

Supporting Information

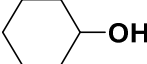
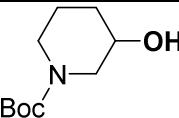
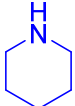
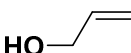
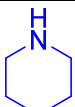
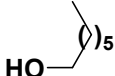
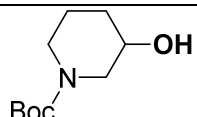
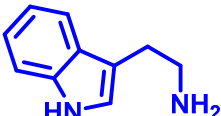
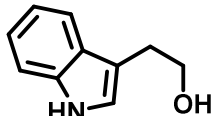
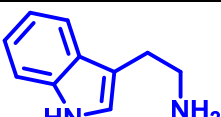
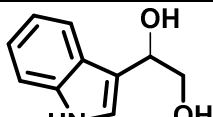
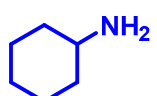
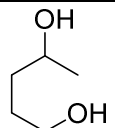
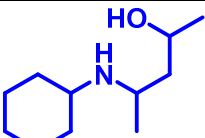
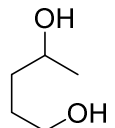
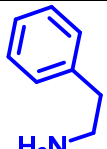
A Metal free, Mild, Non-Epimerizing, Chemo- and Enantio-/or Diastereoselective N-Alkylation of amines by alcohols *via* Oxidation/Imine-Iminium formation/Reductive Amination: A Pragmatic Synthesis of Octahydropyrazinopyridoindoles and higher ring analogues

Imran A. Khan, Anil K. Saxena*

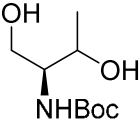
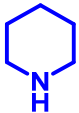
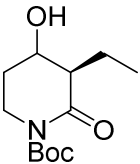
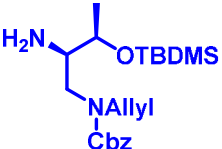
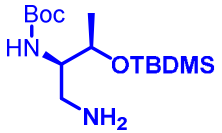
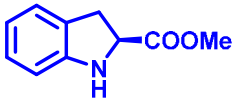
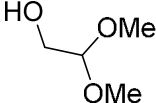
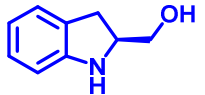
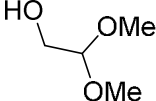
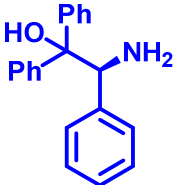
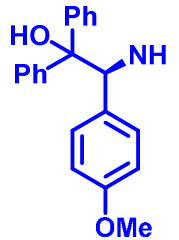
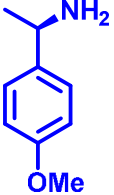
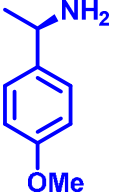
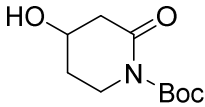
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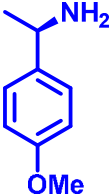
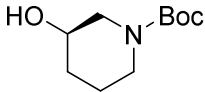
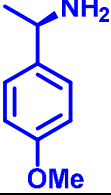
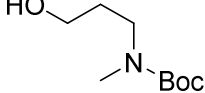
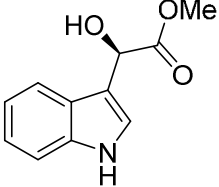
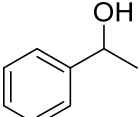
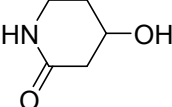
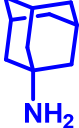
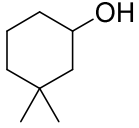
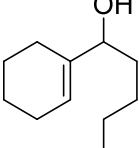
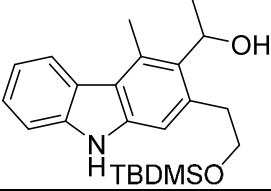
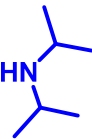
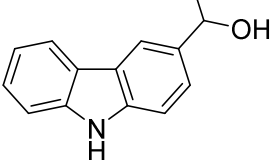
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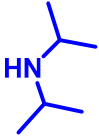
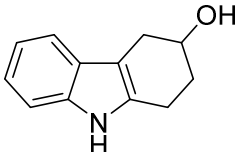
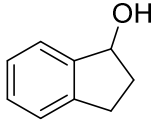
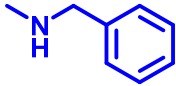
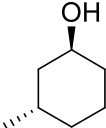
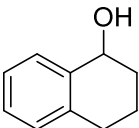
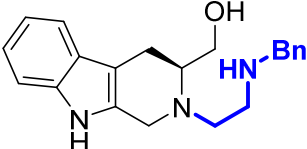
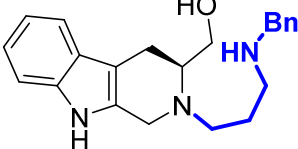
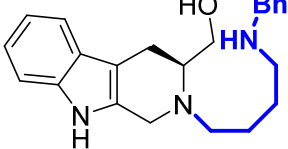
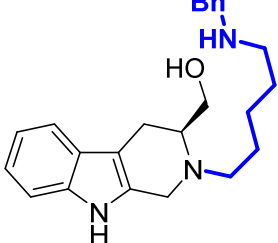
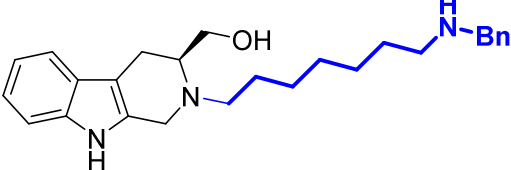
Supplementary Table 1. Details of compound regarding catalyst used and methods of work up

