Supplementary Materials:

Biocatalytic approach to chiral β-nitroalcohols by enantioselective alcohol dehydrogenase – mediated reduction of α-nitroketones

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General analytical methods

^{1}H and ^{13}C NMR spectra were recorded on a 400 or 500 MHz spectrometer in $CDCl_3$ solution at r.t.. The chemical shift scale was based on internal tetramethylsilane.

GC-MS analyses were performed using a HP-5MS column (30 m × 0.25 mm × 0.25 μm, Agilent). The following temperature program was employed: 60°C (1 min) / 6°C min^{-1} / 150°C (1 min) / 12°C min^{-1} / 280°C (5 min). Chiral HPLC analyses were performed on a Chiralcel OD column (4.6 mm × 250 mm, Daicel) or on Chiralart Amylose SA (4.6 mm × 250 mm, YMC) installed on instruments with UV detector.

TLC analyses were performed on Merck Kieselgel 60 F254 plates. All the chromatographic separations were carried out on silica gel columns.

Overexpression of GDH in *E. coli* BL21(DE3)

Glucose dehydrogenase (GDH from *Bacillus megaterium*) was overexpressed in *E. coli* BL21(DE3) strains harboring the plasmid pKTS-GDH [1]. LB medium (5 mL) containing the appropriate antibiotic (100 μg mL^{-1} ampicillin) was inoculated with a single colony from a fresh plate and grown for 8 h at 37°C and 220 rpm. This starter culture was used to inoculate 200 mL medium, which was incubated for 8 h at the same conditions and used to inoculate 1.5 L medium. The latter culture was shaken at 37°C and 220 rpm until OD_{600} reached 0.4-0.5, then enzyme expression was induced by the addition of 0.1 mM IPTG and 50 ng mL^{-1} anhydrotetracycline. After 5-6 h the cells were harvested by centrifugation (5000 *g*, 20 min, 4°C), resuspended in 50 mL of lysis buffer (20 mM potassium phosphate buffer pH 7.0, 300 mM NaCl, 10 mM imidazole) and disrupted by sonication (Omni Ruptor 250 ultrasonic homogeniser, five sonication cycles, 15 s each, 50% duty). The cell-free extract, after centrifugation (20000 *g*, 20 min, 4°C), was chromatographed on IMAC stationary phase (Ni-Sepharose Fast Flow, GE Healthcare) with a mobile phase composed of 20 mM potassium phosphate buffer pH 7.0, 300 mM NaCl and a 10-300 mM imidazole gradient. Protein elution was monitored at 280 nm, the fractions were collected according to the

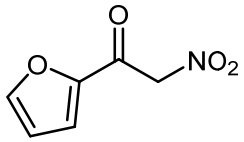
chromatogram and dialysed twice against 1.0 L of 50 mM potassium phosphate buffer pH 7.0 (12 h each, 4°C) to remove imidazole and salts. Purified protein aliquots were stored frozen at –80°C.

General procedure for the synthesis of nitroketones 3a-o [2]

A solution of the suitable carboxylic acid (0.083 mol) and CDI (*N*,*N'*-carbonyldiimidazole, 0.10 mol) in dry THF (150 mL) was refluxed for 1 h (solution A). During that time, CH_3NO_2 (2.32 mol) was slowly added at room temperature to a suspension of NaH (0.10 mmol) in dry THF (100 mL). The resulting solution was stirred for further 30 minutes at room temperature (solution B). Solution A was cooled to room temperature, then transferred to the flask containing solution B. The resulting mixture was refluxed for a few hours with vigorous stirring, affording a light-yellow heterogeneous solution, which was cooled to room temperature. Approximately 2/3 of the solvent was removed *in vacuo*, then the mixture was poured into water and extracted with EtOAc. The aqueous phase was acidified with conc. HCl, to promote the formation of a solid, which was extracted with EtOAc. The combined organic phases of this second extraction were washed with brine, dried on Na_2SO_4 and concentrated *in vacuo* to afford the corresponding crude α-nitroketone, which was purified by crystallization and used for the biocatalysed reductions. The two aliphatic derivatives **3n** and **3o** were purified by column chromatography.

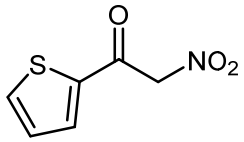
The characterization data of nitroketones **3a-k** have been already reported by the authors in a previous paper [3]. The synthetic details and characterization data of nitroketones **3l-o** are herein reported.

1-(Furan-2-yl)-2-nitroethan-1-one (3l)



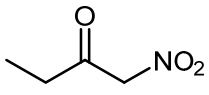
From 2-furoic acid (9.3 g, 0.083 mol) derivative **3l** was obtained (8.7 g, 68 %): ^{1}H NMR ($CDCl_3$, 400 MHz) [4]: δ =7.68 (dd, 1H, J = 1.7 and 0.75 Hz, ArH), 7.42 (dd, 1H, J =3.7 and 0.75 Hz, ArH), 6.67 (dd,1H, J = 3.7 and 1.7 Hz, ArH), 5.70 (s, 2H, CH_2); ^{13}C NMR ($CDCl_3$, 100.6 MHz) [4]: δ = 174.5, 150.0, 148.2, 120.0, 113.7, 80.3; GC-MS (EI) t_r= 14.4 min: m/z (%)= 155 (M^+, 5), 83 (100).

2-Nitro-1-(thiophen-2-yl)-ethan-1-one (3m)



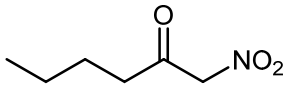
From 2-thiophenecarboxylic acid (10.2 g, 0.080 mol) derivative **3m** was obtained (10.0 g, 73 %): ^{1}H NMR ($CDCl_3$, 400 MHz) [5]: δ = 7.84 (dd, 1H , J = 5.0 and 1.1 Hz, ArH), 7.73 (dd, 1H, J = 3.9 and 1.1 Hz, ArH), 7.22 (dd, 1H, J = 5.0 and 3.9 Hz, ArH), 5.76 (s, 2H, CH_2); ^{13}C NMR ($CDCl_3$, 100.6 MHz) [5]: δ = 178.4, 139.9, 136.8, 133.8, 129.3, 80.9; GC-MS (EI) t_r= 18.2 min: m/z (%)= 171 (M^+, 14), 111 (100), 99 (53).

1-Nitrobutan-2-one (3n)



From propionic acid (6.7 g, 0.090 mmol) derivative **3n** was obtained (7.0 g, 66 %): ^{1}H NMR ($CDCl_3$, 400 MHz) [6]: δ =5.27 (s, 2H, CH_2-NO_2), 2.59 (q, 2H, J = 7.1 Hz, CH_2-CH_3), 1.17 (t, 3H, J =7.2 Hz, CH_3); ^{13}C NMR ($CDCL_3$, 100.6 MHz) [6]: δ = 196.6, 83.1, 34.0, 7.3; GC-MS (EI) t_r= 5.9 min: m/z (%)= 117 (M^+, 3), 88 (10), 57 (100).

1-Nitrohexane-2-one (3o)

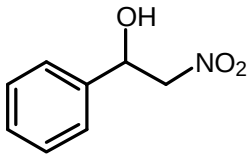


From valeric acid (9.7 g, 0.095 mmol) derivative **3o** was obtained (8.9 g, 65 %): ^{1}H NMR ($CDCl_3$, 400 MHz): δ = 5.26 (s, 2H, CH_2-NO_2), 2.55 (t, 2H, J = 7.2 Hz, CH_2-CO), 1.64 (quintuplet, J = 7.2 Hz, 2H, CH_2-CH_2 -CO), 1.36 (sextet, J = 7.6 Hz, 2H, CH_2-CH_2CH_2 -CO), 0.92 (t, 3H, J = 7.6 Hz, CH_3); ^{13}C NMR ($CDCl_3$, 100.6 MHz): δ = 196.3, 83.3, 40.3, 25.3, 22.2, 13.8; GC-MS (EI) t_r= 10.2 min: m/z (%)= 98 (M^+- 47, 10), 85 (65), 57 (100).

