Photolysis of NSAIDs. IV. Photoproducts of Zomepirac Determined by LC-ESI-MS

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Abstract

A sample of 10 mm zomepirac in methanol was photo-irradiated with a Hanovia 200 W high-pressure quartz Hg lamp for 14 days. In total, four photoproducts were observed from the HPLC chromatogram. The preparative HPLC included an YMC-Pack Pro C18 column (250 x 20 mm i.d.), a mobile phase of CH3CN-CH3OH-1%HOAc (10:60:30, v/v/v), and UV detection at 254 nm. The most probable structures of the four photoproducts were determined by LC-MS. Two major photoproducts were separated, and their structures were further confirmed by the spectroscopic methods. A reaction scheme of zomepirac was proposed that the photochemical reaction routes occur mainly via bond fission between carbonyl-pyrrolyl groups (alpha-cleavage of a ketone), and decarboxylation followed by oxidation with singlet oxygen to produce an aldehyde.