CHEMISTRY
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Supporting Information

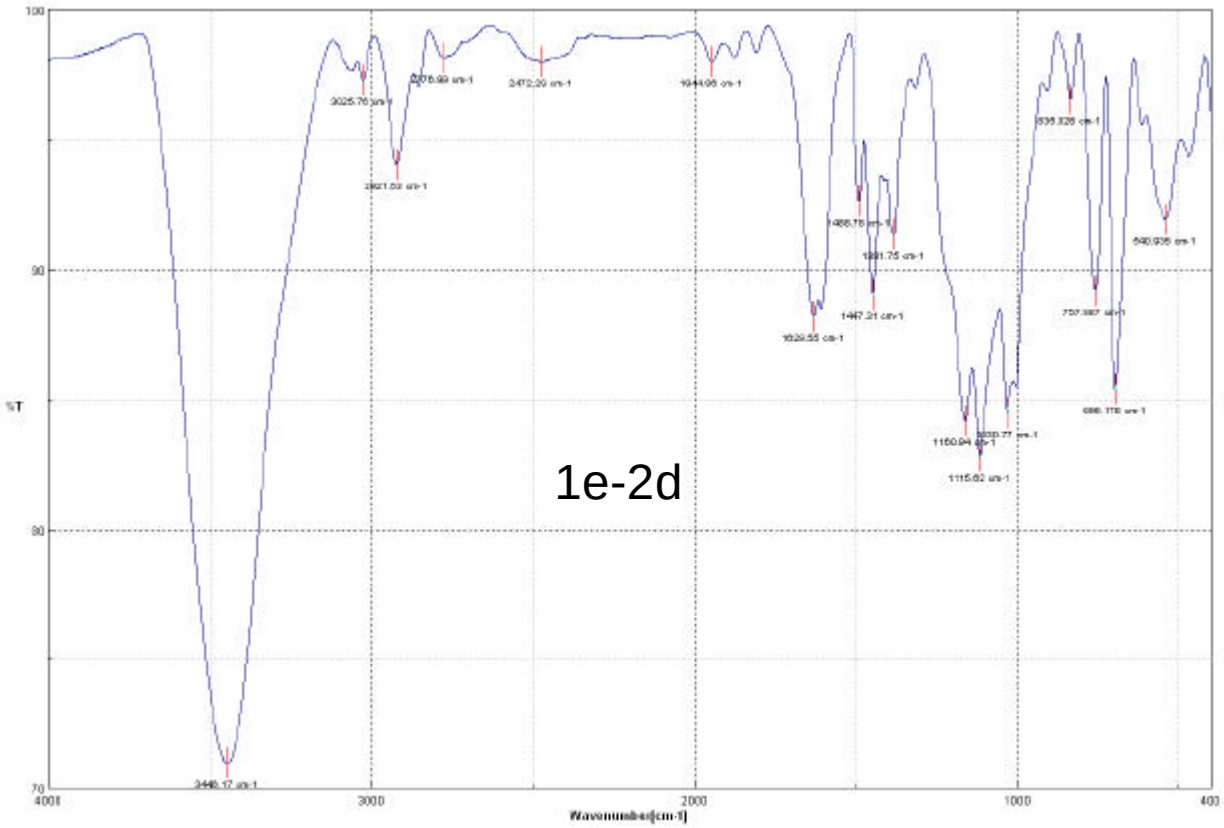
Non-covalently Supported Heterogeneous Chiral Amines Catalysts for Asymmetric Direct Aldol Reactions and Michael Addition Reactions