General procedure for the synthesis of racemic β-nitroalcohols 1a-o

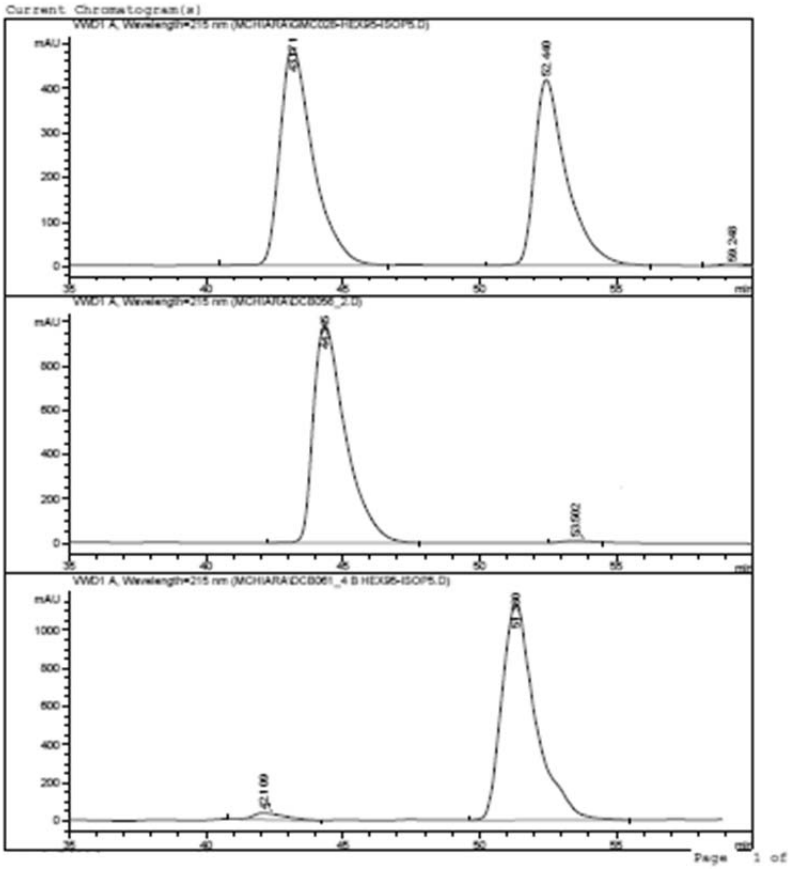
To a stirred solution of aldehyde (1.50 mmol) in nitromethane (10 ml) triethylamine (1 ml) was added and the resulting solution was stirred at room temperature and monitored by TLC analysis. The solution was diluted with ethyl acetate (200 ml) and washed with water. The organic layers were dried over anhydrous Na_2SO_4 and concentrated *in vacuo*. The crude products were purified by silica gel column chromatography eluting with hexane and increasing amount of ethyl acetate.

2-Nitro-1-phenylethan-1-ol (1a)

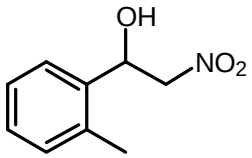


From benzaldehyde (0.16 g, 1.5 mmol) derivative **1a** was obtained (0.15 g, 60%). ^{1}H NMR ($CDCl_3$, 400 MHz) [7]: δ = 7.43-7.34 (m, 5H, ArH), 5.46 (dt, 1H, *J* = 9.5 and 3.4 Hz, *CH*-OH), 4.62 (dd, 1H, *J*= 13.4 and 9.5 Hz, C*H*H-NO_2), 4.52 (dd,1H, *J* = 13.4 and 3.3 Hz, C*H*H-NO_2), 2.81 (d, 1H, *J* = 3.4 Hz, *OH*);^{13}C NMR ($CDCl_3$, 100.6 MHz) [7]: δ = 138.3, 129.1, 129.0, 126.0, 81.3, 71.1.

HPLC [7]: Chiralcel OD, 95/5 hexane/*i*-PrOH, 0.6 mL/min, 215 nm, (*R*)-**1a** t_r = 43.2 min, (*S*)-**1a** t_r = 52.4 min.

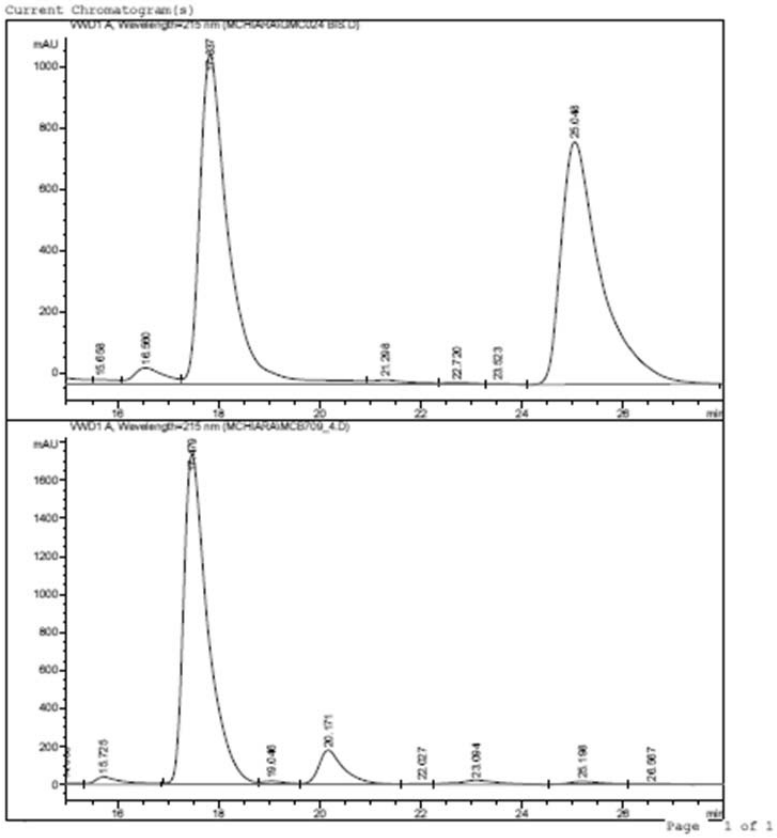


2-Nitro-1-(*o*-tolyl)ethan-1-ol (1b)

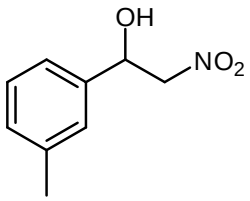


From 2-tolualdehyde (0.18 g, 1.50 mmol) derivative **1b** was obtained (0.14 g, 52 %). ^{1}H NMR ($CDCl_3$, 400 MHz) [8]: δ = 7.52-7.44 (m, 1H, ArH), 7.30-7.15 (m, 3H, ArH), 5.64 (dd, 1H, *J* = 9.6 and 2.7 Hz, *CH*-OH), 4.51 (dd,1H, *J*= 13.3 and 9.6 Hz, C*H*H-NO_2), 4.40 (dd, 1H, *J* = 13.3 and 2.7 Hz, C*H*H-NO_2), 2.36 (s, 3H, CH_3); δ = ^{13}C NMR ($CDCl_3$, 100.6 MHz) [8]: δ = 136.4, 134.6, 131.0, 128.8, 126.9, 125.7, 80.4, 68.1, 19.0.

HPLC [8]: Chiralcel OD, 90/10 hexane/*i*-PrOH, 0.6 mL/min, 215 nm, (*R*)-**1b** t_r = 17.8 min, (*S*)-**1b** t_r = 20.0 min.

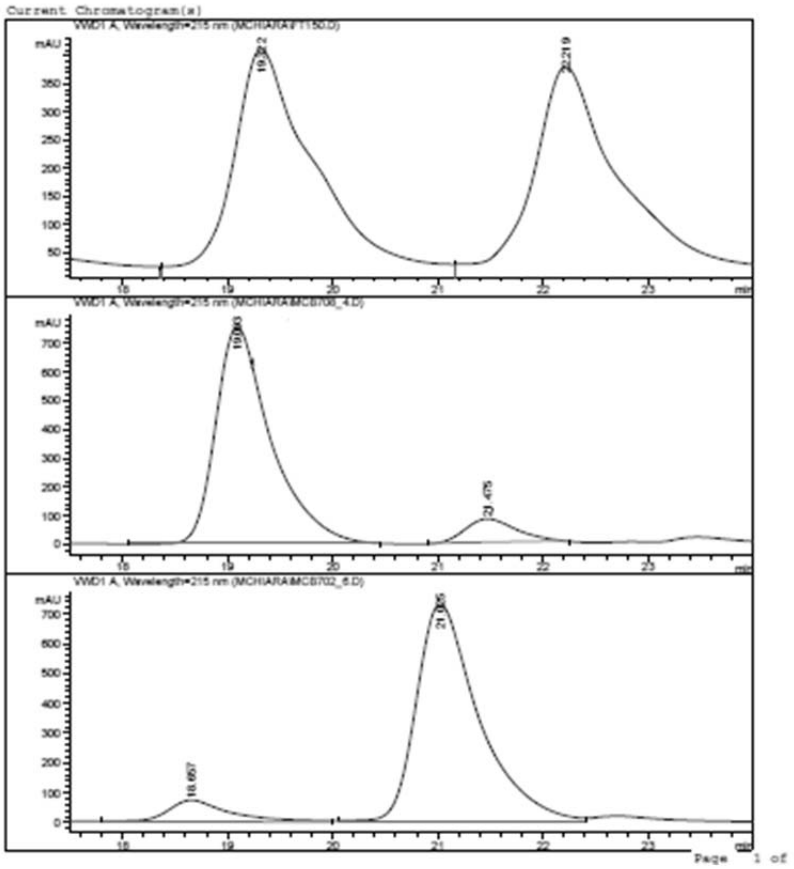


2-Nitro-1-(*m*-tolyl)ethan-1-ol (1c):

