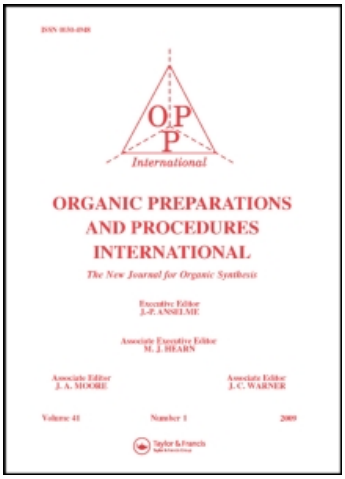

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3,6-DIMETHOXY-9H- DIBENZO[a,c]CARBAZOLE

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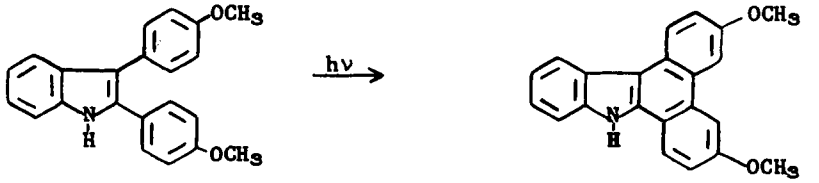

I II

In view of the current interest in photodehydrocyclizations[1,2,3,4,5,6] we would like to report on the easy photochemical conversion of 2,3-bis-(p-methoxyphenyl)indole (I) to the dibenzocarbazole derivative II. Compound I is accessible in one step either by the Fischer-indole synthesis from phenylhydrazine and desoxyanisoin[7] or by condensation of aniline and anisoin[7] and, thus, the new polycyclic dibenzocarbazole II becomes accessible in two easy steps.

Experimental

3,6-Dimethoxy-9H-dibenzo[a,c]carbazole A solution of 2,3-bis(p-methoxyphenyl)indole, I (1.4 g; 4.26 mmoles) and 0.65 g of iodine in 170 ml of benzene was placed in a quartz vessel equipped with a Corex filter and irradiated for 24 hr using a 100w 50L Hanovia lamp. The suspension was diluted with benzene and the resulting brown solution was washed with 5% sodium bicarbonate solution (4 x 25 ml), 5% sodium thiosulfate solution and saturated salt solution. The resulting pale yellow solution was dried over magnesium sulfate and evaporated. The oily solid (1.6 g) was suspended in

10 ml of methylene chloride and the solid was filtered; 0.153 g, mp 203-204° (solid A). The filtrate was chromatographed on 60 g of Florisil collecting 25 ml fractions and using methylene chloride as eluent. Fractions 1-3 gave no material. Fraction 4 (0.46 g) consisted of pure I. Fraction 5 (0.335 g) was a mixture of I and II. Fractions 6, 7 and 8 were crystallized separately from methylene chloride and gave a solid melting at 203-204°. This solid was combined with solid A, dissolved in 10 ml of methylene chloride and 5 ml of methanol, and the solution was concentrated till crystallization began; 0.31 g of II (22% yield), mp 204-205°, unchanged on recrystallization. U.V.: $\lambda_{max.}$ 208 (33,550); sh 234 (27,100); $\lambda_{max.}$ 268 (62,350); 307 (24,150); sh 324 (18,050); $\lambda_{max.}$ 376 (4,100); 396 (4,600). I.R.: NH: 3420; C=C: 1625, 1615, 1585, 1570, 1535, 1510; C-O/C-N: 1285, 1255, 1230, 1190, 1175, 1040; aromatic: 855, 800, 730. Nmr (d_6DMSO, TMS, 60 mc): two OCH_3 singlets at 242.5 and 245 cps (area 6); aromatic H multiplet at 438-530 cps (area 10); NH singlet at 733 cps (area 1).

Anal. Calcd. for $C_{22}H_{17}NO_2$: C, 80.71; H, 5.23; N, 4.28. Found: C, 80.41; H, 4.92; N, 4.45.

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