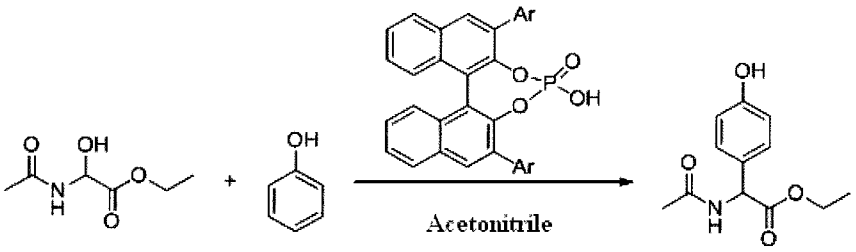
point: 88-89 °C.

[112] ^{1}HNMR [400MHz, $CDCl_3$]: δ 6.86 (s, 1H), 5.58 (d, J = 7.6 Hz, 1H), 4.46 (s, 1H), 4.29 (q, J = 7.2 Hz, 2H), 2.05 (s, 3H), 1.33 (t, J = 7.2 Hz, 3H); ^{13}C NMR [100MHz, $CDCl_3$]; δ 171.3, 169.6, 72.4, 62.8, 23.3, 14.2.

[113] Synthesis of D-ethyl-2-acetamido-2-(4-hydroxyphenyl)acetate, the synthesis route is shown as follows:



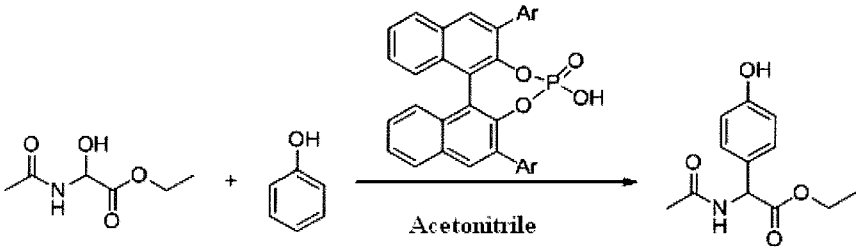
[114] Specific operational steps are as follows:

[115] Ethyl 2-acetamido-2-hydroxyacetate (1.932 g, 12 mmol), 0.1 mmol catalyst chiral phosphoric acid (wherein Ar is ~~selected from the group consisting of hydrogen, phenyl, 2,4,6-triisopropylphenyl, 3,5-bis(trifluoromethyl)phenyl, β-naphthyl, triphenylsilyl, 9-anthryl, 4-biphenylyl, 4-nitrophenyl, 9-phenanthryl, 4-methoxyphenyl, and 4-nitrophenyl~~), phenol (0.94g, 10 mmol), 50 mL acetonitrile were added sequentially into a 100 mL three-necked bottle equipped with a constant pressure dropping funnel and a thermometer, and the reaction solution was reacted at 81 °C for 34 hours, then the reaction was terminated. 23 mL water was added, and stirred at room temperature for 4 hours, and the

when the temperature reached 53 °C, the reaction solution changed from a suspension into a colorless transparent liquid. Continued to heat, and reacted under reflux at 77.06 °C for 13 h, then stopped heating and stirred at room temperature overnight, white precipitate was precipitated, filtered by suction, and the filter cake was soaked and washed with 3×5 mL ethyl acetate, and vacuum-dried at 40 °C, to obtain 7.08 g white solid, the yield was 63.5%, melting temperature: 114-115 °C.

[134] ^{1}H NMR [400 MHz, $CDCl_3$]: δ7.81 (d, J = 7.6 Hz, 2H), 7.58-7.48(m, 2H), 7.44 (t, J = 7.6 Hz, 2H), 5.81 (d, J = 7.2 Hz, 1H), 4.57 (s, 1H), 4.32 (q, J = 7.2 Hz, 2H), 1.34 (t, J = 7.2 Hz, 3H); ^{13}C NMR [100MHz,$CDCl_3$]: δ 169.7, 168.2, 133.1, 132.6, 128.9, 127.5, 72.9, 62.9, 14.3.