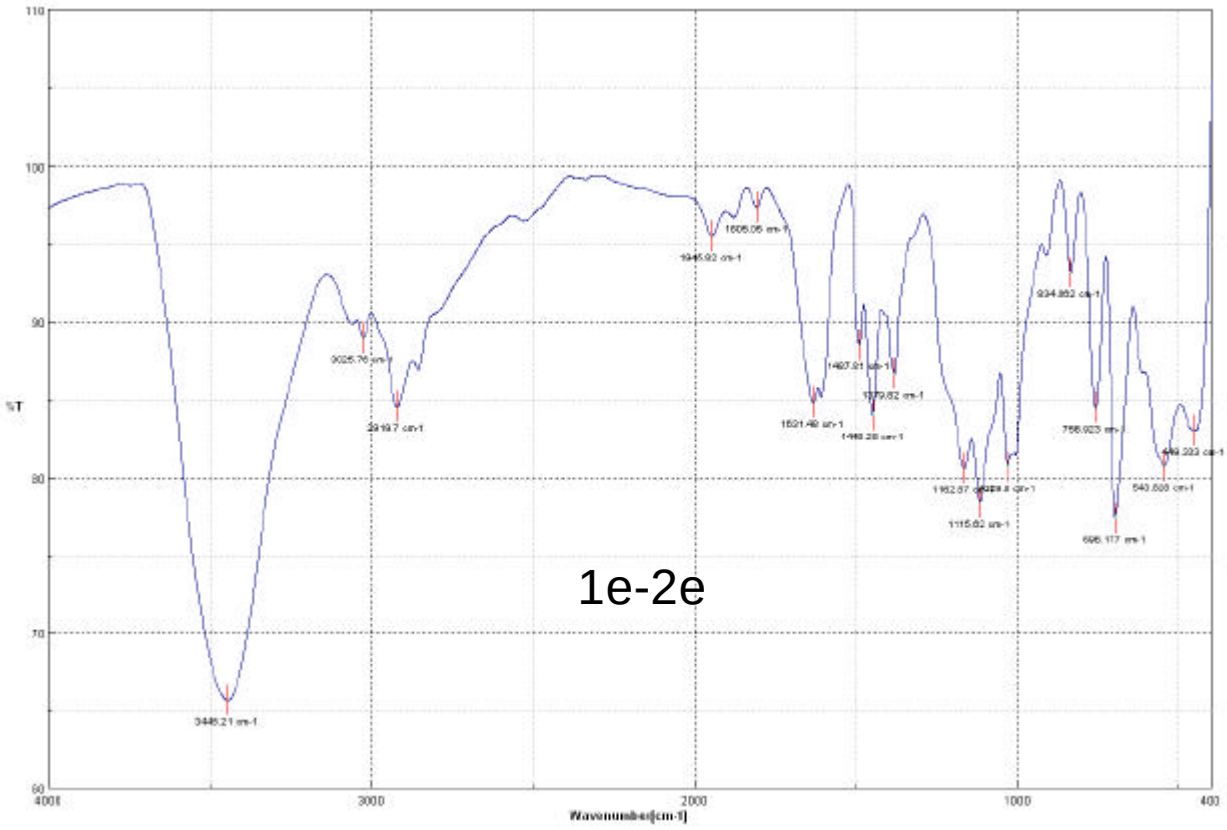
Sanzhong Luo*,[a] Jiuyuan Li,[a] Long Zhang,[b] Hui Xu,[a] and Jin-Pei Cheng*[b]

