

Supplementary information

Facile synthesis of corticiolic acid- a bioactive pharmacophore from natural sources

The supplementary information (SI) for the synthesis of Corticiolic acid is having the original spectral data recorded for the characterization of the synthesized molecules in all three synthetic routes established.

General information:

Reactions were set up on the bench top and carried out under a nitrogen or argon atmosphere. All reagents were used as received from commercial sources unless otherwise specified, or prepared as described in the literature. ^1H NMR and ^{13}C NMR data were recorded on a Bruker-Ultrashield PLUS400 NMR Agilent spectrometer with CDCl_3 or $\text{DMSO-}d_6$ as the solvent. ^1H chemical shifts were referenced to CDCl_3 at 7.26 ppm and $\text{DMSO-}d_6$ at 2.501 ppm. ^{13}C chemical shifts were referenced to $\text{DMSO-}d_6$ septet at 39.5 ppm and obtained with 1H decoupling. Multiplicities are abbreviated as follows: singlet (s), doublet (d), triplet (t), multiplet (m), and broad (br). MS was measured on an Agilent 1100 Series LC/MSD mass spectrometer. HPLC yield was determined on Agilent 1200 Infinity Series. Flash column chromatography was performed on silica gel (particle size 200-300 mesh) and eluted with petroleum ether/ethyl acetate.

Suzuki-Miyaura cross-coupling of Aryl bromide with the BBN complex of Pentadec-1-ene is the key step in all three synthetic routes development in this article. The below table depicts the summary of optimization efforts done on the key Suzuki-Miyaura cross-coupling reaction.

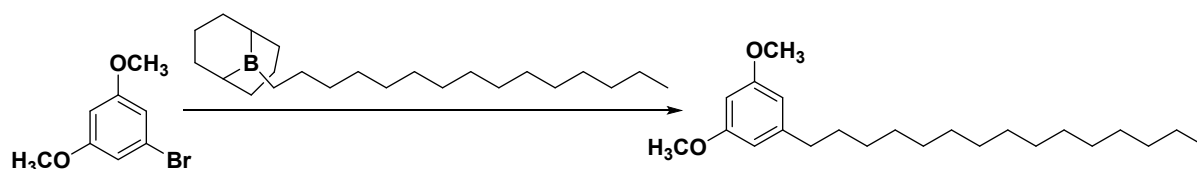


Table 1. Optimization of 9-BBN complex of Pentadec-1-ene and Aryl halide SMC reaction for corticiolic acid

S. No.	Reaction conditions	isolated yield (%)
1	i) Pentadec-1-ene (1.0 eq.), 9-BBN (2.0 eq.), THF (5 v), RT, 16h	5%

	ii) Cs ₂ CO ₃ (2.0eq.), Pd(dppf)Cl ₂ DCM (0.03 eq.), DMF (10 v), 80°C, 16h	
2	i) Pentadec-1-ene (1.0 eq.), 9-BBN (2.0 eq.), THF (5 v), RT, 16h ii) K ₂ CO ₃ (2.0eq.), Pd(dppf)Cl ₂ DCM (0.03 eq.), DMF/Water (9:1 v/v, 10 v), 80°C, 16h	13%
3	i) Pentadec-1-ene (1.2 eq.), 9-BBN (3.0 eq.), THF (5 v), RT, 16 h ii) K ₂ CO ₃ (2.0eq.), Pd(dppf)Cl ₂ DCM (0.03 eq.), DMF/Water (9:1 v/v, 10 v), 80°C, 16h	21%
4	i) Pentadec-1-ene (1.2 eq.), 9-BBN (3 eq.), THF (5 v), 50°C, 16 h ii) K ₂ CO ₃ (2.5 eq.), Pd(dppf)Cl ₂ DCM (0.05 eq.), DMF/Water (9:1 v/v, 10 v), 80°C, 16h	45%
5	i) Pentadec-1-ene (1.5 eq.), 9-BBN (5 eq.), THF (5 v), 50°C, 16 h ii) K ₂ CO ₃ (2.5 eq.), Pd(dppf)Cl ₂ DCM (0.05 eq.), DMF/Water (9:1 v/v, 10 v), 100°C, 16h	78%

