Reversal diastereoselectivity between the organomagnesium and organolithium reagents on chiral *N*-tert-butylsulfinylaldimines for the preparation of chiral amines

Chinnapillai Rajendiran^a, Periyandi Nagarajan^a, A.Naidu^b and P.K.Dubey^b

^a *Suven Life Sciences Ltd., R&D Center, Plot No.18, Phase-III, IDA, Jeedimetla, Hyderabad-500055, India. Ph.040-32921690, Fax.040-23193541.*

^b *Department of Chemistry, J.N.T. University, Hyderabad, A.P., India-500 085.*

I. General procedure for making *N*-tert-butylsulfinylaldimine(3a-3d)

To a stirred solution of aldehydes(**2a-2d**) and *S*(-)-tert-butanefulfonamide (1.1eq.) in THF at room temperature, was added titanium tetraethoxide (2.0eq.). The mixture was refluxed till the completion. Cooled the reaction mass and added saturated sodium chloride solution. Filtered the reaction mass through celite and the aqueous layer was extracted with ethyl acetate. The organic layer was concentrated and purified through column chromatography.

*S*_S-2-Methyl-propane-2-sulfinic acid [3-methyl-butyldiene]-amide(3a)

Prepared using Isoveraldehyde(**2a**). Yield : 77.7%. Light brown liquid; ¹H-NMR (CDCl₃): δ 8.00-8.02(t,1H,J=5.20Hz), 2.34-2.37(t,2H,J=6.00Hz), 1.98-2.05(m,1H), 1.15 (s,9H), 0.93-0.95(d,6H,J=6.40Hz); ¹³C-NMR(CDCl₃): δ 169.22, 56.36, 44.80, 26.02, 22.49, 22.41, 22.23(3C); IR (Neat, cm⁻¹) : 2958, 1622, 1460, 1364, 1168, 1086, 677, 586; MS (m/z) = 190.2 [M+H]⁺; SOR (c=1% in chloroform at 24°C) : +302.5°.

*S*_S-2-Methyl-propane-2-sulfinic acid propylideneamide(3b)

Prepared using *n*-propionaldehyde(**2b**). Yield : 80.5%. Light brown liquid; ¹H-NMR

(CDCl₃): δ 8.00-8.02(t,1H,J=3.6Hz), 2.42-2.48 (m,2H), 1.11(s,12H); ¹³C-NMR(CDCl₃): δ 170.07, 55.25, 29.33, 22.09(3C), 9.40; IR (Neat, cm⁻¹) : 2974, 2930, 2874, 1624, 1474, 1457, 1380, 1363, 1185, 1083, 894, 753, 678, 583, 569; MS (m/z) = 160.2 [M+H]⁺; SOR (c=1% in chloroform at 24°C) : +276.5°.

S_S-2-Methyl-propane-2-sulfinic acid [2-methylpropylidene]-amide(3c)

Prepared using Isobutyraldehyde(2c). Yield : 82.7%. Light brown liquid; ¹H-NMR (CDCl₃): δ 7.92-7.93(d,1H,J=4.35Hz), 2.63-2.68(m,1H), 1.07-1.16(m,15H); ¹³C-NMR (CDCl₃): δ 173.30, 56.21, 34.64, 22.08(3C), 18.70, 18.68; IR (Neat, cm⁻¹) :2969, 2931, 2873, 1622, 1473,1458, 1388, 1364, 1216, 1076, 755, 666, 589; MS (m/z) = 176.2 [M+H]⁺; SOR (c=1% in chloroform at 24°C) : +290.5°.

S_S-2-Methyl-propane-2-sulfinic acid butylideneamide(3d)

Prepared using *n*-butyraldehyde(2d). Yield : 78.7%. Light brown liquid; ¹H-NMR (CDCl₃): δ 8.02-8.04(t,1H,J=4.68Hz), 2.43-2.49(m,1H), 1.60-1.66(m,2H), 1.16(s,9H), 0.94-0.97(t,3H,J=7.43Hz); ¹³C-NMR (CDCl₃): δ 169.51, 56.33, 37.90, 22.19(3C), 18.79, 13.63; IR (Neat, cm⁻¹) :2963, 2874, 1624, 1474, 1458, 1364, 1216, 1185, 1076, 754, 666, 584; MS (m/z) = 176.2 [M+H]⁺; SOR (c=1% in chloroform at 24°C) : +271.1°.

II. General procedure for the reaction of Grignard reagent with *N*-tert-butyl sulfinylaldimines

Prepared the Grignard reagents from aromatic halides(4a-4n) (3.0eq.) using magnesium (3.05eq.) in THF. To a stirred solution of sulfinylaldimine(3a-3d) (1.0eq.) in THF at -5 to 5°C, was added the above prepared Grignard reagent. The mixture was stirred for 1.0 hr. and warmed to room temperature. The above reaction mass was quenched in to saturated ammonium chloride solution and stirred at room temperature. Separated the organic layer and the aqueous layer and extracted in dichloromethane. The organic

extracts were washed with water and concentrated. This sulfinylamines(**5**) is treated with IPA-HCl and stirred for 1.0 hr. After completion of reaction, concentrated the mass and stirred with Ethyl acetate and filtered as hydrochloride salt.

(S)-3-Methyl-1-(2-piperidin-1-yl-phenyl)-butylamine(6a**)^[1,2]**

Prepared from sulfinylaldimine(**3a**) and 1-(2-bromophenyl)piperidine (**4a**). Yield : 76.8%. Isolated as free base with light brown colour liquid. ¹H-NMR(CDCl₃): δ 7.33-7.35(d,1H,J=7.20Hz), 7.08-7.21(m,3H), 4.46-4.50(t,1H,J=6.80Hz), 2.80-2.86(m, 4H), 1.49-1.71(m,11H), 0.93-0.97(t,6H,J=6.40Hz); ¹³C-NMR (CDCl₃): δ 152.17, 142.74, 127.04, 126.27, 124.35, 120.89, 54.86, 48.55(2C), 47.58, 26.59(2C), 25.26, 24.21, 23.11, 22.35; IR (Neat, cm⁻¹) : 3060, 3026, 2932, 2865, 2799, 2739, 1740, 1596, 1487, 1466, 1449, 1380, 1220, 921, 754 ; MS (m/z) = 247.4 [M+H]⁺ ; SOR (c=1% in Methanol at 24°C) : +5.4°; Chiral HPLC : *R*-Isomer-10.29%, *S*-89.71%.

(S)-3-Methyl-1-(4-piperidin-1-yl-phenyl)-butylamine(6b**)**

Prepared from sulfinylaldimine(**3a**) and 1-(4-bromophenyl)piperidine (**4b**). Yield : 61.4%. Isolated as free base with light brown colour liquid; ¹H-NMR(CDCl₃): δ 7.17-7.19(d,2H,J=8.40Hz), 6.89-6.91(d,2H,J=8.40Hz), 3.85-3.88(t,1H,J=6.60Hz), 3.11-3.14(t,4H,J=5.20Hz), 2.04(br,2H), 1.68-1.84(m,4H), 1.42-1.60(m,5H), 0.88-0.91(dd,6H, J=4.69,9.39 Hz); ¹³C-NMR(CDCl₃): δ 151.13, 137.37, 126.77(2C), 116.45(2C), 53.29, 50.70(2C), 48.61, 25.81(2C), 25.00, 24.19, 22.67, 22.54; IR (KBr, cm⁻¹) : 3289, 2958, 1612, 1515, 1453, 1386, 1219, 1130, 919, 822, 756; MS (m/z) = 247.5 [M+H]⁺; SOR (c=1% in Methanol at 24°C) : +17.8°; Chiral HPLC : *R*-Isomer-6.66%, *S*-92.82%.

