# **Supporting Information**

# **Consecutive Aryne Generation Strategy for the Synthesis of 1,3-Diarylpyrazoles**

Tsuneyuki Kobayashi, Takamitsu Hosoya, and Suguru Yoshida\*

Laboratory of Chemical Bioscience, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University (TMDU), 2-3-10 Kanda-Surugadai, Chiyoda-ku, Tokyo 101-0062, Japan

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<sup>1</sup>H and <sup>13</sup>C NMR Spectra of Compounds <sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of 3-Methyl-2-(trimethylsilyl)phenol (CDCl<sub>3</sub>)





<sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of 3-methyl-2-(trimethylsilyl)phenyl triflate (CDCl<sub>3</sub>)



<sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of **2b** (CDCl<sub>3</sub>)





#### $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of 2c (CDCl<sub>3</sub>)



#### <sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of 2d (CDCl<sub>3</sub>)









#### $^{1}$ H NMR (500 MHz) and $^{13}$ C NMR (126 MHz) spectra of **3a** (CDCl<sub>3</sub>)

 $^1\text{H}$  NMR (500 MHz, DMSO-d6) and  $^{13}\text{C}$  NMR (126 MHz, CDCl3) spectra of 3b









# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of 3d (CDCl<sub>3</sub>)







# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of 3f (CDCl<sub>3</sub>)



# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of 3g (CDCl<sub>3</sub>)



#### <sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of **3h** (CDCl<sub>3</sub>)



# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of 3i (CDCl<sub>3</sub>)

 $^1\text{H}$  NMR (500 MHz, CDCl<sub>3</sub>) and  $^{13}\text{C}$  NMR (126 MHz, CD<sub>3</sub>OD) spectra of 4a





<sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of 2-bromo-6-iodo-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl triflate (CDCl<sub>3</sub>)

# $^1\text{H}$ NMR (500 MHz, CDCl<sub>3</sub>) and $^{13}\text{C}$ NMR (126 MHz, DMSO-d<sub>6</sub>) spectra of **4b**











# $^1\text{H}$ NMR (500 MHz, CDCl3) and $^{13}\text{C}$ NMR (126 MHz, CD3OD) spectra of 4d





<sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of 2-iodo-3-morpholino-5-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl triflate (CDCl<sub>3</sub>)

# $^1\text{H}$ NMR (500 MHz, CDCl<sub>3</sub>) and $^{13}\text{C}$ NMR (126 MHz, DMSO-*d*<sub>6</sub>) spectra of 4e





<sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of 2-iodo-3-methyl-5-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl triflate (CDCl<sub>3</sub>)

# $^1\text{H}$ NMR (500 MHz, CDCl<sub>3</sub>) and $^{13}\text{C}$ NMR (126 MHz, DMSO-d<sub>6</sub>) spectra of **4f**





<sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of 2-iodo-5-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-1,3-phenylene bis(triflate) (CDCl<sub>3</sub>)

он <sup>\_В</sup>`он TfO όTf ppm 2.00 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 30 20 ppm

 $^1\text{H}$  NMR (500 MHz) and  $^{13}\text{C}$  NMR (126 MHz) spectra of 4g (CD<sub>3</sub>OD)

# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of **5a** (CDCl<sub>3</sub>)













#### $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of **5d** (CDCl<sub>3</sub>)

#### $^{1}$ H NMR (500 MHz) and $^{13}$ C NMR (126 MHz) spectra of **5e** (CDCl<sub>3</sub>)



# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of **5f** (CDCl<sub>3</sub>)







# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of **5h** (CDCl<sub>3</sub>)







# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of **5j** (CDCl<sub>3</sub>)



# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of 5k (CDCl<sub>3</sub>)





#### $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of **5k'** (CDCl<sub>3</sub>)

# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of **5l** (CDCl<sub>3</sub>)



# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of 8a (CDCl<sub>3</sub>)





#### <sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of **8b** (CDCl<sub>3</sub>)



#### $^{1}$ H NMR (500 MHz) and $^{13}$ C NMR (126 MHz) spectra of 8c (CDCl<sub>3</sub>)



#### <sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of 8d (CDCl<sub>3</sub>)



#### <sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of 8e (CDCl<sub>3</sub>)

# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of 8f (CDCl<sub>3</sub>)









# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of 10a (CDCl<sub>3</sub>)



# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of 10b (CDCl<sub>3</sub>)



<sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of **10c** (CDCl<sub>3</sub>)



# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of 10d (CDCl<sub>3</sub>)



#### <sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of **10e** (CDCl<sub>3</sub>)







 $^1\text{H}$  NMR (500 MHz) and  $^{13}\text{C}$  NMR (126 MHz) spectra of 10g (CDCl<sub>3</sub>)



# $^1\text{H}$ NMR (500 MHz) and $^{13}\text{C}$ NMR (126 MHz) spectra of 10h (CDCl<sub>3</sub>)



#### <sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of **10i** (CDCl<sub>3</sub>)



#### <sup>1</sup>H NMR (500 MHz) and <sup>13</sup>C NMR (126 MHz) spectra of **10j** (CDCl<sub>3</sub>)



#### $^{1}$ H NMR (500 MHz) and $^{13}$ C NMR (126 MHz) spectra of **12** (acetone-*d*<sub>6</sub>)

# ROESY Spectra of 5k, 5k', 8b, 10b, 10h, and 10j

ROESY (400 MHz, JEOL) spectrum of 5k (CDCl<sub>3</sub>)



The regiochemistry of **5k** was determined by the ROESY experiment.







The regiochemistry of  $\mathbf{5k'}$  was determined by the ROESY experiment. MeQ







The regiochemistry of 8b was determined by the ROESY experiment.







The regiochemistry of **10b** was determined by the ROESY experiment.  $\sim \sim \sim \sim^{\mathsf{ROE}}$ 

C N N N ÓМе ÓМе



The regiochemistry of **10h** was determined by the ROESY experiment.





The regiochemistry of 10j was determined by the ROESY experiment. ROE ROE ROE

