

Photodecomposition of a new 1,4-dihydropyridine: Furnidipine

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The photodecomposition of new 1,4-dihydropyridine, furnidipine (CRE-319); 2,6-dimethyl-4-(2-nitrophenyl)-1,4-dihydropyridine-3,5-dicarboxylic acid 3-tetrahydrofurfuryl (5-methyl diester) was studied by voltammetric, UV-vis spectrophotometric, and HPLC technique with three different light conditions (artificial daylight, UV light, and room daylight). The artificial daylight photodecomposition of furnidipine follows 0.5-order kinetics as assessed by the abovementioned techniques. Furthermore, the daylight photoderivative was isolated and identified by NMR and IR as 2,6-dimethyl-4-(2-nitrosophenyl)pyridine-3,5-dicarboxylic acid 3-tetrahydrofurfuryl 5-methyl diester. Quantitative kinetic data for the UV photodecomposition of furnidipine cannot be obtained due to both the high rate of degradation (<1 min) and intermediate reactions. However, polarographic, spectroscopic, and chromatographic evidence permits us to identify this photoproduct as 2,6-dimethyl-4-(2-nitrophenyl)pyridine-3,5-dica