(S)-3-Methyl-1-phenyl-butylamine hydrochloride(6c**)^[3]**

Prepared from sulfinylaldimine(**3a**) and bromobenzene(**4c**). Yield : 47.4%. White solid; ¹H-NMR(DMSO-d₆): δ 8.52(br,s,3H), 7.51-7.53(d,2H,J=7.20Hz), 7.35-7.44(m,3H), 4.19-4.23(t,1H,J=7.60Hz), 1.72-1.80(m,2H), 1.23-1.30(m,1H), 0.80-0.87 (dd,6H,J=6.60,

21.40Hz); ^{13}C -NMR(DMSO- d_6): δ 138.35, 129.03(2C), 128.86, 127.95 (2C), 53.27, 43.49, 24.35, 23.29, 21.73; IR (KBr, cm^{-1}) : 2894, 1607, 1600, 1516, 1395, 768, 699 ; MS (m/z) = 164.2 $[\text{M}+\text{H}]^+$, 147.1 $[\text{M}-\text{NH}_2]^+$; SOR ($c=1\%$ in Methanol at 24°C) : $+20.4^\circ$; Chiral HPLC : *R*-Isomer-8.44%, *S*-91.56%.

(*S*)-1-(2-Chlorophenyl)-3-methyl-butylamine hydrochloride(6d) ^[4]

Prepared from sulfinylaldimine(**3a**) and 1-bromo-2-chlorobenzene(**4d**). Yield : 62.6%. White solid; ^1H -NMR(DMSO- d_6): δ 8.78(br,s,3H), 7.81-7.83(dd,1H, $J=1.0,7.80\text{Hz}$), 7.51-7.52(d,1H, $J=7.56\text{Hz}$), 7.39-7.47(m,2H), 4.60-4.64(t,1H, $J=7.20\text{Hz}$), 1.84-1.89(m, 1H), 1.70-1.74(m,1H), 1.43-1.46(m,1H), 0.84-0.89(q,6H, $J=6.80,11.20\text{Hz}$); ^{13}C -NMR (DMSO- d_6): δ 136.13, 132.78, 130.49, 129.93, 128.76, 128.33, 49.12, 43.54, 24.35, 22.79, 22.45; IR (KBr, cm^{-1}) : 2962, 2934, 1602, 1529, 1481, 1439, 1050, 1037, 752; MS (m/z) = 198.2 $[\text{M}+\text{H}]^+$; MR : $178.4-180.2^\circ\text{C}$; SOR ($c=1\%$ in Methanol at 24°C) : $+15.3^\circ$; Chiral HPLC : *R*-Isomer-19.17%, *S*-80.83%.

(*S*)-1-(3-Chlorophenyl)-3-methyl-butylamine hydrochloride(6e)

Prepared from sulfinylaldimine(**3a**) and 1-bromo-3-chlorobenzene(**4e**). Yield : 53.9%. White solid; ^1H -NMR (DMSO- d_6): δ 8.60(s,3H), 7.68(s,1H), 7.44-7.51 (m,3H), 4.25-4.29(t,1H, $J=7.60\text{Hz}$), 1.70-1.80(m,2H), 1.25-1.31(m,1H), 0.81-0.87(dd, 6H, $J=6.60, 19.40\text{Hz}$) ; ^{13}C -NMR (DMSO- d_6): δ 140.84, 133.63, 130.94, 128.83, 128.00, 126.81, 52.65, 43.30, 24.35, 23.21, 21.79 ; IR (KBr, cm^{-1}) : 2890, 2031, 1602, 1575, 1516, 1441, 1388, 1370, 1209, 1095, 1083, 896, 809, 789, 699 ; MS (m/z) = 198.2 $[\text{M}+\text{H}]^+$; SOR ($c=1\%$ in Methanol at 24°C) : $+17.0^\circ$; Chiral HPLC : *R*-Isomer-10.67%, *S*-85.94%.

(*S*)-1-(4-Chlorophenyl)-3-methyl-butylamine hydrochloride(6f) ^[4]

Prepared from sulfinylaldimine(**3a**) and 1-bromo-4-chlorobenzene(**4f**). Yield : 70.0%. White solid; ^1H -NMR(DMSO- d_6): δ 8.59(br,s,3H), 7.56-7.58(d,2H, $J=8.40\text{Hz}$), 7.48-7.50(d,2H, $J=8.80\text{Hz}$), 4.23-4.27(t,1H, $J=7.40\text{Hz}$), 1.71-1.78(m,2H), 1.22-1.29(m,1H),

0.80-0.86(dd,6H,J=6.40,18.0Hz); ^{13}C -NMR(DMSO- d_6): δ 137.32, 133.48, 130.04(2C), 128.98(2C), 52.54, 43.26, 24.34, 23.28, 21.69; IR (KBr, cm^{-1}) : 2960, 2912, 1598, 1513, 1096, 831, 552; MS (m/z) = 198.2 $[\text{M}+\text{H}]^+$, 181.3 $[\text{M}-\text{NH}_2]^+$; SOR (c=1% in Methanol at 24°C) : +6.0°; Chiral HPLC : *R*-Isomer-7.69%, *S*-92.31%.

(*S*)-3-Methyl-1-o-tolyl-butylamine hydrochloride(6g) ^[4]

Prepared from sulfinylaldimine(**3a**) and 2-bromotoluene(**4g**). Yield : 53.1%. White solid; ^1H -NMR(DMSO- d_6): δ 8.55(br,s,3H), 7.58-7.60(d,1H,J=7.20Hz), 7.22- 7.30(m, 3H), 4.37-4.41(t,1H,J=6.80Hz), 2.35(s,3H), 1.81-1.88(m,1H), 1.65-1.72(m,1H), 1.42-1.47(m,1H), 0.83-0.85(d,6H,J=6.80Hz); ^{13}C -NMR(DMSO- d_6): δ 136.89, 136.04, 130.86, 128.46, 136.86, 126.62, 48.58, 43.52, 24.35, 22.83, 22.54, 19.40; IR (KBr, cm^{-1}) : 2956, 2925, 1599, 1516, 1388, 821, 560 ; MS (m/z) = 178.2 $[\text{M}+\text{H}]^+$, 161.2 $[\text{M}-\text{NH}_2]^+$; SOR (c=1% in Methanol at 24°C) : +16.9°; Chiral HPLC : *R*-Isomer -14.84%, *S*-85.16%.

(*S*)-3-Methyl-1-m-tolyl-butylamine hydrochloride (6h) ^[4]

Prepared from sulfinylaldimine(**3a**) and 3-bromotoluene(**4h**). Yield : 73.8%. White solid; ^1H -NMR(DMSO- d_6): δ 8.58(br,s,3H), 7.27-7.35(m,3H), 7.16-7.18(d,1H,J=7.20 Hz), 4.14(br,1H), 2.31(s,3H), 1.70-1.81(m,2H), 1.24-1.31(m,1H), 0.79-0.86(dd,6H, J=6.40,20.80Hz); ^{13}C -NMR(DMSO- d_6): δ 138.34, 138.14, 129.40, 128.92, 128.54, 124.97, 53.29, 43.47, 24.32, 23.32, 21.74, 21.37; IR (KBr, cm^{-1}) : 2955, 2915, 1611, 1602, 1517, 1469, 1389, 787, 704; MS (m/z) = 178.3 $[\text{M}+\text{H}]^+$, 161.3 $[\text{M}-\text{NH}_2]^+$; SOR (c=1% in Methanol at 24°C) : +5.5°; Chiral HPLC : *R*-Isomer-6.33%, *S*-93.67%.