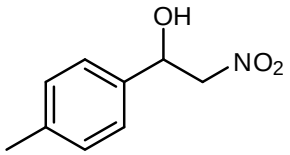


From 3-tolualdehyde (0.18 g, 1.5 mmol) derivative **1b** was obtained (0.15 g, 56 %). ^{1}H NMR (400 MHz, $CDCl_3$) [9]: δ = 7.26 (m, 1H, Ar-H), 7.16 (m, 3H, Ar-H), 5.43 (dd, J = 9.6 and 3.1 Hz, 1H, *CH*OH), 4.61 (dd, J = 13.2 and 9.5, 1H, C*H*H-NO_2), 4.49 (dd, J =13.2 and 3.1 Hz, C*H*H-NO_2); 2.37 (s, 3H, CH_3); ^{13}C NMR (400 MHz, $CDCl_3$) [9]: δ = 138.9, 138.6, 129.6, 129.0, 126.7, 123.1, 81.7, 71.1, 21.5.

HPLC [10]: Chiralcel OD, 90/10 hexane/*i*-PrOH, 0.6 mL/min, 215 nm, (*R*)-**1c** t_r = 19.3 min, (*S*)-**1c** t_r = 22.2 min.

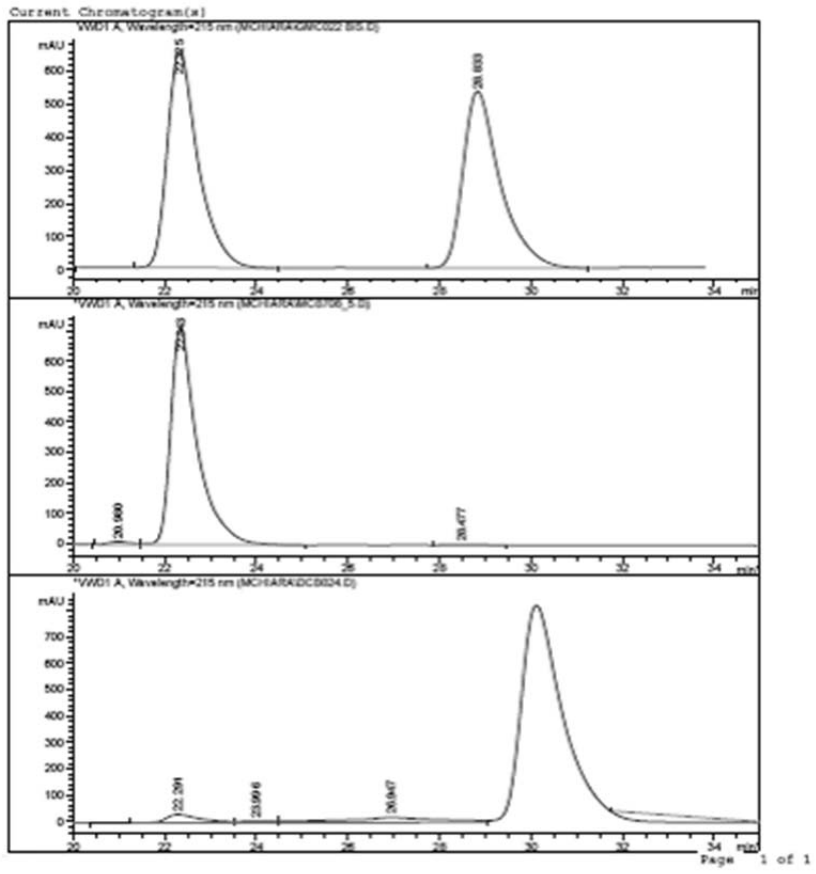


2-Nitro-1-(p-tolyl)ethan-1-ol (1d)

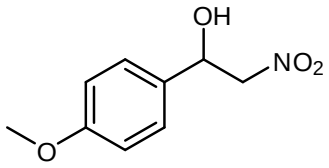


From 4-tolualdehyde (0.18 g, 1.5 mmol) derivative **1d** was obtained (0.18 g, 66 %). ^{1}H NMR ($CDCl_3$, 400 MHz) [9]: δ = 7.31-7.27 (d, 2H, *J* = 8.0 Hz, ArH), 7.23-7.19 (d, 2H, *J* = 8.0 Hz, ArH), 5.43 (dd, 1H, *J* = 9.5 and 3.0 Hz, *CH*-OH), 4.61 (dd,1H, *J*= 13.3 and 9.5 Hz, C*H*H-NO_2), 4.49 (dd, 1H, *J* = 13.3 and 3.0 Hz, C*H*H-NO_2), 2.36 (s, 3H, CH_3); ^{13}C NMR ($CDCl_3$, 100.6 MHz) [9]: δ = 139.3, 135.4, 129.8, 126.0, 81.4, 71.1, 21.3.

HPLC [10]: Chiralcel OD, 90/10 hexane/*i*-PrOH, 0.6 mL/min, 215 nm, (*R*)-**1d** t_r = 22.3 min, (*S*)-**1d** t_r = 28.8 min.

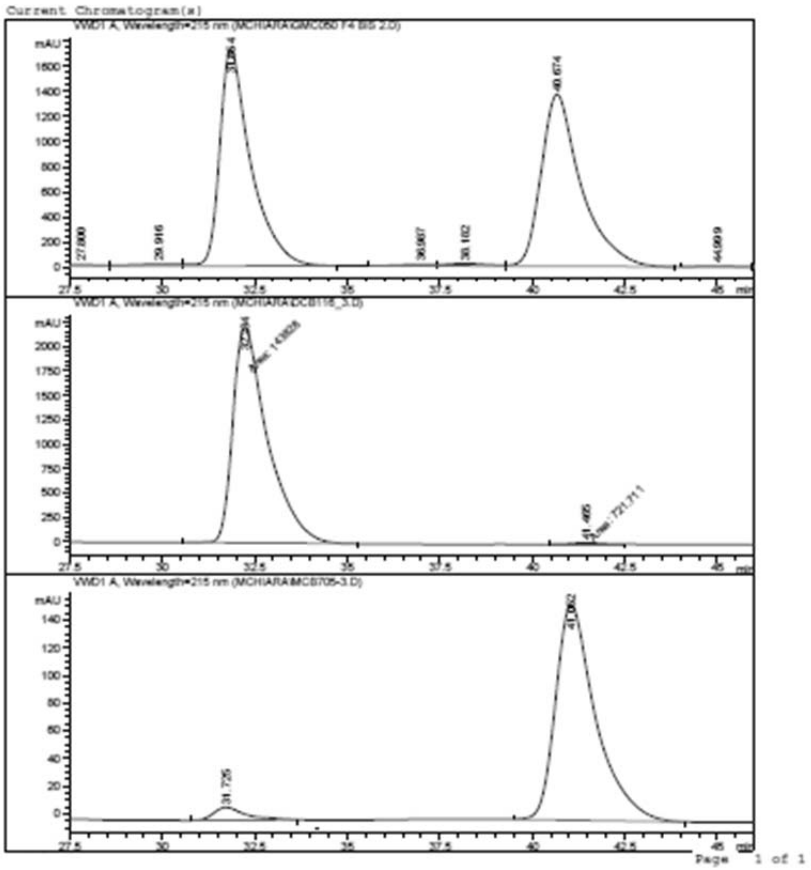


1-(4-Methoxyphenyl)-2-nitroethan-1-ol (1e)

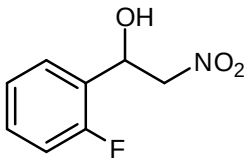


From 4-anisaldehyde (0.20 g, 1.5 mmol) derivative **1e** was obtained (0.19 g, 64%). ^{1}H NMR ($CDCl_3$, 400 MHz)[8]: δ = 7.33 - 7.31 (m, 2H, ArH), 6.93 - 6.90 (m, 2H, ArH), 5.42 (dd, 1H, *J* = 9.6 and 3.1 Hz, *CH*-OH), 4.61 (dd,1H, *J* = 13.3 and 9.5 Hz, C*H*H-NO_2), 4.61 (dd, 1H, *J* = 13.3 and 9.5 Hz, C*H*H-NO_2), 4.48 (dd, 1H, *J* = 13.3 and 3.1 Hz, C*H*H-NO_2), 3.81 (s, 3H, OCH_3);^{13}C NMR ($CDCl_3$, 100.6 MHz) [8]: δ = 160.2, 130.4, 127.4, 114.6, 81.4, 70.8, 55.5.