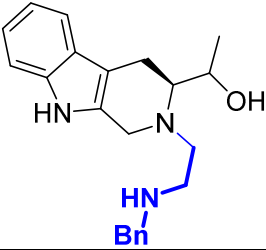
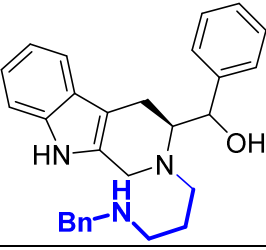
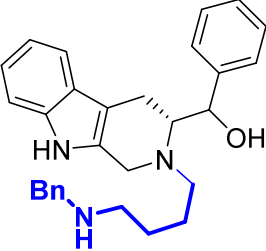
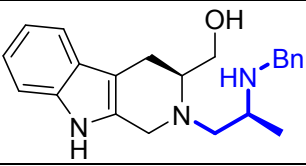
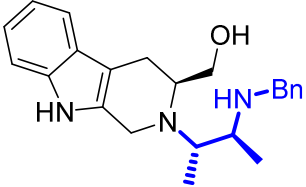
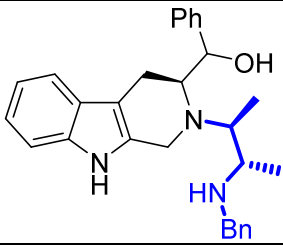
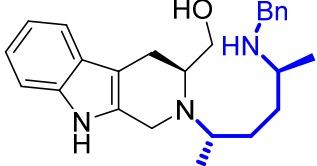
S. No.	Starting amines	Starting Alcohol	Catalyst used	General procedure	Products
Figure 1					
1	BnNH ₂		I-OH	B	3b 89%, 6.5h
2	Tert. BuNH ₂		I-OH	B	3c 94%, 6.5h
3	Allyl-NH ₂		I-OH	B	3d 90%, 7.5h
4	Tert. BuNH ₂	Allyl-OH	I-OH	B	3e 92%, 7.5h
5			I-OH	B	3f 96%, 7.5h
6			I-OH	B	3g 94%, 7.5h
7	Bn ₂ NH		I-OH	B	3h 90%, 10h
8			I-OH	A	3i 85%, 12h
10			I-OH	A	3j 86%, 12h
11			I-OH	B	3k 86%, 12h
12			I-OH	C	3l 86%, 12h
13			I-OH	C	3m 92%, 8.0h