(*S*)-3-Methyl-1-p-tolyl-butylamine hydrochloride(6i) ^[4]

Prepared from sulfinylaldimine(**3a**) and 4-bromotoluene(**4i**). Yield : 65.0%. White solid; ^1H -NMR(DMSO- d_6): δ 8.48(br,s,3H), 7.38-7.40(d,2H, J=7.60Hz), 7.20-7.22 (d,2H,J=7.60Hz), 4.13-4.17(t,1H,J=7.60Hz), 2.30(s,3H), 1.72-1.76 (t,2H,J=7.40Hz),

1.21-1.26(m,1H), 0.79-0.85(dd,6H,J=6.40,19.20Hz); ^{13}C -NMR (DMSO- d_6): δ 138.24, 135.22, 129.57(2C), 127.83(2C), 52.99, 43.38, 24.37, 23.32, 21.66, 21.06; IR (KBr, cm^{-1}) : 2956, 2911, 1599, 1516, 1388, 821, 560; MS (m/z) = 178.2 $[\text{M}+\text{H}]^+$, 161.2 $[\text{M}-\text{NH}_2]^+$; SOR (c=1% in Methanol at 24°C) : +5.7°; Chiral HPLC : *R*-Isomer-13.00%, *S*-87.00%.

(*S*)-1-(3-Methoxyphenyl)-3-methyl-butylamine hydrochloride(6j)

Prepared from sulfinylaldimine(**3a**) and 3-bromoanisole(**4j**). Yield : 70.0%. White solid; ^1H -NMR(DMSO- d_6): δ 8.58(br, s, 3H), 7.31-7.33(t,1H,J=7.34Hz), 7.19(s,1H), 7.06-7.08(d,1H,J=7.80Hz), 6.91-6.94(dd,1H,J=2.0,8.40Hz), 4.15-4.19(t,1H,J=7.60Hz), 3.76(s,3H), 1.72-1.80(m,2H), 1.26-1.32(m,1H), 0.80-0.87(dd,6H,J=6.60,22.60Hz); ^{13}C -NMR(DMSO- d_6): δ 159.80, 139.93, 130.07, 120.10, 114.21, 113.61, 55.57, 53.29, 43.48, 24.35, 23.31, 21.76; IR (KBr, cm^{-1}) : 2957, 2932, 1606, 1515, 1493, 1468, 1263, 1040, 791, 701; MS (m/z) = 194.3 $[\text{M}+\text{H}]^+$, 177.3 $[\text{M}-\text{NH}_2]^+$; MR : 269.1-270.3°C; SOR (c=1% in Methanol at 24°C) : +21.8°; Chiral HPLC : *R*-Isomer-1.88%, *S*-98.12%.

(*S*)-1-(4-Methoxyphenyl)-3-methyl-butylamine hydrochloride(6k)^[4]

Prepared from sulfinylaldimine(**3a**) and 4-bromoanisole(**4k**). Yield : 68.6%. White solid; ^1H -NMR(DMSO- d_6): δ 8.38(br,s,3H), 7.42-7.44(d,2H,J=8.40Hz), 6.96-6.97(d,2H,J=8.40Hz), 4.14-4.18(t,1H,J=7.60Hz), 3.75(s,3H), 1.72-1.77(m,2H), 1.21-1.28(m, 1H), 0.79-0.85(dd,6H,J=6.40,16.0Hz); ^{13}C -NMR(DMSO- d_6): δ 159.64, 130.06, 129.31 (2C), 114.34(2C), 55.50, 52.74, 43.31, 24.39, 23.37, 21.60; IR (KBr, cm^{-1}) : 2958, 2911, 2869, 1613, 1601, 1515, 1466, 1303, 1252, 1181, 1031, 830; MS (m/z) = 177.4 $[\text{M}-\text{NH}_2]^+$; MR : 258.3-259.5°C; SOR (c=1% in Methanol at 24°C) : +14.8°; Chiral HPLC : *R*-Isomer-0.95%, *S*-99.05%.

(*S*)-3-Methyl-1-(4'-methyl-biphenyl-2-yl)-butylamine hydrochloride (6l)

Prepared 2-iodo-4'-methyl-biphenyl(**4l**) as per literature^[8]. Grignard reagent obtained by

the exchange reaction with isopropylmagnesium bromide in THF solvent and followed by general procedure. Yield : 44.8%. White solid; $^1\text{H-NMR}$ (DMSO- d_6): δ 8.62(br,s,3H), 7.78-7.80(d,1H,J=7.60Hz), 7.47-7.51(t,1H,J=7.60Hz), 7.40-7.43(t,1H,J=7.20Hz), 7.22- 7.28(m,5H), 4.19-4.23(t,1H,J= 7.20Hz), 2.36(s,3H), 1.63-1.73(m,2H), 1.18-1.21(m,1H), 0.60-0.62(d,3H,J=6.40Hz), 0.46-0.47(d,3H,J=6.40Hz); $^{13}\text{C-NMR}$ (DMSO- d_6): δ 141.85, 137.27, 137.06, 136.24, 130.37, 129.52(2C), 129.32(2C), 128.55, 128.45, 126.85, 49.23, 44.76, 24.14, 22.74, 22.00, 21.07; IR (KBr, cm^{-1}) : 2955, 2920, 2868, 1591, 1514, 820, 761; MS (m/z) = 254.4 $[\text{M}+\text{H}]^+$, 237.1 $[\text{M}-\text{NH}_2]^+$; MR : 194.1-196.1°C; SOR ($c=1\%$ in Methanol at 24°C) : +4.1°; Chiral HPLC : *R*-Isomer-38.72%, *S*-61.28%.

[4-((*S*)-1-Amino-3-methyl-butyl)-phenyl]-dimethylamine(6m)

Prepared from sulfinylaldimine(**3a**) and (2-bromophenyl)dimethyl amine(**4m**). Yield : 61.9%. Isolated as free base with light brown colour liquid; $^1\text{H-NMR}$ (CDCl_3): δ 7.34-7.35(d,1H,J=7.20Hz), 7.08-7.22(m,3H), 4.51-4.54(t,1H,J=6.80Hz), 2.68(s,6H), 1.52-1.63(m,3H), 0.92-0.95(t,6H,J=6.20Hz); $^{13}\text{C-NMR}$ (CDCl_3): δ 152.12, 142.41, 127.10, 126.42, 124.25, 120.25, 48.39, 47.38, 45.82(2C), 25.32, 23.04, 22.30; IR (Neat, cm^{-1}) : 3019, 2956, 1596, 1578, 1489, 1452, 1215, 1047, 945, 757, 669; MS (m/z) = 207.3 $[\text{M}+\text{H}]^+$, 190.2 $[\text{M}-\text{NH}_2]^+$; SOR ($c=1\%$ in Methanol at 24°C) : +18.5°; Chiral HPLC : *R*-Isomer -13.76%, *S*-86.24%.

