Zero order and area under curve spectrophotometric methods for determination of ampicillin trihydrate in pharmaceutical formulation

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Abstract

Simple, fast and reliable spectrophotometric methods were developed for determination of Ampicillin Trihydrate in bulk and pharmaceutical dosage forms. The solutions of standard and the sample were prepared in double Methanol. The quantitative determination of the drug was carried out using the zero order derivative values measured at 205 nm and the area under the curve method values measured at 202-207 nm. Calibration graphs constructed at their wavelengths of determination were linear in the concentration range of Ampicillin Trihydrate using 5-25 µg/ml (r^2=0.999 and r^2=0.999) for zero order and area under the curve spectrophotometric method. All the proposed methods have been extensively validated as per ICH guidelines. There was no significant difference between the performance of the proposed methods regarding the mean values and standard deviations. Developed spectrophotometric methods in this study are simple, accurate, precise and sensitive to assay of Ampicillin Trihydrate in tablets.

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MEDICINE

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Simple, fast and reliable spectrophotometric methods were developed for determination of Ampicillin Trihydrate in bulk and pharmaceutical dosage forms. The solutions of standard and the sample were prepared in double Methanol. The quantitative determination of the drug was carried out using the zero order derivative values measured at 205 nm and the area under the curve method values measured at 202-207 nm. Calibration graphs constructed at their wavelengths of determination were linear in the concentration range of Ampicillin Trihydrate using 5-25 µg/ml (r^2=0.999 and r^2=0.999) for zero order and area under the curve spectrophotometric method. All the proposed methods have been extensively validated as per ICH guidelines. There was no significant difference between the performance of the proposed methods regarding the mean values and standard deviations. Developed spectrophotometric methods in this study are simple, accurate, precise and sensitive to assay of Ampicillin Trihydrate in tablets.

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