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## Comparative analysis of RP-HPLC, turbidimetric and UV methods used for the determination of Cefepime hydrochloride in pharmaceuticals

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The prospect of new analytical methods, the improvement and validation of existing methods, bring numerous benefits to the pharmaceutical industry, for the purpose to save as much in costs as the analysis time. Cefepime hydrochloride (CEF), an antimicrobial agent  $\beta$ -lactam belonging to the group of fourth generation cephalosporins, is a semi-synthetic product which has activity against several Gram positive and Gram negative aerobic bacteria. The objective of this study was performed a statistical analysis of average contents of CEF obtained by reversed-phase high-performance liquid chromatography (RP-HPLC), microbiological assay (turbidimetric test) and UV method, using analysis of variance (ANOVA). The RP-HPLC method was performed on a C18 column (250 mmx4.6 mm) maintained at room temperature. The mobile phase consisted of water: absolute ethanol (45:55, v/v) at a flow rate of 0.5 mL min<sup>-1</sup>, using UV detection at 258 nm. For performing the turbidimetric assay, *Staphylococcus aureus* ATCC 6538 IAL 2082 was used as the test microorganism and the culture medium chosen was the Casoy broth. The control temperature was maintained at 35°C $\pm$ 2.0°C and incubated for four hours in shaker. The readings of the results were made in spectrophotometer at 530 nm. The UV method was realized using the equipment Spectrophotometer UV Shimadzu. The absorption was obtained at a wavelength of 258 nm. The results through ANOVA showed a significant difference between the methods proposed for the 5% significance level. Thus, the methods are not equivalent and should be used in conjunction in the quality control analysis of CEF.

### Biography

Danilo Fernando Rodrigues has graduated in Pharmacy from the Centro Universitario de Votuporanga (2010). He has completed his Master's degree in Biotechnology from the Universidade Estadual Paulista-UNESP (2013). He is currently a Doctoral student (PhD) in Pharmaceutical Sciences Program at the School of Pharmaceutical Sciences of UNESP funded by FAPESP.

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