

PHOTOCHEMICAL STUDIES OF THE ANTI-INFLAMMATORY DRUG DICLOFENAC IN AQUEOUS SOLUTIONS

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ABSTRACT

Scientists all over the world present data confirming that a wide variety of drugs and their metabolites are showing up in the aquatic environment. In Greece, diclofenac an anti-inflammatory drug was detected in every sample collected from the effluents from several sewage treatment plants. In this work photodegradation of diclofenac was studied, after irradiation with sunlight and UV light in aqueous solutions. Diclofenac degraded completely after irradiation and a number of breakdown products was detected by HPLC-DAD. The identification of three photoproducts, 8-chlorocarbazole-1-acetic acid, 8-hydroxycarbazole-1-acetic acid and carbazole-1-acetic acid was achieved by GC-MS, after derivatization with BSTFA.