[135] Synthesis of D-ethyl-2-benzamido-2-(4-hydroxyphenyl)acetate, the synthetic route is shown as follows:



[136] Specific operational steps are as follows:

[137] Ethyl 2-benzamido-2-acetate (0.223 g, 1 mmol), chiral phosphoric acid (0.1 mmol) (wherein, Ar is ~~selected from the group consisting of~~

hydrogen, phenyl, 2,4,6-triisopropylphenyl, 3,5-bis(trifluoromethyl)phenyl, β-naphthyl, triphenylsilyl, 9-anthryl, 4-biphenylyl, 4-nitrophenyl, 9-phenanthryl, 4-methoxyphenyl, and 4-nitrophenyl), PhOH (0.112 g, 1.2 mmol), 2 mL CH_3CN were sequentially added into a 10 mL schlenk tube, and started to stir, and started to heat, and the reaction was terminated after refluxing at 81.6 ℃ for 23.5 h. 1.2 mL water was added, and the catalyst was precipitated, filtered, and the filtrate was rotary-dried, and separated by column chromatography, phenol and the rest of catalyst were eluted by petroleum ether / ethyl acetate=5:1, and para-product was eluted by petroleum ether / ethyl acetate=3:1, which was a white solid, 40 mg, yield 13.4%. ee=88.1% (HPLC conditions: ChiralCEL OD-H 5 μm, 4.6×250 mm chromatographic column, n-hexane/isopropanol=90:10 was the mobile phase, the flow rate was 1.0 mL/min, and the maximum absorption wavelength was 229 nm).

[138] ^1H NMR [400 MHz, $CDCl_3$]: δ 7.83 (d, J = 6.8 Hz, 2H), 7.62-7.52 (m, 1H), 7.44 (t, J = 7.6 Hz, 2H), 7.23 (d, J = 8.8 Hz, 2H), 6.70 (d, J = 8.4 Hz , 2H), 6.41 (s, 1H), 5.64 (d, J = 6.8 Hz, 1H), 4.32-4.13 (m, 2H), 1.23 (t, J = 7.2 Hz, 3H); ^{13}C NMR [100MHz, $CDCl_3$]: δ 171.5, 167.1, 156.7, 133.7, 132.2, 128.9, 128.7, 128.2, 127.4, 116.2, 62.3, 56.7, 14.2.

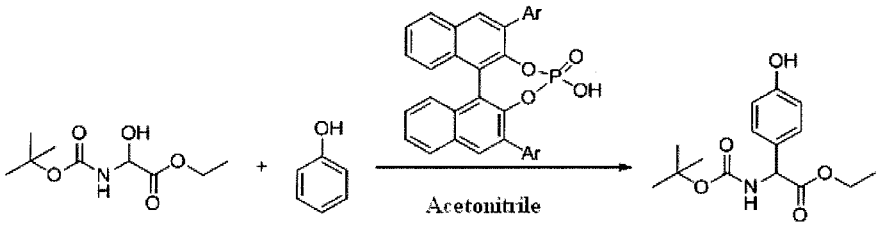
Example 3

Comparative example:

colorless transparent liquid, and reacted under reflux at 61.70 °C for 60 h, then the reaction was terminated. Separated by column chromatography, and the target product was eluted by petroleum ether / ethyl acetate=8:1, which was a white solid, 8.02 g, yield 73.2%, melting point: 54-56 °C.

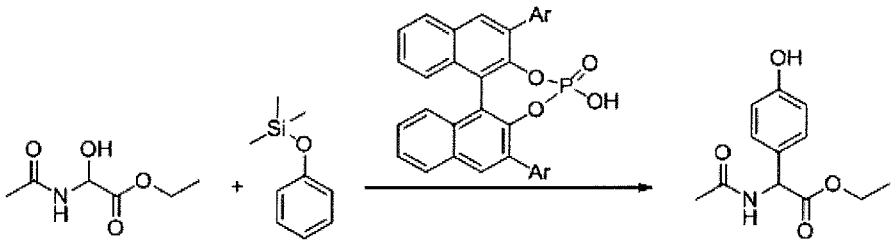
[151] ^{1}HNMR [400 MHz, $CDCl_3$]: δ 5.89 (d, J = 8 Hz, 1H), 5.39 (s, 1H), 4.38 (s, 1H), 4.30-4.21 (m, 2H), 1.43 (s, 9H), 1.30 (t, J = 7.2 Hz, 3H); ^{13}C NMR [100MHz, $CDCl_3$]: δ 169.8, 155.1, 81.1, 73. 6, 62. 6, 28.4, 14.2.