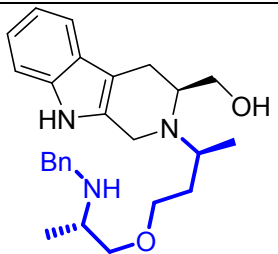
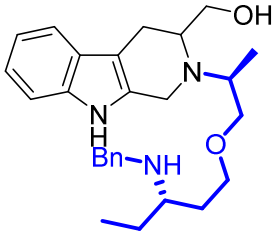
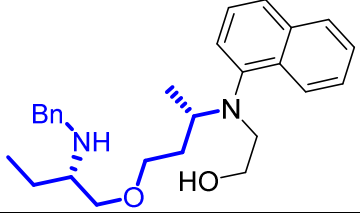
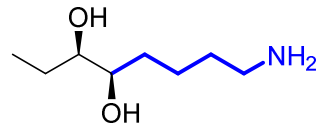
14			I-OH	C	3n 96%, 8.0h
15			I-OH	C	3o 86%, 8.0h
16			I-OH	A	3p 91%, 14h
Figure 2					
17	Allyl-NH ₂		I-OH	C	4a 9.5h, 88%, ee 98%
18			I-OH	C	4b 10h, 87%, ee 98%
19	Allyl-NH ₂		I-OH	C	4c 12h, 81%, ee 96%
20	Allyl-NH ₂		I-OH	C	4d 8h, 80%, ee >98%
21			I-OH	C	4e 14h, 72%, ee 94%
22	Bn ₂ NH		I-OH	C	4f 12h, 94%, ee 96%

23	Allyl-NH ₂		I-OH	C	4g 10h, 92%, ee 97%
24			I-OH	C	4h 9.5h, 88%, de 78%
25		Bn-OH	I-OH	C	5a 9.5h, 88%, ee 98%
26		Allyl-OH	I-OH	C	5b 10h, 96%, ee 98%
27			I-OH	C	5c 9.5h, 80%, ee 98%
28			I-OH	C	5d 9.5h, 86%, ee 98%
29			I-OH	C	5e 9.5h, 81%, ee 99%
30		Allyl-OH	I-OH	C	5f 11h, 87%, ee 98%
31			I-OH	C	5g 10h, 96%, ee 99%
32			I-OH	C	5h^a 9.5h, 88%, de 89% ee 86%