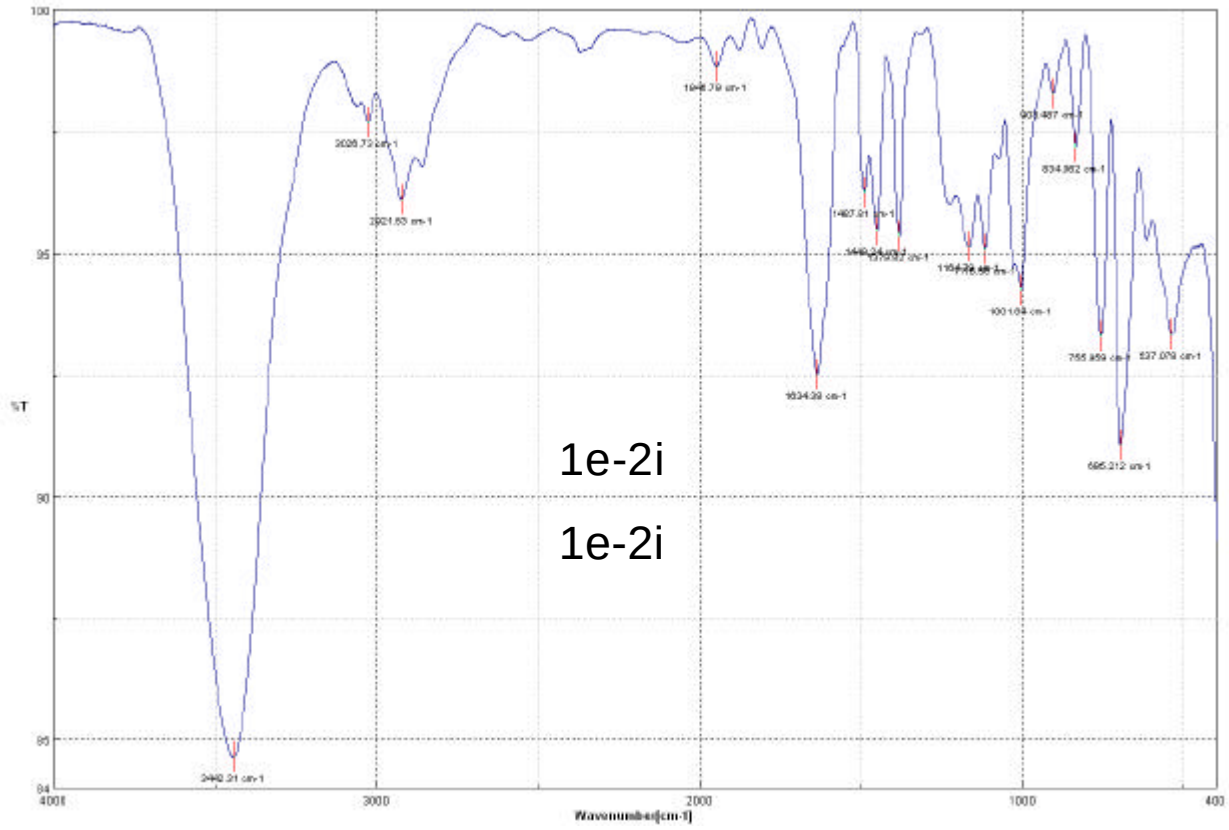
[a] luosz@iccas.ac.cn

[b] chengjp@mail.most.gov.cn

IR spectrum for catalysts:



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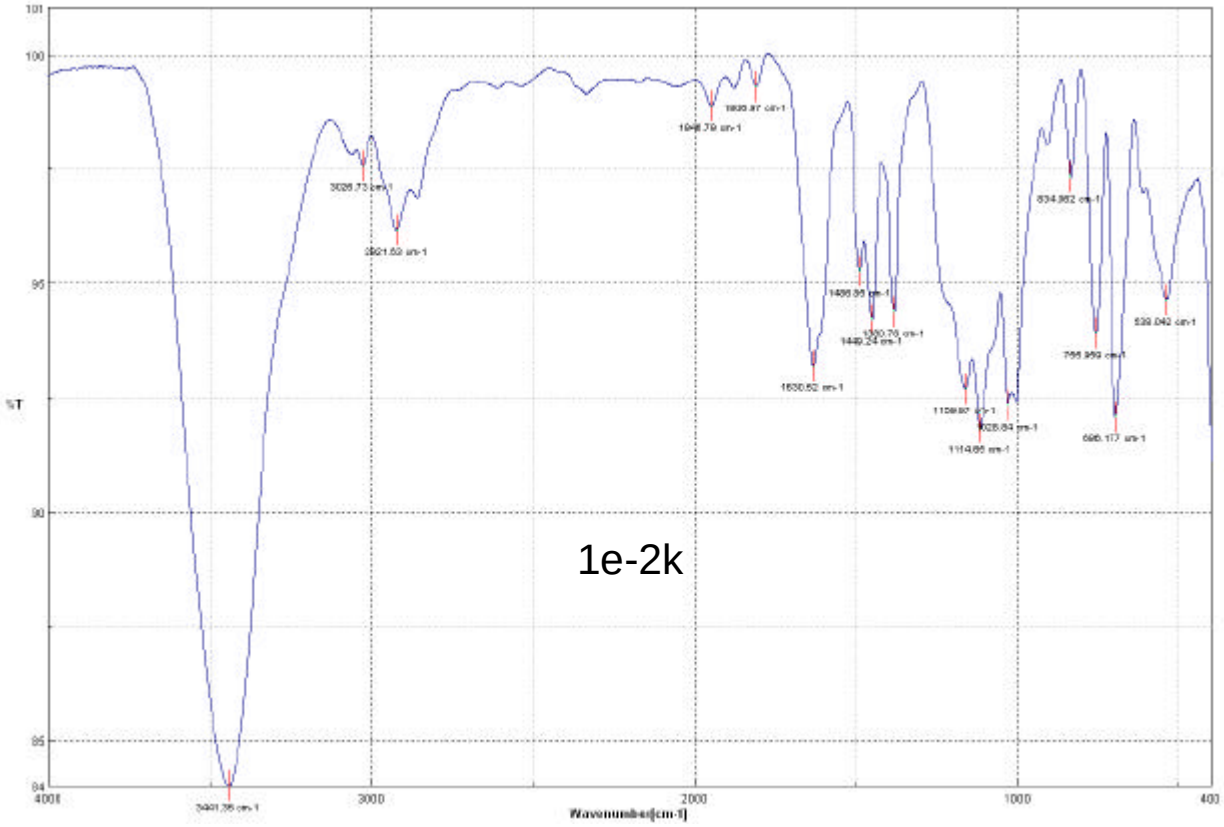
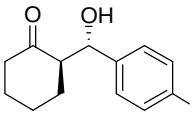
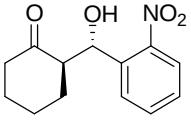
95
90
85
80
%T
4000
3000
2000
1000
400
1e-2i
1e-2i


101
100
95
90
85
84
%T
4000
3000
2000
1000
400
Wavenumber[cm-1]
1e-2k

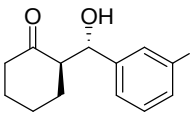
HPLC conditions:



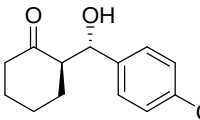
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm (2-propanol: Hexane = 20:80), 25? , 0.5mL/min; t_R=22.98 (major), t_R=29.45 (minor).