[4-((*S*)-1-Amino-3-methyl-butyl)-phenyl]-dimethylamine(6n)

Prepared from sulfinylaldimine(**3a**) and (4-bromophenyl)dimethyl amine(**4n**). Yield : 72.7%. Isolated as free base with light brown colour liquid; $^1\text{H-NMR}$ (CDCl_3): δ 7.18-7.20(d,2H,J=8.40Hz), 6.71-6.73(d,2H,J=8.80Hz), 3.86-3.89(t,1H,J=6.80Hz), 2.93 (s,6H), 1.86(s,2H), 1.50-1.58(br,3H), 0.89-0.92(q,6H,J=5.80,8.60Hz); $^{13}\text{C-NMR}$ (CDCl_3): δ 149.62, 134.81, 126.91(2C), 112.65(2C), 53.26, 48.64, 40.66(2C), 25.05,

22.64, 22.58; IR (Neat, cm^{-1}) : 2956, 1616, 1522, 1466, 1349, 1216, 1163, 1060, 946, 818, 756, 666; MS (m/z) = 190.2 $[\text{M}-\text{NH}_2]^+$; SOR ($c=1\%$ in Methanol at 24°C) : $+14.3^\circ$; Chiral HPLC : *R*-Isomer -3.05%, *S*-96.95%.

(*S*)-1-(2-piperidin-1-yl-phenyl)-propylamine(6o)

Prepared from sulfinylaldimine(**3b**) and 1-(2-bromophenyl)piperidine(**4a**). Yield : 62.1%. Isolated as free base with brown colour liquid; $^1\text{H-NMR}(\text{CDCl}_3)$: δ 7.30-7.32(d,1H, $J=7.43\text{Hz}$), 7.09-7.22(m,3H), 4.22-4.26(t,1H, $J=6.88\text{Hz}$), 2.80-2.83(m, 4H), 1.56-1.79(m,9H), 0.90-0.94(t,6H, $J=7.34\text{Hz}$); $^{13}\text{C-NMR}(\text{CDCl}_3)$: δ 152.47, 142.27, 127.10, 126.27, 124.37, 121.18, 54.86(2C), 51.97, 31.55, 26.64(2C), 24.19, 11.48; IR (Neat, cm^{-1}) : 2933, 2801, 1642, 1599, 1539, 1490, 1450, 1380, 1220, 1113, 1027, 923, 751, 536; MS (m/z) = 219.2 $[\text{M}+\text{H}]^+$; SOR ($c=1\%$ in Methanol at 24°C) : $+5.1^\circ$; Chiral HPLC : *R*-Isomer-1.30%, *S*-98.70%.

(*S*)-1-Phenylpropylamine hydrochloride(6p) ^[3,5,7]

Prepared from sulfinylaldimine(**3b**) and bromobenzene(**4c**). Yield : 72.3%. White solid; $^1\text{H-NMR}(\text{DMSO}-d_6)$: δ 8.48(br,3H), 7.35-7.49(m,5H), 4.08-4.12(dd,1H, $J=5.68,8.77\text{Hz}$), 1.94-2.00(m,1H), 1.75-1.83(m,1H), 0.72-0.76(t,3H, $J=7.32\text{Hz}$); $^{13}\text{C-NMR}(\text{DMSO}-d_6)$: δ 138.10, 128.97(2C), 128.76, 127.83(2C), 56.14, 27.81, 10.35; IR (KBr, cm^{-1}) : 2965, 2928, 1598, 1509, 1458, 1386, 701; MS (m/z) = 136.2 $[\text{M}+\text{H}]^+$, 119.1 $[\text{M}-\text{NH}_2]^+$; SOR ($c=1\%$ in Methanol at 24°C) : $+15.7^\circ$; MR : $245.0-249.1^\circ\text{C}$; Chiral HPLC : *R*-Isomer-Nil%, *S*-100.0%.

(*S*)-1-o-Tolylpropylamine hydrochloride(6q)

Prepared from sulfinylaldimine(**3b**) and 2-bromotoluene(**4g**). Yield : 76.4%. White solid; $^1\text{H-NMR}(\text{DMSO}-d_6)$: δ 8.66(br,3H), 7.55-7.57(d,1H, $J=7.36\text{Hz}$), 7.18-7.29(m,3H), 4.30 (br,1H), 2.33(s,3H), 1.94-2.04(m,1H), 1.75-1.86(m,1H), 0.75-0.78(t,3H, $J=7.34\text{Hz}$); $^{13}\text{C-NMR}(\text{DMSO}-d_6)$: δ 136.53, 136.44, 136.41, 130.76, 128.41, 126.83, 126.33, 51.53,

27.68, 19.53, 10.17; IR (KBr, cm^{-1}) : 2968, 2929, 1597, 1518, 1461, 760, 728; MS (m/z) = 150.1 $[\text{M}+\text{H}]^+$; 247.4 $[\text{M}+\text{H}]^+$; SOR ($c=1\%$ in Methanol at 24°C) : $+15.3^\circ$; MR : 225.4-230.4 $^\circ\text{C}$; Chiral HPLC : *R*-Isomer-4.85%, *S*-95.15%.

(S)-1-p-Tolylpropylamine hydrochloride(6r)

Prepared from sulfinylaldimine(**3b**) and 4-bromotoluene(**4i**). Yield : 75.0%. White solid; $^1\text{H-NMR}$ (DMSO- d_6): δ 8.70(br,3H), 7.38-7.40(d,2H, $J=7.8\text{Hz}$), 7.18-7.20(d,2H, $J=7.8\text{Hz}$), 4.00-4.01(br,1H), 2.28(s,3H), 1.96-2.03(m,1H), 1.77-1.80(m,1H), 0.68-0.72(t,3H, $J=7.36\text{Hz}$); $^{13}\text{C-NMR}$ (DMSO- d_6): δ 137.95, 135.08, 129.42(2C), 127.82(2C), 55.96, 27.73, 21.05, 10.37; IR (KBr, cm^{-1}) : 2969, 2917, 1605, 1518, 1458, 1386,819, 559 ; MS (m/z) = 150.1 $[\text{M}+\text{H}]^+$; SOR ($c=1\%$ in Methanol at 24°C) : $+11.2^\circ$; MR : 218.0-220.5 $^\circ\text{C}$; Chiral HPLC : *R*-Isomer-10.94%, *S*-89.06%.

(S)-2-Methyl-1-(2-piperidin-1-yl-phenyl)-propylamine(6s)

Prepared from sulfinylaldimine(**3c**) and 1-(2-bromophenyl)piperidine (**4a**). Yield : 57.6%. Isolated as free base with light brown colour liquid; $^1\text{H-NMR}$ (CDCl_3): δ 7.09-7.32(m,5H), 4.21-4.23(d,1H, $J=8.56\text{Hz}$), 2.77-2.86(m,4H), 2.11-2.13(m,1H), 1.58-1.70(m,6H), 1.15-1.17(d,3H, $J=6.56\text{Hz}$), 0.77-0.78(d,3H, $J=6.68\text{Hz}$); $^{13}\text{C-NMR}$ (CDCl_3): δ 152.50, 133.53, 128.84, 128.46, 125.31, 122.57, 57.83, 33.13(2C), 26.62, 26.39(2C), 23.92, 19.60, 19.35; IR (Neat, cm^{-1}) : 3019, 2400, 1519, 1423, 1215, 928, 758, 669; MS (m/z) = 233.3 $[\text{M}+\text{H}]^+$; SOR ($c=1\%$ in Methanol at 24°C) : $+2.7^\circ$; Chiral HPLC : *R*-Isomer-39.57%, *S*-60.43%.