HPLC [8]: Chiralcel OD, 90/10 hexane/*i*-PrOH, 0.6 mL/min, 215 nm, (*R*)-**1e** t_r = 31.8 min, (*S*)-**1e** t_r = 40.7 min

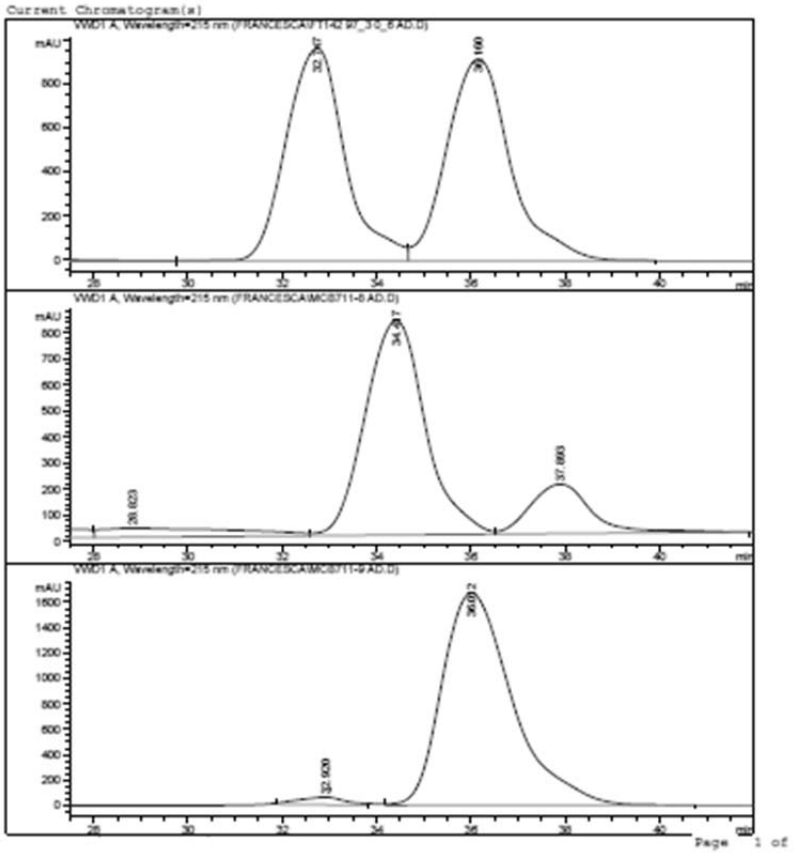


1-(2-Fluorophenyl)-2-nitroethan-1-ol (1f)

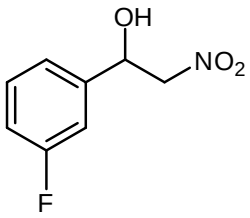


From 2-fluorobenzaldehyde (0.19 g, 1.5 mmol) derivative **1f** was obtained (0.17 g, 61 %). ^{1}H NMR ($CDCl_3$, 400 MHz) [11]: δ =7.57 (m, 1H, Ar-H), 7.34 (m, 1H, Ar-H), 7.22 (m, 1H, Ar-H), 7.08 (m, 1H, Ar-H), 5.75 (dd, *J* = 8.5 and 3.8 Hz, 1H, C*H*OH), 4.61 (m, 2H, CH_2NO$_2$); ^{13}C NMR (400 MHz, $CDCl_3$): δ = 159.5 (d, *J* = 246 Hz), 136.5 (d, *J* = 9.2 Hz), 130.4 (d, *J* = 8.3 Hz), 127.8 (d, *J* = 3.8 Hz), 124.9 (d, *J* = 3.6 Hz), 116.6 (d, *J* = 20.4 Hz), 115.7 (d, *J* = 21.2 Hz), 80.2, 65.4.

HPLC [11]: Chiralart Amylose SA, 97/3 hexane/*i*-PrOH, 0.6 mL/min, 215 nm, (*S*)-**1f** t_r = 32.7 min, (*R*)-**1f** t_r = 36.2 min.

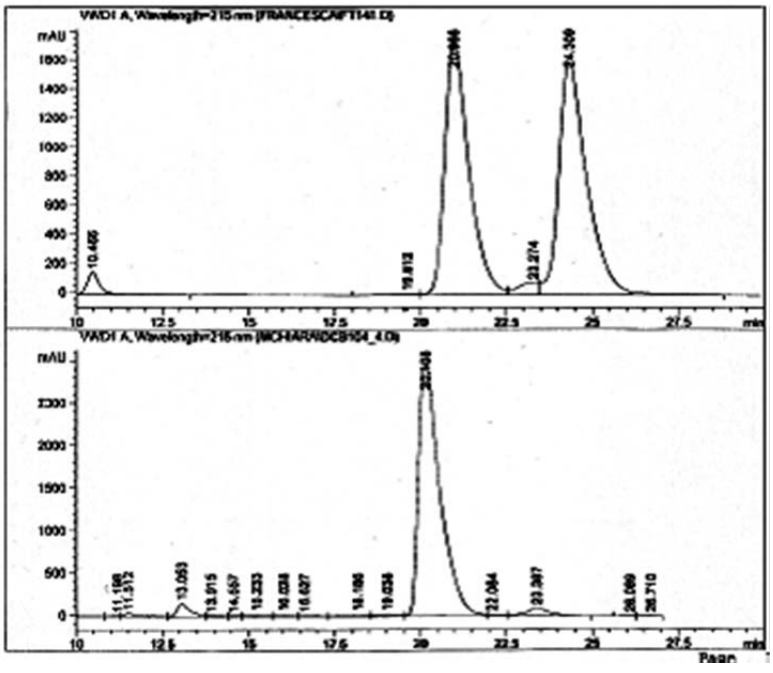


1-(3-Fluorophenyl)-2-nitroethan-1-ol (1g)

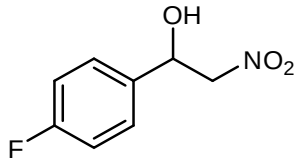


From 3-fluorobenzaldehyde (0.19 g, 1.5 mmol) derivative **1g** was obtained (0.16 g, 57 %). ^{1}H NMR ($CDCl_3$, 400 MHz) [12]: δ = 7.40 - 7.33 (m, 1H, ArH), 7.20 -7.12 (m, 2H, ArH), 7.08 - 7.01 (m, 1H, ArH), 5.47 (dd, 1H, *J* = 9.2 and 3.3 Hz, *CH*-OH), 4.59 (dd, 1H, *J* = 13.4 and 9.4 Hz, C*H*H-NO_2), 4.52 (dd, 1H, *J* = 13.4 and 3.3 Hz, C*H*H-NO_2); ^{13}C NMR ($CDCL_3$, 100.6 MHz) [12]: δ = 163.2 (d, *J* = 247 Hz), 141.5 (*J* = 7.2 Hz), 130.7 (d, *J* = 8.1 Hz), 121.6 (d, *J* = 3.4 Hz), 115.9 (d, *J* = 21.2 Hz), 113.4 (d, *J* = 22.4 Hz), 81.5, 70.4.

HPLC [12]: Chiralcel OD, 90/10 hexane/*i*-PrOH, 0.6 mL/min, 215 nm, (*R*)-**1g** t_r = 21.0 min, (*S*)-**1g** t_r = 24.3 min.

