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N-(5-Phenyl-2,4-pentadiynyl)-1,2,3,4-tetrahydrocarbazole

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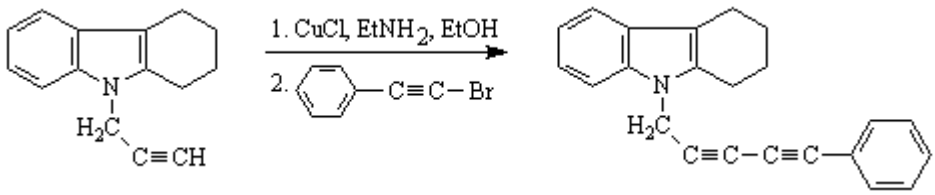

Under nitrogen, 2.09g of N-propargyl-1,2,3,4-tetrahydrocarbazole [1], 0.2g of CuCl, 20 mL of 70% aqueous ethylamine, and 30 mL of 95% ethanol were combined and stirred. A solution of 2.0g of (bromoethynyl)benzene [2] in 10 mL of 95% ethanol was added dropwise over 1 hr. The reaction mixture was stirred for two additional hours, then poured into 100 mL of water. The aqueous suspension was extracted with two, 100 mL portions of ether. The combined ether extracts were sequentially washed with 100 mL of water, two 50 mL portions of 1N HCl, and 50 mL of saturated sodium chloride solution. The ether layer was dried with magnesium sulfate, and rotary evaporated to yield a tan powder. Recrystallization from 95% ethanol yielded 1.73g (56%) of light tan needles.

M.p. 95-96deg.C

IR (KBr pellet): 3050, 2930, 2850, 2240, 1460, 1340, 750, 740, 680 cm^{-1}.

^{1}H-NMR (acetone-d_6): 1.70 (2H, m), 1.79 (2H, m), 2.52 (2H, m), 2.66 (2H, m), 4.96 (2H, s), 6.89 (1H, dt, J=7.5 Hz, J'=1.0 Hz), 6.99 (1H, dt, J=7.0 Hz, J'=1.3 Hz), 7.18-7.37 (7H, m).

^{13}C-NMR (acetone-d_6): 23.07, 23.80, 25.26, 25.31, 34.67, 69.78, 75.28, 79.58, 81.12, 111.16, 112.54, 119.96, 121.41, 123.14, 123.29, 130.30, 130.98, 131.96, 134.73, 137.21, 138.59.

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References and Notes

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Sample Availability: available from MDPI.

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