

SYNTHESES OF APOGALANTHAMINE ANALOGS AS α -ADRENERGIC BLOCKING AGENTS

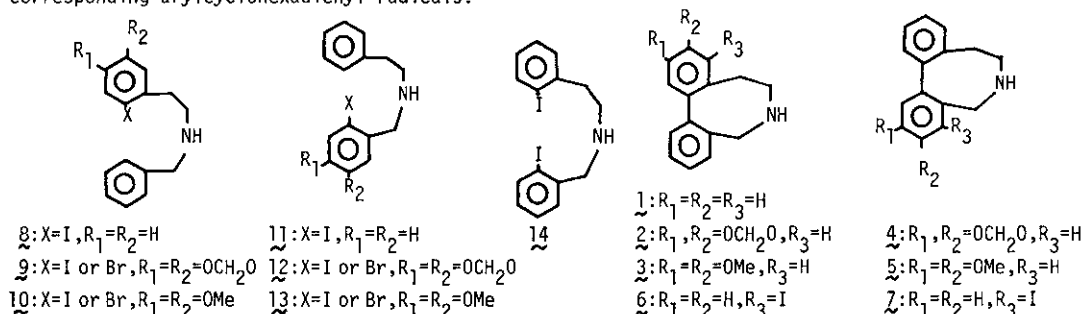
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The apogalanthamine analogs 5,6,7,8-tetrahydrodibenz[c,e]azocine (1), 10,11-methylenedioxy-, and 10,11-dimethoxy-5,6,7,8-tetrahydrodibenz[c,e]azocines (2 and 3, respectively) having α -adrenergic blocking activities, and the related compounds 2,3-methylenedioxy-, 2,3-dimethoxy-, 9-iodo-, and 4-iodo-5,6,7,8-tetrahydrodibenz[c,e]azocines (4-7, respectively) were synthesized by photochemical methods: photolysis of 2-, 2'-halogeno-, or 2,2'-diiodo-N-benzyl- β -phenethylamine derivatives (8-14) gave the corresponding compounds (1-7, respectively), which seemed to be formed via the corresponding arylcyclohexadienyl radicals.



An alternative synthesis of compounds 2-5 has also been realized by the following sequence of chemical reactions. Methyl 2'-formyl-2-biphenylcarboxylates (15a-d) as starting materials were converted to the corresponding 2'-aminoethyl-2-bromomethylbiphenyls (16a-d) via the nitrostyrene derivatives (17a-d) and the amino-alcohols (18a-d). Intramolecular cyclization of the bromides (16a-d) by alkali gave 2-5, respectively. Only compound 1 was prepared from diphenide by 5 steps. The half-tub conformation of the apogalanthamine analogs was discussed on the basis of studies on nuclear magnetic double resonance spectra.

