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Development, validation and application of RP-HPLC method: Simultaneous determination of antihistamine and preservatives with Paracetamol in liquid formulations and human serum

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In this article we described the development and validation of stability indicating, accurate, precise and simple ion-pairing RP-HPLC method for simultaneous determination of paracetamol and cetirizine HCl along with preservatives i.e., propylparaben and methylparaben in pharmaceutical dosage forms of oral solution and in serum. Acetonitrile: buffer: sulfuric Acid (45:55:0.3 v/v/v) was the mobile phase at flow rate 1.0 mL min⁻¹ using a Hibar® Lichrosorb® C18 column and monitored at wavelength of 230 nm. The averages of the absolute and relative recoveries were found to be 99.3%, 99.5%, 99.8% and 98.7% with correlation coefficient of 0.9977, 0.9998, 0.9984, and 0.9997 for cetirizine HCl, paracetamol, methylparaben and propylparaben, respectively. The limit of quantification and limit of detection were in range of 0.3-2.7 ng mL⁻¹ and 0.1-0.8 ng mL⁻¹, respectively. Under stress conditions of acidic, basic, oxidative, and thermal degradation, maximum degradation was observed in basic and oxidative stress where a significant impact was observed, while all drugs were found almost stable in the other conditions. The developed method was validated in accordance to ICH and AOAC guidelines. The proposed method was successfully applied to quantify the amount of paracetamol, cetirizine HCl and two most common microbial preservatives in bulk, dosage form and physiological fluid.

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Application of linear voltammetry in the determination of vitamin C in peppers

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The main objective of this research was to compare the content of ascorbic acid peppers (*Capsicum annuum*), in state of ripening green and red of the same variety. Pepper extract was obtained by crushing the fruit in a porcelain mortar, the liquid obtained was filtered on filter paper. For determining the content of ascorbic acid is used linear sweep voltammetry using three electrodes; as working electrode a platinum wire of high purity, glassy carbon as working electrode and reference electrode Ag/AgCl/KCl. A pattern of ascorbic acid and a solution of HNO₃ and 0.1M NaNO₃ as supporting electrolyte were used for the calibration curve. The results indicate that, green pepper has an average concentration of 1680 ppm of ascorbic acid, and red pepper reached a value of 2283 ppm. These results are superior to those obtained by Chaves et al., in pepper by HPLC. In this case, values of 1000 ppm to 1500 ppm for green pepper and red pepper were found respectively.

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