Supporting Information of

Fe₃O₄@SiO₂/Schiff base/Pd complex as an efficient heterogeneous and recyclable nanocatalyst for chemoselective N-arylation of O-alkyl primary car bamates

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1. Experimental

1.1 General experimental methods

$^1$H and $^{13}$C NMR spectra were recorded by BRUKER AVANCE DRX250 (250 MHz). The IR spectra were obtained on a Shimadzu FT-IR 8300. Mass spectra were analyzed by Shimadzu GC-MS QP 1000 EX. Elemental analysis was performed using Thermofinigan Flash EA-1112 CHNSO rapid elemental analyzer. Melting points were recorded by Electrothermal 9100 and the GallenKamp melting point apparatus and were uncorrected.

1.2 Chemicals

All starting materials and solvents were purified with appropriate purification techniques before use. O-alkyl-N-aryl carbamates, were prepared according to literature.
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Figure S4. MS of ethyl phenylcarbamate.
Figure S5. FT-IR spectra of propyl phenylcarbamate in KBr

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Figure S8. MS of propyl phenylcarbamate
Figure S9. FT-IR spectra of 2-propyl phenylcarbamate in KBr

Figure S10. $^{13}$C-NMR spectra (63 MHz) of 2-propyl phenylcarbamate in CDCl$_3$
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Figure S12. MS of 2-propyl phenyl)carbamate
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Figure S16. MS of 1-butyl phenylcarbamate
Figure S17. FT-IR spectra of 2-butyl phenylcarbamate in KBr

Figure S18. $^{13}$C-NMR spectra (63 MHz) of 2-butyl phenylcarbamate in CDCl$_3$
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Figure S20. MS of 2-butyl phenylcarbamate
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Figure S22. $^{13}$C-NMR spectra (63 MHz) of *iso*-butyl phenylcarbamate in CDCl$_3$
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Figure S28. MS of tert-butyl phenylcarbamate
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**Figure S30.** $^{13}$C-NMR spectra (63 MHz) of cyclohexyl phenylcarbamate in CDCl$_3$
Figure S31. $^1$H-NMR spectra (250 MHz) of cyclohexyl phenylcarbamate in CDCl$_3$

Figure S32. MS of cyclohexyl phenylcarbamate
Figure S33. FT-IR spectra of (-) menthyl phenylcarbamate in KBr

Figure S34. $^{13}$C-NMR spectra (63 MHz) of (-) menthyl phenylcarbamate in CDCl$_3$
Figure S35. $^1$H-NMR spectra (250 MHz) of (-) menthyl phenylcarbamate in CDCl$_3$.

Figure S36. MS of (-) menthyl phenylcarbamate.
Figure S37. FT-IR spectra of benzyl phenylcarbamate in KBr

Figure S38. $^{13}$C-NMR spectra (63 MHz) of benzyl phenylcarbamate in CDCl$_3$
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**Figure S40.** MS of benzyl phenylcarbamate
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Figure S42. $^{13}$C-NMR spectra (63 MHz) of propyl (4-methylphenyl)carbamate in CDCl$_3$
Figure S43. $^1$H-NMR spectra (250 MHz) of propyl (4-methylphenyl)carbamate in CDCl$_3$

Figure S44. MS of propyl (4-methylphenyl)carbamate
**Figure S45.** FT-IR spectra of propyl (4-cyanophenyl)carbamate in KBr

**Figure S46.** $^{13}$C-NMR spectra (63 MHz) of propyl (4-cyanophenyl)carbamate in CDCl$_3$
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Figure S48. MS of propyl (4-cyanophenyl)carbamate
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Figure S50. $^{13}$C-NMR spectra (63 MHz) of propyl (4-nitrophenyl)carbamate in CDCl$_3$
Figure S51. $^1$H-NMR spectra (250 MHz) of propyl (4-nitrophenyl)carbamate in CDCl$_3$.

Figure S52. MS of propyl (4-nitrophenyl)carbamate.
Figure S53. FT-IR spectra of propyl (4-acetylphenyl)carbamate in KBr

Figure S54. $^{13}$C-NMR spectra (63 MHz) of propyl (4-acetylphenyl)carbamate in CDCl$_3$
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Figure S56. MS of propyl (4-acetylphenyl)carbamate
Figure S57. FT-IR spectra of propyl (naphthalen-1-yl)carbamate in KBr

Figure S58. $^{13}$C-NMR spectra (63 MHz) of propyl (naphthalen-1-yl)carbamate in CDCl$_3$
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**Figure S60.** MS of propyl (naphthalen-1-yl)carbamate
Figure S61. FT-IR spectra of propyl (benzo[d][1,3]dioxol-5-yl)carbamate in KBr

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Figure S64. MS of propyl (benzo[d][1,3]dioxol-5-yl)carbamate.
Figure S65. FT-IR spectra of propyl (thiophen-3-yl)carbamate in KBr

Figure S66. $^{13}$C-NMR spectra (63 MHz) of propyl (thiophen-3-yl)carbamate in CDCl$_3$
Figure S67. $^1$H-NMR spectra (250 MHz) of propyl (thiophen-3-yl)carbamate in CDCl$_3$

Figure S68. MS of propyl (thiophen-3-yl)carbamate
Figure S69. FT-IR spectra of propyl (4-boromphenyl)carbamate in KBr

Figure S70. $^{13}$C-NMR spectra (63 MHz) of propyl (4-boromphenyl)carbamate in CDCl$_3$
Figure S71. $^1$H-NMR spectra (250 MHz) of propyl (4-bromophenyl)carbamate in CDCl$_3$.

Figure S72. MS of propyl (4-bromophenyl)carbamate.
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Figure S74. $^{13}$C-NMR spectra (63 MHz) of propyl (4-chlorophenyl)carbamate in CDCl$_3$
Figure S75. $^1$H-NMR spectra (250 MHz) of propyl (4-chlorophenyl)carbamate in CDCl$_3$.

Figure S76. MS of propyl (4-chlorophenyl)carbamate