[152] Synthesis of D-ethyl-2-tert-butoxycarbonylamino-2-(4-hydroxy phenyl)acetate, the synthetic route is shown as follow:



[153] Specific operational steps are as follows:

[154] Ethyl 2-tert-butoxycarbonylamino-2-hydroxyacetate (0.44 g, 2 mmol), 0.2 mmol chiral phosphoric acid (Ar is ~~selected from the group consisting of hydrogen, phenyl, 2,4,6-triisopropylphenyl,~~ 3,5-bis(trifluoromethyl)phenyl, ~~β-naphthyl, triphenylsilyl, 9-anthryl, 4-biphenylyl, 4-nitrophenyl, 9-phenanthryl, 4-methoxyphenyl, and 4-nitrophenyl~~), phenol (0.23 g, 2.4 mmol), 10 mL acetonitrile were sequentially added into a 25 mL two-necked bottle, and reacted under reflux at 81.6 °C for 12 hours and 15 minutes, then the reaction was



[165] Specific operational steps are as follows:

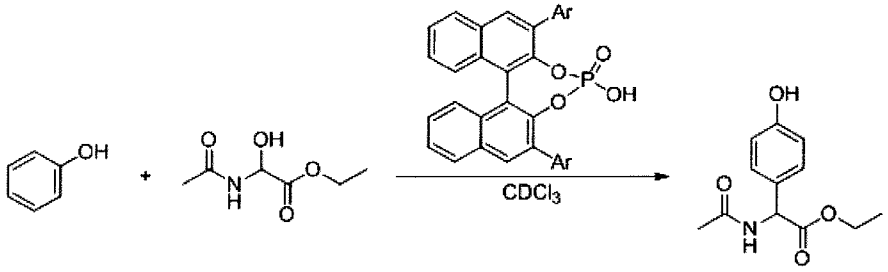
[166] 16.1 mg ethyl 2-acetamido-2-hydroxyacetate (0.1 mmol), 0.01 mmol catalyst chiral phosphoric acid (Ar is ~~selected from the group consisting of hydrogen, phenyl, 2,4,6-triisopropylphenyl, 3,5-bis(trifluoromethyl)phenyl,~~ β-naphthyl, ~~triphenylsilyl, 9-anthryl, 4-biphenylyl, 4-nitrophenyl, 9-phenanthryl, 4-methoxyphenyl, and 4-nitrophenyl~~), 20 mg phenoxytrimethylsilane (0.12 mmol), 0.6 mL CD_3CN were sequentially add into an NMR tube with Φ=5 mm, I=180 mm, and reacted at 60 °C for 29 hours, then reacted at 80 °C for 19 hours, then the reaction was terminated. The reaction solution was rotary-dried, separated by silica gel column, and 5 mg product was eluted with petroleum ether : ethyl acetate=4:5, yield 21.1%. ee=97.4%. (HPLC conditions: chiralPAK AD-H 5 μm, 4.6×250 mm chromatographic column, n-hexane/isopropanol=9:1 was the mobile phase, the flow rate was 1.0 mL/min, and the maximum absorption wavelength was 229 nm).

[167] ^{1}H NMR [400 MHz, $CDCl_3$]: δ 7.17 (d, J = 8.4 Hz, 2H), 6.73 (d, J = 8.8 Hz, 2H), 6.56 (d, J = 6.4 Hz, 1H), 6.44(s,1H),5.46 (d, J = 6.8 Hz, 1H), 4.32-4.10 (m, 2H), 2.04 (s, 3H), 1.21 (t, J = 7.2 Hz, 3H).

toluene, 5.35 g, 26.25 mmol), 20 mL acetone were sequentially added into a 50 mL eggplant-shaped flask. They were reacted under reflux at 56.2 °C for 45 h, and then cooled to a temperature 25 °C, and plenty of precipitate was precipitated, filtered by suction, vacuum-dried at 45 °C for 11 h. 1.76 g white solid was obtained, and the molar yield was 43.82%.