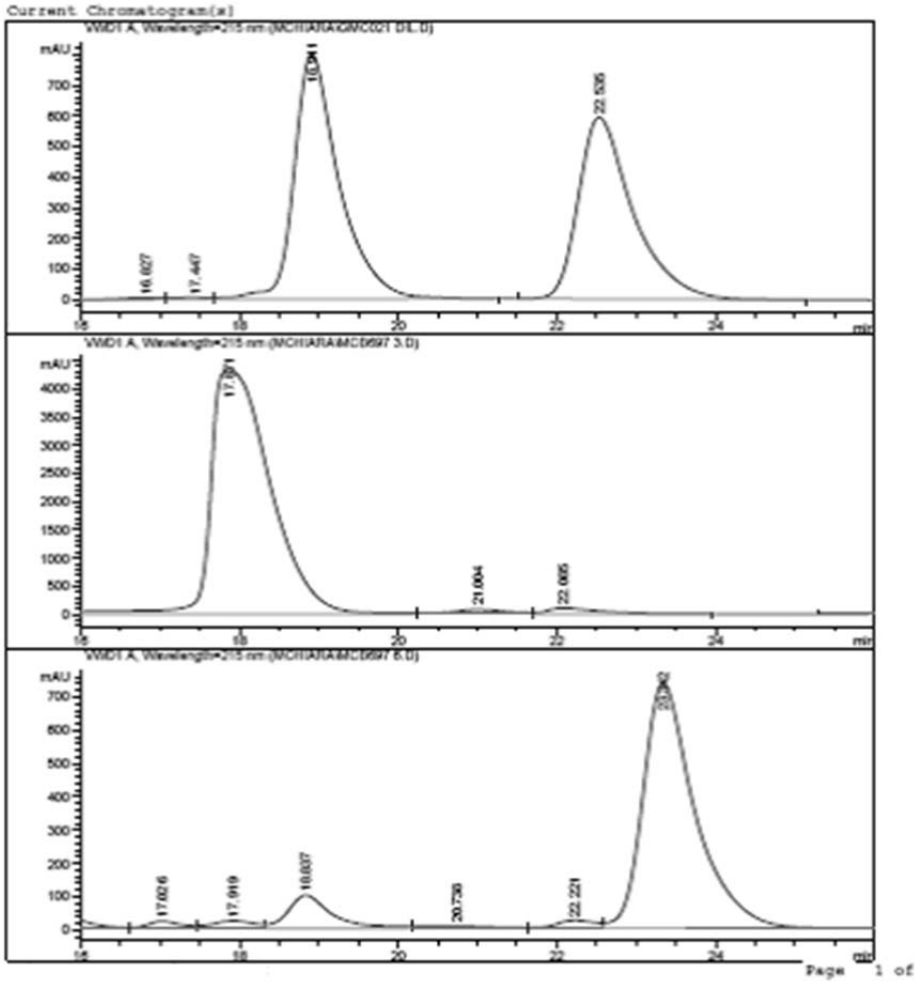


1-(4-Fluorophenyl)-2-nitroethan-1-ol (1h)

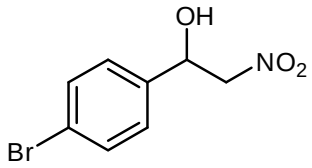


From 4-fluorobenzaldehyde (0.19 g, 1.5 mmol) derivative **1h** was obtained (0.18 g, 65 %). ^{1}H NMR ($CDCl_3$, 400 MHz) [7]: δ = 7.42-7.37 (m, 2H, ArH), 7.12-7.07 (m, 2H,ArH), 5.46 (dd, 1H, J =9.4 and 3.2 Hz, *CH*-OH), 4.59 (dd, 1H, J = 13.4 and 9.4 Hz, C*H*H-NO_2), 4.50 (dd, 1H, J = 13.4 and 3.1 Hz, C*H*H-NO_2);^{13}C NMR ($CDCl_3$, 100.6 MHz) [7]: δ = 163.1 (d, J = 248 Hz), 134.0 (d, J = 3.2 Hz), 127.9 (d, J = 8.2 Hz), 116.2 (d, J = 22 Hz), 81.3, 70.5.

HPLC [7]: Chiralcel OD, 90/10 hexane/*i*-PrOH, 0.6 mL/min, 215 nm, (*R*)-**1h** t_r = 18.9 min, (*S*)-**1h** t_r = 22.5 min.

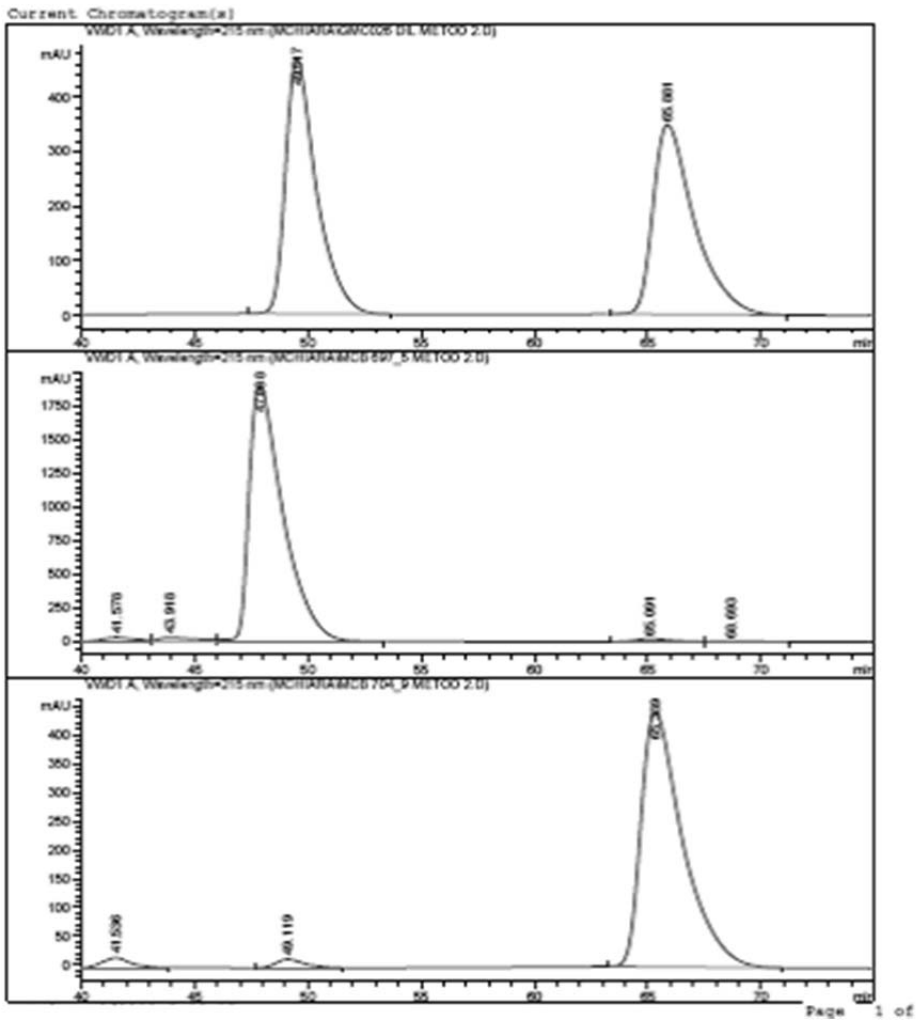


1-(4-Bromophenyl)-2-nitroethan-1-ol (1i)

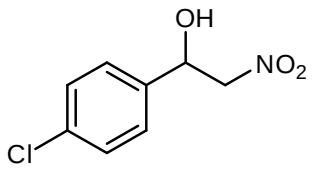


From 4-bromobenzaldehyde (0.28 g, 1.5 mmol) derivative **1i** was obtained (0.19 g, 52%). ^{1}H NMR ($CDCl_3$, 400 MHz) [9]: δ =7.56-7.52 (m, 2H, ArH), 7.31-7.28 (m, 2H, ArH), 5.44 (dd, 1H, *J* = 9.3 and 3.2 Hz, *CH*-OH), 4.57 (dd, 1H, *J* = 13.5 ad 9.2 Hz, C*H*H-NO_2),4.49 (dd, 1H, *J* = 13.5 and 3.2 Hz, C*H*H-NO_2); ^{13}C NMR ($CDCl_3$, 100.6 MHz) [9]: δ = 137.2, 132.3, 127.8, 123.1, 81.1, 70.5.

HPLC [9]: Chiralcel OD, 95/5 hexane/*i*-PrOH, 0.6 mL/min, 215 nm, (*R*)-**1i** t_r = 49.5 min, (*S*)-**1i** t_r = 65.9 min.

