Supplementary Material

Silver-Catalyzed Intramolecular Oxidative Decarboxylative C-H Arylation Reactions for Synthesis of Biaryl sultams

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Table of Contents

1) General Information

All reactions were carried out under air atmosphere in oven-dried glassware with magnetic stirring, unless otherwise specified. All other reagents and solvents were purchased from Energy Chemical, Alfa Aesar or J&K Chemical Company and used without any further purification. TLC information was recorded on GF-254 (Qingdao Haiyang Chemical Co., Ltd. P. R. China) plates. Purification of reaction products was carried out by flash chromatography using Silica gel (200-300 mesh, Qingdao Haiyang Chemical Co. Ltd. P. R. China). All products were recorded using Bruker Avance-400 instruments, calibrated to TMS (^{1}H NMR spectra) and $CDCl_3$ or *d*$_6$-DMSO (^{13}C NMR spectra) as the internal reference (0.00 ppm for 1H NMR spectra and 100.00 ppm for ^{13}C NMR spectra). High-resolution mass spectra (HRMS) were recorded on a Bruker Apex IV FTMS mass spectrometer using ESI (electrospray ionization). Melting points were measured uncorrected.

2) Synthetic Methods of Subatrates 1a-m[1]

To a stirred solution of amine derivative (3.0 mmol) in 10 mL of anhydrous pyridine under ice cooling, was added a solution of 2-chlorosulfonyl benzoic acid (3.6 mmol) in dichloroethane (10 mL) dropwise. The reaction mixture was stirred at room temperature under the nitrogen atmosphere for overnight. After completion of the reaction (monitored by TLC), reaction mixture was diluted with chloroform (20 mL) and quenched with water (10 mL), extracted with chloroform (3x30 mL), the organic layer was washed with 1N HCl (50 mL), then with water (50 mL). The combined organic layers were dried over Na_2SO_4 and evaporated *in vacuo*. The crude compound recrystallized from ethanol to afford the desired product **1a-m**.

3) References

1 Holmes, T. J.; Lawton, Jr., R. G. *J. Org. Chem.* **1983**, *48*, 3146.

4) Scanned ^{1}H NMR and ^{13}C NMR Spectra of 2