(S)-2-Methyl-1-Phenylpropylamine hydrochloride(6t) ^[3]

Prepared from sulfinylaldimine(**3c**) and bromobenzene(**4c**). Yield : 81.7%. White solid; $^1\text{H-NMR}$ (DMSO- d_6): δ 8.64(br,3H), 7.34-7.48(m,5H), 3.91-3.93(d,1H, $J=8.04\text{Hz}$), 2.12-2.21(m,1H), 1.00-1.01(d,3H, $J=6.60\text{Hz}$), 0.67-0.69(d,3H, $J=6.72\text{Hz}$); $^{13}\text{C-NMR}$ (DMSO- d_6): δ 137.58, 128.74(2C), 128.58, 128.16(2C), 60.63, 32.36, 19.83, 18.78; IR

(KBr, cm^{-1}) : 3029, 2968, 2870, 1600, 1576, 1513, 1389, 1160, 993, 703; MS (m/z) = 150.1 $[\text{M}+\text{H}]^+$; SOR ($c=1\%$ in Methanol at 24°C) : $+3.6^\circ$; Chiral HPLC : *R*-Isomer- $\text{Nil}\%$, *S*-100.0%.

(S)-2-Methyl-1-o-Tolylpropylamine hydrochloride(6u)

Prepared from sulfinylaldimine(**3c**) and 2-bromotoluene(**4g**). Yield : 73.8%. White solid; ^1H -NMR(DMSO- d_6): δ 8.50(br,3H), 7.56-7.58(d,1H, $J=7.04\text{Hz}$), 7.23-7.29(m, 3H), 4.07-4.09(d,1H, $J=7.64\text{Hz}$), 2.32(s,3H), 2.13-2.25(m,1H), 1.07-1.09(d,3H, $J=6.52\text{Hz}$), 0.69-0.70(d,3H, $J=6.80\text{Hz}$); ^{13}C -NMR (DMSO- d_6): δ 136.76, 136.40, 130.68, 128.27, 126.92, 126.72, 56.05, 32.90, 19.86, 19.72, 19.06; IR (KBr, cm^{-1}) : 3028, 2967, 2913, 1597, 1517, 1470, 1395, 761, 726; MS (m/z) = 163.1 $[\text{M}+\text{H}]^+$; SOR ($c=1\%$ in Methanol at 24°C) : $+8.3^\circ$; MR : $234.5\text{-}238.4^\circ\text{C}$; Chiral HPLC : *R*-Isomer-3.23%, *S*-96.77%.

(S)-2-Methyl-1-p-Tolylpropylamine hydrochloride(6v)

Prepared from sulfinylaldimine(**3c**) and 4-bromotoluene(**4i**). Yield : 80.3%. White solid; ^1H -NMR(DMSO- d_6): δ 8.49(br,3H), 7.31-7.33(d,2H, $J=7.96\text{Hz}$), 7.20-7.22(d,2H, $J=7.84\text{Hz}$), 3.88(s,1H), 2.30(s,3H), 2.07-2.16(m,1H), 0.98-1.00(d,3H, $J=6.60\text{Hz}$), 0.67-0.69(d,3H, $J=6.68\text{Hz}$); ^{13}C -NMR (DMSO- d_6): δ 137.80, 134.52, 129.24(2C), 128.07 (2C), 60.41, 32.31, 21.05, 19.87, 18.73; IR (KBr, cm^{-1}) : 3034, 2963, 2917, 1603, 1517, 1394, 822; MS (m/z) = 164.1 $[\text{M}+\text{H}]^+$; SOR ($c=1\%$ in Methanol at 24°C) : $+3.5^\circ$; Chiral HPLC : *R*-Isomer-15.84%, *S*-84.16%.

(S)-1-(2-piperidin-1-yl-phenyl)-butylamine(6w)

Prepared from sulfinylaldimine(**3d**) and 1-(2-bromophenyl)piperidine (**4a**). Yield : 58.7%. Isolated as free base with light brown colour liquid; ^1H -NMR(CDCl_3): δ 7.32-7.34(d,1H, $J=7.48\text{Hz}$), 7.08-7.29(m,2H), 4.49-4.53(t,1H, $J=7.36\text{Hz}$), 2.83(br,4H), 1.22-1.99(m,10H), 0.90-0.93 (t,3H, $J=7.32\text{Hz}$); ^{13}C -NMR (CDCl_3): δ 152.46, 135.18,

128.66, 127.84, 125.27, 122.31, 54.99, 51.24, 37.74(2C), 26.41(2C), 23.94, 19.24, 13.69; IR (Neat, cm^{-1}) : 2956, 2934, 272, 2799, 1598, 1577, 1517, 1492, 1451, 1382, 1224, 1035, 918, 763, 746; MS (m/z) = 233.3 $[\text{M}+\text{H}]^+$; SOR ($c=1\%$ in Methanol at 24°C) : $+5.8^\circ$; Chiral HPLC : *R*-Isomer-1.54%, *S*-98.46%.

(*S*)-1-Phenylbutylamine hydrochloride(6x) ^[3]

Prepared from sulfinylaldimine(**3d**) and bromobenzene(**4c**). Yield : 87.8%. White solid; $^1\text{H-NMR}$ (DMSO- d_6): δ 8.69(br,3H), 7.51-7.53(d,2H, $J=7.04\text{Hz}$), 7.33-7.42(m,3H), 4.13-4.16(dd,1H, $J=5.5,9.04\text{Hz}$), 1.76-1.96(m,2H), 1.04-1.19(m,2H), 0.79-0.83(t,3H, $J=7.27\text{Hz}$); $^{13}\text{C-NMR}$ (DMSO- d_6): δ 138.40, 128.96(2C), 128.73, 127.83(2C), 54.61, 36.69, 18.73, 13.79; IR (KBr, cm^{-1}) : 2963, 2935, 1601, 1517, 1498, 1458, 1394, 764, 701; MS (m/z) = 150.1 $[\text{M}+\text{H}]^+$; SOR ($c=1\%$ in Methanol at 24°C) : $+14.6^\circ$; Chiral HPLC : *R*-Isomer-0.98%, *S*-99.02%.

(*S*)-1-o-Tolylbutylamine hydrochloride(6y)

Prepared from sulfinylaldimine(**3d**) and 2-bromotoluene(**4g**). Yield : 79.3%. White solid; $^1\text{H-NMR}$ (DMSO- d_6): δ 8.62(br,3H), 7.61-7.63(d,1H, $J=7.3\text{Hz}$), 7.22-7.28(m,3H), 4.33-4.37(t,1H, $J=7.10\text{Hz}$), 2.33(s,3H), 1.76-1.97(m,2H), 1.07-1.26(m,2H), 0.80-0.84(t, 3H, $J=7.23\text{Hz}$); $^{13}\text{C-NMR}$ (DMSO- d_6): δ 136.85, 136.22, 130.75, 128.39, 126.83, 126.44, 50.04, 36.69, 19.47, 18.58, 13.95; IR (KBr, cm^{-1}) : 2956, 2916, 2872, 1598, 1509, 1463, 760, 754; MS (m/z) = 164.1 $[\text{M}+\text{H}]^+$; SOR ($c=1\%$ in Methanol at 24°C) : $+10.0^\circ$; MR : 209.3-213.6 $^\circ\text{C}$; Chiral HPLC : *R*-Isomer-Nil%, *S*-100.0%.