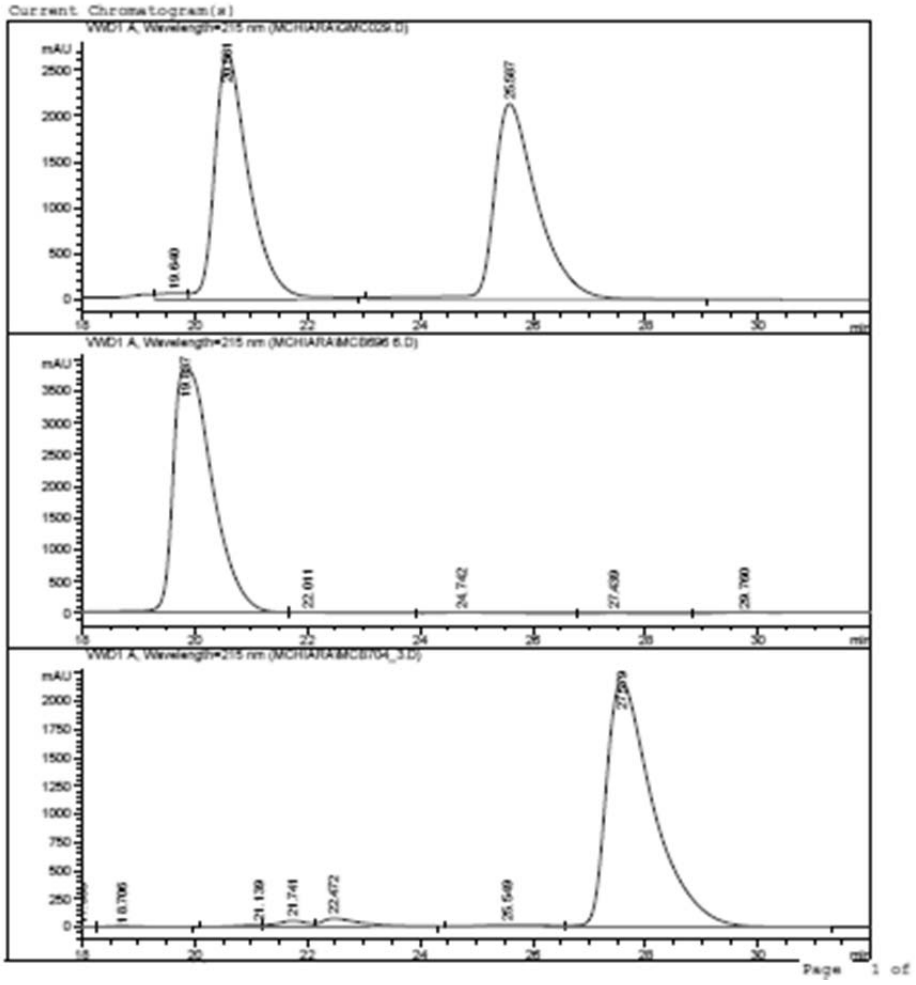


1-(4-Chlorophenyl)-2-nitroethan-1-ol (1j)

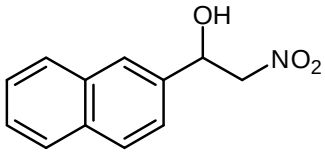


From 4-chlorobenzaldehyde (0.21 g, 1.5 mmol) derivative **1j** was obtained (0.19 g, 63%). ^{1}H NMR ($CDCl_3$, 400 MHz) [7]: δ = 7.41-7.33 (m, 4H, ArH), 5.45 (dd, 1H, *J* = 9.4 and 3.1 Hz, *CH*-OH), 4.58 (dd, 1H, *J* = 13.4 and 9.3 Hz, C*H*H-NO_2), 4.50 (dd, 1H, *J* = 13.4 and 3.2 Hz, C*H*H-NO_2); ^{13}C NMR ($CDCl_3$, 100.6 MHz) [7]: δ = 136.8, 134.8, 129.2, 127.4, 81.1, 70.4.

HPLC [7]: Chiralcel OD, 90/10 hexane/*i*-PrOH, 0.6 mL/min, 215 nm, (*R*)-**1j** t_r = 20.6 min, (*S*)-**1j** t_r = 25.6 min.

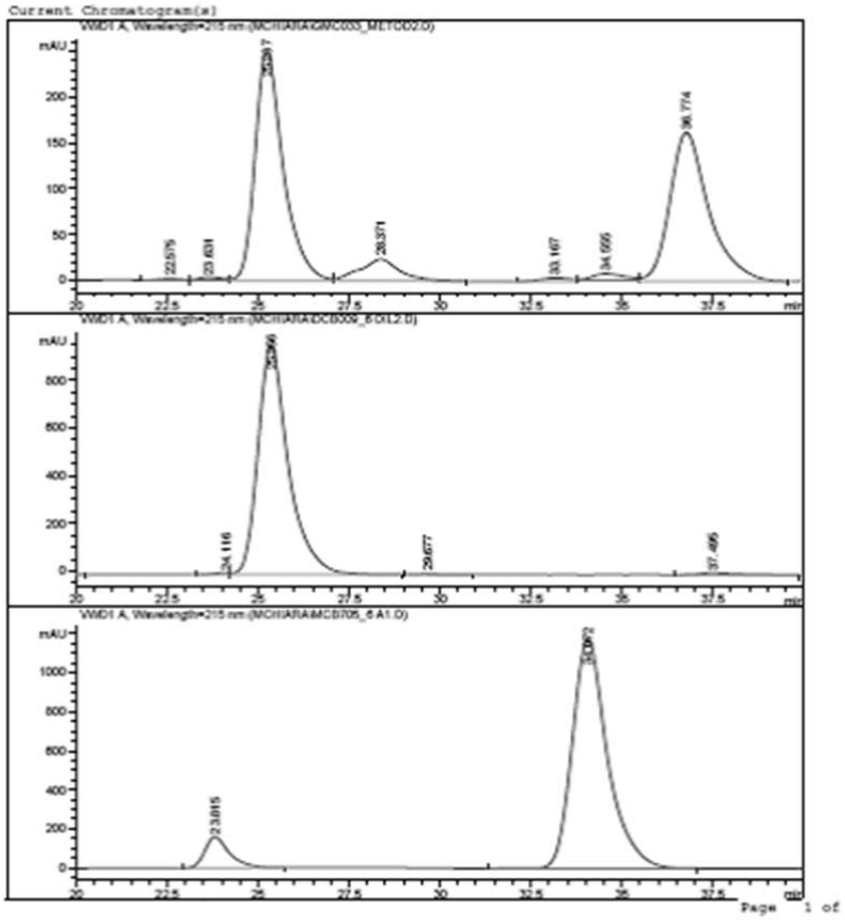


1-(Naphthalen-2-yl)-2-nitroethan-1-ol (1k)

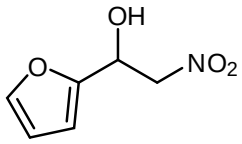


From 2- naphtaldehyde (0.23 g, 1.5 mmol) derivative **1k** was obtained (0.20 g, 62 %). ^{1}H NMR ($CDCl_3$, 400 MHz) [13]: δ = 7.90 - 7.75 (m, 4H, ArH), 7.53 - 7.47 (m, 2H, ArH), 7.44 (dd, 1H, *J* = 8.4 and 1.8 Hz, ArH), 5.59 (dd, 1H, *J* = 9.5 and 3.2 Hz, *CH*-OH), 4.67 (dd, 1H, *J* = 13.2 and 9.5 Hz , C*H*H-NO_2), 4.56 (dd, 1H, *J* = 13.2 and 3.2 Hz, C*H*H-NO_2); ^{13}C NMR ($CDCl_3$, 100.6 MHz) [13]: δ = 136.0, 133.4, 133.2, 128.8, 128.1, 127.8, 126.61, 126.57, 125.3, 123.4, 81.3, 71.1.

HPLC [14]: Chiralcel OD, 80/20 hexane/*i*-PrOH, 0.8 mL/min, 215 nm, (*R*)-**1k** t_r = 25.2 min, (*S*)-**1k** t_r = 36.8 min.