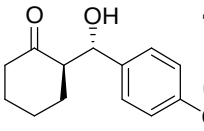
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm (2-propanol: Hexane = 5:95), 25? , 0.8 mL/min; t_R= 56.34 (minor), t_R=60.62 (major).



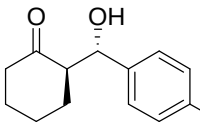
The enantiomeric excess was determined by HPLC with an AS-H column at 254nm (2-propanol: Hexane = 5:95), 25? , 0.5 mL/min; t_R= 89.22 (minor), t_R=102.99 (major).



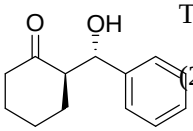
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm (2-propanol: Hexane = 20:80), 25? , 0.5 mL/min; t_R= 13.22 (major), t_R=15.14 (minor).



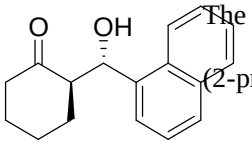
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm (2-propanol: Hexane = 10:90), 25? , 0.5 mL/min; t_R= 39.46 (major), t_R=49.61 (minor).



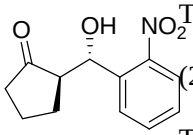
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm (2-propanol: Hexane = 10:90), 25? , 0.5 mL/min; t_R= 45.32 (major), t_R=50.76 (minor).



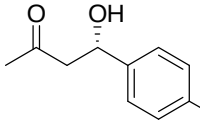
The enantiomeric excess was determined by HPLC with an AS-H column at 254nm (2-propanol: Hexane = 10:90), 25? , 0.5 mL/min; t_R= 16.58 (minor), t_R=18.33 (major).



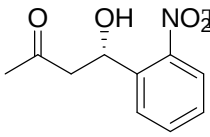
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm (2-propanol: Hexane = 5:95), 25? , 0.8 mL/min; t_R= 31.92 (major), t_R=40.87 (minor).



The enantiomeric excess was determined by HPLC with an AD-H column at 254nm (2-propanol: Hexane = 5:95), 25? , 0.8 mL/min; t_R= 39.61 (minor), t_R=43.30 (major).

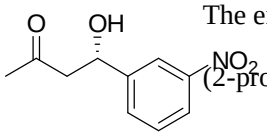


The enantiomeric excess was determined by HPLC with an AS-H column at 254nm (2-propanol: Hexane = 30:70), 25? , 0.5 mL/min; t_R= 24.62 (minor), t_R=32.82 (major).



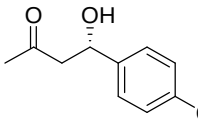
The enantiomeric excess was determined by HPLC with an AS-H column at 254nm

(2-propanol: Hexane = 30:70), 25? , 0.5 mL/min; t_R= 14.28 (major), t_R=20.02 (minor).



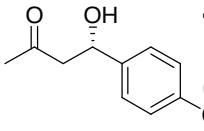
The enantiomeric excess was determined by HPLC with an OJ column at 254nm

(2-propanol: Hexane = 20:80), 25? , 0.5 mL/min; t_R= 22.36 (major), t_R=24.08 (minor).



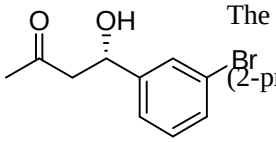
The enantiomeric excess was determined by HPLC with an AS-H column at 254nm

(2-propanol: Hexane = 20:80), 25? , 0.5 mL/min; t_R= 13.05 (minjor), t_R=14.92 (major).



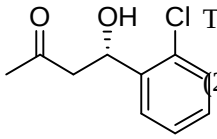
The enantiomeric excess was determined by HPLC with an AS-H column at 254nm

(2-propanol: Hexane = 30:70), 25? , 0.5 mL/min; t_R= 25.69 (minor), t_R=43.57 (major).