(*S*)-1-p-Tolylbutylamine hydrochloride(6z)

Prepared from sulfinylaldimine(**3d**) and 4-bromotoluene(**4i**). Yield : 76.0%. White solid; $^1\text{H-NMR}$ (DMSO- d_6): δ 8.58(br,3H), 7.37-7.39(d,2H, $J=7.88\text{Hz}$), 7.19-7.21(d,2H, $J=7.71\text{Hz}$), 4.08-4.12(dd,1H, $J=5.33,9.15\text{Hz}$), 2.29(s,3H), 1.74-1.95(m,2H), 1.03-1.17 (m,2H), 0.79-83(t,3H, $J=7.29\text{Hz}$); $^{13}\text{C-NMR}$ (DMSO- d_6): δ 137.96, 135.35, 129.43(2C),

127.80(2C), 54.40, 36.62, 21.05, 18.74, 13.78; IR (KBr, cm^{-1}) : 2960, 2935, 2039, 1601, 1520, 1465, 1457, 1382, 817, 558; MS (m/z) = 164.1 $[\text{M}+\text{H}]^+$; SOR (c=1% in Methanol at 24°C) : +12.4°; MR : 260.8-262.3°C; Chiral HPLC : *R*-Isomer-3.71%, *S*-96.29%.

III. General procedure for the reaction of Organolithium reagents with *N*-tert-butyl sulfinylaldimines

To a stirred solution of aromatic halides (**4a-4n**) (2.0eq.) in THF at -40 to -50°C was added slowly *n*-butyllithium in hexanes (1.6M, 2eq.). Stirred the mass for 1.0hr. at -40 to -50°C. Added slowly of sulfinylaldimine (**3a-3d**) at 40 to -50°C and stirred for 1-2 hr. The reaction mass was quenched by adding saturated ammonium chloride solution and warmed to room temperature. Extracted in toluene and the organic extracts were washed with water and concentrated. This sulfinylamines(**7**) is treated with IPA-HCl and stirred for 1.0 hr. After completion of reaction, concentrated the mass and stirred with Ethyl acetate and filtered as hydrochloride salt

(*R*)-3-Methyl-1-(2-piperidin-1-yl-phenyl)-butylamine (**8a**)

Prepared from sulfinylaldimine(**3a**) and 1-(2-bromophenyl)piperidine (**4a**). Yield : 69.2%; Isolated as free base with light brown colour liquid $^1\text{H-NMR}$, $^{13}\text{C-NMR}$, IR, MS were similar to **6a**. SOR (c=1% in Methanol at 24°C) : -2.5°; Chiral HPLC : *R*-Isomer-67.38%, *S*-32.62%.

(*R*)-3-Methyl-1-(4-piperidin-1-yl-phenyl)-butylamine(**8b**)

Prepared from sulfinylaldimine(**3a**) and 1-(4-bromophenyl)-piperidine (**4b**). Yield : 65.3% Isolated as free base with light brown colour liquid; $^1\text{H-NMR}$, $^{13}\text{C-NMR}$, IR, MS were similar to **6b**; SOR (c=1% in Methanol at 24°C) : -10.1°; Chiral HPLC : *R*-Isomer-82.13%, *S*-17.87%.

(*R*)-3-Methyl-1-phenyl-butylamine hydrochloride(**8c**)^[6]

Prepared from sulfinylaldimine(**3a**) and bromobenzene(**4c**). Yield : 58.7% ; White solid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6c**; SOR (c=1% in Methanol at 24°C) : -10.4°; Chiral HPLC : *R*-Isomer-66.87%, *S*-33.13%.

(*R*)-1-(2-Chlorophenyl)-3-methyl-butylamine hydrochloride(8d**)**

Prepared from sulfinylaldimine(**3a**) and 1-bromo-2-chlorobenzene(**4d**). Yield : 64.7% ; White solid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6d**; MR : 178.5-180.1°C; SOR (c=1% in Methanol at 24°C) : -2.4°; Chiral HPLC : *R*-Isomer-54.98%, *S*-45.02%.

(*R*)-1-(3-Chlorophenyl)-3-methyl-butylamine hydrochloride(8e**)**

Prepared from sulfinylaldimine(**3a**) and 1-bromo-3-chlorobenzene(**4e**). Yield : 56.6%; White solid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6e**; SOR (c=1% in Methanol at 24°C) : -8.5°; Chiral HPLC : *R*-Isomer-71.70%, *S*-28.30%.

(*R*)-1-(4-Chlorophenyl)-3-methyl-butylamine hydrochloride(8f**)**

Prepared from sulfinylaldimine(**3a**) and 1-bromo-4-chlorobenzene(**4f**). Yield : 61.9%; White solid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6f**; SOR (c=1% in Methanol at 24°C) : -7.9°; Chiral HPLC : *R*-Isomer-68.38%, *S*-31.62%.

(*R*)-3-Methyl-1-o-tolyl-butylamine hydrochloride(8g**)**

Prepared from Sulfinylaldimine(**3a**) and 2-bromotoluene(**4g**). Yield : 47.8%; White solid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6g**; MR : 253.8-255.2°C; SOR (c=1% in Methanol at 24°C) : -1.1°; Chiral HPLC : *R*-Isomer-54.25%, *S*-45.75%.

(*R*)-3-Methyl-1-m-tolyl-butylamine hydrochloride(8h**)**

Prepared from sulfinylaldimine(**3a**) and 3-bromotoluene(**4h**). Yield : 79.7%; White solid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6h**; SOR (c=1% in Methanol at 24°C) : -2.1°; Chiral HPLC : *R*-Isomer-72.89%, *S*-27.11%.

(*R*)-3-Methyl-1-p-tolyl-butylamine hydrochloride(8i**)**

Prepared from sulfinylaldimine(**3a**) and 4-bromotoluene(**4i**). Yield : 59.0%; White solid;

¹H-NMR, ¹³C-NMR, IR, MS were similar to **6i**; SOR (c=1% in Methanol at 24°C) : -8.3°; Chiral HPLC : *R*-Isomer-72.21%, *S*-27.79%.

(*R*)-1-(3-Methoxyphenyl)-3-methyl-butylamine hydrochloride(8j)

Prepared from sulfinylaldimine(**3a**) and 3-bromoanisole(**4j**). Yield : 57.7%; White solid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6j**; MR : 271.5- 273.2°C; SOR (c=1% in Methanol at 24°C) : -8.9°; Chiral HPLC : *R*-Isomer-73.85%, *S*-26.15%.

(*R*)-1-(4-Methoxyphenyl)-3-methyl-butylamine hydrochloride(8k)

Prepared from sulfinylaldimine(**3a**) and 4-bromoanisole (**4k**). Yield : 60.4%; White solid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6k**; MR : 257.2-260.2°C; SOR (c=1% in Methanol at 24°C) : -5.8°; Chiral HPLC : *R*-Isomer-82.66%, *S*-17.34%..

(*R*)-3-Methyl-1-(4'-methyl-biphenyl-2-yl)-butylamine hydrochloride(8l)

Prepared from sulfinylaldimine(**3a**) and 2-iodo-4'-methyl-biphenyl(**4l**). Yield : 38.4%; White solid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6l**; MR : 194.6-196.9°C; SOR (c=1% in Methanol at 24°C) : -3.1°; Chiral HPLC : *R*-Isomer-62.48%, *S*-37.42%.

[2-((*R*)-1-Amino-3-methyl-butyl)-phenyl]-dimethylamine (8m)

Prepared from sulfinylaldimine(**3a**) and 1-(2-bromophenyl)dimethyl amine(**4m**). Yield : 66.1%. Isolated as free base with light brown colour liquid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6m**; SOR (c=1% in Methanol at 24°C) : -8.2°; Chiral HPLC : *R*-Isomer-59.54%, *S*-40.46%.