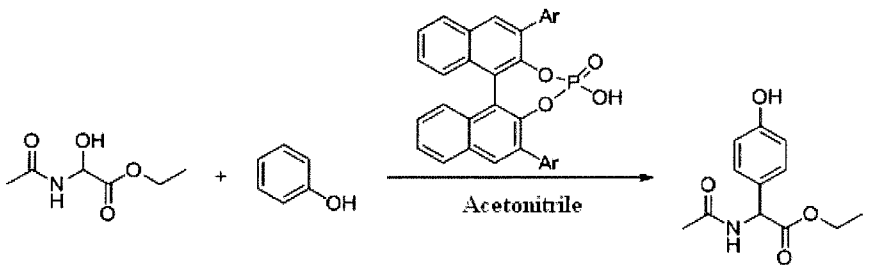
[175] ^{1}HNMR [400MHz, $CDCl_3$]: δ 6.82 (s, 1H), 5.61-5.55 (m, ,1H), 4.40-4.20 (m, 3H), 2.05 (s, 3H), 1.33 (t, J = 7.2 Hz, 3H).

[176] Synthesis of D-ethyl-2-acetamido-2-(4-hydroxyphenyl)acetate, the synthetic route is shown as follows:



[177] Specific operational steps are as follows:

[178] 161 mg ethyl 2-acetamido-2-hydroxyacetate (1 mmol), 0.01 mmol catalyst chiral phosphoric acid (Ar is ~~selected from the group consisting of hydrogen, phenyl, 2,4,6-triisopropylphenyl, 3,5-bis(trifluoromethyl)phenyl, β-naphthyl,~~ triphenylsilyl~~, 9-anthryl, 4-biphenylyl, 4-nitrophenyl, 9-phenanthryl, 4-methoxyphenyl, and 4-nitrophenyl~~), 423 mg phenol (4.5 mmol), 6mL $CDCl_3$ were added sequentially into a 25 mL eggplant-shaped flask, and reacted at 50 °C for 42.5 hours, then reacted at 62 °C for 46.5



[189] Specific operational steps are as follows:

[190] Ethyl 2-acetamido-2-hydroxyacetate (1.932 g, 12 mmol), 0.1 mmol catalyst chiral phosphoric acid (wherein Ar is ~~selected from the group consisting of hydrogen, phenyl, 2,4,6-triisopropylphenyl, 3,5-bis(trifluoromethyl)phenyl, β-naphthyl, triphenylsilyl, 9-anthryl, 4-biphenylyl, 4-nitrophenyl, 9-phenanthryl, 4-methoxyphenyl, and 4-nitrophenyl~~), phenol (0.94g, 10 mmol), 50 mL acetonitrile were added sequentially into a 100 mL three-necked bottle equipped with a constant pressure dropping funnel and a thermometer, and the reaction solution was reacted at 81 °C for 34 hours, 1.47g para-product was purified through aftertreatment, yield 62%, melting point:147-148 °C, ee=90%. (HPLC conditions: chiralPAK AD-H 5 μm, 4.6×250 mm chromatographic column, n-hexane/isopropanol=9:1 was the mobile phase, the flow rate was 1.0 mL/min, the maximum absorption wavelength was 229 nm).

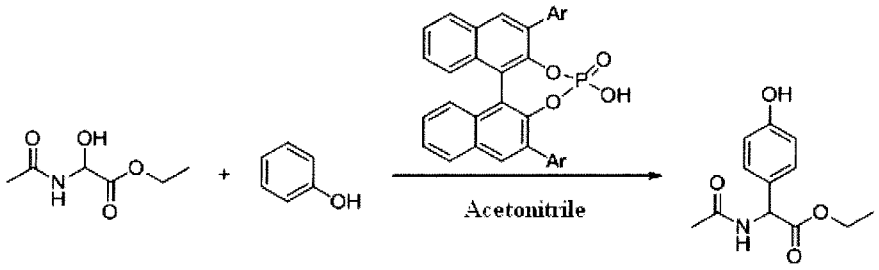
[191] ^{1}H NMR [400 MHz, $CDCl_3$]: δ 7.17 (d, J = 8.4 Hz, 2H), 6.73 (d, J = 8.4 Hz, 2H), 6.58 (d, J = 6.4 Hz, 1H), 5.47 (d, J = 6.8 Hz, 1H), 4.27-4.10 (m, 2H), 2.04 (s, 3H), 1.21 (t, J = 7.2 Hz, 3H); ^{13}C NMR [100