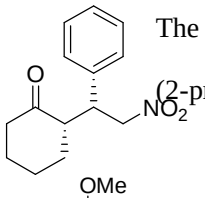
The enantiomeric excess was determined by HPLC with an AS-H column at 254nm

(2-propanol: Hexane = 10:90), 25? , 0.8 mL/min; t_R= 16.96 (major), t_R=17.49 (minor).



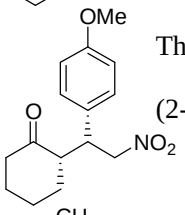
The enantiomeric excess was determined by HPLC with an AS-H column at 254nm

(2-propanol: Hexane = 10:90), 25? , 0.6 mL/min; t_R= 24.09 (major), t_R=34.62 (minor).



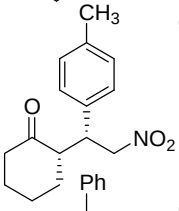
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm

(2-propanol: Hexane = 10:90), 25? , 0.5 mL/min; t_R= 20.11 (minor), t_R=24.71 (major).



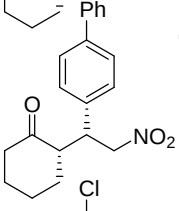
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm

(2-propanol: Hexane = 20:80), 25? , 0.5 mL/min; t_R= 17.75 (minor), t_R=21.40 (major).



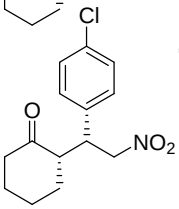
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm

(2-propanol: Hexane = 10:90), 25? , 0.5 mL/min; t_R= 17.45 (minor), t_R=22.00 (major).



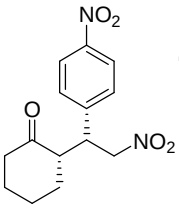
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm

(2-propanol: Hexane = 20:80), 25? , 0.5 mL/min; t_R= 19.47 (minor), t_R=25.49 (major).

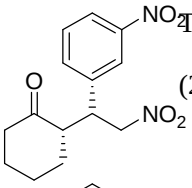


The enantiomeric excess was determined by HPLC with an AD-H column at 254nm

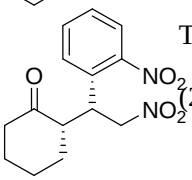
(2-propanol: Hexane = 10:90), 25? , 0.5 mL/min; t_R= 25.01 (major), t_R=37.32 (minor).



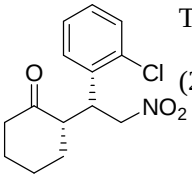
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm (2-propanol: Hexane = 20:80), 25? , 0.5 mL/min; t_R= 31.80 (minor), t_R=69.38 (major).



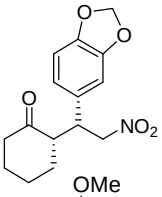
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm (2-propanol: Hexane = 20:80), 25? , 0.5 mL/min; t_R= 22.12 (minor), t_R=26.32 (major).



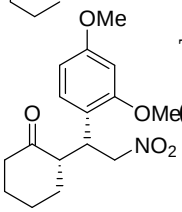
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm (2-propanol: Hexane = 20:80), 25? , 0.5 mL/min; t_R= 24.88 (minor), t_R=38.74 (major).



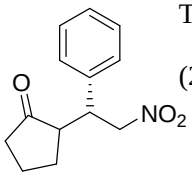
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm (2-propanol: Hexane = 10:90), 25? , 0.5 mL/min; t_R= 19.57 (minor), t_R=31.00 (major).



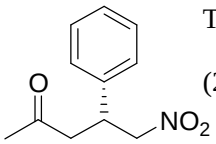
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm (2-propanol: Hexane = 20:80), 25? , 0.5 mL/min; t_R= 22.03 (minor), t_R=23.33 (major).



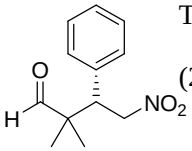
The enantiomeric excess was determined by HPLC with an AD-H column at 254nm (2-propanol: Hexane = 10:90), 25? , 0.8 mL/min; t_R= 15.92 (minor), t_R=17.10 (major).



The enantiomeric excess was determined by HPLC with an AD-H column at 254nm (2-propanol: Hexane = 20:80), 25? , 0.5 mL/min; t_R= 15.47 (minor), t_R=19.23 (major).



The enantiomeric excess was determined by HPLC with an AD-H column at 254nm (2-propanol: Hexane = 20:80), 25? , 0.5 mL/min; t_R= 16.5 (minor), t_R=17.6 (major).



The enantiomeric excess was determined by HPLC with an AS-H column at 254nm (2-propanol: Hexane = 10:90), 25? , 0.5 mL/min; t_R= 30.55 (minor), t_R=32.21 (major).