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Eco-friendly RP-HPLC DAD determination of the anticancer flutamide and its toxic synthesized metabolites

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Flutamide is a potential antineoplastic drug classified as an anti-androgen. It is a therapy for men with advanced prostate cancer. Flutamide undergoes extensive first pass metabolism with the production of toxic metabolites. In this work two of flutamide toxic metabolites namely 4-nitro-3-(trifluoromethyl)phenylamine (Flu-1) and *N*-[4-nitro-3-(trifluoromethyl)phenyl]-acetamide (Flu-2) have been synthesized, then structural confirmation has been carried out by IR, MS and HNMR analysis. The drug along with its two synthesized metabolites was quantitatively analyzed through the development of an eco-friendly stability indicating RP-HPLC-DAD method. The developed method depended on separation of the drug and its metabolites on Zorbax Eclipse C18 column using a gradient mixture of methanol- water maintaining the flow rate constant at 1.8 mL/min and with UV detection at 300 nm. USP guidelines for method validation were followed. Interference from excipients has been tested by method application to pharmaceutical tablets. No significant difference was found between the proposed method and the official one when they were statistically compared at a p-value of 0.05%.

Biography

Nehal Farid has completed my PhD and is Assistant Professor of Analytical Chemistry, Faculty of Pharmacy Beni-Suef University. She has published more several papers in different chromatographic and spectroscopic methods of analysis and she is a potential reviewer in many international journals.

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