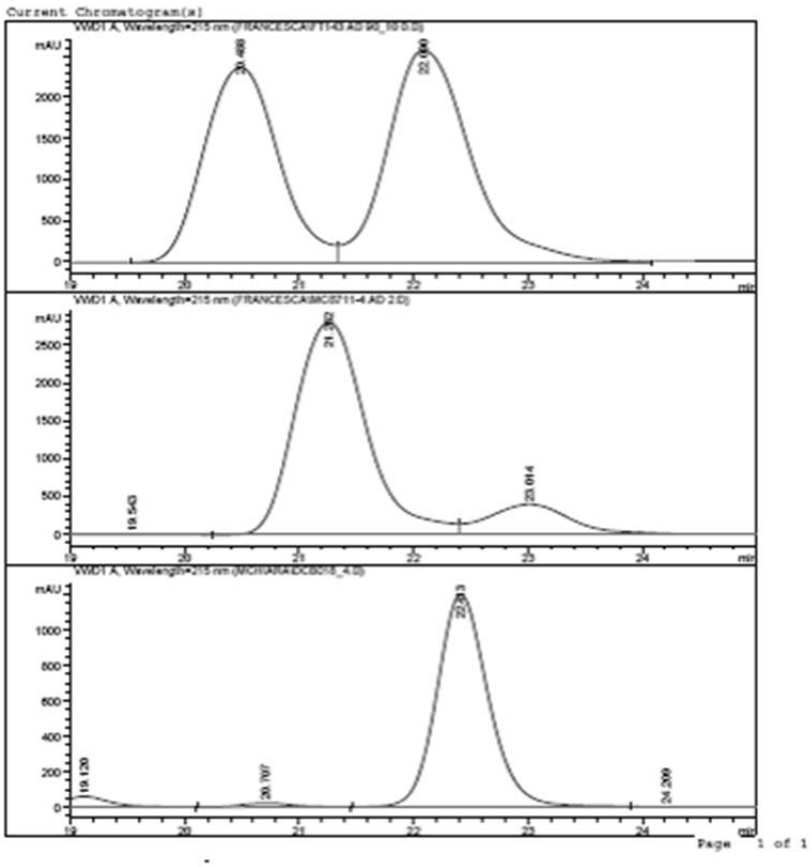


1-(Furan-2-yl)-2-nitroethan-1-ol (1l)

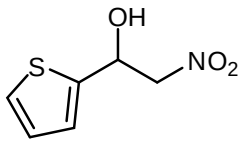


From 2- furanaldehyde (0.14 g, 1.5 mmol) derivative **1l** was obtained (0.14 g, 59 %). ^{1}H NMR ($CDCl_3$, 400 MHz) [9]: δ = 7.43-7.41(m, 1H, furan H), 6.42-6.37 (m,2H, furan H), 4.79 (dd, 1H, J = 13.5 and 8.8 Hz , C*H*H-NO_2), 4.68 (dd, 1H, J = 13.5 and 3.5 Hz, C*H*H-NO_2);^{13}C NMR ($CDCl_3$, 100.6 MHz) [9]: δ = 150.9, 143.3, 110.8, 108.3, 78.6, 65.0.

HPLC [15]: Chiralart Amylose SA, 90/10 hexane/*i*-PrOH, 0.5 mL/min, 215 nm, (*S*)-**1l** t_r = 20.5 min, (*R*)-**1l** t_r = 22.1 min.

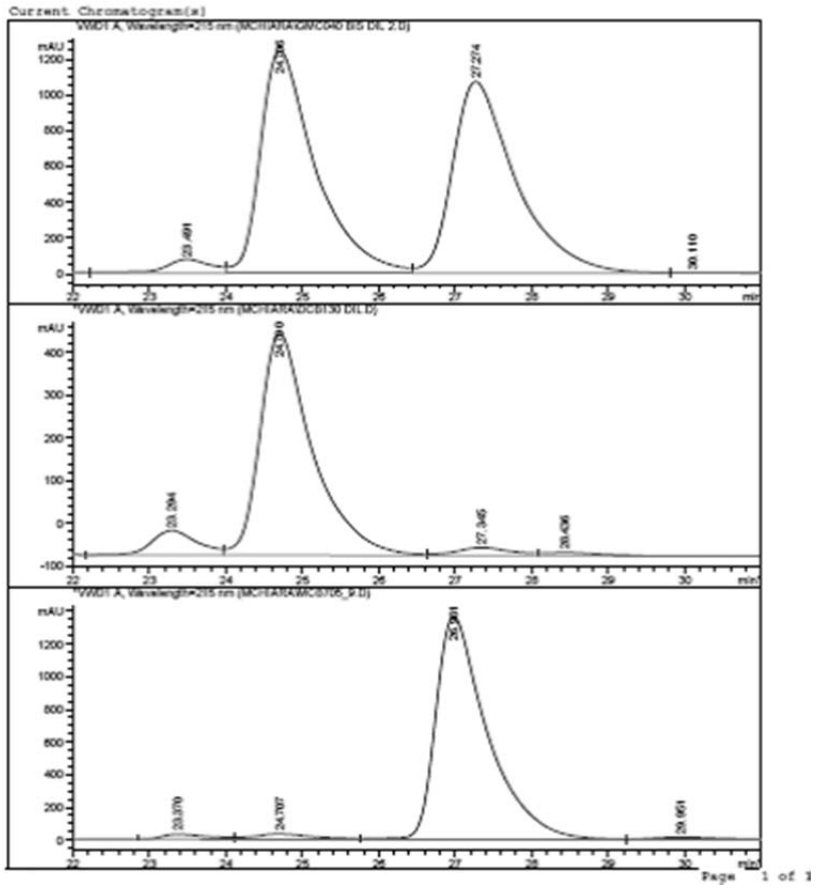


2-Nitro-1-(thiophen-2-yl)ethan-1-ol (1m)

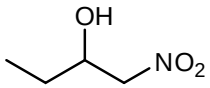


From thiophen-2-aldehyde (0.17 g, 1.50 mmol) derivative **1m** was obtained (0.15 g, 58%).[1] H NMR ($CDCl_3$, 400 MHz) [10]: δ = 7.34 (dd, 1H, J = 5.1 and 1.3 Hz, thiophen H), 7.08-7.06 (m, 1H, thiophen H), 7.02 (dd, 1H, J = 5.1 and 3.5 Hz, thiophen H), 5.73 (dd, 1H, J = 9.3 and 3.3 Hz, *CH*-OH), 4.72 (dd, 1H, J = 13.5 and 9.2 Hz, C*H*H-NO_2), 4.62 (dd, 1H, J= 13.5 and 3.3 Hz, C*H*H-NO_2); ^{13} C NMR ($CDCl_3$, 100.6 MHz) [10]: δ = 141.3, 127.0, 126.4, 124.9, 80.6, 67.1.

HPLC [16]: Chiralcel OD, 90/10 hexane/*i*-PrOH, 0.6 mL/min, 215 nm, (*S*)-**1m** t_r = 22.8 min, (*R*)-**1m** t_r = 24.7 min.

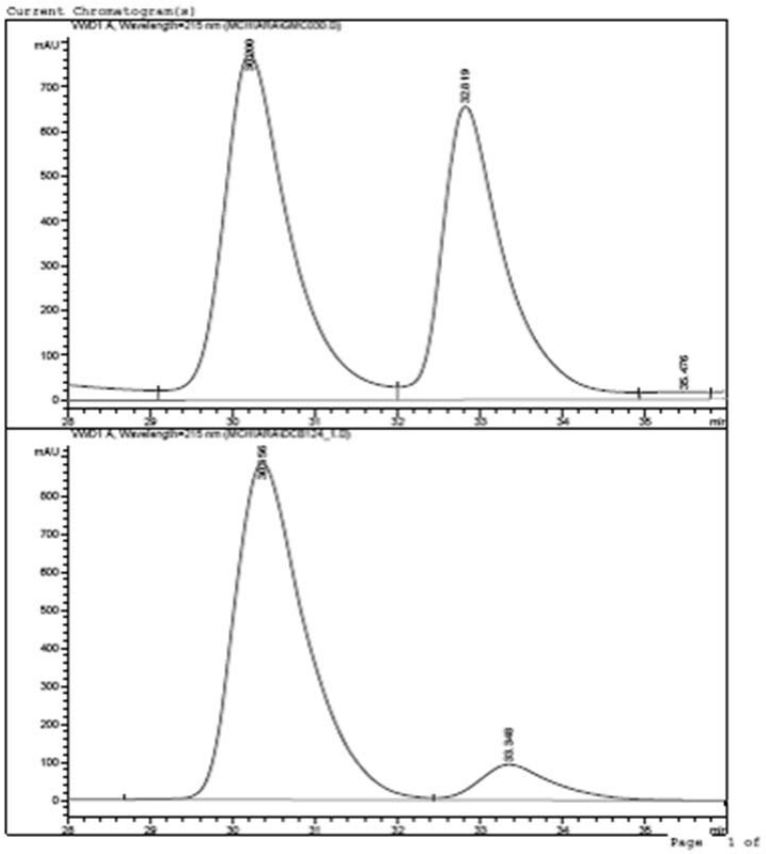


1-Nitrobutan-2-ol (1n)

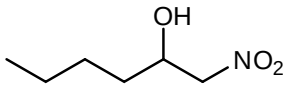


From propanaldehyde (0.087 g, 1.5 mmol) derivative **1n** was obtained (0.19 g, 62 %). ^{1}H NMR ($CDCl_3$, 400 MHz) [12]: δ = 4.48 - 4.34 (m, 2H, CH_2-NO_2), 4.30 - 4.20 (m, 1H, *CH*-OH), 1.65 - 1.45 (m, 2H, CH_2-CH_3), 1.03 (t, 3H, J = 7.4 Hz,CH_3); ^{13}C NMR ($CDCl_3$, 100.6 MHz) [12]: δ = 80.6, 69.9, 27.0, 9.4.

