | <p>v. Miller; Rohde; Chemische Berichte; vol. 23; (1890); p. 1080</p> |

[View in Reaxys](#)

 Rx-ID: 7987451 [View in Reaxys](#)

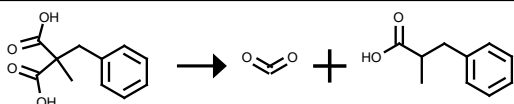
| Yield | Conditions & References |
|-------|--|
| | Bischoff; Conrad ; Justus Liebigs Annalen der Chemie; vol. 204; (1880); p. 179,180 View in Reaxys |


 Rx-ID: 7987452 [View in Reaxys](#)

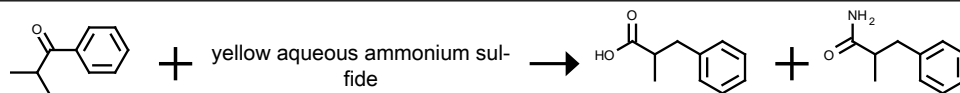
| Yield | Conditions & References |
|-------|--|
| | Simonsen ; Journal of the Chemical Society; vol. 117; (1920); p. 569 View in Reaxys |


 Rx-ID: 1340292 [View in Reaxys](#)

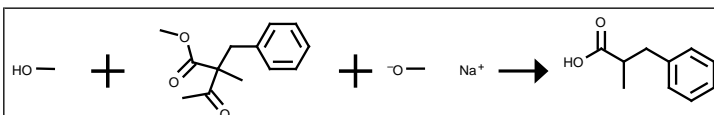
| Yield | Conditions & References |
|-------|--|
| | (i) Raney-Ni, THF, (ii) KOH, aq. EtOH, (iii) H ₂ , Raney-Ni, aq. MeOH, Multistep reaction Bestmann,H.J. et al. ; Chemische Berichte; vol. 99; (1966); p. 1906 - 1911 View in Reaxys |


 Rx-ID: 5809826 [View in Reaxys](#)

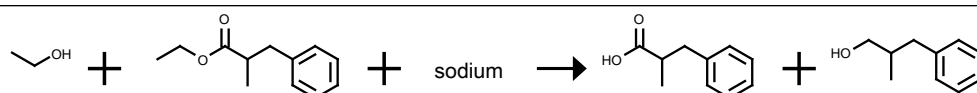
| Yield | Conditions & References |
|-------|--|
| | Conrad; Bischoff ; Justus Liebigs Annalen der Chemie; vol. 204; (1880); p. 178 View in Reaxys |


 Rx-ID: 5815025 [View in Reaxys](#)

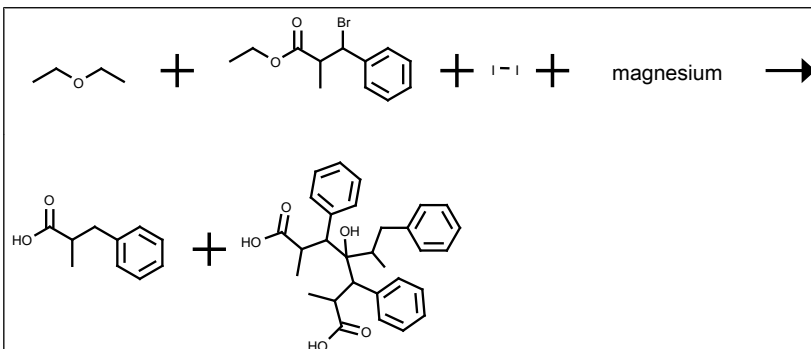
| Yield | Conditions & References |
|-------|---|
| | T= 200 °C , unter Druck Willgerodt; Merk ; Journal fuer Praktische Chemie (Leipzig); vol. <2> 80; (1909); p. 193 View in Reaxys |


Rx-ID: 55936 [View in Reaxys](#)

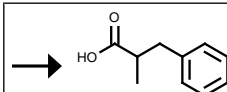
| Yield | Conditions & References |
|-------|--|
| | Behandeln des danach isolierten Reaktionsprodukts mit wss. Natronlauge Patent: Kay-Fries Chem. Inc.; US2413493; (1941) View in Reaxys |


Rx-ID: 7047562 [View in Reaxys](#)

| Yield | Conditions & References |
|-------|---|
| | v. Braun; Grabowski; Kirschbaum; Chemische Berichte; vol. 46; (1913); p. 1280 View in Reaxys |


Rx-ID: 8202788 [View in Reaxys](#)

| Yield | Conditions & References |
|-------|---|
| | nachfolgend Verseifen des Reaktionsproduktes Salkind; Grabowski; Zhurnal Russkago Fiziko-Khimicheskago Obshchestva; vol. 46; (1914); p. 505; Chem. Zentralbl.; vol. 85; nb. II; (1914); p. 1270 View in Reaxys |


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| Yield | Conditions & References |
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| 99% | Example Name 1 Example Title EXAMPLE 1 The benzylmethylmalonic acid (49.2 g) was dissolved in 400 ml of acetonitrile with 1.69 g of cuprous oxide and heated to reflux for 5 hours. The solvent was removed under vacuum. The residue was taken up in 400 ml of diethyl ether and rinsed with 10percent hydrochloric acid (*300 ml), 300 ml of saturated sodium chloride, dried over magnesium sulfate, filtered and concentrated. The residue was purified by flash chromatography (5percentto 10percent methanol in chloroform) to yield 38.3 g of 2-benzylpropionic acid (99percent yield). Patent; Merrell Pharmaceuticals Inc.; US5840729; (1998); (A1) English View in Reaxys |
| 99% | Example Name 1 |