[197] Specific operational steps are as follows:

[198] Acetamide (1.47 g, 25 mmol), ethyl glyoxalate (50% solution in toluene, 5.35 g, 26.25 mmol), 20 mL tetrahydrofuran were added sequentially into a 50 mL eggplant-shaped flask. And they were reacted under reflux at 65 °C for 45 h, then cooled to a temperature of 25 °C, plenty of white precipitate was precipitated, filtered by suction, and vacuum-dried at 45 °C for 11 h. 1.85 g white solid was obtained, and the molar yield was 47.13%.

[199] ^{1}HNMR [400MHz, $CDCl_3$]: δ 6.83 (s, 1H), 5.65-5.50 (m, 1H), 4.45-4.21 (m, 3H), 2.05 (s, 3H), 1.33 (t, J = 7.2 Hz, 3H).

[200] Synthesis of D-ethyl-2-acetamido-2-(4-hydroxyphenyl)acetate, the synthetic route is shown as follows:



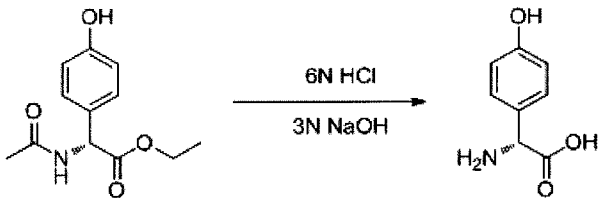
[201] Specific operational steps are as follows:

[202] Ethyl 2-acetamido-2-hydroxyacetate (1.932 g, 12 mmol), 0.1 mmol catalyst chiral phosphoric acid (wherein Ar is ~~selected from the group consisting of hydrogen, phenyl, 2,4,6-triisopropylphenyl, 3,5-bis(trifluoromethyl)phenyl, β-naphthyl, triphenylsilyl, 9-anthryl,~~

4-biphenylyl, ~~4-nitrophenyl, 9-phenanthryl, 4-methoxyphenyl, and 4-nitrophenyl~~), phenol (0.94g, 10 mmol), 50 mL acetonitrile were added sequentially into a 100 mL three-necked bottle equipped with a constant pressure dropping funnel and a thermometer, and the reaction solution was reacted at 81 °C for 34 hours, 1.67g para-product was purified through aftertreatment, yield 62%, melting point:147-148 °C, ee=90%. (HPLC conditions: chiralPAK AD-H 5 μm, 4.6×250 mm chromatographic column, n-hexane/isopropanol=9:1 was the mobile phase, the flow rate was 1.0 mL/min, and the maximum absorption wavelength was 229 nm).

[203] ^{1}H NMR [400 MHz, $CDCl_3$]: δ 7.17 (d, J = 8.4 Hz, 2H), 6.73 (d, J = 8.4 Hz, 2H), 6.58 (d, J = 6.4 Hz, 1H), 5.47 (d, J = 6.8 Hz, 1H), 4.27-4.10 (m, 2H), 2.04 (s, 3H), 1.21 (t, J = 7.2 Hz, 3H); ^{13}C NMR [100 MHz, $CDCl_3$]: δ 171.4, 170.0, 156.5, 128.7, 128.4, 116.1, 62.2, 56.3, 23.4, 14.2.

[204] Synthesis of levorotatory p-hydroxyphenylglycine, the synthetic route is shown as follows:

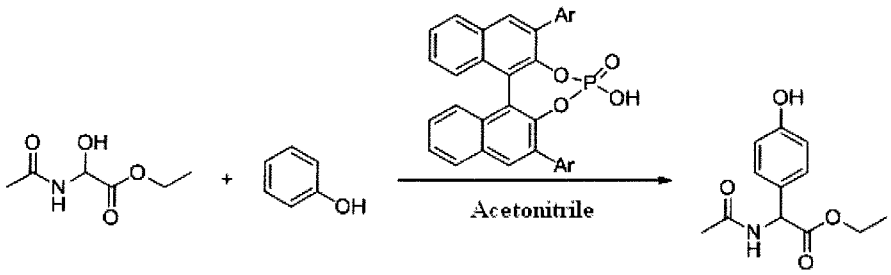


[205] Specific operational steps are as follows:

[206] 0.807 g D-ethyl-2-acetamido-2-(4-hydroxyphenyl)acetate (3.4

1.29 (t, J = 7.2 Hz, 3H).

