**عنوان مقاله:**

An Efficient Cloud Point Extraction for Doxycycline Pre-concentration in Pharmaceutical Samples prior to UV-Vis Spectrophotometric Analysis

**نویسندگان:**

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**خلاصه مقاله:**

A sensitive and eco-friendly cloud point extraction (CPE) method was suggested for pre-concentration of micrograms amount of doxycycline hyclate (DOX) in pure and dosage forms. The method was based on formation a sensitive azo-dye produced by diazotization reaction of DOX with diazotized sulfadimidine (DSD) in a basic medium. The Triton X-۱۱۴ rich phase containing the orange azo-dye was dissolved in ethanol after extraction and identified at the maximum wavelength at ۴۳۰ nm using UV-Vis spectrophotometer. The proposed approach was investigated with and without extraction, and a straightforward comparison between the batch and CPE procedures was accomplished. The effects of several analytical factors on the CPE method, such as reagent and base concentrations, surfactant amounts, incubation temperature, and time were extensively examined. For the batch and CPE techniques, the linear ranges of calibration curves were ۲-۸ and ۰.۳-۶ μg/mL with the detection limits of ۱.۰ and ۰.۰۴۱ μg/mL, respectively, under the selected optimum conditions. According to percentage recoveries ranged from ۹۷.۶ to ۱۰۱.۸% and relative standard deviation values of less than ۳.۵% for both procedures, the suggested methods were accurate and precise. Batch and CPE methods were employed successfully and with excellent accuracy in routine analyses of DOX in pharmaceutical formulations.

**کلمات کلیدی:**

Doxycycline hyclate, Triton X-۱۱۴, Cloud point extraction, sulfadimidine, diazotization reaction

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