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| | <p>Example Title EXAMPLE 1</p> <p>The benzylmethylmalonic acid (49.2 g) was dissolved in 400 ml of acetonitrile with 1.69 g of cuprous oxide and heated to reflux for 5 hours.</p> <p>The solvent was removed under vacuum.</p> <p>The residue was taken up in 400 ml of diethyl ether and rinsed with 10percent hydrochloric acid (2*300 ml), 300 ml of saturated sodium chloride, dried over magnesium sulfate, filtered and concentrated.</p> <p>The residue was purified by flash chromatography (5percent to 10percent methanol in chloroform) to yield 38.3 g of 2-benzylpropionic acid (99percent yield).</p> <p>Patent; Merrell Dow Pharmaceuticals Inc.; US5047534; (1991); (A1) English View in Reaxys</p> |
| 99% | <p>Example Name 8</p> <p>Example Title EXAMPLE 8</p> <p>The benzylmethylmalonic acid (49.2 g) was dissolved in 400 ml of acetonitrile, treated with 1.69 g of cuprous oxide and heated to reflux for 5 hours.</p> <p>The solvent was removed under vacuum and the residue taken up in 400 ml of diethyl ether and rinsed with 10percent hydrochloric acid (2*300 ml), saturated sodium chloride (300 ml), dried over magnesium sulfate, filtered and concentrated.</p> <p>The residue was purified by flash chromatography (5percent to 10percent methanol in chloroform) to yield 38.37 g of 2-benzylpropionic acid (99percent yield).</p> <p>Patent; Merrell Dow Pharmaceuticals Inc.; US5047534; (1991); (A1) English View in Reaxys</p> <p>Patent; Merrell Pharmaceuticals Inc.; US5840729; (1998); (A1) English View in Reaxys</p> |
| | <p>Reinheckel, H.; Tauber, G.; Monatshefte fuer Chemie; vol. 98; (1967); p. 1944 - 1953 View in Reaxys</p> <p>Patent; Farbwerke Hoechst A.G.; DE1300565; (1965); Chem.Abstr.; vol. 71; nb. 91098t; (1969) View in Reaxys</p> <p>Harmon et al.; Journal of Organic Chemistry; vol. 34; (1969); p. 3684 View in Reaxys</p> <p>Normant; Angelo; Bulletin de la Societe Chimique de France; (1962); p. 814 View in Reaxys</p> <p>Hjelte; Acta Chemica Scandinavica (1947-1973); vol. 15; (1961); p. 1200 View in Reaxys</p> <p>Spasov; Stefanova; Journal of Molecular Structure; vol. 53; (1979); p. 219,220,223 View in Reaxys</p> <p>Larcheveque; Annales de Chimie (Cachan, France); vol. 5; nb. 14; (1970); p. 129,132 View in Reaxys</p> <p>Kuchar et al.; Collection of Czechoslovak Chemical Communications; vol. 44; (1979); p. 183,186 View in Reaxys</p> <p>Aviron-Violet et al.; Journal of Molecular Catalysis; vol. 5; (1979); p. 44; Chem.Abstr.; vol. 91; nb. 57462k View in Reaxys</p> <p>Aguiar et al.; Journal of Organic Chemistry; vol. 41; nb. 9; (1976); p. 1545,1547 View in Reaxys</p> <p>Byers; Wolfenden; Biochemistry; vol. 12; (1973); p. 2070 View in Reaxys</p> <p>Marvell et al.; Journal of Organic Chemistry; vol. 25; (1960); p. 608,610 View in Reaxys</p> <p>Marshall et al.; Journal of Organic Chemistry; vol. 31; (1966); p. 4315,4317 View in Reaxys</p> <p>Horner et al.; Liebigs Annalen der Chemie; (1979); p. 341,351 View in Reaxys</p> <p>Pastuschak; Dombrowskii; J. Gen. Chem. USSR (Engl. Transl.); vol. 34; (1964); p. 3110,3150 View in Reaxys</p> <p>Gossauer; Ossorio; Anales de la Real Sociedad Espanola de Fisica y Quimica, Serie B: Quimica; vol. 59; (1963); p. 185,189 View in Reaxys</p> <p>Larcheveque; Comptes Rendus des Seances de l'Academie des Sciences, Serie C: Sciences Chimiques; vol. 268; (1969); p. 640</p> |

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| | View in Reaxys |
| | <p>Example Name 8</p> <p>Example Title EXAMPLE 8</p> <p>After six additional recrystallizations from 50percent aqueous ethanol there remained 18.8 g of the quinine salt. The mother liquors from the above recrystallizations were acidified and extracted to yield 24.86 g of recovered 2-benzylpropionic acid.</p> <p>Patent; Merrell Dow Pharmaceuticals Inc.; US5047534; (1991); (A1) English</p> <p>View in Reaxys</p> <p>Patent; Merrell Pharmaceuticals Inc.; US5840729; (1998); (A1) English</p> <p>View in Reaxys</p> |