[211] Synthesis of D-ethyl-2-acetamido-2-(4-hydroxyphenyl)acetate, the synthetic route is shown as follows:

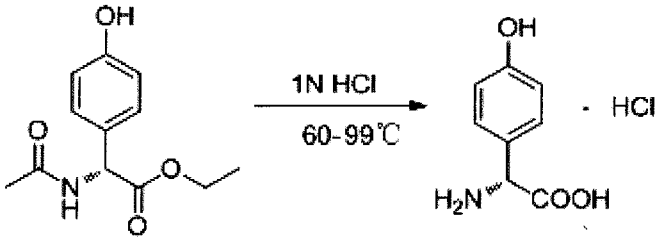


[212] Specific operational steps are as follows:

[213] Ethyl 2-acetamido-2-hydroxyacetate (1.932 g, 12 mmol), 0.1 mmol catalyst chiral phosphoric acid (wherein Ar is ~~selected from the group consisting of hydrogen, phenyl, 2,4,6-triisopropylphenyl, 3,5-bis(trifluoromethyl)phenyl, β-naphthyl, triphenylsilyl, 9-anthryl, 4-biphenylyl, 4-nitrophenyl, 9-phenanthryl, 4-methoxyphenyl, and 4-nitrophenyl~~), phenol (0.94g, 10 mmol), 50 mL acetonitrile were added sequentially into a 100 mL three-necked bottle equipped with a constant pressure dropping funnel and a thermometer, and the reaction solution was reacted at 81 °C for 34 hours, 1.47g para-product was purified through aftertreatment, yield 62%, melting point:147-148 °C, ee=90%. (HPLC conditions: chiralPAK AD-H 5 μm, 4.6×250 mm chromatographic column, n-hexane/isopropanol=9:1 was the mobile phase, the flow rate was 1.0 mL/min, the maximum absorption wavelength was 229 nm).

[214] ^{1}H NMR [400 MHz, $CDCl_3$]: δ 7.17 (d, J = 8.4 Hz, 2H), 6.73 (d, J = 8.4 Hz, 2H), 6.58 (d, J = 6.4 Hz, 1H), 5.47 (d, J = 6.8 Hz, 1H), 4.27-4.10 (m, 2H), 2.04 (s, 3H), 1.21 (t, J = 7.2 Hz, 3H); ^{13}C NMR [100 MHz, $CDCl_3$]: δ 171.4, 170.0, 156.5, 128.7, 128.4, 116.1, 62.2, 56.3, 23.4, 14.2.

[215] Synthesis of levorotatory p-hydroxyphenylglycine hydrochloride, the synthetic route is shown as follows:



[216] Specific operational steps are as follows:

[217] 99.6 mg D-ethyl-2-acetamido-2-(4-hydroxyphenyl)acetate (0.42 mmol), 2 mL 1N hydrochloric acid were sequentially added into a 10 mL schlenk tube, and started to stir, and reacted at 60 °C for 45 h, heated to 80 °C and reacted for 13.5 h, then heated to 99 °C and reacted for 11 h, then the reaction was terminated, the reaction solution was rotary-dried, to obtain 70.0 mg while solid, the yield was 99%. $[\alpha]_D^{20}$=-85°(c=1.0, water).

[218] ^{1}H NMR [400 MHz, D_2O]: δ7.34 (d, J = 8.8 Hz, 2H) , 6.95 (d, J = 8.4 Hz , 2H), 5.06 (s, 1H).

~~[219] The method of synthesizing levorotatory p-hydroxyphenylglycine compounds provided by the present invention is described above in detail.~~

~~Specific examples are employed herein to illustrate the principles and embodiments of the present invention, and the above examples are only described to facilitate the understanding of the method and the core idea of the present invention. It should be noted that, a number of additional alterations and modifications can be made to the present invention by a skilled in the art, without departing from the principle of the present invention, these alterations and modifications also fall within the protection scope of the claims of the present invention.~~