HPLC [12]: Chiralcel OD, 97/3 hexane/*i*-PrOH, 0.6 mL/min, 215 nm, (*R*)-**1n** t_r = 30.2 min, (*S*)-**1n** t_r = 32.8 min.



1-Nitrohexan-2-ol (1o)



From valeraldehyde (0.13 g, 1.5 mmol) derivative **1o** was obtained (0.16 g, 73%). ^{1}H NMR ($CDCl_3$, 400 MHz) [7]: δ = 4.46 - 4.28 (m, 3H, *CH*-OH + CH_2NO_2), 1.60 -1.30 (m, 6H, 3 CH_2), 0.93 (t, 3H, *J*= 7.0 Hz, CH_3); ^{13}C NMR ($CDCl_3$, 100.6 MHz) [7]: δ = 80.8, 68.8, 33.6, 27.5, 22.6, 14.0.

HPLC [14]: Chiralcel OD, 97/3 hexane/*i*-PrOH, 0.6 mL/min, 215 nm, (*R*)-**1o** t_r = 23.8 min, (*S*)-**1o** t_r = 24.9 min.

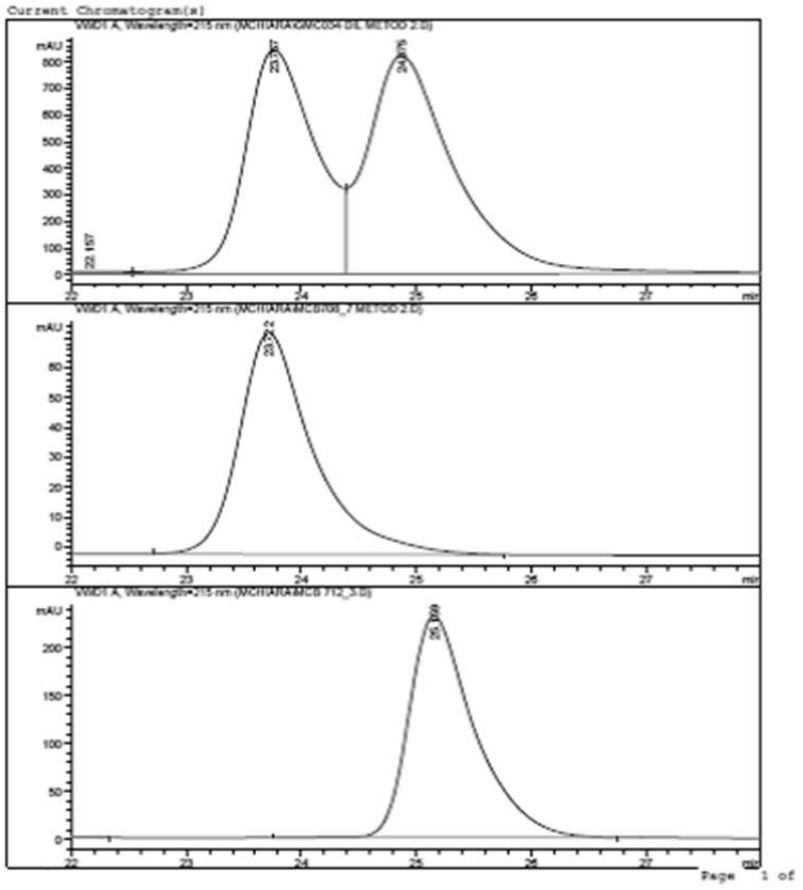


Table S1. ADH-mediated reduction of nitroketone **3a** to nitroalcohol **1a** (preliminary screening)[1]

ADH	conversion (%)[2]	ee of 1a (%)[3]
10	27	75 (*R*)
20	-	
30	15	96 (*R*)
40	-	
130	<10	
140	44	92 (*R*)
190	<10	n.d.
200	15	12 (*R*)
210	-	
250	-	
260	-	
270	94	92 (*S*)
380	-	
420	-	
430	-	
440	96	99 (*R*)
441	82	90 (*S*)
442	52	40 (*R*)

[1]5 mM substrate, 16 mM glucose, ADH (3 mg), GDH (1.5 mg), $NAD(P)^+$ (1 μmol), 1% DMSO, acetate buffer pH 5.0, 25°C, 4-5 h; [2]conversion calculated by ^{1}H NMR spectroscopy as molar percentage of the nitroalcohol **1a** in the final reaction mixture after 4-5 h, taking into account the molar amount of the unreacted nitroketone **3a**, and of the carboxylic acid obtained upon nitroketone hydrolysis; [3]enantiomeric excess calculated on the basis of HPLC analysis on a chiral stationary phase.

Table S2. ADH-mediated reduction of nitroketones **3a-o** to nitroalcohols **1a-o** (preliminary screening)[1]

Substrate	ADH	conversion (%)[2]	ee of nitroalcohol 1 (%)[3]
C_6H_5 (3a)	270	94	92 (*S*)
	440	96	99 (*R*)
	441	82	90 (S)
***o*-Me-C_6H_4 (3b)**	270	<5	
	440	99	99 (*R*)
	441	n.r.	
***m*-Me- C_6H_4 (3c)**	270	35	82 (*S*)
	440	99	84 (*R*)
	441	80	93 (*S*)
***p*-Me- C_6H_4 (3d)**	270	71	94 (*S*)
	440	99	99 (*R*)
	441	59	79 (*S*)
***p*-OMe- C_6H_4 (3e)**	270	18	91 (*S*)
	440	93	99 (*R*)
	441	n.r.	
***o*-F- C_6H_4 (3f)**	270	69	62 (*S*)
	440	100	94 (*R*)
	441	17	43 (*R*)
***m*-F- C_6H_4 (3g)**	270	72	rac
	440	99	93 (*R*)
	441	n.r.	-
***p*-F- C_6H_4 (3h)**	270	30	66 (*S*)
	440	83	96 (*R*)
	441	n.r.	
***p*-Br- C_6H_4 (3i)**	270	69	95 (*S*)
	440	92	98 (*R*)
	441	n.r.	
***p*-Cl- C_6H_4 (3j)**	270	67	97 (*S*)
	440	97	98 (*R*)
	441	94	92 (*S*)
2-Naphthyl (3k)	270	23	83 (*S*)
	440	99	98 (*R*)
	441	62	62 (*S*)
2-Furyl (3l)	270	73	84 (*R*)
	440	100	71 (*S*)
	441	65	96 (*R*)
2-Thienyl (3m)	270	100	93 (*R*)
	440	100	92 (*S*)
	441	79	78 (*R*)
Ethyl (3n)	270	100	80 (*R*)
	440	97	rac
	441	73	rac
Butyl (3o)	270	100	99 (*S*)
	440	100	99 (*R*)
	441	n.r.	-

[1]5 mM substrate, 16 mM glucose, ADH (3 mg), GDH 1.5 mg), $NAD(P)^+$ (1 μmol), 1% DMSO, acetate buffer pH 5.0, 25°C, 4-5 h; [2]calculated by ^{1}H NMR spectroscopy as molar percentage of nitroalcohol **1** in the final reaction mixture after 4-5 h, taking into account the molar amount of the unreacted nitroketone **3**, and of the carboxylic acid obtained upon nitroketone hydrolysis; [3]enantiomeric excess calculated on the basis of HPLC analysis on a chiral stationary phase.

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