[4-((*R*)-1-Amino-3-methyl-butyl)-phenyl]-dimethylamine(8n)

Prepared from Sulfinylaldimine(**3a**) and 1-(4-Bromophenyl)dimethyl amine(**4n**). Yield : 75.9%. Isolated as free base with light brown colour liquid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6n**; SOR (c=1% in Methanol at 24°C) : -9.3°; Chiral HPLC : *R*-Isomer-85.95%, *S*-14.05%.

(*R*)-1-(2-piperidin-1-yl-phenyl)-propylamine(8o)

Prepared from sulfinylaldimine(**3b**) and 1-(2-bromophenyl)piperidine (**4a**). Yield : 65.7%. Isolated as free base with light brown colour liquid; $^1\text{H-NMR}$, $^{13}\text{C-NMR}$, IR, MS were similar to **6o**; SOR (c=1% in Methanol at 24°C) : -1.2°; Chiral HPLC : *R*-Isomer-54.86%, *S*-45.14%.

(R)-1-Phenylpropylamine hydrochloride(8p)

Prepared from sulfinylaldimine(**3b**) and bromobenzene(**4c**). Yield : 88.6%. White solid; $^1\text{H-NMR}$, $^{13}\text{C-NMR}$, IR, MS were similar to **6p**; SOR (c=1% in Methanol at 24°C) : -15.3°; Chiral HPLC : *R*-Isomer-100.0%, *S*-Nil%.

(R)-1-o-Tolylpropylamine hydrochloride(8q)

Prepared from Sulfinylaldimine(**3b**) and 2-bromotoluene(**4g**). Yield : 82.3%. White solid; $^1\text{H-NMR}$, $^{13}\text{C-NMR}$, IR, MS were similar to **6q**; SOR (c=1% in Methanol at 24°C) : -13.7°; Chiral HPLC : *R*-Isomer-95.11%, *S*-4.89%.

(R)-1-p-Tolylpropylamine hydrochloride(8r)

Prepared from sulfinylaldimine(**3b**) and 4-bromotoluene(**4i**). Yield : 79.5%. White solid; $^1\text{H-NMR}$, $^{13}\text{C-NMR}$, IR, MS were similar to **6r**; SOR (c=1% in Methanol at 24°C) : -9.9°; Chiral HPLC : *R*-Isomer-87.85%, *S*-12.15%.

(R)-2-Methyl-1-(2-piperidin-1-yl-phenyl)-propylamine(8s)

Prepared from sulfinylaldimine(**3c**) and 1-(2-bromophenyl)piperidine(**4a**) Yield : 66.5%. Isolated as free base with light brown colour liquid. $^1\text{H-NMR}$, $^{13}\text{C-NMR}$, IR, MS were similar to **6s**; SOR (c=1% in Methanol at 24°C) : -3.5°; Chiral HPLC : *R*-Isomer-83.52%, *S*-16.48%.

(R)-2-Methyl-1-Phenylpropylamine hydrochloride(8t)

Prepared from sulfinylaldimine(**3c**) and bromobenzene(**4c**). Yield : 80.1%. White solid; $^1\text{H-NMR}$, $^{13}\text{C-NMR}$, IR, MS were similar to **6t**; SOR (c=1% in Methanol at 24°C) : -4.2°; Chiral HPLC : *R*-Isomer-98.09%, *S*-1.91%.

(R)-2-Methyl-1-o-Tolylpropylamine hydrochloride(8u)

Prepared from sulfinylaldimine(**3c**) and 2-bromotoluene(**4g**). Yield : 78.4%. White solid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6u**; SOR (c=1% in Methanol at 24°C) : -4.5°; Chiral HPLC : *R*-Isomer-66.44%, *S*-33.56%.

(R)-2-Methyl-1-p-Tolylpropylamine hydrochloride(8v)

Prepared from sulfinylaldimine(**3c**) and 4-bromotoluene(**4i**). Yield : 75.6%. White solid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6v**; SOR (c=1% in Methanol at 24°C) : -3.2°; Chiral HPLC : *R*-Isomer-77.02%, *S*-22.98%.

(R)-1-(2-piperidin-1-yl-phenyl)-butylamine(8w)

Prepared from sulfinylaldimine(**6w**) and 1-(2-bromophenyl)piperidine (**4a**). Yield : 63.2%. Isolated as free base with light brown colour liquid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6w**; SOR (c=1% in Methanol at 24°C) : -5.4°; Chiral HPLC : *R*-Isomer-57.21%, *S*-42.19%.

(R)-1-Phenylbutylamine hydrochloride(8x)

Prepared from sulfinylaldimine(**3d**) and bromobenzene(**4c**). Yield : 88.7%. White solid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6x**; SOR (c=1% in Methanol at 24°C) : -3.7°; Chiral HPLC : *R*-Isomer-62.90%, *S*-37.10%.

(R)-1-o-Tolylbutylamine hydrochloride(8y)

Prepared from sulfinylaldimine(**3d**) and 2-bromotoluene(**4g**). Yield : 85.2%. White solid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6y**; SOR (c=1% in Methanol at 24°C) : -0.3°; Chiral HPLC : *R*-Isomer-53.01%, *S*-46.99%.

(R)-1-p-Tolylbutylamine hydrochloride(8z)

Prepared from sulfinylaldimine(**3d**) and 4-bromotoluene(**4i**). Yield : 81.1%. White solid; ¹H-NMR, ¹³C-NMR, IR, MS were similar to **6z**. SOR (c=1% in Methanol at 24°C) : -0.9°; Chiral HPLC : *R*-Isomer-52.91%, *S*-47.91%.

Peak Results

	Name	RT	Area	% Area	RT Ratio
1	R-Isomer	8.88	2452132	10.29	0.89
2	S-Isomer	10.02	21382820	89.71	
Sum			23834952	100

Peak Results

	Name	RT	Area	% Area	RT Ratio
1	R-Isomer	8.89	11824606	67.38	0.88
2	S-Isomer	10.05	5723744	32.62	
Sum			17548353	100

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	10.53	6.66	1039644	32506	
2	Peak2	12.70	0.53	82254	2372	1.21
3	S-Isomer	19.45	92.82	14499742	327588	1.85
Sum			100	15621640

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	10.48	82.13	10294136	327897	
2	S-Isomer	19.61	17.87	2240053	52874	1.87
Sum			100	12534190

Peak Results

	Name	RT	% Area	Area	Height	RT Ratio
1	Peak1	7.00	8.44	1576368	72651	
2	Peak2	10.50	91.56	17105473	534839	
Sum			100	18681840

Peak Results

	Name	RT	% Area	Area	Height	RT Ratio
1	Peak1	6.91	66.87	25599572	907036	
2	Peak2	10.56	33.13	12681804	419720	
Sum			100	38281376

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	Peak1	5.63	19.17	3564048	196587	
2	Peak2	6.50	80.83	15063026	718058	
Sum			100	18627074

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	Peak1	5.48	54.98	24288036	960620	
2	Peak2	6.35	45.02	19890485	827413	
Sum			100	44178521

Peak Results

	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	7.37	10.67	463148	20834	
2	S-Isomer	8.32	85.94	3730261	158036	1.13
3	Peak3	8.87	3.39	146983	8111	1.20
Sum			100	4340391

Peak Results

	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	7.38	71.70	4919994	209215	
2	S-Isomer	8.35	28.30	1941610	81259	1.13
Sum			100	6861605

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	8.01	7.69	1472988	62495	1.13
2	S-Isomer	9.03	92.31	17674055	666772	
Sum			100	19147043

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	8.00	68.38	17068237	669067	1.13
2	S-Isomer	9.04	31.62	7891672	305579	
Sum			100	24959909

