**Supporting information** 

for

## Pd-Catalyzed direct C2-acylation and C2,C7-diacylation of indoles: Pyrimidine as easily removable C-H directing group

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## Content

<sup>1</sup>H and <sup>13</sup>C Spectra for all Compounds



Figure 1: 400 MHz <sup>1</sup>H NMR spectrum of **3a** in CDCl<sub>3</sub>



Figure 2: 100 MHz <sup>13</sup>C NMR spectrum of **3a** in CDCl<sub>3</sub>



Figure 3: 400 MHz 1H NMR spectrum of 3b in CDCl<sub>3</sub>



Figure 4: 100 MHz <sup>13</sup>C NMR spectrum of **3b** in CDCl<sub>3</sub>



Figure 5: 100 MHz <sup>13</sup>C NMR spectrum of **3c** in CDCl<sub>3</sub>



Figure 6: 100 MHz <sup>13</sup>C NMR spectrum of **3c** in CDCl<sub>3</sub>



Figure 7 : 400 MHz <sup>1</sup>H NMR spectrum of 3d in CDCl<sub>3</sub>



Figure 8 : 100 MHz <sup>13</sup>C NMR spectrum of 3d in CDCl<sub>3</sub>



Figure 9: 400 MHz <sup>1</sup>H NMR spectrum of **3e** in CDCl<sub>3</sub>



Figure 10 : 100 MHz <sup>13</sup>C NMR spectrum of **3e** in CDCl<sub>3</sub>



Figure 11 : 400 MHz <sup>1</sup>H NMR spectrum of 3f in CDCl<sub>3</sub>



Figure 12 : 100 MHz <sup>13</sup>C NMR spectrum of 3f in CDCl<sub>3</sub>



Figure 13 : 400 MHz <sup>1</sup>H NMR spectrum of 3g in CDCl<sub>3</sub>



Figure 14 : 100 MHz <sup>13</sup>C NMR spectrum of 3g in CDCl<sub>3</sub>



Figure 15 : 400 MHz <sup>1</sup>H NMR spectrum of **3h** in CDCl<sub>3</sub>



Figure 16: 100 MHz <sup>13</sup>C NMR spectrum of 3h in CDCl<sub>3</sub>



Figure 17 : 400 MHz 1H NMR spectrum of 3i in CDCl<sub>3</sub>



Figure 18 : 100 MHz <sup>13</sup>C NMR spectrum of 3i in CDCl<sub>3</sub>



Figure 19 : 400 MHz <sup>1</sup>H NMR spectrum of 3j in CDCl<sub>3</sub>



Figure 20 : 100 MHz <sup>13</sup>C NMR spectrum of 3j in CDCl<sub>3</sub>



Figure 21 : 400 MHz <sup>1</sup>H NMR spectrum of 3k in CDCl<sub>3</sub>



Figure 22 : 100 MHz <sup>13</sup>C NMR spectrum of 3k in CDCl<sub>3</sub>



Figure 23 : 400 MHz <sup>1</sup>H NMR spectrum of 3I in CDCl<sub>3</sub>



Figure 24 : 100 MHz <sup>13</sup>C NMR spectrum of 3I in CDCl<sub>3</sub>



Figure 25 : 400 MHz <sup>1</sup>H NMR spectrum of **3m** in CDCl<sub>3</sub>



Figure 26 : 100 MHz <sup>13</sup>C NMR spectrum of **3m** in CDCl<sub>3</sub>



Figure 27 : 400 MHz  $^{1}$ H NMR spectrum of 3n in CDCl<sub>3</sub>



Figure 28 : 100 MHz <sup>13</sup>C NMR spectrum of **3n** in CDCl<sub>3</sub>



Figure 29 : 400 MHz <sup>1</sup>H NMR spectrum of 4a in CDCl<sub>3</sub>



Figure 30 : 100 MHz <sup>13</sup>C NMR spectrum of 4a in CDCl<sub>3</sub>



Figure 31 : 400 MHz <sup>1</sup>H NMR spectrum of 4b in CDCl<sub>3</sub>



Figure 32: 100 MHz <sup>13</sup>C NMR spectrum of 4b in CDCl<sub>3</sub>



Figure 33 : 400 MHz <sup>1</sup>H NMR spectrum of 4c in CDCl<sub>3</sub>



Figure 34: 100 MHz <sup>13</sup>C NMR spectrum of 4c in CDCl<sub>3</sub>



Figure 35 : 400 MHz <sup>1</sup>H NMR spectrum of 5a in CDCl<sub>3</sub>



Figure 36 : 100 MHz <sup>13</sup>C NMR spectrum of 5a in CDCl<sub>3</sub>



Figure 37 : 400 MHz <sup>1</sup>H NMR spectrum of 5b in CDCl<sub>3</sub>



Figure 38 : 400 MHz <sup>13</sup>C NMR spectrum of 5b in CDCl<sub>3</sub>



Figure 39 : 400 MHz <sup>1</sup>H NMR spectrum of x in CDCl<sub>3</sub>



Figure 40 : 100 MHz <sup>1</sup>H NMR spectrum of x in CDCl<sub>3</sub>



Figure 41 : 400 MHz <sup>1</sup>H NMR spectrum of 6a in CDCl<sub>3</sub>



Figure 42 : 100 MHz <sup>13</sup>C NMR spectrum of 6a in CDCl<sub>3</sub>



Figure 43 : 400 MHz <sup>1</sup>H NMR spectrum of 6b in CDCl<sub>3</sub>



Figure 44 : 100 MHz <sup>13</sup>C NMR spectrum of **6b** in CDCl<sub>3</sub>



Figure 45 : 400 MHz <sup>1</sup>H NMR spectrum of 6c in CDCl<sub>3</sub>



Figure 46 : 100 MHz <sup>13</sup>C NMR spectrum of 6c in CDCl<sub>3</sub>