Investigation of the Scope of a Co-Mediated O→C Ring Contraction

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General Methods: ^1H -NMR spectra were recorded at 250, 400 or 500 MHz and chemical shifts are reported in ppm from tetramethylsilane with the solvent resonance as the internal standard (deuteriochloroform: δ 7.26 ppm). ^{13}C -NMR were recorded at 62.5, 100 or 125 MHz with complete proton decoupling. Chemical shifts are reported in ppm from tetramethylsilane with the solvent as the internal standard (deuteriochloroform: δ 77.0 ppm). Column chromatography was performed on glass columns using silica gel (40-63 μm particle size). Solvents for extraction and chromatography were HPLC grade. Unless stated otherwise, reactions were performed in flame-dried glassware under a positive pressure of nitrogen using freshly distilled solvent. Typically, all non-organometallic, commercially-obtained reagents were purified by distillation or recrystallization prior to use. Dichloromethane (CH_2Cl_2), acetonitrile (MeCN) and toluene were distilled from CaH_2 under an inert atmosphere of nitrogen. Tetrahydrofuran (THF) was distilled from sodium/benzophenone ketyl.

Analytical data for compounds **7**,¹ **15**, **16**, **17**, **20**, **24**, **30**, **31**, **32**, **33**, **36**, **43** and **46**² have been reported elsewhere.

¹ (a) Carbery, D.R.; Reignier, S.; Myatt, J.W.; Miller, N.D.; Harrity, J.P.A. *Angew. Chem., Int. Ed.* **2002**, *41*, 2584. (b) Carbery, D.R.; Reignier, S.; Miller, N.D.; Adams, H.; Harrity, J.P.A. *J. Org. Chem.* **2003**, *68*, 4392.

² Meek, S.J.; Pradaux, F.; Demont, E.H.; Harrity, J.P.A. *Org. Lett.* **2006**, *8*, 5597.

Compound 9: ^1H NMR **Compound 9: ^{13}C NMR**

Compound 18: ^1H NMR **Compound 18: ^{13}C NMR**

Compound 19: ^1H NMR **Compound 19: ^{13}C NMR**

Compound 21: ^1H NMR **Compound 21: ^{13}C NMR**

Compound 22: ^1H NMR **Compound 22: ^{13}C NMR**

Compound 23: ^1H NMR **Compound 23: ^{13}C NMR**

Compound 25: ^1H NMR **Compound 25: ^{13}C NMR**

Compound 26: ^1H NMR **Compound 26: ^{13}C NMR**

Compound 27: ^1H NMR **Compound 27: ^{13}C NMR**

Compound 28: ^1H NMR **Compound 28: ^{13}C NMR**

Compound 29: ^1H NMR **Compound 29: ^{13}C NMR**

Compound 10: ^1H NMR

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Compound 10: ^{13}C NMR

Compound 34: ^1H NMRSimon Meek E27 Sample ref. SJM4-636A1 in CDCl_3 **Compound 34: ^{13}C NMR**

Compound 35: ^1H NMR (CDCl_3) **Compound 35: ^{13}C NMR (CDCl_3)**

Compound 37: ^1H NMR **Compound 37: ^{13}C NMR**

Compound 38: ^1H NMR **Compound 38: ^{13}C NMR**

Compound 39: ^1H NMR

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Compound 39: ^{13}C NMR

Compound 40: ^1H NMR **Compound 40: ^{13}C NMR**

Compound 41: ^1H NMR **Compound 41: ^{13}C NMR**

Compound 42: ^1H NMR **Compound 42: ^{13}C NMR**

Compound 44: ^1H NMRSimon Meek E27 Sample ref: SJM2-315 in CDCl_3 **Compound 44: ^{13}C NMR**

Compound 45: ^1H NMR **Compound 45: ^{13}C NMR**

Compound 47: ^1H NMR **Compound 47: ^{13}C NMR**

Compound 48: ^1H NMR **Compound 48: ^{13}C NMR**

Compound 49: ^1H NMR

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Compound 50: ^1H NMR **Compound 50: ^{13}C NMR**