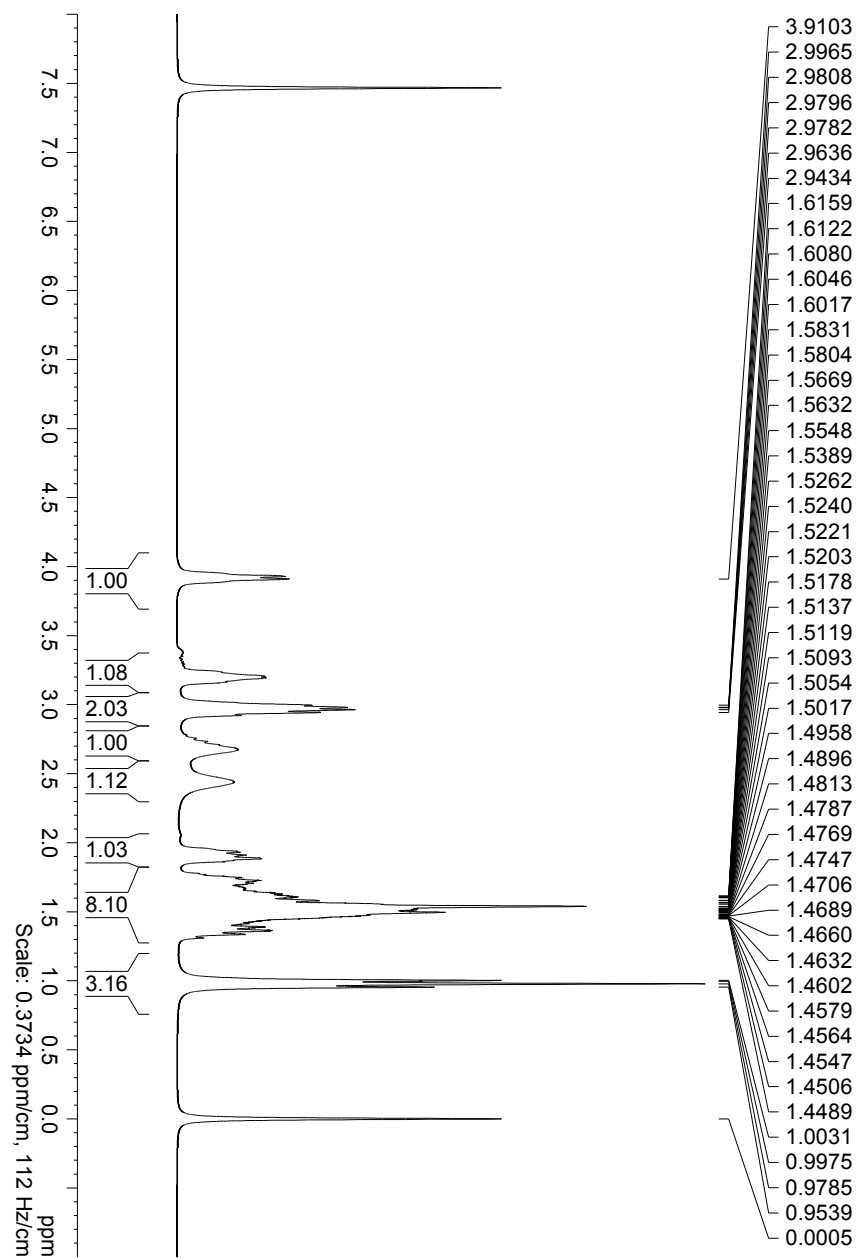
33			V-OH	C	5i 10h, 85%, <i>de</i> 90% <i>ee</i> 99%
34			V-OH	C	5j 10h, 88%, <i>ee</i> 99%
Figure 3					
35			V-OH	B	6a 9.0h, 85%, <i>ee</i> 91%
36	Allyl-NH ₂		V-OH	B	6b 9.0h, 81%, <i>ee</i> 98%
37			V-OH	B	6c 12h, 75%, <i>ee</i> 92%
38			V-OH	C	6d 9.0h, 81%, <i>ee</i> 93%
39			V-OH	B	6e 9.0h, 78%, <i>ee</i> 88%
40	Me ₂ NH		V-OH	A	6f 9.0h, 85%, <i>ee</i> 94%
41			V-OH	A	6g 8.5h, 96%, <i>ee</i> 95%

42			V-OH	A	6h 9.0h, 85%, ee 94%
43	Allyl-NH ₂		V-OH	C	6i 9.0h, 96%, ee 91%
44			V-OH	B then C	6j 12h, 76%, ee 89%
45	Allyl-NH ₂		V-OH	B then C	6k 9.0h, 72%, ee 95%
Figure 4					
46			V-OH	A	7a 11h, 87%, ee 98%
47			V-OH	A	7b 11h, 81%, ee 94%
48			V-OH	C	7c 10h, 72%, ee 95%
49			V-OH	C	7d 14h, 68%, ee 86%
50			V-OH	C	7e 11h, 61%, ee 94%

51		V-OH	A	7f 11h, 83%, de 97%, ee
52		V-OH	A	7g 11h, 81%, de 96.5% ee
53		V-OH	C	7h 11h, 80%, ee 96%
54		V-OH	A	8a 11h, 87%, ee 98%
55		V-OH	A	8b 11h, 81%, ee 98%
56		V-OH	C	8c 11h, 85%, ee 98%
57		V-OH	C	8d 11h, 79%, ee 92%

58		V-OH	C	8e 11h, 76%, ee 94%
59		V-OH	C	8f 11h, 75%, ee 96%
60		V-OH	C	9a 11h, 87%, ee 96%
61		V-OH	C	9b 11h, 52%, ee 98% + 9c 11h, 36%, ee 98%

¹H NMR of the compound 9c



¹³C NMR of compound 9c