Peak Results

	Name	RT	% Area	Area	Height	RT Ratio
1	Peak1	6.30	14.84	3134486	141352	
2	Peak2	7.85	85.16	17989891	738930	
Sum			100	21124376

Peak Results

	Name	RT	% Area	Area	Height	RT Ratio
1	Peak1	6.34	54.25	11719328	527267	
2	Peak2	7.89	45.75	9881382	461123	
Sum			100	21600711

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	6.48	6.33	214628	9742	
2	S-Isomer	9.20	93.67	3177217	125285	1.42
Sum			100	3391845

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	6.47	72.89	2904767	124957	
2	S-Isomer	9.19	27.11	1080367	43964	1.42
Sum			100	3985133

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	Peak1	6.53	13.00	3925091	176691	
2	Peak2	8.71	87.00	26264559	807286	
Sum			100	30189650

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	Peak1	6.51	72.21	15514009	668285	
2	Peak2	8.87	27.79	5970576	254599	
Sum			100	21484585

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	10.75	1.88	108008	3939	1.47
2	S-Isomer	15.75	98.12	5629362	172291	
Sum			100	5737370

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	10.74	73.85	5730697	191662	1.47
2	S-Isomer	15.75	26.15	2029734	62378	
Sum			100	7760431

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	11.32	0.95	130885	5596	
2	S-Isomer	15.88	99.05	13631815	397163	1.40
Sum			100	13762700

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	11.31	82.66	17830212	526424	
2	S-Isomer	15.95	17.34	3740409	124980	1.41
Sum			100	21570621

Peak Results

	Name	RT	% Area	Area	Height	RT Ratio
1	R- Isomer	6.32	38.72	10957571	591397	1.06
2	S- Isomer	6.72	61.28	17345471	998120	
Sum			100	28303042

Peak Results

	Name	RT	% Area	Area	Height	RT Ratio
1	R- Isomer	6.33	62.48	17273143	841461	1.06
2	S- Isomer	6.74	37.52	10372058	627975	
Sum			100	27645201

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	5.63	13.76	2194536	90456	
2	S-Isomer	6.48	86.24	13755181	532990	1.15
Sum			100	15949717

Peak Results						
	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	5.62	59.54	12444473	476357	
2	S-Isomer	6.48	40.46	8456991	350922	1.15
Sum			100	20901464

Peak Results

	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	12.97	3.05	614262	19696	
2	S-Isomer	37.29	96.95	19518024	279554	2.88
Sum			100	20132286

Peak Results

	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	12.92	85.95	18673439	580487	
2	S-Isomer	37.73	14.05	3053109	93100	2.92
Sum			100	21726548

Peak Results

	Name	RT	Area	Height	% Area	RT Ratio
1	R-Isomer	8.68	80856	6760	1.30	0.69
2	S-Isomer	12.65	6155207	216622	98.70	
Sum			6236062

Peak Results

	Name	RT	Area	Height	% Area	RT Ratio
1	R-Isomer	8.64	2176234	113149	54.86	0.67
2	S-Isomer	12.81	1790322	68331	45.14	
Sum			3966555

Peak Results

	Name	RT	Area	Height	% Area	RT Ratio
1	S-Isomer	13.82	4987491	125069	100.00	
Sum			4987491

Peak Results

	Name	RT	% Area	Area	Height (μV)
1	R-Isomer	9.70	100.00	2283302	109091
Sum			100	2283302

Peak Results

	Name	RT	% Area	Area	Height (μV)
1	R-Isomer	11.15	4.85	252354	8229
2	S-Isomer	12.58	95.15	4950912	162719
Sum			100	5203265

Peak Results

	Name	RT	% Area	Area	Height (μV)
1	R-Isomer	11.05	95.11	7925350	233521
2	S-Isomer	12.72	4.89	407531	15035
Sum			100	8332882

Peak Results

	Name	RT	% Area	Area	Height (μV)
1	R-Isomer	9.08	10.94	642040	38043
2	S-Isomer	12.52	89.06	5226522	172970
Sum			100	5888562

Peak Results

	Name	RT	% Area	Area	Height (μV)
1	R-Isomer	9.05	87.85	4734378	260286
2	S-Isomer	12.68	12.15	654534	22432
Sum			100	5388912

Peak Results

	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	7.17	39.57	2159121	115528	0.68
2	S-Isomer	10.61	60.43	3297082	146258	
Sum			100	5456203

Peak Results

	Name	RT	% Area	Area	Height	RT Ratio
1	R-Isomer	7.14	83.52	2706714	143538	0.67
2	S-Isomer	10.63	16.48	534172	25351	
Sum			100	3240886

Peak Results

	Name	RT	Area	Height	% Area	RT Ratio
1	S-Isomer	13.82	4987491	125069	100.00	
Sum			4987491

Peak Results

	Name	RT	Area	Height	% Area	RT Ratio
1	R-Isomer	9.49	6104483	247140	98.09	0.67
2	S-Isomer	14.15	119046	3273	1.91	
Sum			6223528

Peak Results

	Name	RT	Area	Height	% Area	RT Ratio
1	R-Isomer	6.75	351536	24073	3.23	
2	S-Isomer	9.73	10541334	379143	96.77	
Sum			10892870

Peak Results

	Name	RT	Area	Height	% Area	RT Ratio
1	R-Isomer	6.73	2993884	170743	66.44	0.69
2	S-Isomer	9.76	1512120	87349	33.56	
Sum			4506004

Peak Results

	Name	RT	% Area	Area	Height (μV)
1	R-Isomer	6.90	15.84	1548696	85380
2	S-Isomer	9.57	84.16	8228627	325173
Sum			100	9777323

Peak Results

	Name	RT	% Area	Area	Height (μV)
1	R-Isomer	6.99	77.02	7192259	366903
2	S-Isomer	9.85	22.98	2146479	89927
Sum			100	9338738

Peak Results

	Name	RT	Area	Height	% Area	RT Ratio
1	R-Isomer	9.95	143121	9199	1.54	0.85
2	S-Isomer	11.73	9135356	344402	98.46	
Sum			9278477

Peak Results

	Name	RT	Area	Height	% Area	RT Ratio
1	R-Isomer	9.85	5340829	217168	57.21	0.84
2	S-Isomer	11.78	3994237	155247	42.79	
Sum			9335066

Peak Results

	Name	RT	Area	Height	% Area	RT Ratio
1	R-Isomer	9.03	49707	5074	0.98	0.70
2	S-Isomer	12.97	5000901	163944	99.02	
Sum			5050608

Peak Results

	Name	RT	Area	Height	% Area	RT Ratio
1	R-Isomer	8.93	1291379	70637	62.90	0.68
2	S-Isomer	13.10	761666	25270	37.10	
Sum			2053045

Peak Results

	Name	RT	Area	Height	% Area	RT Ratio
1	S-Isomer	13.05	7109982	178113	100.00	
Sum			7109982

Peak Results

	Name	RT	Area	Height	% Area	RT Ratio
1	R-Isomer	8.89	6805035	300998	53.01	
2	S-Isomer	13.22	6031284	275073	46.99	1.50
Sum			12836318

Peak Results

	Name	RT	Area	Height	% Area	RT Ratio
1	R-Isomer	7.55	515728	53142	3.71	
2	S-Isomer	11.38	13397670	396891	96.29	1.51
Sum			13913397

Peak Results

	Name	RT	Area	Height	% Area	RT Ratio
1	R-Isomer	7.31	6344599	257456	52.09	
2	S-Isomer	11.00	5834915	265851	47.91	1.50
Sum			12179514			

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